STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA

91-5420 Kapolei Parkway, Kapolei, Oʻahu, Hawaiʻi, and Zoom: Meeting ID: 609 754 2925
Monday, December 19, 2022, at 9:30 a.m. to be continued, if necessary, on
Tuesday, December 20, 2022, 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, December 14, 2022.

I. ORDER OF BUSINESS

A. Roll Call
B. Approval of Agenda
C. Approval of Minutes:
   a. November 21 & 22, 2022 Regular Meeting
   b. January 19 & 20, 2016; February 23, 2016; March 21 & 22, 2016
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 at the time 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 Streamline Refinance of Loans (see exhibit)
D-4 Approval of Homestead application Transfers / Cancellations (see exhibit)
D-5 Commission Designation of Successors to Application Rights – Public Notice 2014 & 2021 (see exhibit)
D-6 Approval to Certify Applications of Qualified Applicants for the Month of November 2022 (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)
D-10 Commission Designation of Successor of a Tenant in Common Interest, **STEVEN T. TUI**, Residential Lease No 799, Lot No. 154, Kewalo, Oahu
D-11 Commission Designation of Successor – **WAYNE WAINUHEA KAUPIKO**, Residential Lease No. 09314, Lot No. 1, Kaniohale, Hawaii
D-12 Rescission of Homestead Lease Award and Reinstatement of Lease Application – **WAYLENE U. TOYOZAKI**

B. REGULAR AGENDA

Office of the Chairman

C-1 Approval of Resolution Number 305 Honoring William J. Aila, Jr. For His Service as Chairman of the Hawaiian Homes Commission
C-2 Approval of Lease Awards Kakaina Subdivision Residential Vacant Lot, Waimanalo, Oahu; Approval of Lease Award Makuʻu Farm Lots Unit 1 Agricultural Pre-Owned Home, Makuʻu, Puna, Hawaiʻi (see exhibit)

Land Management Division

F-1 Preliminary Approval to the Issuance of a General Lease to Waiohuli Hawaiian Homesteaders Association, Inc., Waiohuli-Keokea, Maui, TMK Nos. (2) 2-2-028:181(portion), (2) 2-2-002:014(portion)
F-2 Approval to First Amendment of Right of Entry No. 708, Frank V. Coluccio Construction Company, Inc., Puowaina, Honolulu, Oahu, TMK: (1) 2-2-005:035(portion)

Planning Office

G-1 Approval of Recommendation for Various Grant Awards (see exhibit)
G-2 Approval of the South Molokaʻi Shoreline Erosion Management Plan (SM-SEMP)
G-3 Approval of the Anahola Regional Plan Update (2022)
G-4 Declare a Finding of No Significant Impact for the Waimea Nui Regional Community Development Initiative Kīpuka o Ke Ola Clinic Relocation Final Environmental Assessment, TMK (3)-6-4-038:011 (por.), Puʻukapu, Waimea, Hawaiʻi Island
G-5 Accept the Beneficiary Consultation Report for Three Requests to Utilize DHHL Lands for Non-Homesteading Purposes in the Ahupuaʻa of Waianae by Kaʻala Farms Inc. (TMK 1-8-5-004:036); Waiʻanae Valley Homestead Community Association (TMK 1-8-6-001:022); and the Waiʻanae Coast Comprehensive Health Center (TMK 1-8-6-001:012, 024, 025, 026, 027 and 028), Waiʻanae, Oahu
G-6 Accept the Beneficiary Consultation Report for the Kailapa Firebreak Project, Kawaihae, South Kohala, Hawaiʻi Island

Administrative Services Office

H-1 Transfer of Hawaiian Home Receipts Fund at the End of the Second Quarter, FY 2023

III. EXECUTIVE SESSION

The Commission anticipates convening an executive meeting pursuant to Section 92-5(a)(4), HRS, to consult with its attorney on questions and issues pertaining to the Commission's powers, duties, privileges, immunities, and liabilities on the following matters:

1. Update on discussions with Department of Interior regarding Act 236 (SLH 2021)
2. Recommendation to approve settlement agreement for Matsushima v. Hawaiian Homes Commission, Civil No. 1CCV-21-0001526.

IV. ITEMS FOR INFORMATION/DISCUSSION

A. REGULAR ITEMS

Office of the Chairman

C-4 For Information Only – Update on the Tribal Broadband Connectivity Program by the National Telecommunications & Information Administration

Homestead Services Division

D-1 HSD Status Reports
A.-Homestead Lease and Application Totals and Monthly Activity Reports
B.-Delinquency Reports

Land Development Division

E-1 For Information Only – Implementation Progress Report, as of December 2022, for Act 279, Session Laws of Hawaii 2022.
E-2 For Information Only – Nanakuli and Waianae Projects Update

B. WORKSHOPS

Planning Office

G-7 For Information Only – Memorandum of Understanding Agreement Among DHHL, Trustees of the Bishop Estate of Bernice Pauahi Bishop dba Kamehameha Schools, and the County of Hawai‘i Department of Water Supply (DWS) Regarding Water System Improvements and Allocation of DWS Water Credits and Facility Charge Credits, Keauhou, North Kona, Hawai‘i Island
G-8 For Information Only – Status Update on Nānākuli and Wai‘anae Plan Implementation

V. ANNOUNCEMENTS AND RECESS

1. DHHL Community Meeting Monday, December 19, 2022, 6:30 p.m., Kalanihookaha Community Learning Center, 89-102 Farrington Hwy, Wai‘anae, HI, 96792

STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA

91-5420 Kapolei Parkway, Kapolei, Oʻahu, Hawaiʻi, and Zoom: Meeting ID: 609 754 2925
Tuesday, December 20, 2022, 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

Public testimony on any item **relevant to this agenda** may be taken at this time, or a testifier may wait to testify at the time 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

Land Management Division

F-3 Approval to Issue Right of Entry Permit to Waianae Valley Homestead Community Association, Inc., Waianae, Island of Oahu, TMK No.: (1) 8-6-001:022 (portion)
F-4 Approval to Issue Right of Entry Permit to Waianae Coast Comprehensive Health Center, Waianae, Island of Oahu, TMK Nos.: (1) 8-6-001:012 (portion), :024 (portion), :025 (portion), :026 (portion), :027 (portion), and :028 (portion)
F-5 Preliminary Approval to the Issuance of a General Lease to Kaala Farm, Inc., Nanakuli, Island of Oahu, TMK No.: (1) 8-5-005:0036

Planning Office

G-7 Authorize the Chairman to Enter into Memorandum of Understanding Agreement Among DHHL, Trustees of the Bishop Estate of Bernice Pauahi Bishop dba Kamehameha Schools, and the County of Hawaiʻi Department of Water Supply (DWS) Regarding Water System Improvements and Allocation of DWS Water Credits and Facility Charge Credits, Keauhou, North Kona, Hawaiʻi Island

III. ITEMS FOR INFORMATION/DISCUSSION

Land Management Division

F-6 For Information Only – Geothermal Investigation/Exploration at Humuula, Hawaii Island, various DHHL TMKs
F-7 For Information Only – Sale of and/or Land Exchange, Waimanalo, Oahu Island, TMK No. (1) 4-1-014:007

A. GENERAL AGENDA

Requests to Address the Commission

J-1 Kekoa Enomoto – Maui/Lanai Mokupuni Council and Paʻupena Community Development Inc.
J-2 Homelani Schaedel – Various Concerns

J-3 Bo Kahui – Laʻiopua Development Corporation
J-4 Debbie Mahuna – Puunani Homestead Association
J-5 Blossom Feiteira – Various Concerns
J-6 Simeon "Butch" Ramos – Kewalo Lease
J-7 Kauilani Almeida – PHHLCA
J-8 Keomailani Hirata – DHHL Ualapuʻe Kuleana Homestead Project
J-9 Rogeitte Bernardino - Kauluokahaʻi Self-build

IV. ANNOUNCEMENTS AND ADJOURNMENT

A. Next HHC Meeting – January 17 & 18, 2023, (Tuesday & Wednesday) Hale Ponoʻī, Department of Hawaiian Home Lands, Kapolei, Oahu
B. Next DHHL Community Meeting – February 21, 2023 (No Community Meeting in January)
C. Adjournment

William J. Aila Jr., Chairman
Hawaiian Homes Commission

COMMISSION MEMBERS

Randy K. Awo, Maui
Patricia A. Teruya, Oʻahu
Pauline N. Namuʻo, Oʻahu
Michael L. Kaleikini, East Hawaiʻi
Zachary Z. Helm, Molokaʻi
Vacant, West Hawaiʻi
Dennis L. Neves, Kauaʻi
Russell K. Kaʻupu, Oʻahu

If you need an auxiliary aid/service or other accommodation due to a disability, contact Michael Lowe at 620-9512, or michael.l.lowe@hawaii.gov, as soon as possible, preferably by December 15, 2022. If a response is received after then, 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.icro@hawaii.gov* by December 16, 2022, 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, video camera and microphone to participate. Testimony may be limited to a maximum of three (3) minutes per person.

ITEM C-2 EXHIBIT

APPROVAL OF LEASE AWARDS KAKAINA RESIDENTIAL SUBDIVISION VACANT LOT, WAIMANALO, OAHU

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
SAADIA L. HASHIMOTO	02/20/1974	2	(1) 4-1-041-002	12991
GERALDINE CAMARA	06/15/1964	10	(1) 4-1-041-010	12994

APPROVAL OF LEASE AWARD MAKU‘U FARM LOTS UNIT 1 AGRICULTURAL-PRE-OWNED HOME, MAKU‘U, PUNA, HAWAI‘I

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
GERTRUDE B HAIA	11/05/1980	117	(3) 1-5-118-037	12993

ITEM D-2 EXHIBIT

APPROVAL OF CONSENT TO MORTGAGE

LESSEE	LEASE NO.	AREA
AANO, Allison	8609	Nanakuli, Oahu
AKAHI, Kuakea	9444	Waiehu Kou II, Maui
APANA, Carol H.	12987	Anahola, Kauai
ASHLEY, Bradfrey G., Jr.	12616	Kanehili, Oahu
ASUNCION, Ronald K.	12220	Waiehu Kou IV, Maui
BALOGBOG, Charles N.	5584	Lualualei, Oahu
GOMES, Patrick L.	8463	Princess Kahanu Estates, Oahu
INSILLIO, Antonio, Jr.	8371	Princess Kahanu Estates, Oahu
KAAHANUI, Kaniela H. K.	7543	Waiohuli, Maui
KALEIKINI, Melvin K.	12780	Maluohai, Oahu
KUNIPO, Lea	8411	Princess Kahanu Estates, Oahu
NAKAMURA, Kekoaalii K.	11634	Kanehili, Oahu
NUUANU, Edward P. F.	4551	Nanakuli, Oahu
TAYLOR, Jeremy L.	3843	Nanakuli, Oahu

ITEM D-3 EXHIBIT

APPROVAL OF STREAMLINE REFINANCE OF LOANS

LESSEE	LEASE NO.	AREA
IOANE, Mickey K.	6817	Waiakea, Hawaii

ITEM D-4 EXHIBIT

APPROVAL OF HOMESTEAD APPLICATION TRANSFERS / CANCELLATIONS

APPLICANT	AREA
AKAHI, Lloyd	Maui IW Agr
AKAHI, Lloyd	Maui IW Res
HUE SING, Aaron P.	Maui IW Pas
HUE SING, Aaron P.	Maui IW Res

KAHAWAII-LANG, Hamby O.	Maui IW Res
KAUWE, Kauluokala	Oahu IW Res to Kauai IW Res
KAUWE, Kauluokala	Hawaii IW Agr to Kauai IW Agr
KELIIKOA, Vanessa K.M.	Hawaii IW Res to Oahu IW Res
KILA, Randolf R.	Oahu IW Agr
RAPANOT, Jodean K.	Molokai IW Res to Maui IW Res
RAWLINS, Charlotte K.	Oahu IW Res to Molokai IW Res
SANTANA, Deborah H.	Kauai IW Res to Oahu IW Res
SHIMOSE, Raynette L.	Oahu IW Res
SILVA, Kirk A.	Kauai IW Agr to Hawaii IW Agr

* IW = Islandwide

ITEM D-5 EXHIBIT

COMMISSION DESIGNATION OF SUCCESSORS TO APPLICATION RIGHTS – PUBLIC NOTICE 2014 & 2021

APPLICANT	AREA
HUE SING, Aaron P.	Maui IW Agr
HUE SING, Aaron P.	Maui IW Res
KAMALAMALAMA, Alberta P.K.	Oahu IW Res
KAUWALU, Alicia Joy K.	Molokai IW Agr
KILA, Randolf R.	Hawaii IW Agr
REPERCIO, Daniel M.	Oahu IW Res
REPERCIO, Daniel M.	Hawaii IW Agr
SAYSON, Renita L.	Oahu IW Res

* IW = Islandwide

ITEM D-6 EXHIBIT

APPROVAL TO CERTIFY APPLICATIONS OF QUALIFIED APPLICANTS FOR THE MONTH OF November 2022

APPLICANT	AREA
ADAMS, Donna K.	Oahu IW Res
ADAMS, Keith Earl K.	Kauai IW Pas
ADAMS, Keith Earl K.	Kauai IW Res
AKANA, Laie K.	Oahu IW Res
AWAI, Adrian N.	Oahu IW Agr
AWAI, Adrian N.	Oahu IW Res
AWAI, Dawn N.	Oahu IW Agr
AWAI, Dawn N.	Oahu IW Res
AWAI-BELTRAN, Jennifer K.	Oahu IW Agr
AWAI-BELTRAN, Jennifer K.	Oahu IW Res
AWEAU, Jhalani B.K.	Maui IW Res
AWEAU, Jhalani B.K.	Maui IW Pas

AWEAU, Jhianna D.E.K.P.K.	Maui IW Res
AWEAU, Jhianna D.E.K.P.K.	Maui IW Pas
BLACKSTAD, Tiffany K.	Kauai IW Agr
BLACKSTAD, Tiffany K.	Kauai IW Res
BOTELHO, Terry Lynn M.	Oahu IW Res
CARVEIRO, Bessie P.	Kauai IW Agr
CARVEIRO, Bessie P.	Kauai IW Res
CHINN, Daniel K.N.	Oahu IW Agr
CHINN, Daniel K.N.	Oahu IW Res
COSMA, Leroy P.	Maui IW Agr
COSMA, Leroy P.	Maui IW Res
CROWELL, Jimmy Dean K.	Kauai IW Res
CROWELL, Jimmy Dean K.	Oahu IW Agr
DAMAS, Loretta L.	Hawaii IW Res
DAVIS, Kawenaokala J.	Maui IW Agr
DAVIS, Kawenaokala J.	Maui IW Res
DELOS SANTOS, Bernard Jr.	Maui IW Pas
DELOS SANTOS, Bernard Jr.	Maui IW Res
DEMOTTA, Radford K.	Hawaii IW Agr
DEMOTTA, Radford K.	Hawaii IW Res
DUTRO, Henry	Oahu IW Res
FALETOI, Doris K.	Oahu IW Res
GARCIA, Chanelle L.	Oahu IW Res
GILMAN, Kawelinaonalani K.	Hawaii IW Agr
GILMAN, Kawelinaonalani K.	Oahu IW Res
GOO, Shane A.	Oahu IW Agr
GOO, Shane A.	Oahu IW Res
HAILI BARAWIS, Kealoha K.K.	Hawaii IW Res
HANOHANO CARLIN, Leala K.	Oahui IW Res
HEW-LEN, Chris K.	Oahu IW Res
HOLI-ARRINGTON, Marvilyn H.	Oahu IW Res
HOOPAI, Wyatt M.	Maui IW Res
HOOPAI, Wyatt M.	Maui IW Agr
HUSSEY, Loretta O.L.	Oahu IW Res
JENSEN, Jeffery K.	Oahu IW Agr
JENSEN, Jeffery K.	Oahu IW Res
JENSEN, Stuart K.	Maui IW Pas
JENSEN, Stuart K.	Maui IW Res
KAAIHUE, Isaiah K.	Oahu IW Agr
KAAIHUE, Isaiah K.	Oahu IW Res
KAHANANUI, Karen K.	Maui IW Agr
KAHIAPO, Joanna K.	Oahu IW Res
KAIWI-BARRIONUEBO, Kapono I.	Oahu IW Res
KALAMA, Reef L.	Oahu IW Agr
KALAMA, Reef L.	Oahu IW Res

KALAUKOA, Jeremiah P.M.A.K.	Hawaii IW Pas
KALEI, Derrick K.	Oahu IW Agr
KALEI, Derrick K.	Oahu IW Res
KANAHELE, Fraizer K.	Oahui IW Res
KASSEBEER, Bronson K.A.	Oahu IW Agr
KASSEBEER, Bronson K.A.	Oahu IW Res
KASSEBEER, Frederick J.A.A.	Hawaii IW Agr
KASSEBEER, Frederick J.A.A.	Hawaii IW Res
KAUI, Shelly L.	Kauai IW Agr
KAUI, Shelly L.	Kauai IW Res
KAWAA, Daisha K.	Kauai IW Agr
KAWAA, Daisha K.	Kauai IW Res
KAWAAKOA, Tammi T.L.	Maui IW Agr
KAWAAKOA, Tammi T.L.	Maui IW Res
KEALOHA, Gabriel	Hawaii IW Agr
KEANU, Homer L.	Hawaii IW Agr
KEANU, Homer L.	Oahu IW Res
KEANU-BRANCO, Alaci I.	Hawaii IW Res
KEITH, Joni L.	Maui IW Agr
KEITH, Joni L.	Maui IW Res
KEKAWA, Abriana K.	Oahu IW Res
KEPAA, Shynel N.	Oahu IW Agr
KING, Ka-Inoa R.	Hawaii IW Agr
KING, Ka-Inoa R.	Oahui IW Res
KREUTZMANN, Saundra A.	Maui IW Agr
KREUTZMANN, Saundra A.	Maui IW Res
KUPAHU, Jo ann H.	Oahu IW Res
KUPAHU, Mahela M.	Hawaii IW Agr
KUPAHU, Mahela M.	Maui IW Res
KUPAHU, Tiare E.	Oahu IW Res
LAI, Earline M.	Oahu IW Res
LANE, Ginger L.	Hawaii IW Res
LEE, William K.	Hawaii IW Res
LEE, William K.	Hawaii IW Agr
LEOPOLDO, Amanda K.	Oahu IW Res
MAKANEOLE, William Jr.	Oahu IW Res
MAKANEOLE, William Jr.	Hawaii IW Agr
MAKANEOLE-BRAGG, Genesis K.H.	Hawaii IW Agr
MCKEAGUE, Brittiny N.	Molokai IW Agr
MCKEAGUE, Brittiny N.	Molokai IW Res
MCKEAGUE, Cameron I.	Oahu IW Agr
MCKEAGUE, Cameron I.	Oahu IW Res
MEHEULA, Daniel K.	Oahu IW Res
MENO, Tichelle K.	Hawaii IW Agr
MERSBURGH, Isaac K.	Oahu IW Agr

MERSBURGH, Isaac K.	Oahu IW Res
NAEOLE, Laakea Q.	Oahu IW Agr
NAEOLE, Laakea Q.	Oahu IW Res
NUNUHA, Jaymason K.	Oahu IW Agr
OLIVERA, Ida P.	Hawaii IW Agr
PACK, Chevone P.	Hawaii IW Agr
PACK, Chevone P.	Hawaii IW Res
PANCHO, John T.I.	Oahu IW Res
PAVAO, Riley J.K.	Hawaii IW Res
PETERS, Kimo	Oahu IW Agr
PETERS, Kimo	Oahu IW Res
PULE, Jacob L.I.	Oahu IW Agr
PULE, Jacob L.I.	Oahu IW Res
RENKEN, Mercedes K.	Hawaii IW Agr
RENKEN, Mercedes K.	Oahu IW Res
RICHARDSON, Sage G.K.	Oahu IW Res
RODRIGUES, Nelson A.K.	Kauai IW Agr
RODRIGUES, Nelson A.K.	Oahu IW Res
ROGERS-FAASA, Tommie-Ann K.	Oahu IW Res
SANDERS, Lonnie A.	Hawaii IW Res
SANTIAGO, Lacey N.K.	Molokai IW Agr
SANTIAGO, Lacey N.K.	Molokai IW Res
SCHUMACHER, Albert N.	Oahu IW Agr
SCHUMACHER, Albert N.	Oahu IW Res
SOLOMON-CERVANTES, Lenell K.	Hawaii IW Agr
SOLOMON-CERVANTES, Lenell K.	Oahu IW Res
TAYLOR, Abraham K.	Hawaii IW Pas
TAYLOR, Abraham K.	Maui IW Res
TAYLOR, Sadie H.	Hawaii IW Agr
TAYLOR, Sadie H.	Oahu IW Res
TAYLOR, Tehani G.N.	Hawaii IW Pas
TAYLOR, Tehani G.N.	Maui IW Res
TAYLOR, Tracy K.	Hawaii IW Pas
TAYLOR, Tracy K.	Maui IW Res
THOMPSON, Kuumomi K.	Kauai IW Agr
THOMPSON, Kuumomi K.	Kauai IW Res
TOLENTINO, Charmaine K.N.M.P.	Oahu IW Agr
TOLENTINO, Charmaine K.N.M.P.	Oahu IW Res
TUPUA, Kapuni A.I.	Maui IW Res
VALMOJA, Bartolome A., Jr.	Oahu IW Agr
VALOROSO, Sunday V.	Oahu IW Agr
WHITE-KALEIKULA, Shaden K.	Oahu IW Res
WONG, Kauanani A.K.	Maui IW Res
WONG, Le'ia O.K.	Maui IW Res
WOODS, Justin K.	Oahu IW Res

YOU, Sage L.	Oahu IW Agr
YOU, Sage L.	Oahu IW Res
YOU, Sam J.K.A.	Oahu IW Agr
YOU, Sam J.K.A.	Oahu IW Res

* IW = Islandwide

ITEM D-7 EXHIBIT
APPROVAL OF ASSIGNMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
AIKALA, Kalsey L.	5584	Lualualei, Oahu
AIO, Gabriel A.L.	8463	PKE, Oahu
AKANA, Spencer N.	3541	Puukapu, Hawaii
COX, Valen A.	12616	Kanehili, Oahu
ASHLEY, Bradfrey G.	12616	Kanehili, Oahu
KAWAI, Nathalie B.	2708	Kuhio Village, Hawaii
KAWEWEHI, Loreen L.	11704	Kanehili, Oahu
KOFFMAN, Judith K.	9359	Kaniohale, Hawaii
NAMULAUTI, Moriah K.	8411	PKE, Oahu
KUNIPO, Edward K.	8411	PKE, Oahu
MENDONCA, Ilona K.	923	Papakolea, Oahu
PACHECO, Kaimi Kaleonahe M.	10273	Keaukaha, Hawaii
STONE, Kahana A.	7502	Waiohuli, Maui
DIAS, Dennis K.	10548	Waiohuli, Maui
BLOCK, Beatrice N.	12988	Makuu, Hawaii

ITEM D-8 EXHIBIT
APPROVAL OF AMENDMENT OF LEASEHOLD INTEREST

LESSEE	LEASE NO.	AREA
AKANA, Spencer N.	3541	Puukapu, Hawaii
BROWN, Elizabeth J.K.	245	Nanakuli, Oahu
DANNER, Scott K.	11016	Anahola, Kauai
JOHNSON, Joshua K.	10379	Waiohuli, Maui
KANIAUPIO, Stanton K.	11273	Waimanalo, Oahu
KAWAI, Nathalie B.	2708	Kuhio Village, Hawaii
SUAPAIA, Richard K.	10357	Waiohuli, Maui

ITEM D-9 EXHIBIT
APPROVAL TO ISSUE A NON-EXCLUSIVE LICENSE FOR ROOFTOP PHOTOVOLTAIC SYSTEMS FOR CERTAIN LESSEES

LESSEE	LEASE NO.	AREA
AH HEE, Merle J.	6363	Kawaihae, Hawaii
BALOGBOG, Charles N.	5584	Lualualei, Oahu
GOMES, Patrick L.	8463	PKE, Oahu
LAZARO, Michael K.	4667	Kekaha, Kauai
LAZARO, Keneze K.	4667	Kekaha, Kauai

LAZARO, Leroy	4667	Kekaha, Kauai
LAZARO, Darrick K.	4667	Kekaha, Kauai
OHELO, Amber U.	9681	Nanakuli, Oahu
OHELO, Angela M.	9681	Nanakuli, Oahu

ITEM G-1 EXHIBIT A

RFP-23-HHL-001
Grant for Improvements to Existing Facilities on Hawaiian Home Lands (Statewide)
Grant Applications Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
OAHU					
Kaala Farm Inc.	$368,034	$0	$24,000	$392,034	$0
Ka Waihona O Ka Na‘auau Public Charter School	$1,000,000	$1,000,000	$0	$2,000,000	$1,000,000
Nanakuli Hawaiian Homestead Community Association	$980,000	$0	$45,000	$1,025,000	$980,000
Princess Kahanu Estates Association	$1,000,000	$201,000	$0	$1,201,000	$1,000,000
MOLOKAI					
Kalamaula Homesteaders Association	$400,000	$200,000	$0	$600,000	$400,000
Moloka‘i Homestead Farmers Alliance	$1,000,000	$0	$18,500	$1,018,500	$1,000,000
MAUI					
Waiohuli Hawaiian Homesteaders Association, Inc.	$1,000,000	$0	$75,000	$1,075,000	$1,000,000
TOTAL	**$5,748,034**	**$1,401,000**	**$162,500**	**$7,311,534**	**$5,380,000**

ITEM G-1 EXHIBIT B

RFP-23-HHL-002
Grant for Existing Programs and Services in Existing Homesteads (Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
KAUAI					
Aina Alliance	$331,100	$0	$0	$331,100	$331,100
OAHU					
College-In-7, Inc.	$167,200	$0	$0	$167,200	$0
Ke Kula Nui O Waimānalo	$500,000	$0	$84,000	$584,000	$500,000
Kula No Na Po'e Hawai'i	$447,344	$93,813	$0	$541,157	$447,344
Princess Kahanu Estates Association	$500,000	$0	$0	$500,000	$0
MAUI					
Waiohuli Hawaiian Homesteaders Association, Inc.	$170,000	$170,000	$0	$340,000	$170,000
Habitat for Humanity International	$500,000	$0	$0	$500,000	$500,000
MOLOKAI					
Ka ʻOhana O Kahikinui, Inc.	$500,000	$0	$0	$500,000	$0
Moloka'i Homestead Farmers Alliance	$400,000	$7,000	$44,700	$451,700	$400,000
TOTAL	**$3,515,644**	**$270,813**	**$128,700**	**$3,915,157**	**$2,348,444**

ITEM G-1 EXHIBIT C

RFP-23-HHL-003
Grant for Project Implementation (Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
HAWAII					
La'i'opua Community Development Corporation	$95,000	$0	$78,000	$173,000	$0
'O Maku'u Ke Kahua Community Center	$100,000	$50,000	$0	$150,000	$100,000
Princess Kahanu Estates Association	$100,000	$0	$0	$100,000	$100,000
MAUI					
Ka 'Ohana O Kahikinui, Inc.	$100,000	$96,958	$0	$196,958	$100,000
Waiohuli Hawaiian Homesteaders Association, Inc.	$100,000	$0	$0	$100,000	$100,000
MOLOKAI					
Ho'opili Farmers Assocation	$100,000		$60,000	$160,000	$100,000
Kalamaula Homesteaders Association	$100,000	$27,800	$22,200	$150,000	$100,000
OAHU					
Kanehili Community Association	$100,000	$30,000	$0	$130,000	$100,000
TOTAL	**$795,000**	**$204,758**	**$160,200**	**$1,159,958**	**$700,000**

ITEM G-1 EXHIBIT D

RFP-23-HHL-004

Grant for Community Capacity Building (Statewide)

Grant Applications

Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
OAHU					
Princess Kahanu Estates Association (1)	$15,000	$0	$0	$15,000	$15,000
Princess Kahanu Estates Association (2)	$15,000	$0	$0	$15,000	$0
MOLOKAI					
Ho'opili Farmers Association	$15,000	$0	$7,500	$22,500	$15,000
MAUJI					
Waiohuli Hawaiian Homesteaders Association, Inc.	$15,000	$0	$0	$15,000	$15,000
HAWAII					
'O Maku'u Ke Kahua Community Center	$15,000	$3,700	$3,800	$22,500	$15,000
TOTAL	**$75,000**	**$3,700**	**$11,300**	**$90,000**	**$60,000**

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

C – ITEMS

OFFICE OF THE CHAIRMAN

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Paula Aila, Acting Administrator,
Contact & Awards Division

FROM: Michelle Hitzeman, HALE Manager
Moana Freitas, Case Management Specialist
Contact & Awards Division

SUBJECT: Approval of Lease Awards

RECOMMENDED MOTION/ACTION

Approve the awards of Department of Hawaiian Home Lands Residence Lot Leases to the applicants listed below for ninety-nine (99) years, subject to the purchase of the existing improvements on the lot by way of a loan or cash.

DISCUSSION

Kakaina Residential Subdivision – Vacant Lot, Waimanalo, Oahu

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
SAADIA L. HASHIMOTO	02/20/1974	2	(1) 4-1-041-002	12991
GERALDINE CAMARA	06/15/1964	10	(1) 4-1-041-010	12994

Maku'u Farm Lots Unit 1 Agricultural – Pre-Owned Home, Maku'u, Puna, Hawaii

NAME	APPL DATE	LOT NO	TAX MAP KEY	LEASE NO
GERTRUDE B HAIA	11/05/1980	117	(3) 1-5-118-037	12993

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

D – ITEMS

HOMESTEAD SERVICES DIVISION

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

From: Juan Garcia, HSD Administrator

SUBJECT: **Homestead Services Division Status Reports**

RECOMMENDED MOTION/ACTION

NONE

DISCUSSION

The following reports are for information only:

Exhibit A: Homestead Lease & Application Totals and Monthly Activity Reports

Exhibit B: Delinquency Report

Exhibit C: DHHL Guarantees for FHA Construction Loans

ITEM NO. D-1

December 19, 2022

SUBJECT: Homestead Lease and Application Totals and Monthly Activity Reports

LEASE ACTIVITY REPORT

Month through November 30, 2022

	As of 10/31/22	Add	Cancel	As of 11/30/22
Residential	8,473	3	0	8,476
Agricultural	1,090	1	0	1,091
Pastoral	413	0	0	413
Total	**9,976**	**4**	**0**	**9,980**

The cumulative number of Converted Undivided Interest Lessees represents an increase of 540 families moving into homes. Their Undivided Interest lease was converted to a regular homestead lease.

	As of 10/31/22	Converted	Rescinded/ Surrendered/ Cancelled	As of 11/30/22
Undivided	773	0	0	773

Balance as of 11/30/2022

Awarded	1,434
Relocated to UNDV	7
Rescinded	118
Surrendered	6
Cancelled	4
Converted	540
Balance to Convert	773

ITEM NO. D-1
EXHIBIT A

Lease Report For the Month Ending November 30, 2022

	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	29	2	0	31	0	0	0	0	0	0	0	0	29	2	0	31
Kalawahine	90	0	0	90	0	0	0	0	0	0	0	0	90	0	0	90
Kanehili	399	0	0	399	0	0	0	0	0	0	0	0	399	0	0	399
Kapolei	176	0	0	176	0	0	0	0	0	0	0	0	176	0	0	176
Kauluokahai	147	0	0	147	0	0	0	0	0	0	0	0	147	0	0	147
Kaupea	325	0	0	325	0	0	0	0	0	0	0	0	325	0	0	325
Kaupuni	19	0	0	19	0	0	0	0	0	0	0	0	19	0	0	19
Kewalo	248	0	0	248	0	0	0	0	0	0	0	0	248	0	0	248
Kumuhau	51	0	0	51	0	0	0	0	0	0	0	0	51	0	0	51
Lualualei	147	0	0	147	30	0	0	30	0	0	0	0	177	0	0	177
Malu'ohai	225	0	0	225	0	0	0	0	0	0	0	0	225	0	0	225
Nanakuli	1,045	0	0	1,045	0	0	0	0	0	0	0	0	1,045	0	0	1,045
Papakolea	64	0	0	64	0	0	0	0	0	0	0	0	64	0	0	64
Princess Kahanu Estates	270	0	0	270	0	0	0	0	0	0	0	0	270	0	0	270
Waiahole	0	0	0	0	17	0	0	17	0	0	0	0	17	0	0	17
Waianae	421	0	0	421	12	0	0	12	0	0	0	0	433	0	0	433
Waimanalo	714	0	0	714	2	0	0	2	0	0	0	0	716	0	0	716
TOTAL	4,370	2	0	4,372	61	0	0	61	0	0	0	0	4,431	2	0	4,433
MAUI																
Hikina	31	0	0	31	0	0	0	0	0	0	0	0	31	0	0	31
Kahikinui	0	0	0	0	0	0	0	0	75	0	0	75	75	0	0	75
Keokea	0	0	0	0	64	0	0	64	0	0	0	0	64	0	0	64
Leialii	102	0	0	102	0	0	0	0	0	0	0	0	102	0	0	102
Paukukalo	178	0	0	178	0	0	0	0	0	0	0	0	178	0	0	178
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	97	0	0	97	0	0	0	0	0	0	0	0	97	0	0	97
Waiohuli	591	0	0	591	0	0	0	0	0	0	0	0	591	0	0	591
TOTAL	1,260	0	0	1,260	64	0	0	64	75	0	0	75	1,399	0	0	1,399
EAST HAWAII																
Discovery Harbour	2	0	0	2	0	0	0	0	0	0	0	0	2	0	0	2
Kamaoa	0	0	0	0	0	0	0	0	25	0	0	25	25	0	0	25
Kaumana	43	0	0	43	0	0	0	0	0	0	0	0	43	0	0	43
Keaukaha	471	0	0	471	0	0	0	0	0	0	0	0	471	0	0	471
Kurtistown	3	0	0	3	0	0	0	0	0	0	0	0	3	0	0	3
Makuu	0	0	0	0	119	1	0	120	0	0	0	0	119	1	0	120
Panaewa	13	0	0	13	260	0	0	260	0	0	0	0	273	0	0	273
Piihonua	17	0	0	17	0	0	0	0	0	0	0	0	17	0	0	17
Puueo	0	0	0	0	12	0	0	12	0	0	0	0	12	0	0	12
University Heights	4	0	0	4	0	0	0	0	0	0	0	0	4	0	0	4
Waiakea	285	0	0	285	0	0	0	0	0	0	0	0	285	0	0	285
TOTAL	838	0	0	838	391	1	0	392	25	0	0	25	1,254	1	0	1,255
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	16	0	0	16	16	0	0	16
Kaniohale	223	0	0	223	0	0	0	0	0	0	0	0	223	0	0	223
Kawaihae	192	0	0	192	0	0	0	0	1	0	0	1	193	0	0	193
Laiopua	277	0	0	277	0	0	0	0	0	0	0	0	277	0	0	277
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	110	0	0	110	218	0	0	218	445	0	0	445
Puupulehu	33	0	0	33	0	0	0	0	0	0	0	0	33	0	0	33
TOTAL	872	0	0	872	110	0	0	110	285	0	0	285	1,267	0	0	1,267
KAUAI																
Anahola	531	1	0	532	46	0	0	46	0	0	0	0	577	1	0	578
Hanapepe	47	0	0	47	0	0	0	0	0	0	0	0	47	0	0	47
Kekaha	117	0	0	117	0	0	0	0	0	0	0	0	117	0	0	117
Puu Opae	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	1
TOTAL	695	1	0	696	46	0	0	46	1	0	0	1	742	1	0	743
MOLOKAI																
Hoolehua	153	0	0	153	345	0	0	345	21	0	0	21	519	0	0	519
Kalamaula	167	0	0	167	70	0	0	70	3	0	0	3	240	0	0	240
Kapaakea	47	0	0	47	0	0	0	0	3	0	0	3	50	0	0	50
Moomomi	0	0	0	0	3	0	0	3	0	0	0	0	3	0	0	3
One Alii	27	0	0	27	0	0	0	0	0	0	0	0	27	0	0	27
TOTAL	394	0	0	394	418	0	0	418	27	0	0	27	839	0	0	839
LANAI																
Lanai	44	0	0	44	0	0	0	0	0	0	0	0	44	0	0	44
TOTAL	44	0	0	44	0	0	0	0	0	0	0	0	44	0	0	44
STATEWIDE TOTAL	8,473	3	0	8,476	1,090	1	0	1,091	413	0	0	413	9,976	4	0	9,980

ITEM NO. D-1
EXHIBIT-A

HOMESTEAD AREA AND ISLANDWIDE APPLICATIONS WAITING LIST MONTHLY REPORT FOR THE MONTH ENDING
November 30, 2022

AREA WAITING LIST

	RESIDENCE				AGRICULTURE				PASTURE				
DISTRICT AREA	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	TOTAL
Oahu District	936	0	0	936	0	0	0	0	0	0	0	0	936
Maui District	50	0	0	50	4	0	0	4	5	0	0	5	59
Hawaii District	127	0	0	127	28	0	0	28	46	0	0	46	201
Kauai District	50	0	0	50	3	0	0	3	27	0	0	27	80
Molokai District	19	0	0	19	17	0	0	17	1	0	0	1	37
TOTAL	1,182	0	0	1,182	52	0	0	52	79	0	0	79	1,313

ISLANDWIDE WAITING LIST

	RESIDENCE				AGRICULTURE				PASTURE				
ISLAND	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	TOTAL
Oahu	10,204	16	5	10,215	3,964	5	0	3,969	0	0	0	0	14,184
Maui	3,879	0	0	3,879	4,722	0	0	4,722	625	1	0	626	9,227
Hawaii	5,877	7	2	5,882	7,308	6	1	7,313	1,917	0	1	1,916	15,111
Kauai	1,669	1	1	1,669	2,272	0	0	2,272	308	0	0	308	4,249
Molokai	809	0	1	808	1089	0	1	1088	203	0	0	203	2,099
Lanai	74	0	0	74	0	0	0	0	0	0	0	0	74
TOTAL	22,512	24	9	22,527	19,355	11	2	19,364	3,053	1	1	3,053	44,944

AREA AND ISLANDWIDE LISTS

	RES	AG	PAS	TOTAL
OAHU	11,151	3,969	0	15,120
MAUI	3,929	4,726	631	9,286
HAWAII	6,009	7,341	1,962	15,312
KAUAI	1,719	2,275	335	4,329
MOLOKAI	827	1,105	204	2,136
LANAI	74	0	0	74
TOTAL	23,709	19,416	3,132	46,257

ADDITIONS	
New Applications	32
Application Transfers	4
Lease Rescissions	0
App Reinstatements	0
HHC Adjustments	0
TOTAL	36

CANCELLATIONS	
New Lease Awards	8
Application Transfers	4
Succ'd and Cancel Own	0
Public Notice Cancel	0
Voluntary Cancellations	0
Lease Successorships	0
HHC Adjustments	0
Dec'd No Successor	0
Additional Acreage	0
NHQ Unqualified	0
TOTAL	12

ITEM NO. D-1
EXHIBIT A

HOMESTEAD AREA AND ISLANDWIDE APPLICATIONS WAITING LIST MONTHLY REPORT FOR THE MONTH ENDING

November 30, 2022

	RESIDENCE				AGRICULTURE				PASTURE				
OAHU DISTRICT	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	Last Month	Add	Cancel	TOTAL	TOTAL
Nanakuli	159	0	0	159	0	0	0	0	0	0	0	0	159
Waianae	138	0	0	138	0	0	0	0	0	0	0	0	138
Lualualei	0	0	0	0	0	0	0	0	0	0	0	0	0
Papakolea/Kewalo	66	0	0	66	0	0	0	0	0	0	0	0	66
Waimanalo	548	0	0	548	0	0	0	0	0	0	0	0	548
Subtotal Area	936	0	0	936	0	0	0	0	0	0	0	0	936
Islandwide	10,204	16	5	10,215	3,964	5	0	3,969	0	0	0	0	14,184
TOTAL OAHU APPS	11,140	16	5	11,151	3,964	5	0	3,969	0	0	0	0	15,120
MAUI DISTRICT													
Paukukalo	50	0	0	50	0	0	0	0	0	0	0	0	50
Kula	0	0	0	0	4	0	0	4	5	0	0	5	9
Subtotal Area	50	0	0	50	4	0	0	4	5	0	0	5	59
Islandwide	3,879	0	0	3,879	4,722	0	0	4,722	625	1	0	626	9,227
TOTAL MAUI APPS	3,929	0	0	3,929	4,726	0	0	4,726	630	1	0	631	9,286
HAWAII DISTRICT													
Keaukaha/Waiakea	67	0	0	67	0	0	0	0	0	0	0	0	67
Panaewa	0	0	0	0	16	0	0	16	0	0	0	0	16
Humuula	0	0	0	0	0	0	0	0	0	0	0	0	0
Kawaihae	16	0	0	16	0	0	0	0	0	0	0	0	16
Waimea	44	0	0	44	12	0	0	12	46	0	0	46	102
Subtotal Area	127	0	0	127	28	0	0	28	46	0	0	46	201
Islandwide	5,877	7	2	5,882	7,308	6	1	7,313	1,917	0	1	1,916	15,111
TOTAL HAWAII APPS	6,004	7	2	6,009	7,336	6	1	7,341	1,963	0	1	1,962	15,312
KAUAI DISTRICT													
Anahola	42	0	0	42	3	0	0	3	20	0	0	20	65
Kekaha/Puu Opae	8	0	0	8	0	0	0	0	7	0	0	7	15
Subtotal Area	50	0	0	50	3	0	0	3	27	0	0	27	80
Islandwide	1,669	1	1	1,669	2,272	0	0	2,272	308	0	0	308	4,249
TOTAL KAUAI APPS	1,719	1	1	1,719	2,275	0	0	2,275	335	0	0	335	4,329
MOLOKAI DISTRICT													
Kalamaula	4	0	0	4	0	0	0	0	0	0	0	0	4
Hoolehua	8	0	0	8	17	0	0	17	1	0	0	1	26
Kapaakea	6	0	0	6	0	0	0	0	0	0	0	0	6
One Alii	1	0	0	1	0	0	0	0	0	0	0	0	1
Subtotal Area	19	0	0	19	17	0	0	17	1	0	0	1	37
Islandwide	809	0	1	808	1,089	0	1	1,088	203	0	0	203	2,099
TOTAL MOLOKAI APPS	828	0	1	827	1,106	0	1	1,105	204	0	0	204	2,136
LANAI DISTRICT													
Islandwide	74	0	0	74	0	0	0	0	0	0	0	0	74
TOTAL LANAI APPS	74	0	0	74	0	0	0	0	0	0	0	0	74
TOTAL AREA ONLY	1,182	0	0	1,182	52	0	0	52	79	0	0	79	1,313
TOTAL ISLANDWIDE	22,512	24	9	22,527	19,355	11	2	19,364	3,053	1	1	3,053	44,944
TOTAL STATEWIDE	23,694	24	9	23,709	19,407	11	2	19,416	3,132	1	1	3,132	46,257

ITEM NO. D-1
EXHIBIT A

DELINQUENCY REPORT - STATEWIDE
December 19, 2022
($Thousands)

	Total Outstanding		Total Delinquency		RISK 30 Days (low)		60 Days (Medium)		90 Days (High)		180 Days (Severe)		% of Totals 11/30/2022	
DIRECT LOANS	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	(000s) Amt.	No.	$
OAHU	379	36,861	120	11,454	21	1,735	7	360	23	2,336	69	7,022	31.7%	31.1%
EAST HAWAII	201	12,138	63	4,238	8	381	10	436	4	210	41	3,211	31.3%	34.9%
WEST HAWAII	78	8,035	10	1,082	4	400	2	324	0	0	4	358	12.8%	13.5%
MOLOKAI	81	7,066	15	674	3	284	0	0	2	43	10	347	18.5%	9.5%
KAUAI	91	7,204	11	781	3	224	0	0	0	0	8	557	12.1%	10.8%
MAUI	105	14,001	34	4,535	12	1,284	1	124	6	884	15	2,242	32.4%	32.4%
TOTAL DIRECT	**935**	**85,306**	**253**	**22,763**	**51**	**4,308**	**20**	**1,244**	**35**	**3,473**	**147**	**13,737**	**27.1%**	**26.7%**
	100.0%	**100.0%**	**27.1%**	**26.7%**	**5.5%**	**5.0%**	**2.1%**	**1.5%**	**3.7%**	**4.1%**	**15.7%**	**16.1%**		
Advances (including RPT)	**249**	**5,989**	**249**	**5,989**	**0**	**0**	**0**	**0**	**249**	**5,989**			**100%**	**100%**
DHHL LOANS & Advances	**1,184**	**91,295**	**502**	**28,751**	**51**	**4,308**	**20**	**1,244**	**284**	**9,462**	**147**	**13,737**	**42.4%**	**31.5%**
LOAN GUARANTEES as of June 30, 2022														
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	1,366	0	0	0	0	0	0	0	0			0.0%	0.0%
OHA	1	6	1	6	0	0	0	0	1	6			100.0%	100.0%
TOTAL GUARANTEE	**331**	**38,448**	**71**	**7,259**	**0**	**0**	**0**	**0**	**71**	**7,259**			**21.5%**	**18.9%**
PMI Loans	124	17,225	5	905	1	129	1	86	3	690			4.0%	5.3%
HUD REASSIGNED for Recovery	**128**	**13,928**	**102**	**12,152**	**0**	**0**	**1**	**13**	**5**	**375**	**96**	**11,764**	**79.7%**	**87.3%**
FHA Insured Loans	2,941	533,887	213	33,274	0	0	0	0	213	33,274			7.2%	6.2%
TOTAL INS. LOANS	**3,193**	**565,040**	**320**	**46,331**	**1**	**129**	**2**	**99**	**221**	**34,339**	**96**	**11,764**	**10.0%**	**8.2%**
OVERALL TOTALS(EXC Adv/RP	**4,459**	**688,794**	**644**	**76,353**	**52**	**4,437**	**22**	**1,343**	**327**	**45,071**	**243**	**25,502**	**14.4%**	**11.1%**
ADJUSTED TOTALS	**4,708**	**694,782**	**893**	**82,342**	**52**	**4,437**	**22**	**1,343**	**576**	**51,060**	**243**	**25,502**		**11.9%**

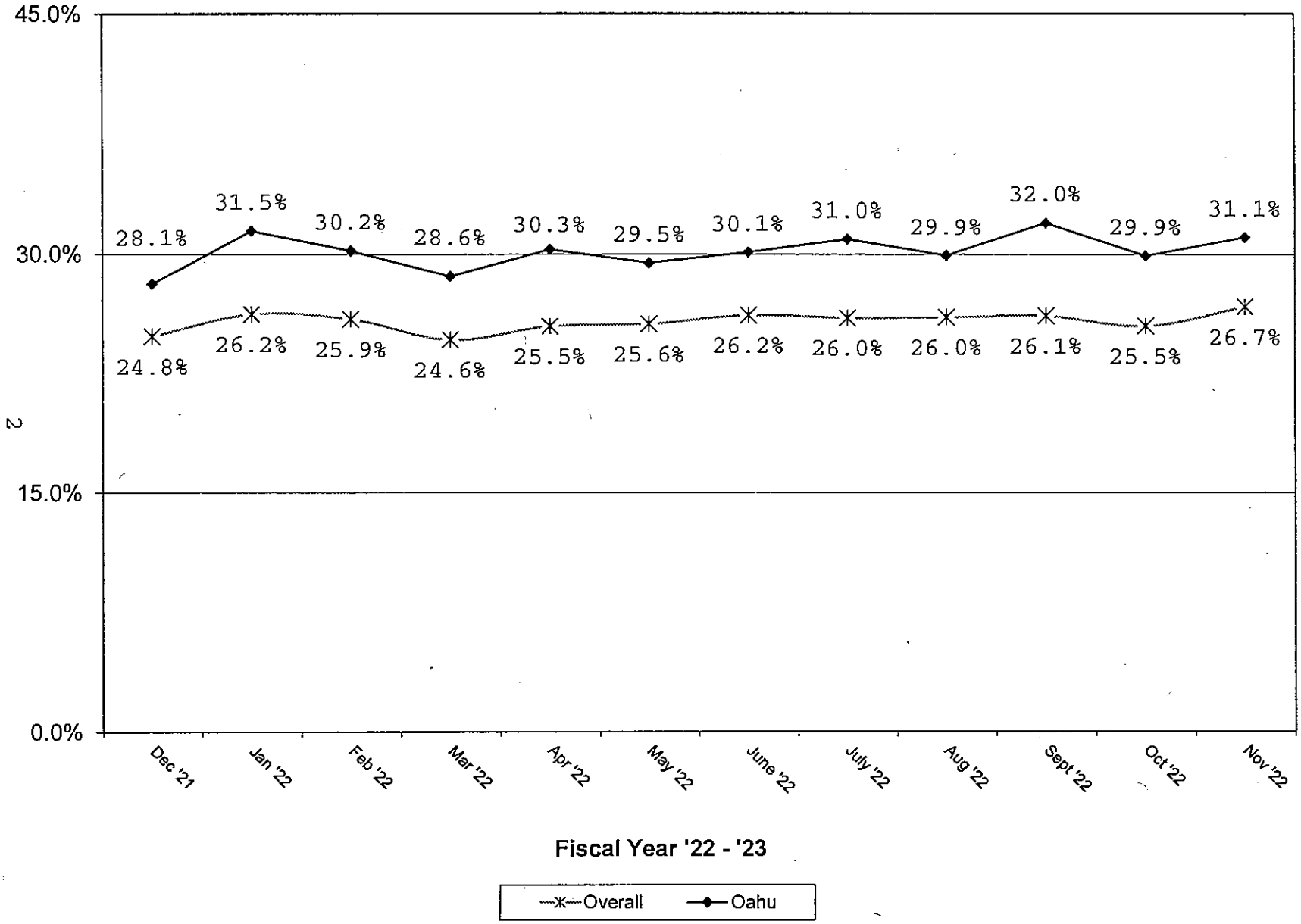
EXHIBIT B
ITEM NO. D-1

Note: HUD 184A loan program has 515 loans, with a total outstanding principal balance of $112,252,547 as of June 30, 2022. 15 Loans, totaling $3,590,830 are delinquent.

The deferred interest for 479 loans comes out to $2,135,349.76 as of 10/31/2022.

ITEM NO. D-1
EXHIBIT B

OAHU
Direct Loans
Delinquency Ratio Report



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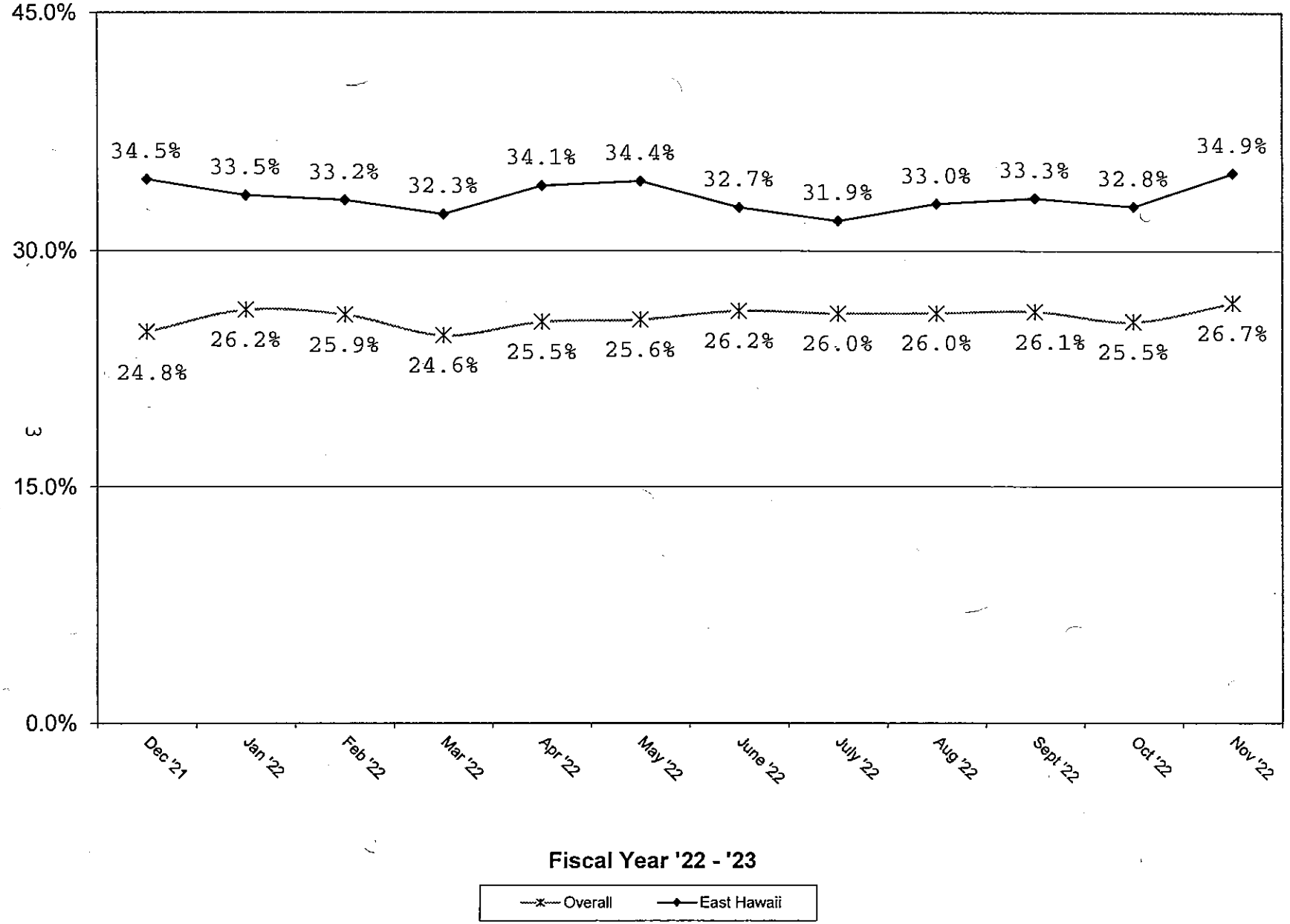
ITEM NO. D-1
EXHIBIT B

EAST HAWAII
Direct Loans
Delinquency Ratio Report



WEST HAWAII
Direct Loans
Delinquency Ratio Report

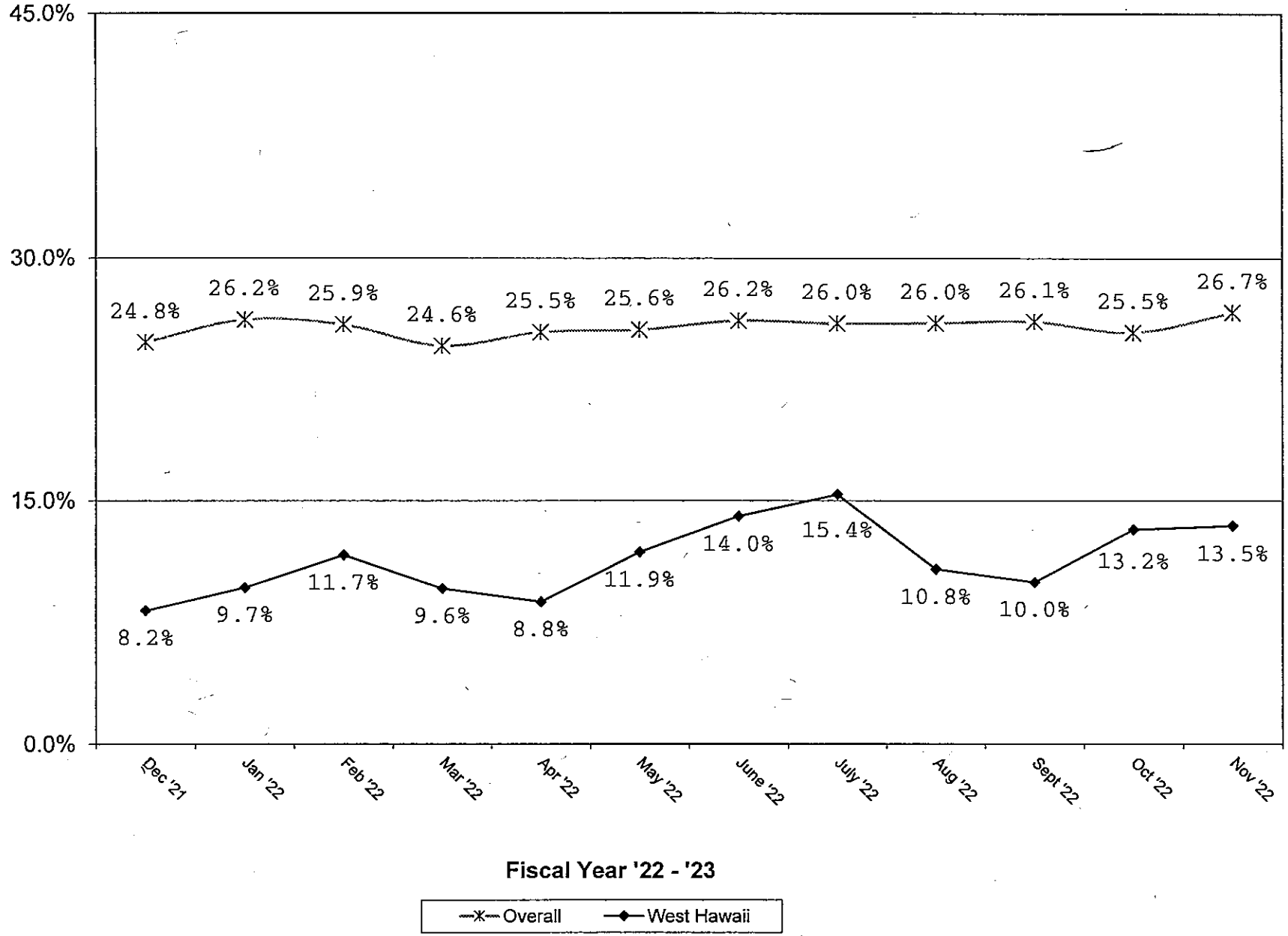


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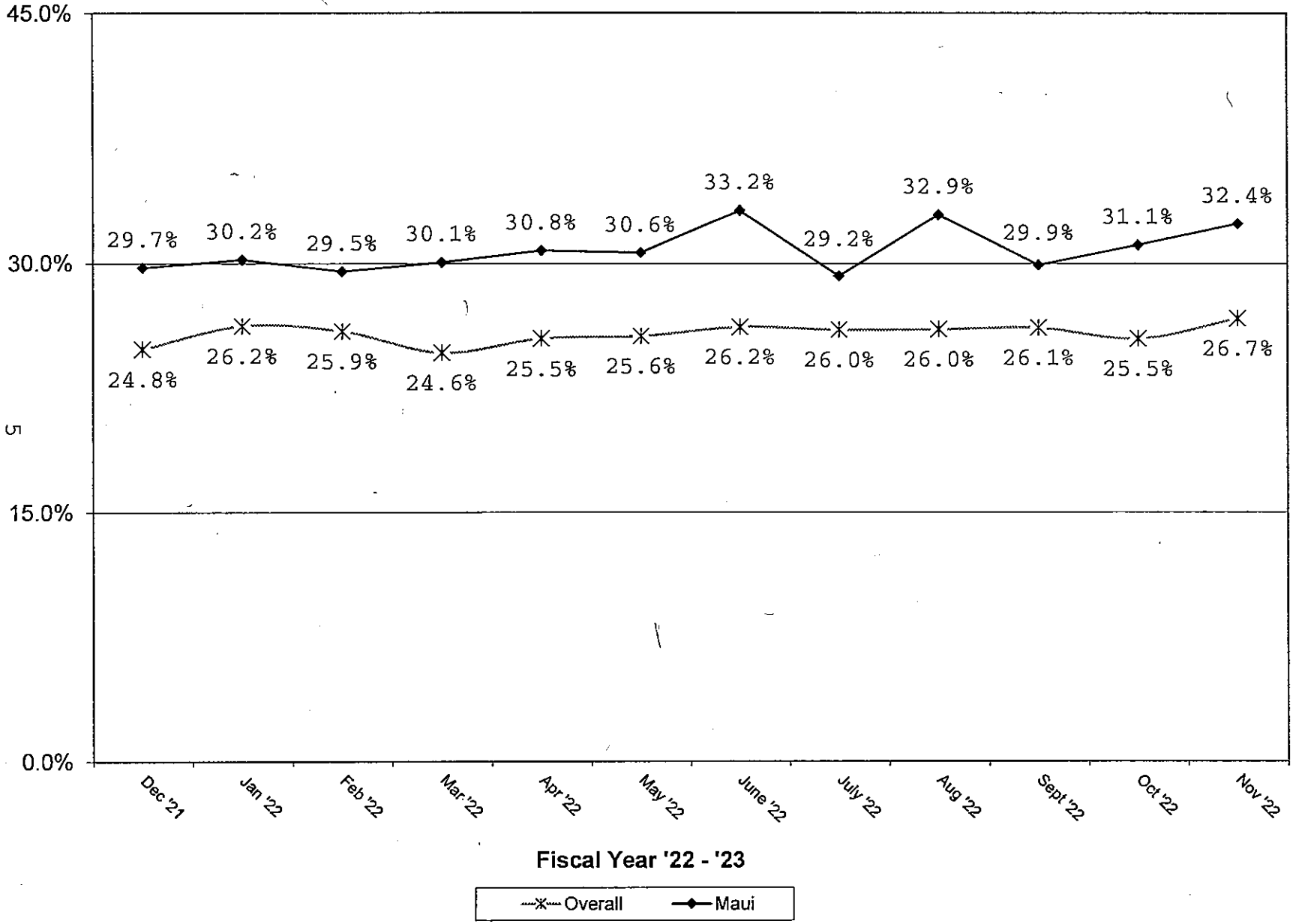
EXHIBIT B

MAUI
Direct Loans
Delinquency Ratio Report



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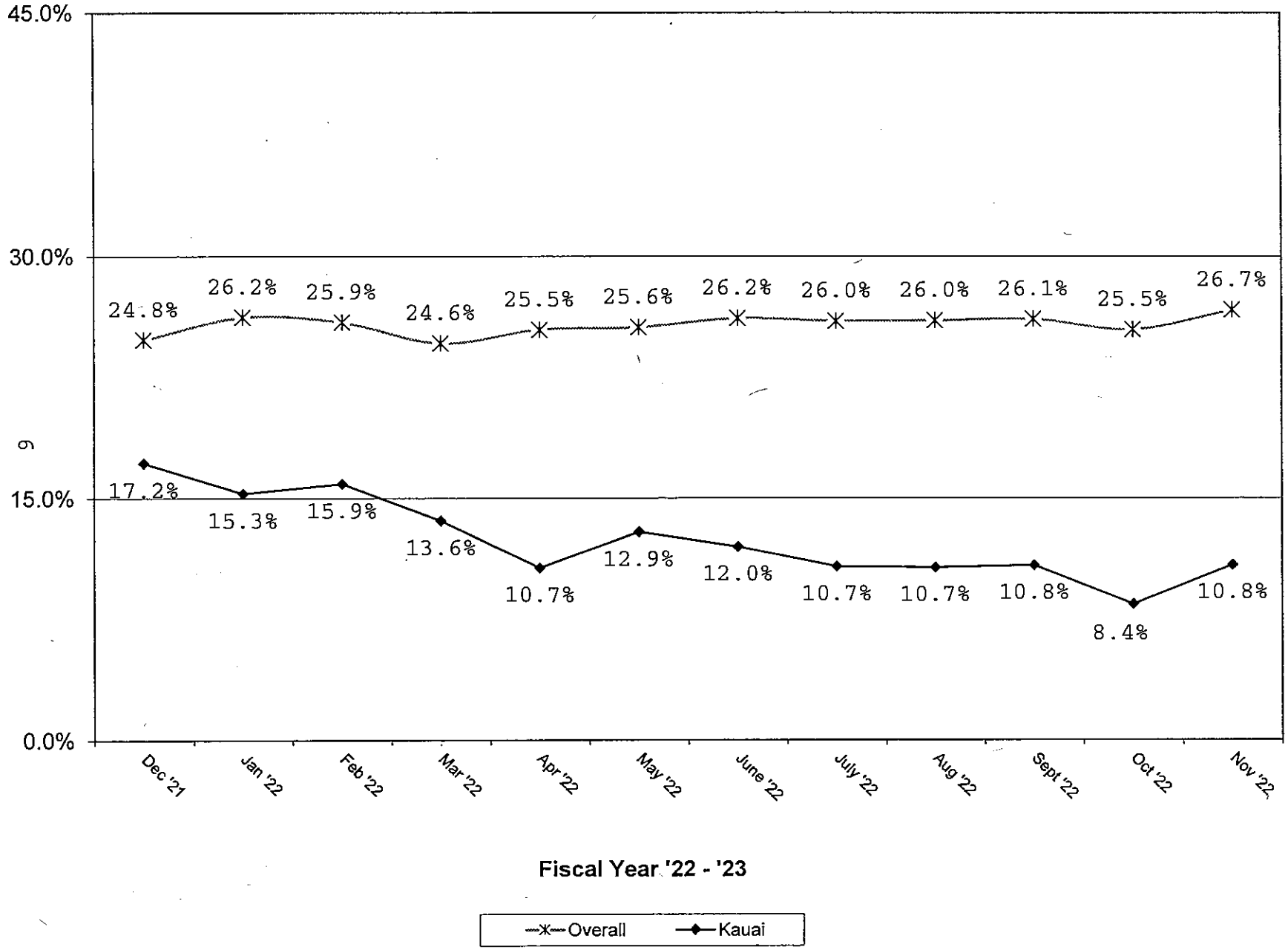
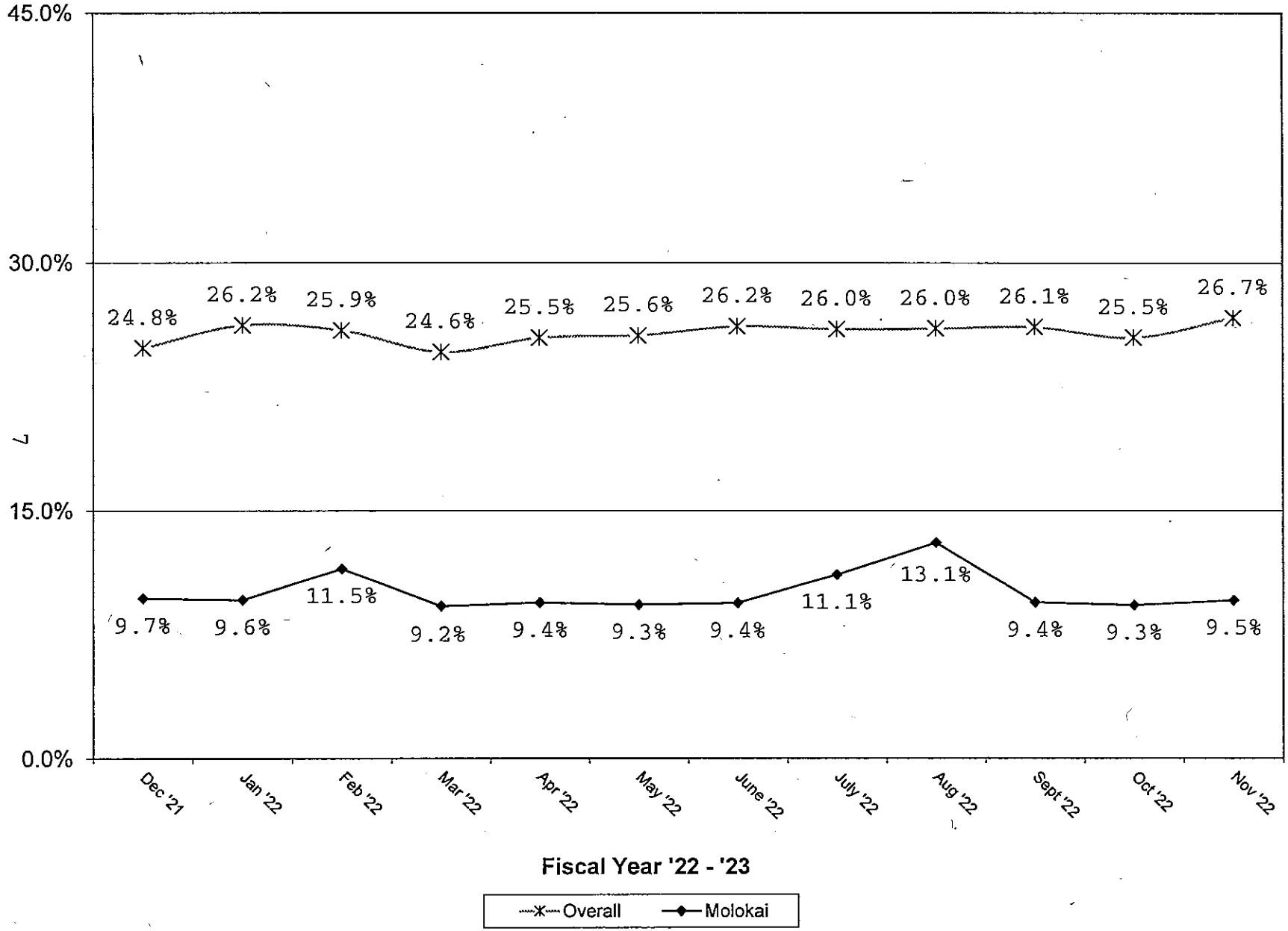
ITEM NO. D-1
EXHIBIT B

KAUAI
Direct Loans
Delinquency Ratio Report



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

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

FROM: Dean Oshiro, 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			
Lualualei Lease No. 5584 TMK: 1-8-6-023:112	BALOGBOG, Charles N. (Purchase)USDA, RD	SecurityNat- ional Mortg- age Company	$ 386,000
Nanakuli Lease No. 8609 TMK: 1-8-9-017:013	AANO, Allison (Cash Out Refi) FHA	Click N' Close, Inc.	$ 195,000
Nanakuli Lease No. 4551 TMK: 1-8-9-010:016	NUUANU, Edward P. F. (Cash Out Refi) FHA	Click N' Close, Inc.	$ 352,000

OAHU

Princess Kahanu Estates Lease No. 8411 TMK: 1-8-7-043:054	KUNIPO, Lea (Purchase)FHA	Guild Mortgage	$ 575,960
Princess Kahanu Estates Lease No. 8371 TMK: 1-8-7-043:014	INSILLIO, Antonio, Jr. (Cash Out Refi) FHA	Bank of Hawaii	$ 157,000
Kanehili Lease No. 11634 TMK: 1-9-1-153:012	NAKAMURA, Kekoaalii K. (Cash Out Refi) HUD 184A	Bank of Hawaii	$ 566,000
Maluohai Lease No. 12780 TMK: 1-9-1-120:101	KALEIKINI, Melvin K. (Cash Out Refi) FHA	Mann Mortgage LLC	$ 225,000
Kanehili Lease No. 12616 TMK: 1-9-1-152:085	ASHLEY, Bradfrey G., Jr. (Purchase)FHA	SecurityNat- ional Mortg- age Company	$ 702,000
Nanakuli Lease No. 3843 TMK: 1-8-9-009:034	TAYLOR, Jeremy L. (Cash Out Refi) FHA	Mann Mortgage LLC	$ 95,000
Princess Kahanu Estates Lease No. 8463 TMK: 1-8-7-042:090	GOMES, Patrick L. (Purchase)FHA	Guild Mortgage	$ 285,450

MAUI

Waiehu Kou IV Lease No. 12220 TMK: 2-3-2-026:028	ASUNCION, Ronald K. (Cash Out Refi) FHA	Homebridge Financial Services, Inc.	$ 385,000

ITEM NO. D-2

MAUI

Waiehu Kou II Lease No. 9444 TMK: 2-3-2-022:006	AKAHI, Kuakea (Purchase)HUD 184A	Homebridge Financial Services, Inc.	$ 246,818
Waiohuli Lease No. 7543 TMK: 2-2-2-027:039	KAAHANUI, Kaniela H. K. (Purchase)FHA	MLD, Mortgage, Inc.	$ 545,000

KAUAI

Anahola Lease No. 12987 TMK: 4-4-8-021:001	APANA, Carol H. (Purchase)USDA, RD	SecurityNat- ional Mortg- age Company	$ 285,858

ITEM NO. D-2

RECAP	NO.	FHA AMOUNT	NO.	VA AMOUNT
FY Ending 6/30/22	381	$ 125,173,653	10	$ 4,610,852
Prior Months	89	$ 30,970,192	3	$ 819,375
This Month	10	3,517,410	0	0
Total FY '22-'23	99	$ 34,487,602	3	$ 819,375

	NO.	HUD 184A AMOUNT	NO.	USDA-RD AMOUNT
FY Ending 6/30/22	54	$ 16,015,743	5	$ 1,134,606
Prior Months	12	$ 3,932,692	0	$ 0
This Month	2	812,818	2	0
Total FY '22-'23	14	$ 4,745,510	2	$ 671,858

ITEM NO. D-2

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

FROM: Dean Oshiro, Loan Services Branch Manager

SUBJECT: **Approval of Streamline Refinance of Loans**

RECOMMENDED MOTION/ACTION

To approve the refinancing of loans from the Hawaiian Home General Loan Fund.

DISCUSSION

The following lessees have met the "Streamline/Interest rate reduction loan" criteria, which was approved by the Hawaiian Homes Commission at its August 19, 2013 meeting. This criteria includes twelve (12) consecutive monthly payments, borrower's current interest rate is higher than the current DHHL interest rate, current with their Homeowners Insurance, Real Property Tax, Lease Rent, county sewer/refuse fees, and does not have any advances made by DHHL on the borrowers behalf.

HSD's recommendation for approval is based on actual payment history, over the past twelve (12) months and the review of the above-mentioned criteria. Streamline/Interest Rate Loan refinancing will provide lessees a chance to simply reduce their interest rate and payments without DHHL having to credit and/or income qualify the borrower.

The following lessee(s) has met the aforementioned criteria and is recommended for Streamline/Interest rate reduction loan refinance program:

LESSEE	LEASE NO. & AREA	REFINANCING LOAN TERMS
Ioane, Mickey K.	6817, Waiakea	NTE $43,500 @4% interest per annum, NTE $300 monthly, repayable over 17 years.

Loan Purpose: Refinance existing Contract of Loan No. 17149. Original loan amount of $52,779 at 9.5% per annum, $444 monthly, repayable over 30 years. A Contested Case Hearing was not held for this account.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Nicole F. Bell, Specialist V
Application Branch, 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

KAUWE, Kauluokala	03/24/1997	KAUAI	RES	08/05/2022
RAWLINS, Charlotte K.	05/16/1994	MOLOKAI	RES	10/07/2022

HAWAII ISLANDWIDE AGRICULTURAL LEASE LIST

KAUWE, Kauluokala	03/24/1997	KAUAI	AGR	08/05/2022

HAWAII ISLANDWIDE RESIDENTIAL LEASE LIST

KELIIKOA, Vanessa K.M.	05/21/2021	OAHU	RES	07/28/2022

KAUAI ISLANDWIDE AGRICULTURAL LEASE LIST

SILVA, Kirk A.	05/09/1988	HAWAII	AGR	08/11/2022

KAUAI ISLANDWIDE RESIDENTIAL LEASE LIST

SANTANA, Deborah H.	08/01/2018	OAHU	RES	06/07/2022

MOLOKAI ISLANDWIDE RESIDENTIAL LEASE LIST

RAPANOT, Jodean K.	06/29/2016	MAUI	RES	10/12/2022

2. Deceased Applicants

NONE FOR SUBMITTAL

3. Awards of Leases

OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

SHIMOSE, Raynette L.	Assigned Residential Lease #11857, Lot 18445 in Kanehili, Oahu dated 01/22/2021. Remove application dated 10/24/2000.

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

KAHAWAII-LANG, Hamby O.	Assigned Residential Lease #10319, UNDV022 in Waiohuli, Maui dated 09/23/2022. Remove application dated 01/26/2009.

4. Native Hawaiian Qualification

NONE FOR SUBMITTAL

5. Voluntary Cancellation

NONE FOR SUBMITTAL

6. Successorship

OAHU ISLANDWIDE AGRICULTURAL LEASE LIST

KILA, Randolf R.	Succeeded to Hawaii Islandwide Agricultural application of Sibling, Roxanne A. Savilla, dated 05/16/1986. Remove application dated 06/15/2006.

MAUI ISLANDWIDE AGRICULTURAL LEASE LIST

AKAHI, Lloyd	Succeeded to Maui Islandwide Agricultural application of Parent, Marcia H. Akahi, dated 11/21/1988. Remove application dated 02/19/2016.

MAUI ISLANDWIDE PASTORAL LEASE LIST

HUE SING, Aaron P.	Succeeded to Maui Islandwide Agricultural application of Sibling, Aliya K. Hue Sing, dated 03/11/2015. Remove application dated 07/21/2021.

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

AKAHI, Lloyd	Succeeded to Maui Islandwide Residential application of Parent, Marcia H. Akahi, dated 11/21/1988. Remove application dated 02/19/2016.
HUE SING, Aaron P.	Succeeded to Maui Islandwide Residential application of Sibling, Aliya K. Hue Sing, dated 03/11/2015. Remove application dated 07/21/2021.

7. Additional Acreage

NONE FOR SUBMITTAL

8. HHC Adjustments

NONE FOR SUBMITTAL

Last Month's Transaction Total	12
Last Month's Cumulative FY 2022-2023 Transaction Total	153
Transfers from Island to Island	7
Deceased	0
Cancellations:	
Awards of Leases	2
NHQ	0
Voluntary Cancellations	0
Successorship	5
Additional Acreage	0
HHC Adjustments	0
This Month's Transaction Total	14
This Month's Cumulative FY 2022-2023 Transaction Total	**167**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Nicole F. Bell, Specialist V
Application Branch, Homestead Services Division

SUBJECT: **Commission Designation of Successors to Application Rights - Public Notice 2014 & 2021**

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:	George K. Kamalamalama
	Date of death:	04/23/2021
	Successor to app rights:	Alberta P.K. Kamalamalama
	Relationship to decedent:	Sibling
	Island:	Oahu
	Type:	Islandwide Residential
	Date of Application:	04/18/1985
	Date of Public Notice:	11/2021
2.	Deceased Applicant:	Paul H. Patcho
	Date of death:	10/31/2014
	Successor to app rights:	Renita L. Sayson
	Relationship to decedent:	Child
	Island:	Oahu
	Type:	Islandwide Residential
	Date of Application:	04/15/1983
	Date of Public Notice:	11/2021
3a.	Deceased Applicant:	Sandra L. Sumailo
	Date of death:	05/13/2021
	Successor to app rights:	Daniel M. Repercio
	Relationship to decedent:	Sibling
	Island:	Oahu
	Type:	Islandwide Residential
	Date of Application:	11/04/1982
	Date of Public Notice:	11/2021
3b.	Island:	Hawaii
	Type:	Islandwide Agricultural
	Date of Application:	06/27/1996
4a.	Deceased Applicant:	Aliya K. Hue Sing
	Date of death:	08/10/2019
	Successor to app rights:	Aaron P. Hue Sing
	Relationship to decedent:	Sibling
	Island:	Maui
	Type:	Islandwide Agricultral
	Date of Application:	03/11/2015
	Date of Public Notice:	11/2021
4b.	Island:	Maui
	Type:	Islandwide Residential
	Date of Application:	03/11/2015

5. Deceased Applicant: Roxanne A. Savilla
Date of death: 12/29/2013
Successor to app rights: Randolf R. Kila
Relationship to decedent: Sibling
Island: Hawaii
Type: Islandwide Agricultural
Date of Application: 05/16/1986
Date of Public Notice: 11/2014

6. Deceased Applicant: Robert K. Pelekai, Jr.
Date of death: 09/30/2010
Successor to app rights: Alicia Joy K. Kauwalu
Relationship to decedent: Child
Island: Molokai
Type: Islandwide Agricultural
Date of Application: 04/04/1983
Date of Public Notice: 11/2014

Previous Cumulative Total for Current FY	38
Current Month's Total	8
Fiscal Year Total: July 2022-June 2023	**46**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator

FROM: Nicole F. Bell, Specialist V
Application Branch, Homestead Services Division

SUBJECT: **Approval to Certify Applications of Qualified Applicants for the month of November 2022**

RECOMMENDED MOTION/ACTION

To approve the certification of applications of qualified applicants for the month of November 2022. 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 individuals 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 'ohana process.

OAHU ISLANDWIDE AGRICULTURAL LEASE LIST

TOLENTINO, Charmaine K.N.M.P.	06/22/2022
PULE, Jacob L.I.	07/15/2022
VALOROSO, Sunday V.	07/19/2022
YOU, Sam J.K.A.	07/20/2022

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CROWELL, Jimmy Dean K.	08/02/2022
KALEI, Derrick K.	08/22/2022
KALAMA, Reef L.	08/22/2022
CHINN, Daniel K.N.	08/23/2022
GOO, Shane A.	08/23/2022
MCKEAGUE, Cameron I.	08/24/2022
NUNUHA, Jaymason K.	08/25/2022
NAEOLE, Laakea Q.	08/25/2022
JENSEN, Jeffery K.	08/25/2022
AWAI, Dawn N.	08/25/2022
YOU, Sage L.	08/30/2022
VALMOJA, Bartolome A., Jr.	08/30/2022
AWAI-BELTRAN, Jennifer K.	08/31/2022
KASSEBEER, Bronson K.A.	09/06/2022
MERSBURGH, Isaac K.	09/08/2022
KEPAA, Shynel N.	09/09/2022
AWAI, Adrian N.	09/14/2022
SCHUMACHER, Albert N.	09/21/2022
KAAIHUE, Isaiah K.	09/22/2022
PETERS, Kimo	10/27/2022

OAHU ISLANDWIDE RESIDENTIAL LEASE LIST

ADAMS, Donna K.	06/21/2022
TOLENTINO, Charmaine K.N.M.P.	06/22/2022
LEOPOLDO, Amanda K.	06/23/2022

RODRIGUES, Nelson A.K.	06/23/2022
PULE, Jacob L.I.	07/15/2022
RENKEN, Mercedes K.	07/15/2022
KAIWI-BARRIONUEBO, Kapono I.	07/15/2022
KAHIAPO, Joanna K.	07/18/2022
KEANU, Homer L.	07/19/2022
TAYLOR, Sadie H.	07/20/2022
YOU, Sam J.K.A.	07/20/2022
AKANA, Laie K.	07/21/2022
LAI, Earline M.	08/15/2022
GARCIA, Chanelle L.	08/16/2022
FALETOI, Doris K.	08/18/2022
HOLI-ARRINGTON, Marvilyn H.	08/18/2022
HEW-LEN, Chris K.	08/22/2022
KANAHELE, Fraizer K.	08/22/2022
KALEI, Derrick K.	08/22/2022
KALAMA, Reef L.	08/22/2022
CHINN, Daniel K.N.	08/23/2022
GOO, Shane A.	08/23/2022
MCKEAGUE, Cameron I.	08/24/2022
KING, Ka-Inoa R.	08/24/2022
MEHEULA, Daniel K.	08/24/2022
KUPAHU, Tiare E.	08/25/2022
KUPAHU, Jo Ann H.	08/25/2022
NAEOLE, Laakea Q.	08/25/2022

JENSEN, Jeffery K.	08/25/2022
AWAI, Dawn N.	08/25/2022
RICHARDSON, Sage G.K.	08/26/2022
SOLOMON-CERVANTES, Lenell K.	08/26/2022
GILMAN, Kawelinaonalani K.	08/29/2022
PANCHO, John T.I.	08/29/2022
WOODS, Justin K.	08/29/2022
YOU, Sage L.	08/30/2022
AWAI-BELTRAN, Jennifer K.	08/31/2022
DUTRO, Henry	09/01/2022
MAKANEOLE, William Jr.	09/06/2022
KASSEBEER, Bronson K.A.	09/06/2022
HANOHANO CARLIN, Leala K.	09/06/2022
MERSBURGH, Isaac K.	09/08/2022
ROGERS-FAASA, Tommie-Ann K.	09/12/2022
AWAI, Adrian N.	09/14/2022
BOTELHO, Terry Lynn M.	09/15/2022
HUSSEY, Loretta O.L.	09/16/2022
WHITE-KALEIKULA, Shaden K.	09/21/2022
SCHUMACHER, Albert N.	09/21/2022
KAAIHUE, Isaiah K.	09/22/2022
KEKAWA, Abriana K.	10/24/2022
PETERS, Kimo	10/27/2022

MAUI ISLANDWIDE AGRICULTURAL LEASE LIST

COSMA, Leroy P.	07/18/2022
KREUTZMANN, Saundra A.	07/20/2022
KAHANANUI, Karen K.	07/28/2022
DAVIS, Kawenaokala J.	08/17/2022
KAWAAKOA, Tammi T.L.	08/16/2022
KEITH, Joni L.	08/23/2022
HOOPAI, Wyatt M.	09/09/2022

MAUI ISLANDWIDE PASTORAL LEASE LIST

AWEAU, Jhalani B.K.	07/27/2022
AWEAU, Jhianna D.E.K.P.K.	07/27/2022
DELOS SANTOS, Bernard Jr.	08/17/2022
JENSEN, Stuart K.	08/22/2022

MAUI ISLANDWIDE RESIDENTIAL LEASE LIST

TAYLOR, Tracy K.	06/20/2022
TAYLOR, Abraham K.	06/20/2022
TAYLOR, Tehani G.N.	06/20/2022
COSMA, Leroy P.	07/18/2022
WONG, Kauanani A.K.	07/19/2022
WONG, Le'ia O.K.	07/19/2022
KREUTZMANN, Saundra A.	07/20/2022
TUPUA, Kapuni A.I.	07/25/2022
AWEAU, Jhalani B.K.	07/27/2022
AWEAU, Jhianna D.E.K.P.K.	07/27/2022

DAVIS, Kawenaokala J.	08/17/2022
KAWAAKOA, Tammi T.L.	08/16/2022
DELOS SANTOS, Bernard Jr.	08/17/2022
JENSEN, Stuart K.	08/22/2022
KUPAHU, Mahela M.	08/22/2022
KEITH, Joni L.	08/23/2022
HOOPAI, Wyatt M.	09/09/2022

HAWAII ISLANDWIDE AGRICULTURAL LEASE LIST

KEALOHA, Gabriel	10/24/1978
LEE, William K.	06/29/2022
RENKEN, Mercedes K.	07/15/2022
KEANU, Homer L.	07/19/2022
TAYLOR, Sadie H.	07/20/2022
OLIVERA, Ida P.	08/17/2022
DEMOTTA, Radford K.	08/22/2022
KUPAHU, Mahela M.	08/22/2022
MENO, Tichelle K.	08/23/2022
MAKANEOLE-BRAGG, Genesis K.H.	08/23/2022
KING, Ka-Inoa R.	08/24/2022
SOLOMON-CERVANTES, Lenell K.	08/26/2022
GILMAN, Kawelinaonalani K.	08/29/2022
PACK, Chevone P.	09/01/2022
MAKANEOLE, William Jr.	09/06/2022
KASSEBEER, Frederick J.A.A.	09/09/2022

HAWAII ISLANDWIDE PASTORAL LEASE LIST

TAYLOR, Tracy K.	06/20/2022
TAYLOR, Abraham K.	06/20/2022
TAYLOR, Tehani G.N.	06/20/2022
KALAUKOA, Jeremiah P.M.A.K.	09/01/2022

HAWAII ISLANDWIDE RESIDENTIAL LEASE LIST

PAVAO, Riley J.K.	06/17/2022
LEE, William K.	06/29/2022
KEANU-BRANCO, Alaci K.	07/15/2022
SANDERS, Lonnie A.	07/21/2022
DEMOTTA, Radford K.	08/22/2022
PACK, Chevone P.	09/01/2022
KASSEBEER, Frederick J.A.A.	09/09/2022
LANE, Ginger L.	09/13/2022
DAMAS, Loretta L.	10/25/2022
HAILI BARAWIS, Kealoha K.K.	11/07/2022

KAUAI ISLANDWIDE AGRUCULTURAL LEASE LIST

RODRIGUES, Nelson A.K.	06/23/2022
KAWAA, Daisha K.	08/15/2022
THOMPSON, Kuumomi K.	08/16/2022
CARVEIRO, Bessie P.	08/30/2022
BLACKSTAD, Tiffany K.	08/30/2022
KAUI, Shelly L.	08/30/2022

KAUAI ISLANDWIDE PASTORAL LEASE LIST

ADAMS, Keith Earl K.	09/28/2022

KAUAI ISLANDWIDE RESIDENTIAL LEASE LIST

CROWELL, Jimmy Dean K.	08/02/2022
KAWAA, Daisha K.	08/15/2022
THOMPSON, Kuumomi K.	08/16/2022
CARVEIRO, Bessie P.	08/30/2022
BLACKSTAD, Tiffany K.	08/30/2022
KAUI, Shelly L.	08/30/2022
ADAMS, Keith Earl K.	09/28/2022

MOLOKAI ISLANDWIDE AGRICULTURAL LEASE LIST

SANTIAGO, Lacey N.K.	08/08/2022
MCKEAGUE, Brittiny N.	08/29/2022

MOLOKAI ISLANDWIDE RESIDENTIAL LEASE LIST

SANTIAGO, Lacey N.K.	08/08/2022
MCKEAGUE, Brittiny N.	08/29/2022

Previous Cumulative Total for Current FY	350
Current Month's Total	151
Fiscal Year Total: July 2022-June 2023	**501**

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

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

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

RECOMMENDED MOTION/ACTION

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.

DISCUSSION

Fifteen (15) assignments of lease.

1. Lessee Name: Kalsey L. Aikala
Res. Lease No. 5584, Lot No. 112
Lease Date: 6/3/1985
Area: Lualualei, Oahu
Property Sold & Amount: Yes, $380,000.00
Improvements: 3 bedroom, 1-1/2 bath dwelling

Transferee Name: Charles N. Balogbog
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 3/6/2013

Reason for Transfer: "Financial reasons." Special Conditions: Transferee to obtain funds to pay purchase price.

2. Lessee Name: Gabriel A. L. Aio
Res. Lease No. 8463, Lot No. 172
Lease Date: 8/1/1995
Area: PKE, Oahu
Property Sold & Amount: Yes, $375,000.00
Improvements: 3 bedroom, 2 bath dwelling

Transferee Name: Patrick L. Gomes
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 8/30/2012

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

3. Lessee Name: Spencer N. Akana
Pas. Lease No. 3541, Lot No. 8
Lease Date: 10/23/1964
Area: Puukapu, Hawaii
Property Sold & Amount: Yes, $300,000.00
Improvements: 3 bedroom, 1 bath dwelling

Transferee Name: Barney J. K. Schutte
Relationship: None
Loan Assumption: N/A
Applicant: No

Reason for Transfer: "Financial reasons." Special Conditions: Transferee to obtain funds to pay purchase price.

4. Lessee Name: Valen A. Cox
Res. Lease No. 12616, Lot No. 18365
Lease Date: 7/19/2010
Area: Kanehili, Oahu
Property Sold & Amount: Yes, $750,000.00
Improvements: 5 bedroom, 3 bath dwelling

Transferee Name: Bradfrey G. Ashley
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 12/02/2020

Reason for Transfer: "Moving off island." Special Conditions: Transferee to obtain funds to pay purchase price. See simultaneous transfer below.

5. Lessee Name: Bradfrey G. Ashley
Res. Lease No. 12616, Lot No. 18365
Lease Date: 7/19/2010
Area: Kanehili, Oahu
Property Sold & Amount: Yes, $750,000.00
Improvements: 5 bedroom, 3 bath dwelling

Transferee Name: Bradfrey G. Ashley, Jr.
Relationship: Son
Loan Assumption: N/A
Applicant: No

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

6. Lessee Name: Nathalie B. Kawai
Res. Lease No. 2708, Lot No. 50-A
Lease Date: 10/1/1952
Area: Kuhio Village, Hawaii
Property Sold & Amount: No, N/A
Improvements: 4 bedroom, 1 bath dwelling

Transferee Name: Warrene L. F. DeGuzman
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 10/14/2016

Reason for Transfer: "Moving off island."

7. Lessee Name: Loreen L. Kawewehi
Res. Lease No. 11704, Lot No. 18654
Lease Date: 12/13/2008
Area: Kanehili, Oahu
Property Sold & Amount: Yes, $190,000.00
Improvements: 3 bedroom, 2 bath dwelling

Transferee Name: Lynn Ann K. Kaakau
Relationship: Sister
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 6/01/1992

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

8. Lessee Name: Judith K. Koffman
Res. Lease No. 9359, Lot No. 46
Lease Date: 5/1/1999
Area: Kaniohale, Hawaii
Property Sold & Amount: Yes, $375,000.00
Improvements: 3 bedroom, 2 bath dwelling

Transferee Name: Bobbie A. Keliikoa
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Hawaii IW Res., 5/12/2021

Reason for Transfer: "Financial reasons." Special Conditions: Transferee to obtain funds to pay purchase price.

9. Lessee Name: Moriah K. Namulauti
Res. Lease No. 8411, Lot No. 120
Lease Date: 9/1/1995
Area: PKE, Oahu
Property Sold & Amount: Yes, $575,000.00
Improvements: 3 bedroom, 2-1/2 bath dwelling

Transferee Name: Edward K. Kunipo
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 6/10/2021

Reason for Transfer: "Financial reasons." Special Conditions: Transferee to obtain funds to pay purchase price. See simultaneous transfer below.

10. Lessee Name: Edward K. Kunipo
Res. Lease No. 8411, Lot No. 120
Lease Date: 9/1/1995
Area: PKE, Oahu
Property Sold & Amount: Yes, $575,000.00
Improvements: 3 bedroom, 2-1/2 bath dwelling

Transferee Name: Le'a U. K. Kunipo
Relationship: Daughter
Loan Assumption: N/A
Applicant: No

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

11. Lessee Name: Ilona K. Mendonca
Res. Lease No. 923, Lot No. 66-A
Lease Date: 12/28/1945
Area: Papakolea, Oahu
Property Sold & Amount: No, N/A
Improvements: 3 bedroom, 2 bath dwelling

Transferee Name: Dayna-Ann A. Mendonca
Relationship: Daughter
Loan Assumption: N/A
Applicant: No

Reason for Transfer: "Giving lease to relative."

12. Lessee Name: Kaimi Kaleonahe M. Pacheco
Res. Lease No. 10273, Lot No. 1-A
Lease Date: 6/1/2005
Area: Keaukaha, Hawaii
Property Sold & Amount: Yes, $300,000.00
Improvements: 2 bedroom 1 bath dwelling.

Transferee Name: Robert K. Iokepa
Relationship: None
Loan Assumption: N/A
Applicant: Yes, Oahu IW Res., 12/16/2009

Reason for Transfer: "Financial reasons." Special Conditions: Transferee to obtain funds to pay purchase price.

13. Lessee Name: Kahana A. Stone
Res. Lease No. 7502, Lot No. 64
Lease Date: 2/7/2002
Area: Waiohuli, Maui
Property Sold & Amount: Yes, $290,000.00
Improvements: 4 bedroom, 3 bath dwelling

Transferee Name: Kristy K. Stone
Relationship: Wife
Loan Assumption: N/A
Applicant: No

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

14. Lessee Name: Dennis K. Dias
Res. Lease No. 10548, Lot No. UNDV251
Lease Date: 6/18/2005
Area: Waiohuli, Maui
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Elena K. Dias
Relationship: Daughter
Loan Assumption: N/A
Applicant: No

Reason for Transfer: "Giving lease to relative."

15. Lessee Name: Beatrice N. Block
Agr. Lease No. 12988, Lot No. 66
Lease Date: 10/25/2022
Area: Makuu, Hawaii
Property Sold & Amount: No, N/A
Improvements: None

Transferee Name: Brita N. Block
Relationship: Daughter
Loan Assumption: N/A
Applicant: No

Reason for Transfer: "Giving ot relative."

Assignments for the Month of December `22	15
Previous FY '22 - '23 balance	93
FY '22 - '23 total to date	108
Assignments for FY '21 - '22	220

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, Acting 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

Seven (7) amendments of lease.

1. Lessee: Spencer N. Akana
Pas. Lease No.: 3541
Lot No., Area, Island: 8, Puukapu, Hawaii
Amendment: To amend the lease title and lessor's name, to incorporate the currently used terms, conditions, and covenants to the lease, and to extend the lease term to an aggregate term of 199 years.

2. Lessee: Elizabeth J. K. Brown
Res. Lease No.: 245
Lot No., Area, Island: 5, Nanakuli, Oahu
Amendment: To amend the lease title and lessor's name and to incorporate the currently used terms, covenants and conditions to the lease.

3.	Lessee:	Scott K. Danner
	Res. Lease No.:	11016
	Lot No., Area, Island:	UNDV015, Anahola, Kauai
	Amendment:	To amend the commencement date, lot number, and property description due to final subdivision approval.
4.	Lessee:	Joshua K. Johnson
	Res. Lease No.:	10379
	Lot No., Area, Island:	UNDV082, Waiohuli, Maui
	Amendment:	To amend the commencement date, lot number, and property description due to final subdivision approval.
5.	Lessee:	Stanton K. Kaniaupio
	Res. Lease No.:	11273
	Lot No., Area, Island:	UNDV075, Waimanalo, Oahu
	Amendment:	To amend the commencement date, lot number, and property description due to final subdivision approval.
6.	Lessee:	Nathalie B. Kawai
	Res. Lease No.:	2708
	Lot No., Area, Island:	50-A, Kuhio Village, Hawaii
	Amendment:	To amend the lease to incorporate the currently used terms, conditions, and covenants to the lease, to extend the lease term to an aggregate term of 199 years.
7.	Lessee:	Richard K. Suapaia
	Res. Lease No.:	10357
	Lot No., Area, Island:	UNDV060, Waiohuli, Maui
	Amendment:	To amend the commencement date, lot number, and property description due to final subdivision approval.

Amendments for the Month of December '22	7
Previous FY '22 - '23 balance	42
FY '22 - '23 total to date	49
Amendments for FY '21 - '22	133

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, Acting 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

Five (5) non-exclusive licenses.

1. Lessee: Merle J. Ah Hee
Res. Lease No.: 6363
Lot No., Area, Island: 9, Kawaihae, Hawaii
Permittee: Sunrun Installation Services, Inc.

2. Lessee: Charles N. Balogbog
Res. Lease No.: 5584
Lot No., Area, Island: 112, Lualualei, Oahu
Permittee: Sunrun Installation Services, Inc.

ITEM NO. D-9

3.	Lessee:	Patrick L. Gomes
	Res. Lease No.:	8463
	Lot No., Area, Island:	172, PKE, Oahu
	Permittee:	STW Holdings, LLC
4.	Lessee:	Michael K. Lazaro, Keneze K. Lazaro, Leroy Lazaro & Darrick K. Lazaro
	Res. Lease No.:	4667
	Lot No., Area, Island:	25, Kekaha, Kauai
	Permittee:	Sunrun Installation Services, Inc.
5.	Lessee:	Amber U. Ohelo & Angela M. Ohelo
	Res. Lease No.:	9681
	Lot No., Area, Island:	23, Nanakuli, Oahu
	Permittee:	STW Holdings, LLC

Non-Exclusive License for the Month of December '22	5
Previous FY '22 - '23 balance	42
FY '22 - '23 total to date	47
Non-Exclusive License for FY '21 - '22	53

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

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

SUBJECT: **Commission Designation of Successor of a Tenant in Common Interest, STEVEN T. TUI, Residential Lease No. 799, Lot No. 154, Kewalo, Oahu**

RECOMMENDED MOTION/ACTION

1. To approve the designation of Neichelle-Ann Hooululani Tui (Neichelle-Ann) as successor to Steven T. Tui's 50% tenant in common interest in Residential Lease No. 799, Lot No. 154, Kewalo, Oahu (Lease), for the remaining term of the Lease;

2. To approve and accept that Neichelle-Ann is of no less than the required 25% Hawaiian ancestry and is therefore a qualified successor pursuant to Section 209 of the Hawaiian Homes Commission Act, 1920, as amended;

3. To stipulate that Neichelle-Ann's successorship right and interest in the Lease do not vest until Neichelle-Ann has signed that: (i) Transfer Through Successorship of Lease; (ii) Lease Addendum; and such necessary and appropriate instruments; and that if Neichelle-Ann does not sign all such documents on or before **February 28, 2023** (the Deadline), that the Commission's selection of Neichelle-Ann as a successor is automatically revoked;

4. To authorize the Department to extend the Deadline up to 60 days for good cause; and

5. To declare and approve that if Neichelle-Ann's selection as a successor is revoked; citing the impracticality of returning the unclaimed 50% tenant in common interest to the Department's inventory, the unclaimed interest shall pass to the

Decedent's tenant in common co-lessee for the remaining term of the Lease;

DISCUSSION

Steven Troy Tui (Decedent), and Mary Leilani Tui (Mary) succeeded to their late mother's interest in the Lease on July 31, 2012, as tenants in common.

On June 4, 2020, the Decedent passed away without naming a successor to his 50% tenant in common interest in the lease.

On December 6, 2021, the Department received the decedent's death certificate.

In compliance with Administrative Rule 10-3-63, the Department published legal notices in the Honolulu Star-Advertiser, the Hawaii Tribune Herald, the West Hawaii Today, The Maui News, and The Garden Island newspapers on June 8, 15, 22, and 29, 2022, to notify all interested, eligible and qualified heirs of the Decedent to submit their successorship claims to the Lease.

The Department received a claim from the Decedant's wife, Neichelle-Ann, who have been determined to be of at least 25% Hawaiian ancestry and are thus 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.

Pursuant to Section 209, Neichelle-Ann holds the highest priority to succeed to the Decedent's 50% tenant in common leasehold interest.

Improvements to the homestead lot consist of a 3 bedroom and 2 bath, single family dwelling, which was constructed in 1990. Neichelle-Ann is presently the sole occupant of the house.

There are no outstanding loans. The real property tax is current, and the next assessment will be due in February 2023. The lease rent account is in arrears of $13 dollars.

The Department requests approval of its recommendation.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

FROM: Juan Garcia, Administrator
Homestead Services Division

THRU: James W. Du Pont, WHDO District Supervisor
Homestead Services Division

SUBJECT: **Commission Designation of Successor – Wayne Wainuhea Kaupiko, Residential Lease No. 09314, Lot No. 1, Kaniohale, Hawaii**

RECOMMENDED MOTION/ACTION

1. To approve the selection of Jacqueline Candy Leinaala Kaupiko, to succeed to the interest of Wayne W. Kaupiko to Residential Lease No. 09314, Lot No. 1, Kaniohale, Hawaii (Lease) for the remaining term of the Lease;

2. To stipulate that Jacqueline's right and interest in the Lease does not vest until Jacqueline has signed that: (i) Transfer Through Successorship of Lease; (ii) Lease Addendum; and such necessary and appropriate instruments; and that if Jaqueline does not sign all such documents on or before February 28, 2022 (the Deadline) that the Commission's selection of Jaqueline as a successor is automatically revoked;

3. To authorize the Department to extend the Deadline up to 30 days for good cause; and

4. To declare that if Jacqueline's selection as a successor is revoked; then under Section 209 (a) of the Hawaiian Homes Commission Act, as amended, "the lease shall resume its status as unleased Hawaiian home lands the department is authorized to lease the land to a native Hawaiian as provided by the Act."

DISCUSSION

Wayne W. Kaupiko (Decedent)was awarded the Lease, commencing on August 1, 1999.

On May 21, 2019, the Decedent passed away without naming a successor.

In compliance with Administrative Rule 10-3-63, the Department published legal ads in the Honolulu Star Advertiser, Hawaii Tribune Herald, West Hawaii Today, Maui News, and The Garden Island newspapers on December 6, 13, 20, 27, 2021 to notify all interested, eligible and qualified heirs of the Decedent, to submit their successorship claim to the Lease.

The Department received a successorship claim from the Decedent's spouse, Jacqueline, who has been determined to be at least 25% Hawaiian ancestry and eligible for successorship to the Lease.

Pursuant to Section 209 of the Hawaiian Homes Commission Act of 1920, as amended (Act), when a lessee designates an ineligible 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 children, widows or widowers of the brothers and sisters, or nieces and nephews.

Improvements to the homestead lot consist of a 2-bedroom, 1 full bath, single family dwelling, which was constructed in 1999.

There is an outstanding mortgage with Mr. Cooper in the amount of $43,181.72, which Jaqueline will assume. Lease rent, real property taxes, and association dues are paid current.

The Department requests approval of its recommendation.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Juan Garcia, HSD Administrator
Homestead Services Division

FROM: Ross K. Kapeliela, Acting District Supervisor
Oahu District Office
Homestead Services Division

SUBJECT: **Rescission of Homestead Lease Award and Reinstatement of Lease Application - WAYLENE U. TOYOZAKI**

RECOMMENDED MOTION/ACTION

1. To approve the rescission of Makuu Agricultural Lease No. 7018 for Lot No. 76 commencing on October 1, 1986; and

2. To reinstate the corresponding cancelled agricultural lease application to the Hawaii Islandwide Agricultural Waitlist at the original date of application.

DISCUSSION

Lessee Waylene U. Toyozaki's (Waylene) request for relocation was approved by the Hawaiian Homes Commission at its November 21, 2016, regular meeting as the lot encompassed by Lease No. 7018 is a portion of Department lands identified as possibly affected by unexploded ordnance (EXHIBITS A & B). The Commission's relocation approval allows for Waylene's relocation to "any suitable lot in DHHL inventory statewide."

Waylene has recently opted to relocate to Puukapu Residential Vacant Lot No. 7A.

As the lessee is relocating from an agricultural lot to a residential lot necessitated by the threat of possible exposure to unexploded ordnance as provided in Section 10-3-23(3)(A) of the Hawaii Administrative Rules (EXHIBIT C), the aforementioned agricultural lease will be rescinded and the lessee's Hawaii

Islandwide Agricultural Lease Application will be reinstated at its original application date of May 2, 1985 (EXHIBIT D).

Furthermore, as the lessee will subsequently receive a residential lot, Waylene's Oahu Islandwide Residential Lease Application dated October 24, 2000, will be recommended for Commission cancellation.

The Department requests approval of its recommendation.

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA
91-5420 Kapolei Parkway, Kapolei, O'ahu, Hawai'i
Monday, November 21, 2016 at 9:00 a.m. to be continued, if necessary, on
Tuesday, November 22, 2016, at 9:00 a.m.

Note: Commission Meeting Packets will be available at dhhl.hawaii.gov, by Saturday, November 19, 2016.

I. ORDER OF BUSINESS

1. Roll Call
2. Approval of Agenda
3. Approval of Minutes for April 2014; September 21 & 22, 2015

II. ITEMS FOR DECISION MAKING

A. PUBLIC TESTIMONY ON AGENDIZED ITEMS

B. CONSENT AGENDA

Homestead Services Division

- D-2 Ratification of Loan Approvals (see exhibit)
- D-3 Approval of Consent to Mortgage (see exhibit)
- D-4 Approval of Refinance of Loans (see exhibit)'
- D-5 Approval of Streamline Refinance of Loans (see exhibit)
- D-6 Approval to Schedule Loan Delinquency contested Case Hearings (see exhibit)
- D-7 Approval of Homestead Application Transfers / Cancellations (see exhibit)
- D-8 Ratification of Designations of Successors to Leasehold Interest and Designation of Persons to Receive Net Proceeds (see exhibit)
- D-9 Approval of Assignment of Leasehold Interest (see exhibit)
- D-10 Approval of Amendment of Leasehold Interest (see exhibit)
- D-11 Approval to Issue Non-Exclusive Licenses for Rooftop Photovoltaic Systems for Certain Lessees (see exhibit)
- D-12 Commission Designation of Successor – **DOROTHY B. GASPAR**, Lease No. 5384, Lot No. 108, Waiakea, Hawai'i
- D-13 Request to Schedule Contested Case Hearing - **Lease Violations, SUSAN P.K. LAKE and SHALEEN L. WHITE,** Lease No. 2219, Lot No. 85, Kewalo, Oahu
- D-16 Relocation Request for **CATHRY MAHEALANI JENSEN**, Kawaihae Unit 1 Residential Lot Lease No. 7113, Lot No. 60, Kawaihae, Hawai'i
- D-18 Request for Relocation: **WAYLENE TOYOZAKI**, Lease # 7018 , Lot # 76, Maku'u, Hawai'i
- D-19 Commission Designation of Successor to Application Rights of **SYLVIA L. BECKHAM**, Deceased – Public Notice 2006

C. REGULAR AGENDA

Office of the Chairman

- C-1 Approval of the 2017 Hawaiian Homes Commission Meeting Schedule
- C-2 Designation of Presiding Officers for Public Hearings for Administrative Rulemaking Under Chapter 91, Hawaii Revised Statutes

ITEM NO. D-12
EXHIBIT A

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

November 21, 2016

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Dean Oshiro, Acting HSD Administrator

FROM: Niniau Simmons, NAHASDA Manager
Louis Hao, East Hawaii District Office Supervisor

SUBJECT: **Request for Relocation: WAYLENE TOYOZAKI, Lease # 7018, Lot #76, Makuu, Hawaii**

RECOMMENDED MOTION/ACTION

To approve the relocation for Waylene Toyazaki to any suitable lot in DHHL inventory statewide, identical to the approval granted by the Hawaiian Homes Commission (HHC) on May 23, 2016, for other lessees in the same situation due to the issues with Unexploded Ordinances (UXO).

DISCUSSION

Popoki Target Area

The Popoki Target Area was located in the district of Puna, at Makuu, and comprised of 640 acres. These lands were utilized by the U.S. military during World War II as an aerial target site. As of November 1, 2011, USACE removed 96 UXO items: ninety-five (95) MK23 3-lb Practice Bombs and one (1) 60 mm Mortar HE M49. For most of 2015 the DHHL worked with the County of Hawaii, State Civil Defense, and the Federal Emergency Management Agency (FEMA) as the Popoki Target Area had been within the path of the June 27, 2014, lava flow. During that time, DHHL held monthly community meetings from December 2014 - May 2015 with the last meeting in August 2015 to discuss the UXO lease addendum. The lava flow has since ceased in approach to Makuu and has turned toward the Kalapana area along the sea coast.

Historical Context - Popoki Target Area

Like the history of the Puukapu1 ands of Waimea, the lands of Kaohe Makuu were named in Section 203 of the Hawaiian Homes Commission Act of 1920, as amended. These lands were already under lease to W. H. Shipman, Ltd. and did not come into the Trust inventory until much later. The department issued agricultural leases in 1985 and, to date, there are 124 leases in the area of which approximately less than half are occupied.

RECOMMENDATION:

HSD recommends approval of the motion stated. If approved, East Hawaii District Office staff will continue to work with the lessee to select another lot currently in the Department's inventory or as they become available.

ITEM NO.D-18

ITEM NO. D-12

EXHIBIT A

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION MEETING/WORKSHOP AGENDA
Courtyard King Kamehameha's Kona Beach Hotel Ballroom #4
75-5660 Palani Road, Kailua-Kona, Hawai'i 96740
Monday, May 23, 2016 at 9:30 a.m. to be continued, if necessary, on
Tuesday, May 24, 2016, at 9:00 a.m.

Note: Commission Meeting Packets will be available at dhhl.hawaii.gov, by Saturday, May 21, 2016.

I. ORDER OF BUSINESS

1. Roll Call
2. Approval of Agenda
3. Approval of Minutes for March 2014; August 17 & 18, 2015

II. EXECUTIVE SESSION

The Commission anticipates convening in executive meeting pursuant to Section 92-5(a)(4), HRS, to consult with its attorney on questions and issues pertaining to the Commission's powers, duties, privileges, immunities, and liabilities on these matters.

1. Update on Nelson Case - Richard Nelson, III et al., v HHC, Civil No. 07-1-1663

III. ITEMS FOR DECISION MAKING

A. PUBLIC TESTIMONY ON AGENDIZED ITEMS

B. CONSENT AGENDA

Homestead Services Division

D-2 Ratification of Loan Approvals (see exhibit)
D-3 Approval of Consent to Mortgage (see exhibit)
D-4 Approval of Streamline Refinance of Loans (see exhibit)
D-5 Approval to Schedule Loan Delinquency Contested Case Hearings (see exhibit)
D-6 Approval of Homestead Application Transfers / Cancellations (see exhibit)
D-7 Commission Designations of Successor to Application Rights – Public Notices 2012 and 2014 – **SAMUEL WAHILANI, DARLENE K. KAMAE**
D-8 Reinstatement of Deferred Application –**LORRAINE K. LINCOLN**
D-9 Ratification of Designations of Successors to Leasehold Interest and Designation of Persons to Receive Net Proceeds (see exhibit)
D-10 Approval of Assignment of Leasehold Interest (see exhibit)
D-11 Approval of Amendment of Leasehold Interest (see exhibit)
D-12 Approval to Issue Non-Exclusive Licenses for Rooftop Photovoltaic Systems for Certain Lessees (see exhibit)
D-13 Request to Schedule Contested Case Hearing – Lease Violations – **PEGGY ANN TOLENTINO**, Lease No. 7114, Lot No. 61, Kawaihae, Hawaii & **HERBERT KEALOHA, JR.**, Lease No. 7038, Lot No. 11, Pu'u Pulehu, Hawaii

ITEM NO. D-12
EXHIBIT B

C. REGULAR AGENDA

Office of the Chairman

C-1 Approval of Recommendations for Proposed Amendments to Title 10, Hawaii Administrative Rules and to Proceed with Rulemaking under Chapter 91, Hawaii Revised Statutes

C-2 Approval of Subdivision, Transfer of a Portion of Lease and Amendment to Lease No. 9504, Lot A, Waimea, Hawai'i – Flora Beamer Solomon (Lot A-3), Huali Solomon Covington (Lot A-1), Alice Leiomalama Solomon (Lot A-2).

Homestead Services Division

D-14 Set Aside of Prior Designation of Successor to Lease No. 7248, Lot No. 49, Kawaihae, Hawaii and Designation of **SHELBY HO'OKAHI** as Successor to Lease No. 7248, Lot No. 49, Kawaihae, Hawai'i

D-16 Requests for Relocation - **Kenneth Akim Seu,** Lease #06410, Lot #102, TMK (3)-1-5-118:022 Makuu; **Emily Kahai,** Lease #06398, Lot #117, TMK (3)-1-5-118:037 Makuu; **Karla Keliihoomalu** Lease #06934, Lot #U1-26, TMK (3)-1-5-118:039 Makuu; and, **Roy Santos** Lease# 09014, Lot# 140 TMK (3)-6-4-035:080 Puukapu

Land Development Division

E-1 Approval of Lease Award – Elton K.K. Suganuma

Land Management Division

F-1 Issuance of Right of Entry Permit to Kamakana Senior LLC and Kamakana Family Phase I, LLC, Keahuolu, North Kona, Island of Hawai'i, TMK No.(3)-7-4-021:023(por.)

F-2 Approval to Extension of License Term, Church License No. 503, St. Rita's Church, Nanakuli, Island of O'ahu, TMK Nos. (1)8-9-005:001, (1)9-007:002(por.) & (1)9-007:004(por.)

F-3 Issuance of Right of Entry Permit, Edward K. Taniguchi, Anahola Mauka, Anahola, Island of Kaua'i, TMK No. (4)4-7-002:004(por.)

F-4 Issuance of Right of Entry Permit, Kalalea/Anehola Farmers Hui, Anahola Farm Lots, Anahola, Island of Kaua'i, TMK No. (4)4-8-005:026(por.)

Planning Office

G-1 Delegation of Authority to Chair to Sign and Approve US Department of Agriculture Rural Development Grant Awards

IV. ITEMS FOR INFORMATION/DISCUSSION

A. GENERAL AGENDA

ITEM NO. D-12
EXHIBIT B

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

May 23-24, 2016

TO: Chairman and Members, Hawaiian Homes Commission

THROUGH: Niniau Simmons, Office of the Chairman
Dean Oshiro, Acting HSD Administrator

FROM: Niniau Simmons, NAHASDA Manager
James Du Pont, West Hawaii District Office Supervisor
Louis Hao, East Hawaii District Office Supervisor

SUBJECT: **Request for Relocation:**

Kenneth Akim Seu, Lease #06410, Lot #102, TMK (3)-1-5-118:022 Makuu;
Emily Kahai, Lease #06398, Lot #117, TMK (3)-1-5-118:037 Makuu;
Karla Keliihoomalu Lease #06934, Lot #U1-26, TMK (3)-1-5-118:039 Makuu; and,
Roy Santos Lease# 09014, Lot# 140 TMK (3)-6-4-035:080 Puukapu

RECOMMENDED MOTION/ACTION

To approve the relocation for Kenneth Akim Seu; Emily Kahai; Karla Keliihoomalu; and Roy Santos to any suitable lot in DHHL inventory statewide.

DISCUSSION

Waikoloa Maneuver Area

The Puukapu, Kuhio Village, Lalamilo, and Kawaihae Residence Lots homesteads are within the boundary of the 100,000-acre, formerly used defense site (FUDS), known as the Waikoloa Maneuver Area (WMA). The WMA encompasses the vast majority of the district of South Kohala. The area was used by the U.S. military during World War II as a practice/target site. As of September 30, 2014, the U.S. Army Corps of Engineers (USACE) cleared unexploded ordnance (UXO) from approximately 27,200 acres within the WMA.

On October 14, 2014, the Chairman was notified of UXO in the affected homesteads named above. During the next two months, DHHL met with officials from the USACE, U.S. Office of Housing and Urban Development (HUD), and the County of Hawaii. On December 3, 2014, letters were mailed to all 500+ lessees of the affected areas informing them of the UXO and inviting them to a community meeting on December 16, 2014. The letter also included a voluntary offer of relocation for any affected lessee. At said meeting, USACE shared important safety information and reviewed the historical context of the WMA. DHHL met monthly with the community from December 2014 - May 2015 with its last meeting on the UXO lease addendum held in August 2015.

Historical Context - Waikoloa

During World War II (1941-1942), the Hawaiian Homes Commission, under Acting Chairman Mrs. Phoebe H. Amoy, approved the use of Trust lands for U.S. military use in Keaukaha, Hawaii; Hoolehua, Molokai; and Nanakuli, Oahu. The lands at Keaukaha involved the extension of Hilo Airport, the demolition of 22 homesteaders' homes, and the relocation of 8 others. On Molokai, no homes were lost and instead, damages to pineapple crops were suffered. Twenty-six lessees were granted temporary leaves of absences to work on military projects on Oahu. The lands of Puukapu, Kuhio Village, and Kawaihae were named in Section 203 of the Hawaiian Homes Commission Act 1920, but were already under lease. Pursuant to said section, those lands did not come into the Trust's inventory until the leases expired. As a result, Mr. A. W. Carter, Trustee for the Parker Ranch, was the lessee during World War II, and he made these lands available for use by the U.S. military. A sweep was made in 1946 and again in 1952 by the U.S. Army and over the years, a handful of people have died handling the munitions.

Popoki Target Area

The Popoki Target Area was located in the district of Puna, at Makuu, and comprised of 640 acres. These lands were utilized by the U.S. military during World War II as an aerial target site. As of November 1, 2011, USACE removed 96 UXO items: 95 MK23 3-lb Practice Bombs and one (1) 60 mm Mortar HE M49. The notification timeline, as stated above, is for the WMA and included the additional work with the County of Hawaii, State Civil Defense, and the Federal Emergency Management Agency (FEMA) as the Popoki Target Area had been within the path of the June 27, 2014, lava flow. DHHL held monthly community meetings from December 2014 - May 2015 with the last meeting in August 2015 to discuss the UXO lease addendum.

Historical Context - Popoki Target Area

Like the history of the Puukapu lands of Waimea, the lands of Kaohe-Makuu were named in Section 203 of the Hawaiian Homes Commission Act of 1920, as amended. These lands were already under lease to W. H. Shipman, Ltd. and did not come into the Trust inventory until much later. The department issued agricultural leases in 1985 and, to date, there are 124 leases in the area of which approximately less than half are occupied.

RECOMMENDATION

The UXO issue has been a multi-faceted one requiring the DHHL to respond to its lessees and applicant beneficiaries to ensure health and safety. The Hawaiian Homes Commission did, at its May 2015 meeting in Waikoloa, approve the UXO Policy which currently guides the DHHL as rules are being developed.

Staff recommend approval of the motion as stated.

§10-3-23 Awards to previous lessees, when. No award of a residence lot lease shall be made to an applicant who at the time of application has previously been a lessee of a Hawaiian home lands residence lot; or who at the time of consideration for award had become a lessee of a Hawaiian home lands residence lot through transfer or successorship; provided, that exceptions to this limitation may be made in the following conditions:

(1) Award of a residence lot lease to an applicant who had been a lessee may be made if the department determines that the transfer or surrender of the previous lease was made under compelling circumstances and that denial of award of another residence lot lease would be unreasonably unfair to the applicant.

(2) Transfer of a residence lot lease through successorship may be made to an otherwise qualified designated successor who had been a lessee if at the time of the designation the former lessee had already transferred or

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EXHIBIT C

surrendered the lease and if the designation was filed with and approved by the department.

(3) Award of a residence lot lease may be made to a present lessee of a residence lot if the department determines an emergency situation as follows:

(A) Due to circumstances beyond the control of and not caused by the lessee, the lessee's health, safety, and welfare are endangered by continued occupancy of the premises, or the further rehabilitation of the lessee is highly improbable without relocation to another residence lot;

(B) The lessee has agreed to surrender the present lease and has waived all rights to the appraisal value of all improvements on the presently leased residence lot;

(C) The lessee has agreed and is financially able to pay all expenses for the move to the residence lot to be leased;

(D) The lessee is financially able to assume:

(i) The indebtedness outstanding against the residence lot to be leased; or

(ii) The indebtedness that must be incurred to enable the lessee to occupy the residence lot within one year after the lease is awarded; or

(E) The circumstances of the present lessee indicate sufficient need for relocation to justify the department's withholding of the residence lot to be leased from availability to qualified applicants, if any, for leases in that area and the department's awarding of a lease of that residence lot to the relocating lessee.

(4) Exceptions to this limitation shall be made only after notice of the department's

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EXHIBIT C

consideration of such action has been given through the posting of the agenda and after full disclosure of the material facts has been made in a public meeting. [Eff 7/30/81; comp 10/26/98] (Auth: HHC Act §222) (Imp: HHC Act §207)

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EXHIBIT C

DHHL Time Stamp

HAWAIIAN HOME LANDS
APPROVED
RECEIVED
MAY 2 12 14 PM '60

DEPARTMENT OF HAWAIIAN HOME LANDS
Application for Lease of Homestead Lot

Application Code No .....
Application File No .....
Date Received .....
Appl. Soc. Sec. No [redacted]
Spouse Soc. Sec. No .....

To the Department of Hawaiian Home Lands,
Honolulu, Hawaii

I, ...Waylene Ululani Upshimoto..... the undersigned, do hereby make application to the Department of Hawaiian Home Lands for a lease of a ...Agricultural..... Lot on .....Hawaii..... and in support of said application I do hereby make the following statements under oath, namely:

1. That I am a ~~male~~ female (cross out one), citizen of the United States of America and the State of Hawaii, residing at [redacted] Telephone No. [redacted]
State of Hawaii, mailing address .....

2. That I am a native Hawaiian within the meaning of the Hawaiian Homes Commission Act 1920, having been born at ..... State County of [redacted] State of Hawaii, on the [redacted] day of [redacted], A. D. [redacted], and I am now of the age of [redacted] years;

3. That my father [redacted] (Name of father), was born at .....Honolulu....., County of .Honolulu..... State of Hawaii, and was .....0%..... (Proportion of Hawaiian blood) Hawaiian and .....100% Japanese (Proportion and kinds of non-Hawaiian blood);

4. That my mother [redacted] (Name of mother) was born at .....Honolulu..... County of ..Honolulu..... State of Hawaii, and was .....100%..... (Proportion of Hawaiian blood) Hawaiian and ....0%..... (Proportion and kinds of non-Hawaiian blood);

5. That I am married, ~~widower, widow~~, divorced, single (cross all but correct status);

6. That my present wife, husband (cross out one) ..... (Name of wife, husband) ..... was born at ..... County of ..... State of Hawaii, on the .....day of ..... A. D. ..... and is ..... (Proportion of Hawaiian blood) Hawaiian and ..... (Proportion and kinds of non-Hawaiian blood);

(Should there be any previous wife or husband, write in below information relative to same as required above).

.....
.....
.....
.....
.....
.....

7. a. That I am the blood father or mother (cross out one) of the following children:

Name	Residence	Sex	Age	Other Parent
none				

ITEM NO. D-12
EXHIBIT D

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

E – ITEMS

LAND DEVELOPMENT DIVISION

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

November 21-22, 2018

To: Chairman and Members, Hawaiian Homes Commission

From: Stewart Matsunaga, Acting Administrator, Land Development Division

Subject: For Information Only
Implementation Progress Report, as of December 2022, for Act 279, Session Laws of Hawaii 2022

RECOMMENDED MOTION/ACTION

None, for information only.

BACKGROUND

Act 279 enacted in Regular Session of 2022 of the 31st Legislature appropriated $600,000,000 in general funds to provide a multi-pronged approach to reducing the DHHL waitlist. The $600,000,000 will address the needs of those on the waitlist and those beneficiaries still waiting. (Excerpt from "Strategic Plan to Implement Act 279 of 2022 dated November 2022)

On August 16, 2022, The Hawaiian Homes Commission (HHC) approved the Strategic Approach to Implement Act 279 - August 2022. Further, on November 22, 2022 the HHC approved the Strategic Plan to Implement Act 279 of 2022.

Pursuant to Section 4(c), Act 279, DHHL shall submit the strategic plan, including findings, recommendations, and any proposed legislation, to the Legislature, no later than December 10, 2022. On December 6, 2022 copies of the Strategic Plan to Implement Act 279, SLH 2022 was transmitted to the Senate President and members of the Senate and President of the House and members of the House of Representatives, pursuant to Section 4(c), Act 279.

DISCUSSION ON FY 2023 IMPLEMENTATION

Section 6, Act 279, SLH 2022 states:

There is appropriated out of the general revenues of the State of Hawaii the sum of $600,000,000 or so much there of as may be necessary for the fiscal year 2021-2022 for the purposes of this Act; provided that any moneys not encumbered for specific purposes shall lapse to the general fund on June 30, 2025.

In order to comply with the Legislative deadline to encumber $600,000,000 by June 30, 2025, HHC approved Agenda Item C-5, an implementation budget for Act 279, SLH 2022 on August 15, 2022. Agenda Item C-5 is attached as Exhibit A.

On November 7, 2022, Governor David Ige approved the release of $172,750,000 for the implementation of the FY 2023 projects.

Exhibit B provides the procurement, contract and encumbrance status of FY 2023 subdivisions and projects.

In its approval of the Act 279 Implementation Budget, the HHC authorized the Chairman to shift funding of expenditures between cost elements and funds as warranted, but not to exceed the total budget. DHHL intends to seek authorization from the Chairman to shift funds from FY 2024 to FY 2023, anticipating numerous offers for Land Acquisition and Development.

RECOMMENDED MOTION/ACTION:

None—for information only.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

AUGUST 15, 2022

TO: Chairman and Members, Hawaiian Homes Commission

FROM: Rodney K. M. Lau, Administrative Services Officer

SUBJECT: Approval of Act 279 (SLH 2022) Implementation Budget for Fiscal Year 2022-2023

RECOMMENDED MOTION/ACTION

That the Commission approve the Act 279 (SLH 2022) Implementation Budget for Fiscal Year 2022-2023 for the Department of Hawaiian Home Lands and authorize the Chairman to shift funding of expenditures between cost elements and funds as warranted but not to exceed the total budget.

DISCUSSION

On July 11, 2022, Governor David Ige signed into law Act 279, SLH 2022 (formerly HB 2511 HB2 SD2 CD1). Act 279, SLH 2022 appropriates $600 million in general funds to provide a multi-pronged approach to reduce the Department of Hawaiian Home Lands (DHHL) waitlist. The $600 million will address the needs of beneficiaries on the DHHL waitlist and those that are still waiting to get on the land.

On May 16, 2022 Chairman William Aila, Jr. established the Act 279 Permitted Interaction Group (f.k.a. the HB2511 HD2 SD2 CD1 "Waitlist Reduction Act" Permitted Interaction Group)("Act 279 Committee") Recommendations from the Act 279 Committee were presented to the Commission at its July 2022 meeting with action on these recommendations identified as item C-4 on this month's agenda. If the Commission approves the "Preliminary Strategic Approach to Implement Act 279 of 2022" and authorizes the Chair to begin implementation, this Budget provides the needed funds for the current fiscal year, FY2022-2023.

ITEM NO. E-1
Exhibit "A"
ITEM NO. C-5

The analysis and justification for the funding priorities for Act 279 are laid out in the "Preliminary Strategic Approach" document and are not discussed here. Instead, this submittal focuses on the allocation of funds.

A two-year CAPITAL PROJECTS ENCUMBRANCE PLAN ("PLAN") is included as Exhibit A. In addition to lot development and offsite infrastructure, the PLAN includes funding set aside for potential Land/Project Acquisition and Innovative Project Financing/Partnerships.

The ACT 279 IMPLEMENTATION BUDGET for FY 2022-2023 is included below in TABLE 1. Like the PLAN the Capital Projects Budget includes funding for potential Land/Project Acquisition and Innovative Project Financing/Partnerships.

TABLE 1
ACT 279 IMPLEMENTATION BUDGET FY 2022-2023

ACT 279 Capital Projects (SEE EXHIBIT B)	$172,761,000
Individual Assistance Programs to Address Barriers to Homeownership and/or Address Housing Insecurity (ideas from beneficiary or housing stakeholder organizations)	$ 60,000,000
TOTAL	$232,761,000

Because the ACT 279 IMPLEMENTATION BUDGET for FY 2022-2023 is based on estimated costs, the department, with Chairman's approval, may need to shift funding of expenditures between cost elements and funds as warranted but in no event will any expenditure be funded if the total budget is exceeded.

The Commission's approval of the recommended motion is respectfully requested.

DEPARTMENT OF HAWAIIAN HOME LANDS
ACT 279, SLH 2022: CAPITAL PROJECTS - PROPOSED ENCUMBRANCE PLAN
FISCAL YEAR 2023 and 2024

			General Fund			
			FY 2023-2024	FY 2023	FY 2024	
Island	Subdivision/Project	Lots	Act 279, SLH 2022	Encumbrances	Encumbrances	Phase
	HAWAII COUNTY					
Hawaii	Honomu Subsistence Ag Lots, Phase 2	40	$ 6,000,000		$ 6,000,000	C
	Laiopua Village 2 (includes N Kona Water Development)	200	$ 44,000,000	$ 4,000,000	$ 40,000,000	DA
	Laiopua Village 1	200	$ 23,000,000		$ 23,000,000	DA
	MAUI COUNTY					
Lanai	Lanai Residence Lots Offsite Infrastructure	75*	$ 2,000,000	$ 2,000,000		D
Molokai	Hoolehua Scattered Lots	20	$ 3,500,000		$ 3,500,000	C
	Naiwa Ag Subdivision	16	$ 6,000,000		$ 6,000,000	C
Maui	Pu'unani Homestead Subdivision, Phase 1	161	$ 17,500,000	$ 17,500,000		DA
	Honokowai Subistence Ag, Phase 1	50	$ 5,000,000		$ 5,000,000	C
	Leialii 1B Offsite Water		$ 15,000,000	$ 15,000,000		C
	Leialii 1B Subdivision	250	$ 68,000,000		$ 68,000,000	DA
	CITY AND COUNTY OF HONOLULU					
Oahu	Kaupea, Phase 2	60	$ 23,000,000	$ 8,250,000	$ 14,750,000	DA
	East Kapolei II Backbone Infrastructure		$ 50,000,000	$ 3,000,000	$ 47,000,000	D/C
	East Kapolei IIA	300	$ 14,000,000	$ 14,000,000		DA
	East Kapolei IID	124	$ 18,000,000		$ 18,000,000	DA
	East Kapolei IIE	142	$ 21,000,000	$ 21,000,000		DA
	East Kapolei IIF	155	$ 23,000,000		$ 23,000,000	DA
	Maili Development	280	$ 60,000,000		$ 60,000,000	DA
	Ewa Beach (former NOAA site)	600	$ 48,000,000		$ 48,000,000	DA
	KAUAI COUNTY					
Kauai	Hanapepe Residence Lots, Phase 2	75	$ 23,000,000	$ 23,000,000		C
	Anahola Kuleana Homestead Lease Agricultural and Pastoral	115	$ 5,000,000		$ 5,000,000	C
Statewide	Land/Project Acquisition	300**	$ 35,000,000	$ 35,000,000		L/DA
	Project Financing/Partnerships (Public/Public; Public/Private)		$ 30,000,000	$ 30,000,000		DA
	TOTAL	3,163**	$ 540,000,000	$ 172,750,000	$ 367,250,000	
	Phase: D=Design; C=Construction; L=Land Acquisition; DA=Development Agreement					
	*Assumes construction funding is available after 2025					
	**Estimate					

ITEM NO. E-1
Exhibit "A"
ITEM NO. C-5

DEPARTMENT OF HAWAIIAN HOME LANDS
ACT 279, SLH 2022: CAPITAL PROJECTS
FISCAL YEAR 2023 BUDGET

			General Fund	
Island	Subdivision/Project	Lots	FY 2023 Encumbrances	Phase
	HAWAII COUNTY			
Hawaii	Honomu Subsistence Ag Lots, Phase 2	40	$ 1,000	C
	Laiopua Village 2 (includes N Kona Water Development	200	$ 4,000,000	DA
	Laiopua Village 1	200	$ 1,000	DA
	MAUI COUNTY			
Lanai	Lanai Residence Lots Offsite Infrastructure	75*	$ 2,000,000	D
Molokai	Hoolehua Scattered Lots	20	$ 1,000	C
	Naiwa Ag Subdivision	16	$ 1,000	C
Maui	Pu'unani Homestead Subdivision, Phase 1	161	$ 17,500,000	DA
	Honokowai Subistence Ag, Phase 1	50	$ 1,000	C
	Leialii 1B Offsite Water		$ 15,000,000	C
	Leialii 1B Subdivision	250	$ 1,000	DA
	CITY AND COUNTY OF HONOLULU			
Oahu	Kaupea, Phase 2	60	$ 8,250,000	DA
	East Kapolei II Backbone Infrastructure		$ 3,000,000	D/C
	East Kapolei IIA	300	$ 14,000,000	DA
	East Kapolei IID	124	$ 1,000	DA
	East Kapolei IIE	142	$ 21,000,000	DA
	East Kapolei IIF	155	$ 1,000	DA
	Maili Development	280	$ 1,000	DA
	Ewa Beach (former NOAA site)	600	$ 1,000	DA
	KAUAI COUNTY			
Kauai	Hanapepe Residence Lots, Phase 2	75	$ 23,000,000	C
	Anahola Kuleana Homestead Lease Agricultural and Pastoral	115	$ 1,000	C
Statewide	Land/Project Acquisition	300**	$ 35,000,000	L/DA
	Project Financing/Partnerships (Public/Public; Public/Private)		$ 30,000,000	DA
	TOTAL	3,163**	$ 172,761,000	
	Phase: D=Design; C=Construction; L=Land Acquisition; DA=Development Agreement			
	*Assumes construction funding is available after 2025			
	**Estimate			

ITEM NO. E-1
Exhibit "A"
ITEM NO. C-5

Act 279 Implementation: Project Status, as of December 2022

Island	FY23 Subdivision/Project	Lots	Budget	Phase	Status
Hawaii	Laiopua Village 2 (Includes N. Kona Water Development	200	$ 4,000,000	Land	DHHL considering two well sites. Well site #1: Negotiating acquisition of property from Cannery Commercial LLC for well site. Well site #2: Seeking HHC approval on Preliminary Water Agreement with Kamehameha Schools and County Dept. of Water Supply (Item G-7 HHC December Meeting)
Lanai	Lanai Residence Lots Offsite Infrastructure	75	$ 2,000,000	Design	Consultant Selection 1st Q 2023; consider modification to Development Agreement toPlans, Designs, Construction and Interim Financing to include offsite infrastructure development of 75+ lots.
Maui	Pu'unani Homestead Subdivision	161	$ 17,500,000	Construction	Construction Contract Awarded to Maui Kupono Builders; $17,171,944; construction
Maui	Pu'unani Homestead Subdivision (Offsite Water Tank)			Design/ Construction	Final EA Nov. 2022; Invitation to bid 2ndQ 2023; required for house occupance; $5M Supplemental Contract Developer Agreement;
Maui	Leialii 1B Offsite Water		$ 15,000,000	Construction	Draft EA published in Dec. 2022; continue design
Oahu	Kaupea, Phase 2	60	$ 8,250,000	Land	$8.25M Encumbered; Transfer Agreement Executed; funds transfered to HHFDC
Oahu	East Kapolei II Backbone Infrastructure		$ 3,000,000	Design	Encumbered with Trust Fund;Design Consultant initiating work; proposed budget decrease in Budget Amendment/shift to Pu'unani Homestead
Oahu	East Kapolei IIA	300	$ 14,000,000	Dev Agree	Draft RFP in process
Oahu	East Kapolei IIE	142	$ 21,000,000	Dev Agree	Draft RFP in process
Kauai	Hanapepe Residence Lots, Phase 2	82	$ 23,000,000	Construction	Construction Bids open on Dec. 21, 2022.
Statewide	Land/Project Acquisition	300	$ 35,000,000	Dev Agree	Request for Proposals let; Offers due Dec. 16, 2022; evaluation and selection committee approved by Chairman; DHHL anticipates need to increase budget.
Statewide	Project Financing/Partnerships		$ 30,000,000	Dev Agree	Draft RFP in process
	Total		$ 172,750,000		$172,750,00 released by Governor 11/7/2022

ITEM NO. E-1
Exhibit "B"

HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Nānākuli and Waiʻanae Project Updates

Land Development Division

Item E-2

For Information Only

December 19-20, 2022

Former Voice of America Property, Māʻili

ULU KE KUKUI REDEVELOPMENT

- **Developer: Hawaiian Community Development Board**
- **Convert 80 transitional housing units into 40 affordable rental units**
- **Finalizing construction plans and securing financing**
- **Department of Human Services, Homeless Programs Office contract with Catholic Charities Hawaii completed 11/24/21**
- **Rent-up scheduled to start 2023**
- **Developer continuing to secure financing.**



Former Voice of America Property, Māʻili

DHHL New Residential Community

- **Approximately 40 acres**
- **Mixture of single-family lots and multi-family townhouses; approximately 250-340 units**
- **Legislative Appropriations - $800,000 (Planning, Designs)**
- **Estimated site construction cost $48 million**

- **June 2021: Beneficiary Consultation**
- **Feb 2022: Draft Environmental Assessment**
- **2023 to 2024: Infrastructure Design**
- **2025 to 2026: Infrastructure Construction**
- **2026 to 2027: House Construction / Multi-family Development**



NANAKULI DRAINAGE CHANNEL IMPROVEMENTS

PHASE 1

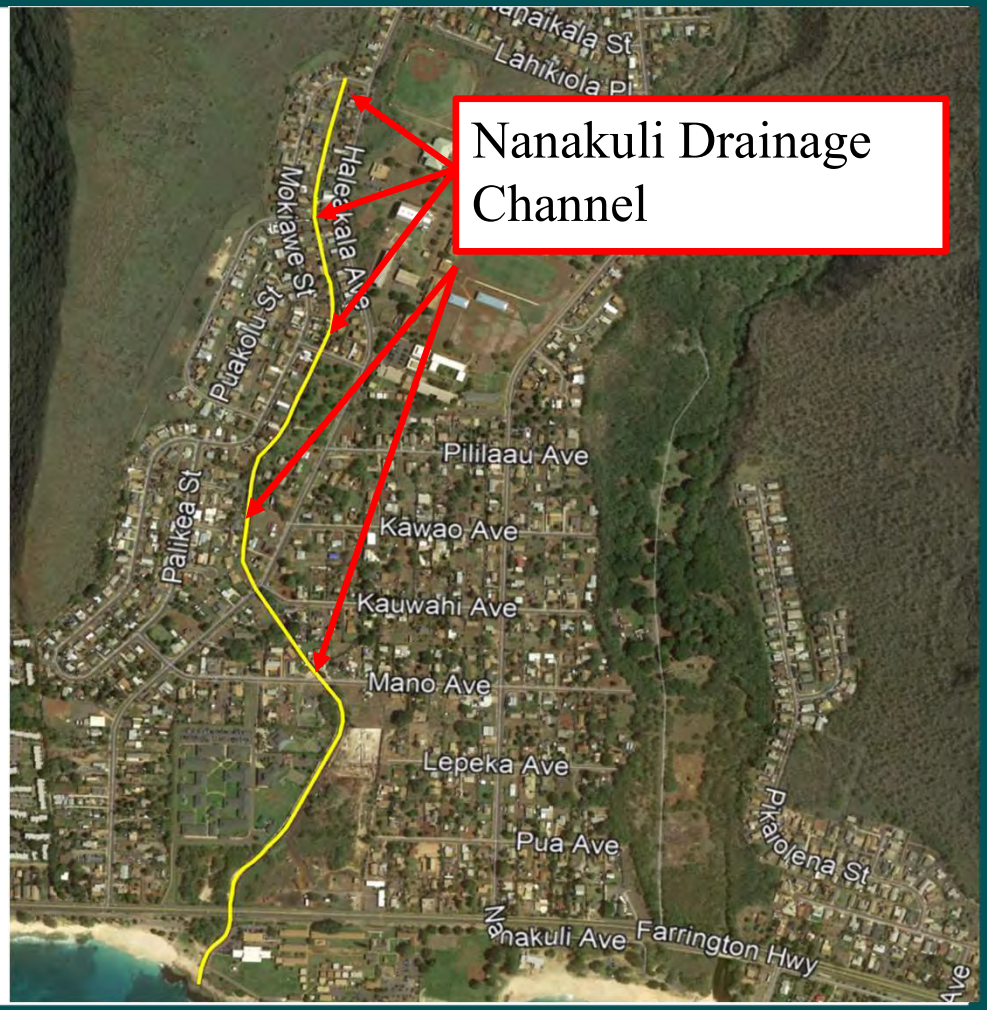
Scope: Re-line channel walls – 5,000 linear feet
Cost: $3.2 million
Schedule: Construction completed - Summer 2021

ADDITIONAL PHASES

Scope: Additional repairs to lateral channels
Budget: $2.2 Million CIP funding required
Schedule: Designs in progress; bid in Fall 2021







NANAKULI TRAFFIC CALMING

Traffic calming, to include flashing beacons, speed humps and tables, crosswalk signals, curbs, striping and signage.

Locations to include, but not limited to:

1. **Nanakuli Ave & Pua Ave**
2. **Haleakala Ave & Mano Ave**
3. **Nanakuli Ave & Pililaau Ave.**
4. **Nanakuli Ave & Ilimapapa Ave.**
5. **Haleakala Ave. & Opuhe St.**
6. **Haleakala Ave. & Mokiawe St.**
7. **Haleakala Ave. & Pililaau St.**
8. **Mano Ave fronting Nanaikapono Elementary School**
9. **Nanakuli Ave. outside Nanakuli High School**
10. **Nanakuli Ave. & Lepeka Ave.**

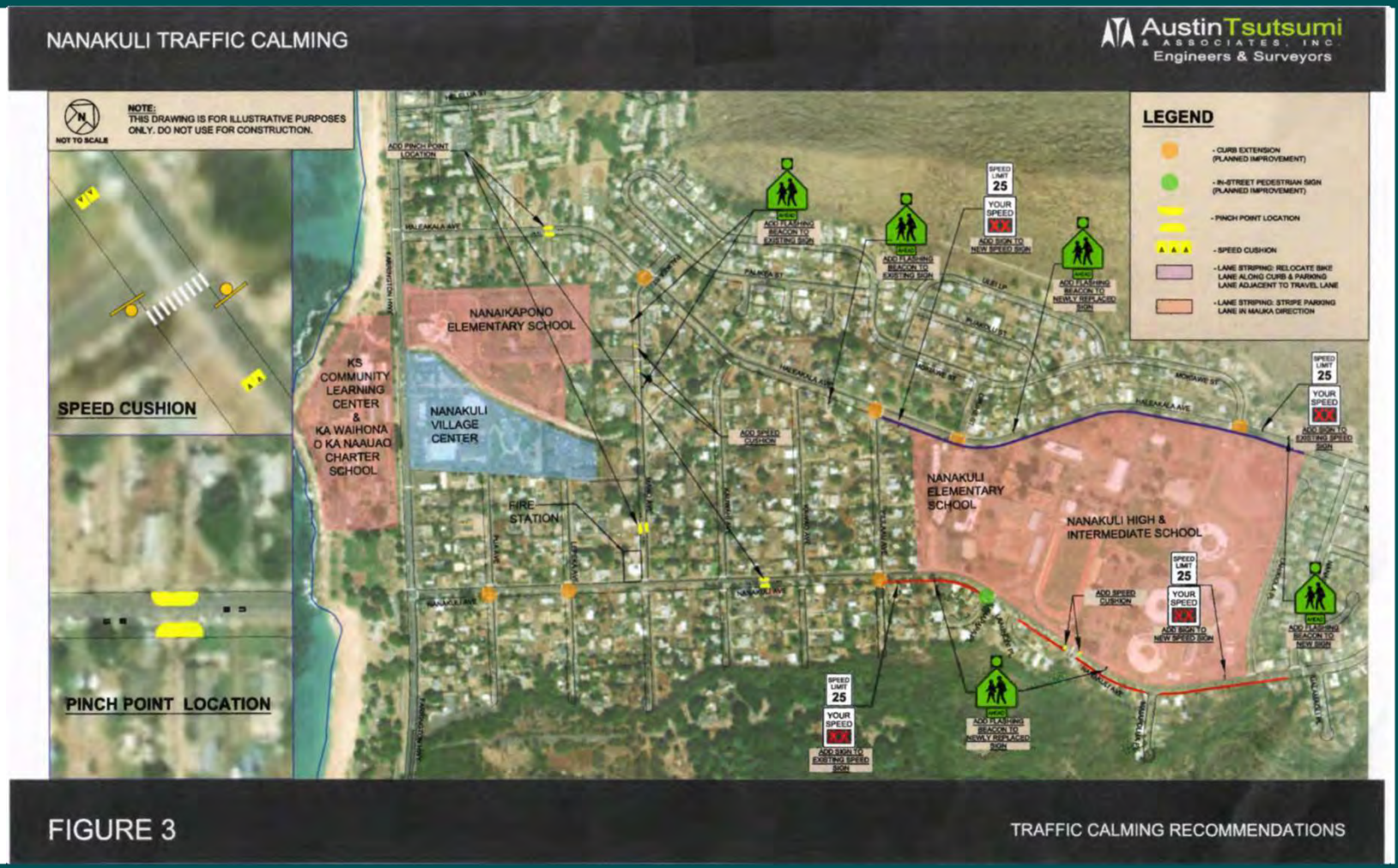
DHHL Trust funds: $315,000 (Design)
Legislative Appropriation: $1,000,000 (Construction)



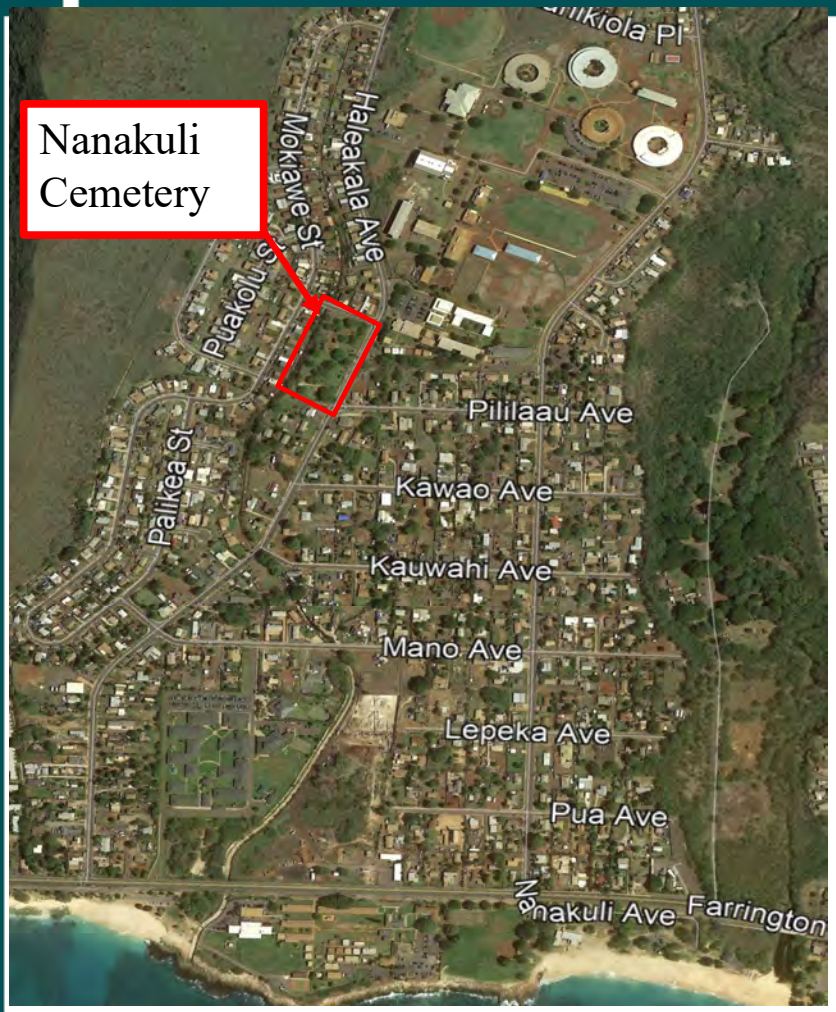
NANAKULI TRAFFIC CALMING, Phase 1

Phase 1: Emergency speed humps and other traffic calming measures installed in 2022.

Phase 2: Lower Nanakuli Construction of flashing beacons and crosswalk improvements to start in 2023, subject to approved plans.



NANAKULI CEMETERY REPAIRS



Proposed Repair Scope:

- Fencing installation: 1,000 linear feet
- Wall Repair: 700 linear feet
- Remove excess excavated soil
- Repair water line

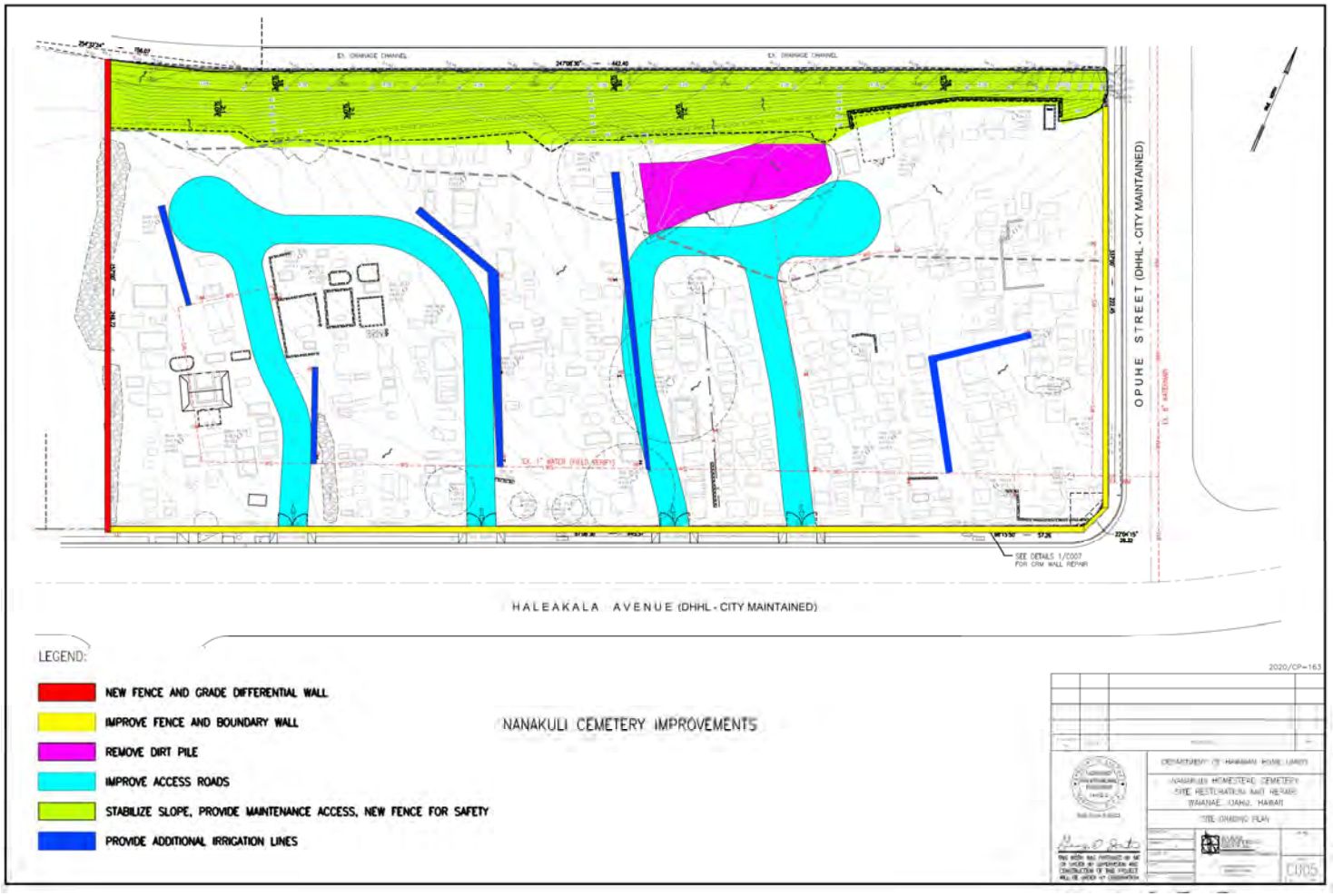
Cost estimate:

- $370,000 Operating Fund

Schedule

- Permit approval in progress
- Open Bids: January 2022

NANAKULI CEMETERY REPAIRS



WAIANAE VALLEY, INCREMENT 4



- 8 new residential lots with water, sewer, electric and communication available for award.
- Lots range from 7,071 square feet to 9,274 square feet.
- Project Construction Cost: $1,325,243.00
- Contractor: Close Construction, Inc.
- Estimated Construction Schedule:
  - Start Construction: December 2019
  - Completion: December 2021



Wai‘anae Coast Emergency Access Road



Wai'anae Coast Emergency Access Road
Proposed Route Alternatives through Nānākuli
June 29 2018

HAWAIIAN HOME LANDS

Wai‘anae Coast Emergency Access Road

- Legislative CIP funding: $3,000,000
- Assess routes, conduct research, analyze alternatives, consult with community.
- No viable routes through Nānākuli community.
- No further assessments to be conducted.
- Contracts Expired: July 2022

West O‘ahu Sewers Assessment

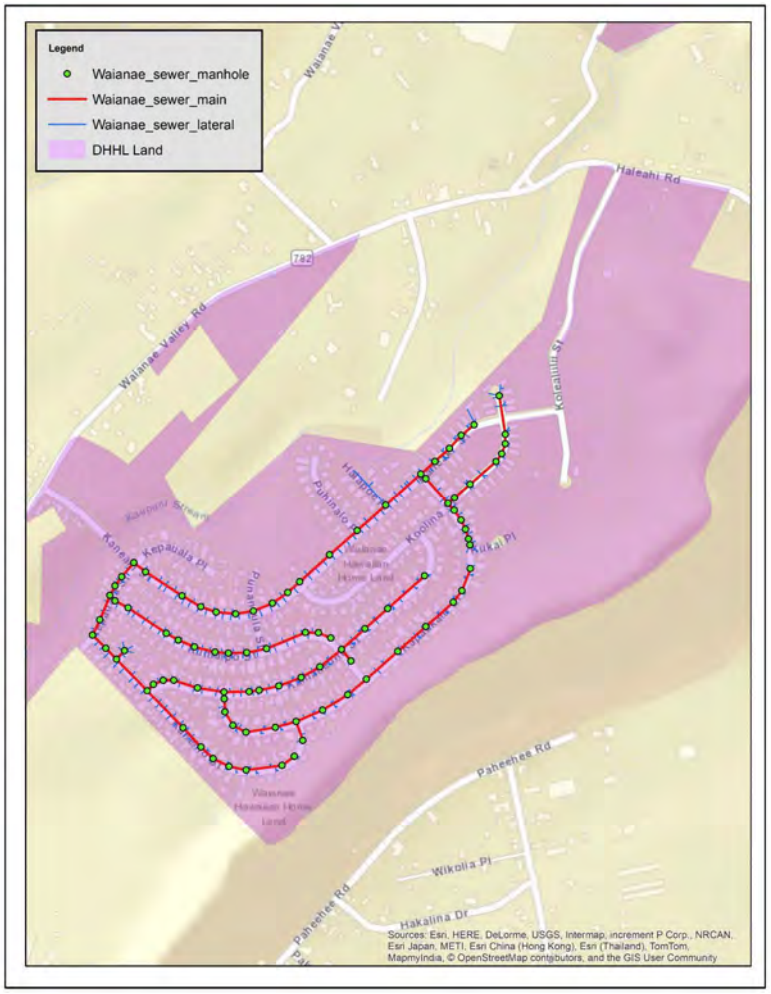
Purpose:
Improve existing sewer collector lines to City and County standards

Locations:
DHHL Sewerlines in Wai‘anae, Princess Kahanu Estates, and Nānākuli.

Scope of Work:
- Replace non-conforming sewer lines, manholes, laterals and cleanouts
- Reconnect sewer laterals
- Paving restoration

- **Status:**
- Video-camera inspection, smoke testing and cleanout survey completed.
- Wai‘anae - IFB issued November 2022, Bids Due: December 13, 2022.
- Princess Kahanu Estates – Design in Progress.
- Nānākuli - Initiate Design in 2023.

Wai‘anae Sewer Assessment



Construction Scope:

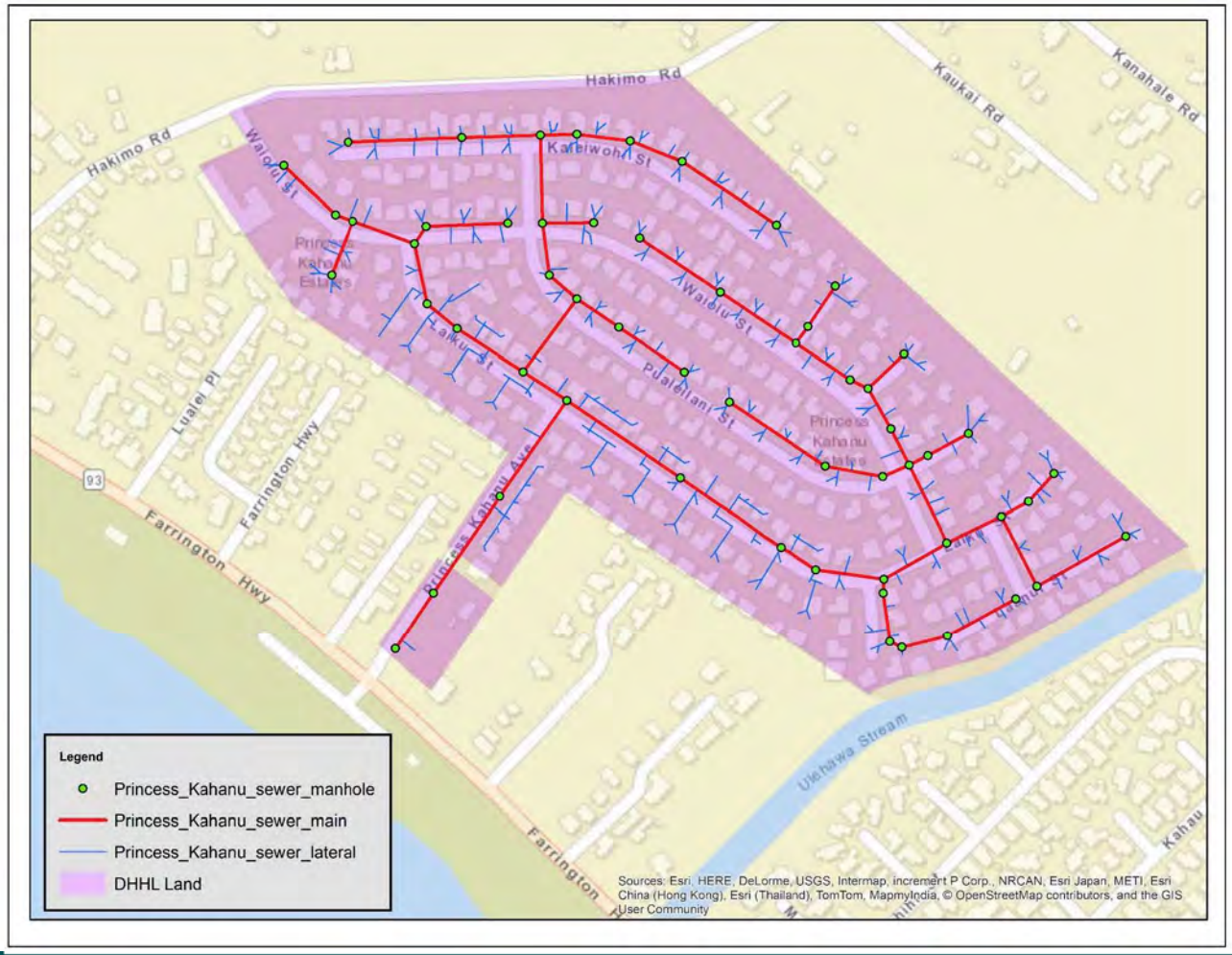
- Replace 2,580 feet of 8” to 15” sewerline
- Replace 66 sewer laterals
- Construct/Reconstruct 33 sewer manholes

Construction Timetable:

- Award contract – December 2022
- Execute contract – January 2023
- Certify contract – February 2023
- Notice to Proceed – February 2023
- Time of Performance – 1 year

Construction estimate: $6.7 Million

Princess Kahanu Estates Sewer Assessment



Construction Scope:

- Replace 6,160 feet of 8” to 12” sewerline
- Replace 180 sewer laterals
- Convert 2,300’ of 6” sewer laterals to 8” sewer mains
- Construct/Reconstruct 41 sewer manholes

Construction Timetable:

- Design in progress
- Construction bid: 2023

Construction estimate: $15 Million

Nānākuli Sewer Assessment



Construction Scope:

- Replace 18,500 feet of 6” to 15” sewerline
- Replace over 300 sewer laterals
- Construct/Reconstruct 126 sewer manholes

Construction Timetable:

- Design start in 2023, subject to Leg CIP funding.
- Construction start estimated 2024.

Construction estimate: $40 Million

Nānākuli & Waiʻanae Cesspool Assessment

Project Description

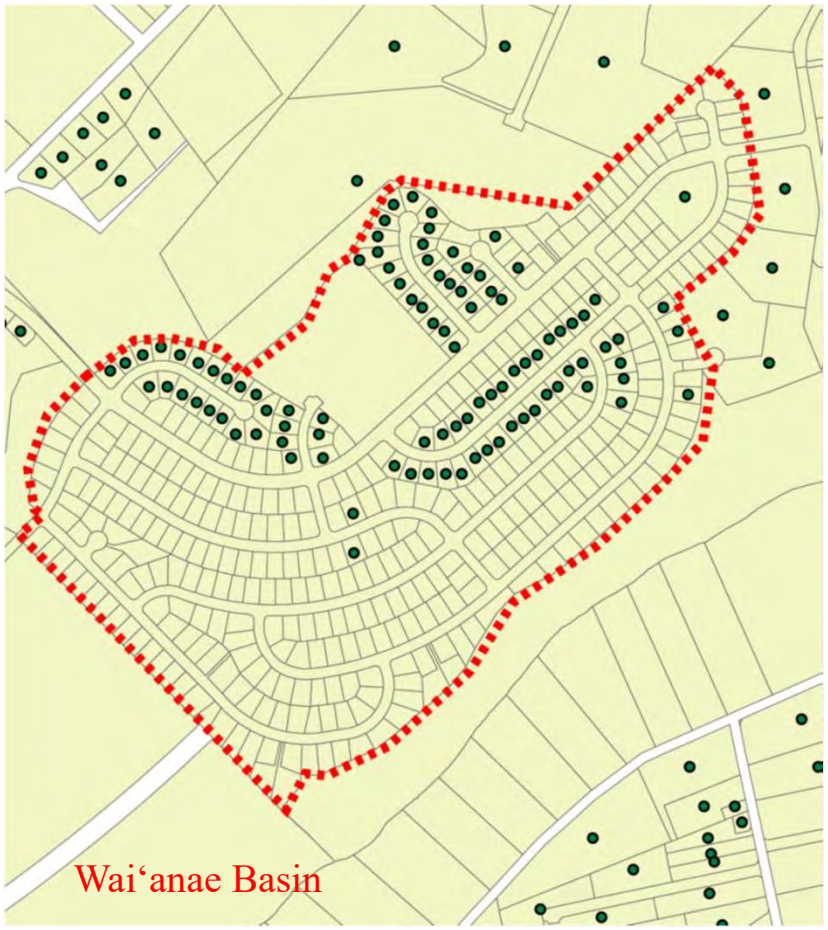
- Background:

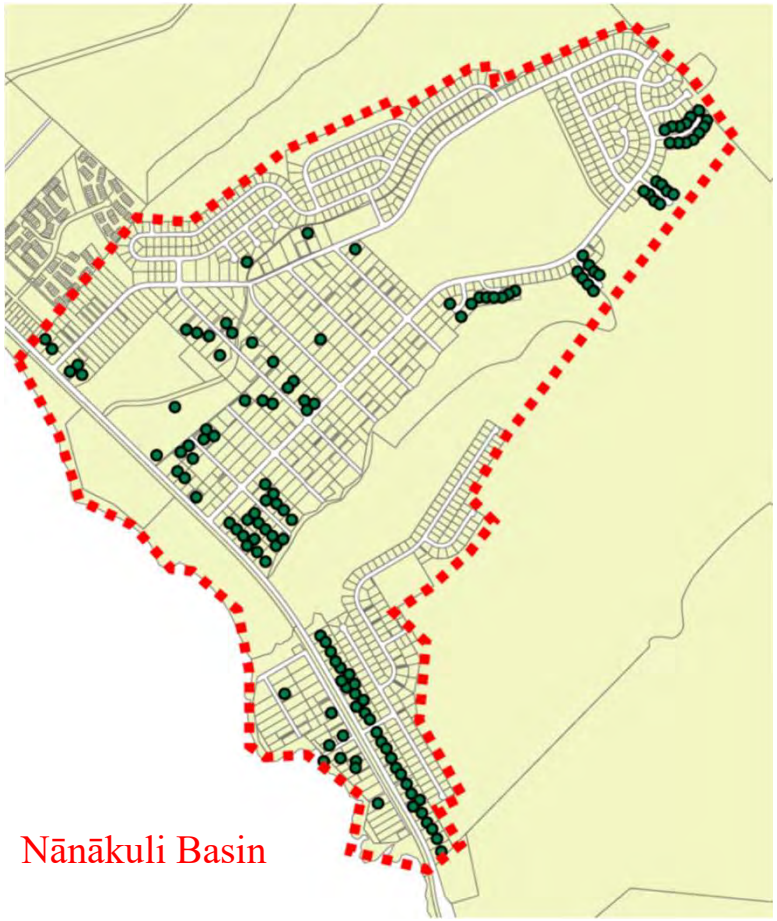
  Act 125, Session Laws of Hawaii 2017 mandates upgrade, conversion, or sewer connection of all cesspools by 2050.

- Project Objectives:
  1) Identify existing DHHL lots with cesspools
  2) Assess options for connections to the public sewer

- General Scope of Work:
  - Identify and conduct physical survey of DHHL lots with cesspools in Waiʻanae, Nānākuli, and Waimānalo
  - Prepare Assessment report and recommendations for upgrade, conversion, or connection to public sewers

Nānākuli & Waiʻanae Cesspool Assessment





Source: Hawaii Statewide GIS Program - On-site Sewage Disposal Systems (OSDS)
Lots without dot: connected to public sewers or undeveloped

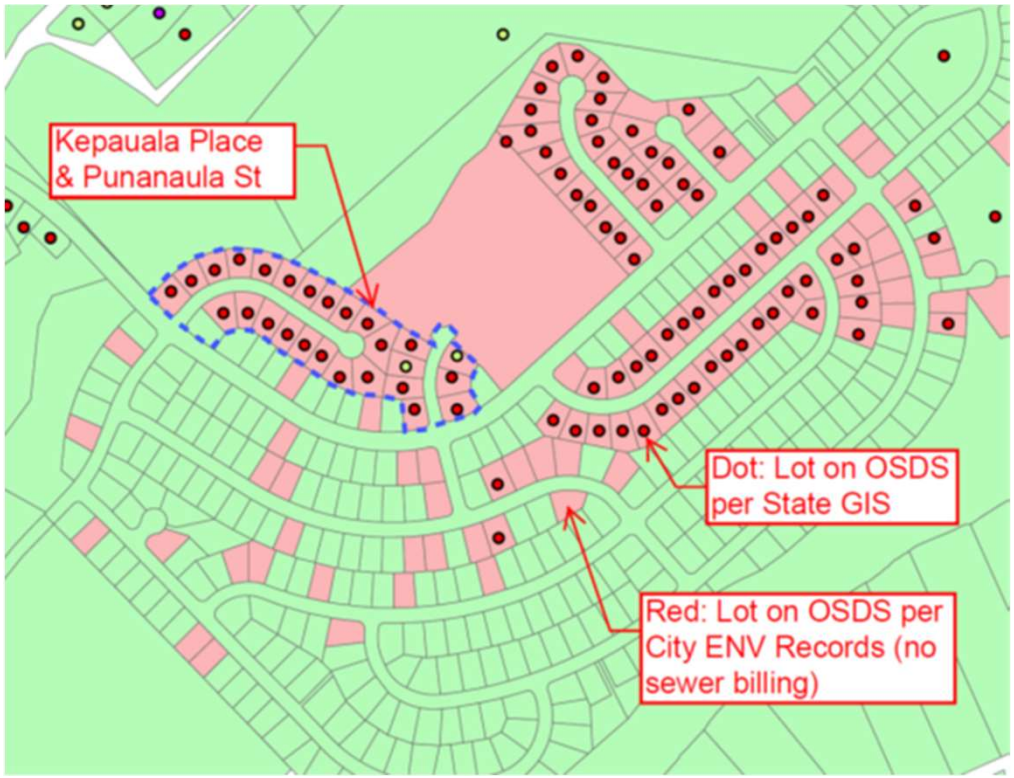
Nānākuli & Waiʻanae Cesspool Assessment

Two-Phased Project Approach

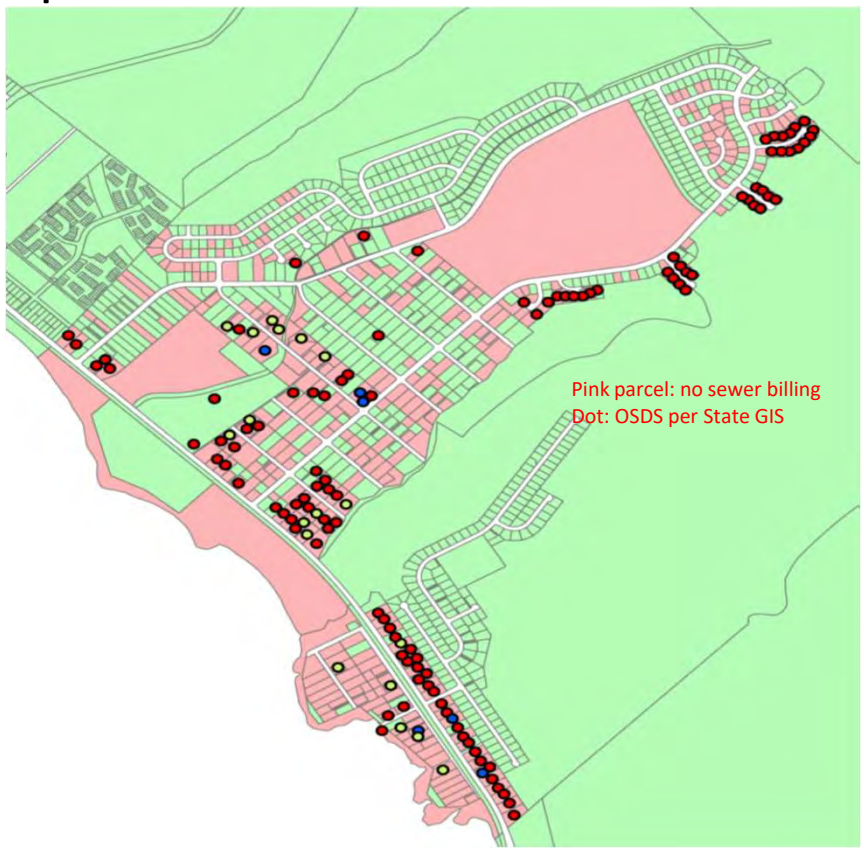
- Phase I
  - Background desktop research
  - Public notification
  - Field verify Onsite Sewage Disposal System (OSDS) lots and identify cesspools
- Phase II
  - Phase II topographical survey of OSDS lots
  - Connection option assessment
  - Design for sewer connection: gravity sewer or pump station connection

Nānākuli & Waiʻanae Cesspool Assessment

Pre-survey Desktop Research



Waiʻanae Subdivision Results



Nānākuli Subdivision Results

Nānākuli & Waiʻanae Cesspool Assessment

Construction Budget Estimates

Cost to convert to gravity sewer or low pressure sewer system (LPSS)

- Waiʻanae: $12 million (gravity sewers)
- Nānākuli: $17 million (gravity sewers + LPSS)

Construction Schedule Estimates

Preliminary Completion Schedule (subject to CIP appropriations)

- Waiʻanae: Late - 2025
- Nānākuli: Mid- 2027

Nānākuli & Waiʻanae Cesspool Assessment

Phase I Field Survey

- Notification Letter: inform lessees of the project and schedule

- Lessee Questionnaire:
  - Preliminary OSDS information
  - Contact information to inform lessees of lot survey
  - Consent to enter lot agreement

Successful project progress is highly dependent on kōkua from lessees to enter lot to conduct field survey.

Mahalo

DEPARTMENT OF HAWAIIAN HOME LANDS

www.dhhl.hawaii.gov

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

F – ITEMS

LAND MANAGEMENT DIVISION

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19–20, 2022

To: Chairman and Members, Hawaiian Homes Commission

Through: Peter "Kahana" Albinio, Jr., Acting Administrator
Land Management Division

Kalei Young, Supervising Land Agent
Land Management Division

From: Shelly Carreira, Land Agent
Land Management Division

Subject: Preliminary Approval to the Issuance of a General Lease to Waiohuli Hawaiian Homesteaders Association, Inc., Waiohuli-Keokea, Maui, TMK Nos: 2-2-028:181 (portion), (2) 2-2-002:014 (portion)

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission ("HHC") grant its **PRELIMINARY** approval to the issuance of a 65-year general lease to Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) to use of approximately 150.0 acres of Hawaiian home lands located in Waiohuli, island of Maui, further identified by TMK Nos. (2) 2-2-028:18 (portion), (2) 2-2-002:014 (portion) (see Exhibit "A"), for the Waiohuli Economic Development Opportunities, to include cultural, educational, and economic components.

This **PRELIMINARY** approval is intended to provide WHHA, and its financiers with sufficient comfort to expend resources and pursue financial commitments.

The **PRELIMINARY** approval is subject to the following basic terms and conditions and is subject to **FINAL** approval by the Hawaiian Homes Commission:

(1) LESSEE: Waiohuli Hawaiian Homesteader Association, Inc., with the ability to assign the lease, subject to approval from the Chairman of the Hawaiian Homes Commission

(2) TERM: 65 years

(3) LAND AREA: Approximately 150 acres of Hawaiian Home Lands in Waiohuli, Maui

(4) PURPOSE: The site shall be used for economic development (including job training and employment opportunities), infrastructure development and community public purposes.

(5) BASE RENT: To be determined later based on the final development plan on proposed land uses.

(6) Before FINAL approval is brought to the HHC for consideration, WHHA must complete the required HRS Chapter 343, Environmental Assessment and compliance with HRS Chapter 6E, Historic Preservation.

DISCUSSION

The WHHA presently holds Right of Entry No. 688 (ROE 688) for the purpose of conducting due diligence related to developing its Waiohuli Economic Development Opportunity (WE DO) project and its meeting of November 21, 2022 the Hawaiian Homes Commission (HHC) approved an extension to the term of WHHA's ROE.

In summary, the vision for WE DO is to provide economic opportunities that will foster greater self-sufficiency through capacity building and community-based job opportunities. Section 2 of the WE DO plan describes the vision, goals, and proposed land use, see Exhibit "B". Figure 3 provides a conceptual land use plan that illustrates relationships, locations, and estimated acreage within the planned development.

The WHHA has completed its master plan, business plan under ROE 688. To proceed forward, the 150-acre parcel would remain under ROE 688 while the environmental studies are being completed. Once this work is completed, FINAL approval for a long-term general lease to WHHA can be brought to the HHC for action. The anticipated time frame for the completion of the environmental studies is approximately nine to twelve months.

The WHHA is compliant with the State of Hawaii, State Procurement Office, Hawaii Compliance Express. See attached Exhibit "C" for copies of WHHA's Certificate of Vendor Compliance and Department of Commerce and Consumer Affairs documents.

RECOMMENDATION

Land Management Division requests approval of the recommended motion as stated.

ITEM NO. F-1
EXHIBIT "A"



2 WE DO Plan

2.1 Vision & Goals

The vision for WE DO is to provide short- and long-term economic opportunities that will foster greater self-sufficiency for the people of upcountry Maui through capacity building and jobs homegrown at the WE DO Site. WE DO proposes a public-private collaboration to combine traditional construction of a master plan development with community-based job opportunities derived from development of infrastructure, agricultural cultivation, renewable energy, and water source development to create long-term economic sustainability for the Waiohuli community.

Goals for the project include:

- Maximize use of the existing Waiohuli Community Center as a space for job training, business incubation, and production.
- Develop a flexible space (indoor and outdoor) for capacity building in the trades.
- Staff the educational and community facilities with persons trained on site.
- Create career mentoring and employment opportunities in multiple fields of expertise and services associated with a master-planned development.
- Leverage public resources and services to secure deliberate, sustainable private communities and expertise to provide the best, affordable, and timely development solutions possible.
- Propose land uses of WHHA's master-planned development are consistent and complimentary with the DHHL's Waiohuli Regional Plan and land use designations.

2.2 WE DO Conceptual Plan *(ROE Special Condition #1)*

A preliminary site plan map illustrating land uses for the Site is provided in Figure 3, referred to herein as the "WE DO Conceptual Land Use Plan." The relationships and locations of the planned land uses are illustrated on the map with an accompanying table showing estimated acreage within the planned development. A description of the conceptual plan elements, proposed land uses, and facilities within the development is outlined in Section 0.

2.2.1 WE DO Proposed Land Uses

The WE DO conceptual land use plan is Figure 3 within this report. A description of the anticipated land uses follows.

Community Support Training Facilities

An area of the Site designated to the Community Support Training Facilities is proposed to be located near the roadway entrance along both sides of the Lauʻie Drive extension, comprising a total of 6 acres. This component of the master plan will complement the existing Waiohuli Community Center abutting these areas to offer community facilities, social services and other

ITEM NO. F-1
EXHIBIT "B"

resources for the broader Waiohuli region. Potential uses could include recreational spaces, educational and workforce training facilities, multi-purpose functional spaces, as well as health and wellness facilities that feature both traditional Hawaiian healing practices and western medical services. Community support training facilities and concepts will be developed to align with the desired needs of the community and will be invaluable for the Waiohuli region, given the remoteness of the community.

Infrastructure Training Sites

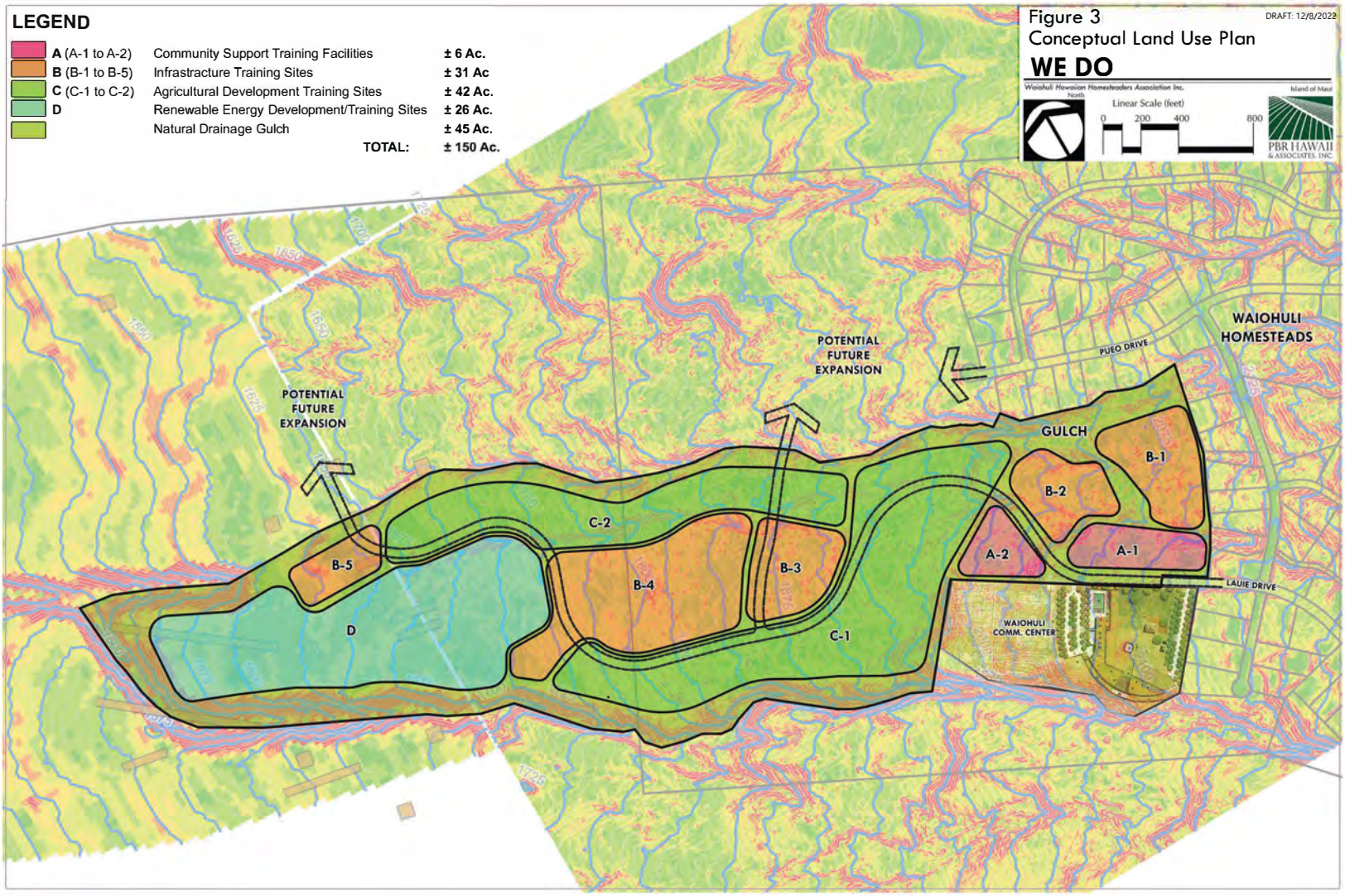
Three segments of the Site, totaling approximately 31 acres, will be utilized as the Infrastructure Training Sites. This includes areas on the far eastern end of the Site near the Lauʻie Drive entrance, a segment in the central portion of the Site, and an area near the far western end of the Site. These areas will primarily serve as a component of the master plan that will support job training related to infrastructure construction. Infrastructure development through job training facilities could eventually provide the means for future growth within the Site. Within the Infrastructure Training Sites in the central portion of the Site, a water well capable of 350 gallons per minute (gpm) production is proposed. The proposed yield and pumping capacity were determined based on estimated water demand outlined by a groundwater feasibility study conducted in 2022 to evaluate potential build out of the Site if community development is considered in the future. The segment on the far western end of the Site is being considered to develop wastewater treatment package plant scalable to the proposed uses to serve the community support training facilities and will be designed with capacity to serve potential future growth on the Site if desired by the Waiohuli community.

Agriculture Development Training Sites

The Agriculture Development Training Sites will comprise approximately 42 acres, stretching along the northern and southern portions of the Site, as well as a central portion makai of the existing Waiohuli Community Center. This segment of the Site will primarily provide space for educational facilities and job training in the agricultural industry rooted in indigenous knowledge and traditional Hawaiian farming. Agriculture cultivated in these areas will also be a resource for the community and serve as an opportunity to build on indigenous knowledge cultivating native plants using traditional Hawaiian farming techniques. Agricultural development on the Site will also offer economic opportunities for commercial development to generate revenue streams for the Waiohuli community.

Renewable Energy Development/Training Sites

A large 26.4-acre segment along the western boundary of the Site has been planned as an opportunity to for training focused on renewable energy development that could also support potential future growth on the Site and the neighboring communities.


LEGEND
A (A-1 to A-2) Community Support Training Facilities ± 6 Ac.
B (B-1 to B-5) Infrastracture Training Sites ± 31 Ac
C (C-1 to C-2) Agricultural Development Training Sites ± 42 Ac.
D Renewable Energy Development/Training Sites ± 26 Ac.
Natural Drainage Gulch ± 45 Ac.
TOTAL: ± 150 Ac.
Figure 3
Conceptual Land Use Plan
DRAFT: 12/8/2022
WE DO
Waiohuli Hawaiian Homesteaders Association Inc.
Island of Maui
North
Linear Scale (feet)
0 200 400 800
PBR HAWAII & ASSOCIATES, INC.
POTENTIAL FUTURE EXPANSION
POTENTIAL FUTURE EXPANSION
WAIOHULI HOMESTEADS
PUEO DRIVE
GULCH
B-1
B-2
A-1
A-2
C-2
B-3
B-4
B-5
D
C-1
LAUIE DRIVE
WAIOHULI COMM. CENTER

STATE OF HAWAII
STATE PROCUREMENT OFFICE

CERTIFICATE OF VENDOR COMPLIANCE

This document presents the compliance status of the vendor identified below on the issue date with respect to certificates required from the Hawaii Department of Taxation (DOTAX), the Internal Revenue Service, the Hawaii Department of Labor and Industrial Relations (DLIR), and the Hawaii Department of Commerce and Consumer Affairs (DCCA).

Vendor Name: **WAIOHULI HAWAIIAN HOMESTEADERS ASSOCIATION, INC.**

DBA/Trade Name: **WAIOHULI HAWAIIAN HOMESTEADERS ASSOCIATION, INC.**

Issue Date: **12/12/2022**

Status: **Compliant**

Hawaii Tax#: 20556458-01
New Hawaii Tax#:
FEIN/SSN#: XX-XXX1895
UI#: No record
DCCA FILE#: 115966

Status of Compliance for this Vendor on issue date:

Form	Department(s)	Status	
A-6	Hawaii Department of Taxation	Compliant	
8821	Internal Revenue Service	Compliant	
COGS	Hawaii Department of Commerce & Consumer Affairs	Compliant	
LIR27	Hawaii Department of Labor & Industrial Relations	Compliant	

Status Legend:

Status	Description
Exempt	The entity is exempt from this requirement
Compliant	The entity is compliant with this requirement or the entity is in agreement with agency and actively working towards compliance
Pending	A status determination has not yet been made
Submitted	The entity has applied for the certificate but it is awaiting approval
Not Compliant	The entity is not in compliance with the requirement and should contact the issuing agency for more information

ITEM NO. F-1
EXHIBIT "C"

DCCA State of Hawaii

Downloaded on December 12, 2022.
The information provided below is not a certification of good standing and does not constitute any other certification by the State.
Website URL: http://hbe.ehawaii.gov/documents

Business Information

MASTER NAME	WAIOHULI HAWAIIAN HOMESTEADERS ASSOCIATION, INC.
BUSINESS TYPE	Domestic Nonprofit Corporation
FILE NUMBER	115966 D2
STATUS	Active
PURPOSE	TO PROTECT AND FURTHER THE NATIVE HAWAIIAN CULTURAL HERITAGE THROUGH EDUCATION; AND TO FURTHER THE QUALITY OF LIFE OF DISADVANTAGED FAMILIES WITHIN THE WAIOHULI HAWAIIAN HOMESTEAD COMMUNITY.
ORGANIZED IN	Hawaii UNITED STATES
INCORPORATION DATE	Jul 6, 1999
MAILING ADDRESS	P O BOX 698 KULA, Hawaii 96790-0698 UNITED STATES
TERM	PER
AGENT NAME	ERNETTE KAEA-PRONES
AGENT ADDRESS	P O BOX 698 KULA, Hawaii 96790 UNITED STATES

Annual Filings

FILING YEAR	DATE RECEIVED	STATUS
2022	Oct 3, 2022	Processed
2021	Aug 8, 2021	Processed
2020	Oct 5, 2020	Processed
2019	Sep 18, 2019	Processed
2018	Oct 16, 2018	Processed
2017	Jul 31, 2017	Processed
2016	Oct 4, 2016	Processed
2015	Aug 6, 2015	Processed
2014	Sep 25, 2014	Processed
2013	Jul 8, 2013	Processed
2012	Jul 6, 2012	Processed
2011	Sep 6, 2011	Processed
2010	Sep 27, 2010	Processed
2009	Aug 11, 2009	Processed
2008	Jul 14, 2008	Processed
2007	Jul 2, 2007	Processed
2006	Apr 5, 2007	Processed
2005	Jan 30, 2006	Processed
2004	Oct 20, 2004	Processed
2003	Sep 5, 2003	Processed
2002		Not Required
2001	Jun 17, 2002	Processed
2000	Jul 22, 2002	Processed
1999	Sep 5, 2002	Processed

Officers

NAME	OFFICE	DATE
ARTATES,PERRY	P	Jul 1, 2015
ALO,KAWIKA	V	Jul 1, 2017
BROWN,JOADDIE	S	Jul 1, 2017
KAEA-PRONES,ERNETTE	T	Jul 1, 2015
ARUDA,STEVEN	D	Jul 1, 2017
FOSTER,SA'A	D	Jul 1, 2017
YAP,EMMA	D	Jul 1, 2017
GREIG, WILLIAM	D	Jul 1, 2019
ARTATES, ALANI	D	Jul 1, 2019
KUAILANI, KEITH	D	Jul 1, 2019
NAKOOKA,DANETTE	D	Jul 1, 2015
SAFFERY,CARL	D	Jul 1, 2015

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

To: Chairman and Members, Hawaiian Homes Commission

Through: Peter "Kahana" Albinio, Jr., Acting Administrator
Land Management Division VA

Kalei Young, Supervising Land Agent
Land Management Division

From: Shelly Carreira, Land Agent SC
Land Management Division

Subject: Approval to First Amendment of Right of Entry No. 708, Frank V. Coluccio Construction Company, Inc., Puowaina, Honolulu, Oahu, TMK: (1) 2-2-005:035 (por.)

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission (HHC) grant its approval to the First Amendment to Right of Entry No. 708 (ROE 708) issued to Frank V. Coluccio Construction Company, Inc. for the purpose of amending the land area and extending the term for an additional twelve (12) month period.

Approval of this first amendment is subject to the following conditions:

1. The land area shall be amended to approximately 33,050 square feet, further shown in Exhibit "A";

2. The term shall be extended for an additional twelve (12) month period, commencing on April 21, 2023;

3. PERMITTEE shall be required to pay a non-refundable processing and documentation fee of $150.00; and

4. With the exception of the current requested action, all of the terms, conditions, covenants, and provisions of Right of Entry No. 708 shall continue and remain in full force and effect.

BACKGROUND/DISCUSSION:

At its meeting of February 23, 2022, the Hawaiian Homes Commission approved issuance of a right of entry to Frank V. Coluccio Construction Company, Inc. (Permittee) for a twelve (12) month period. The approved ROE 708 commenced on April 21, 2022 and allows access to approximately 40,000 square feet of Hawaiian home lands Puowaina parcel located in Honolulu, Oahu for construction base yard purposes.

Pursuant to the attached letter dated December 8, 2022, (Exhibit "B"), the Permittee is requesting an amendment to the land area due to the topography of the permitted area. A portion of the permitted parcel is not suitable for use due to the sloped terrain. The proposed amendment will replace sloped areas with level areas that are suitable for use. Although the amendment will reduce the land area to approximately 33,050 sq. ft., the Permittee is willing to continue paying the established monthly fee set at $2,133.00.

In addition, the Permittee is requesting an extension to the term for an additional twelve (12) month period commencing on April 21, 2023. The Permittee's projected timeline has been impacted due to material shipping delays and City & County of Honolulu, Department of Planning and Permitting requirements. Therefore, an extension to the term will allow continued use of the base yard site while Permittee works diligently to complete its nearby construction project.

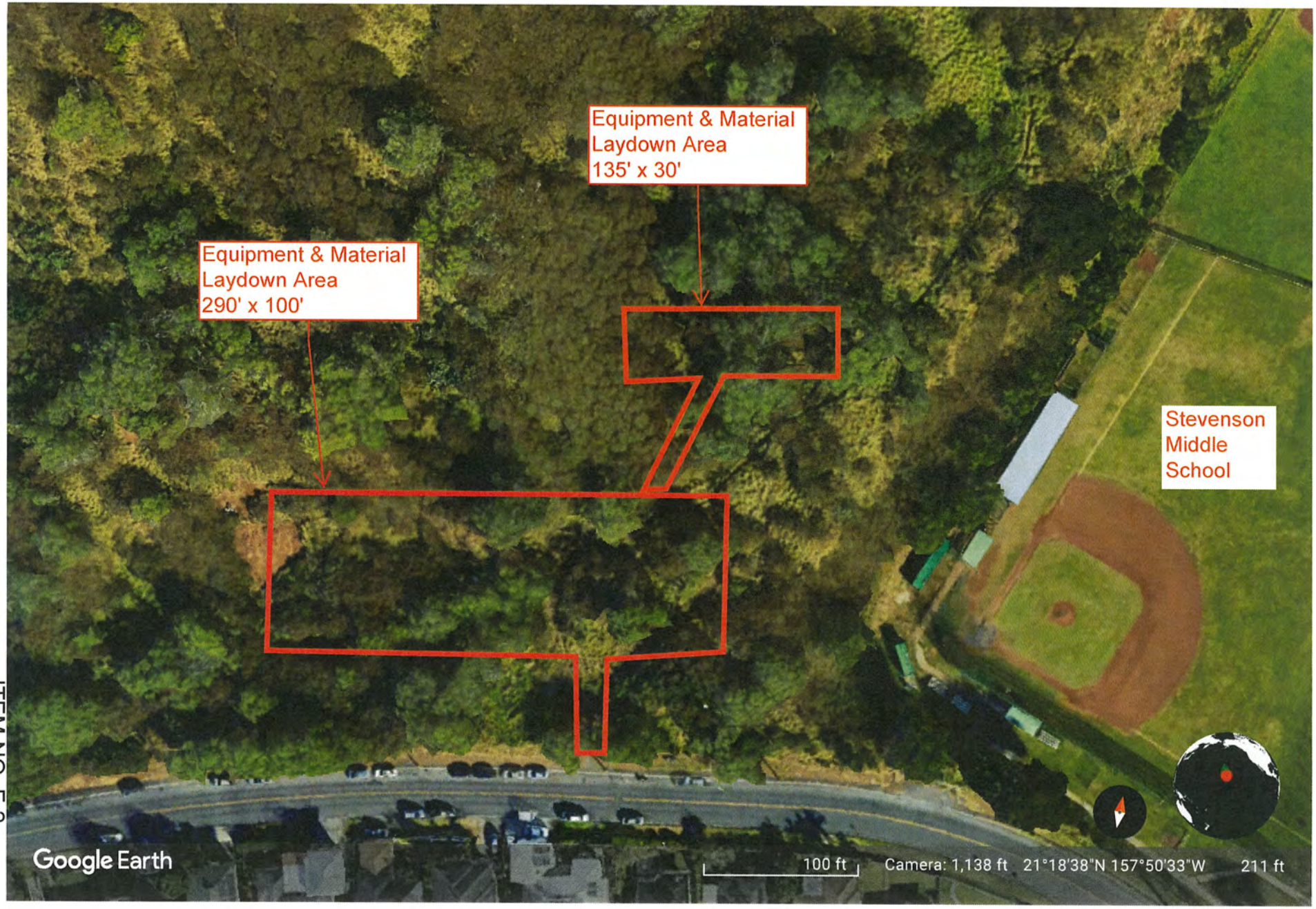
Permittee is compliant with the terms of ROE 708. In addition, Permittee has proposed improvements at no cost to the Department of Hawaiian Home Lands. Such improvements include expanding the existing gated entry and fence repair in an area damaged by trespassers.

AUTHORITY

Hawaii Revised Statues, Section 171-55 Permits.

RECOMMENDATION

Land Management Division recommends approval of the requested motion/action as stated.



ITEM NO. F-2
EXHIBIT "A"

December 8, 2022

Mr. William J. Aila, Jr.
Chairman
Hawaiian Homes Commission
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

SUBJECT: Right-of-Entry No. 708 Extension Request

Dear Mr. Aila, Jr,

Frank V. Coluccio Construction Company, Inc. (FVCCC) currently has a lease agreement with the Department of Hawaiian Home Lands, Right-of-Entry No. 708. It is set to expire on April 20, 2023. FVCCC requests to extend this agreement for twelve (12) additional months.

In addition, the current lease rate is based on square footage. Due to the lot's landscape, FVCCC was not able to use the 40,000 square feet initially granted. The actual square footage being used is 33,050 square feet. However, FVCCC is not asking for a reduction in the monthly lease rate, but is willing to continue to pay the $2,133.00 per month lease rate.

Further, FVCCC requests to replace the current 12-foot wide gate with a 24-foot wide gate professionally installed. At the end of the lease, the 24-foot wide gate can remain in place or the original 12-foot wide gate can be restored. Either option would be at no additional cost to the Department of Hawaiian Home Lands.

Please see the attached marked up map and sketch detailing the requests.

Please call or email me if you have any questions regarding this request.

Sincerely,

Jordan Bleasdale

Jordan Bleasdale
Frank V. Coluccio Construction Company, Inc.
(808) 864-6225
jordan@fvcoluccio.com

ITEM NO. F-2
EXHIBIT "B"


Equipment & Material
Laydown Area
135' x 30'
Equipment & Material
Laydown Area
290' x 100'
Stevenson
Middle
School
Google Earth
100 ft
Camera: 1,138 ft 21°18'38"N 157°50'33"W 211 ft

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Peter "Kahana" Albinio, Jr., Acting Administrator
Land Management Division KA

Subject: Approval to Issue Right of Entry Permit to Waianae Valley Homestead Community Association, Inc., Waianae, Island of Oahu, TMK No.: (1) 8.6.001:022 (por.)

APPLICANT:

WAIANAE VALLEY HOMESTEAD COMMUNITY ASSOCIATION, INC "WVHCAI"

RECOMMENDED MOTION/ACTION:

That the Hawaiian Homes Commission (HHC) authorize approval to a Right of Entry Permit, to "WVHCAI" covering a portion of the subject area identified by Tax Map Key No. (1) 8.6.001:022(por.) delineated more specifically on Exhibit "A" attached hereto consisting of an approximate land area yet to be determined, of Hawaiian home lands situated at Waianae, Island of Oahu for the purposes conducting due diligence studies including but not limited to project master plan, business plan, and related Chapter 343, HRS compliance requirements and Chapter 6E, HRS compliance requirements.

Approval and issuance of this Right of Entry Permit (ROE) shall be subject to the following conditions:

1. Authorize the issuance of a Right-of-Entry permit to "WVCHAI" covering the subject area under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:

    A. The standard terms and conditions of the most current right-of-entry permit form, as may be amended from time to time;

    B. The premises shall be utilized strictly for purposes as proposed and described above ONLY and for no other purposes whatsoever;

    C. The term of the Right of Entry shall be month-to-month for up to thirty-six (36) months, commencing upon execution, with the option for tow (2) additional twelve (12) month extensions at the sole discretion of PERMITTOR;

D. The fee for the term of thei ROE shall be gratis;

E. PERMITTEE shall submit a Master Plan to include but not be limited to the following:

i. Narrative description that clearly articulates permittee's project goals for the project area and detailed description of each proposed programmatic element and land use by the permittee;
ii. Narratively and graphically describe characteristics of the project area including topography, portions of the project area susceptible to natural disaster events, access points for vehicle and pedestrian ingress and egress, identification of level of infrastructure improvements;
iii. Site plan drawing at scale of the project area depicting conceptual size and location of proposed improvements and programmatic use of the project area.

F. Such other terms and conditions as may be prescribed by the Hawaiian Homes Commission to best serve the interests of the Hawaiian Home Lands Trust;

2. Declare that, after considering the potential effects of the proposed disposition as provided by Chapter 343, HRS, and Chapter 11-200, HAR this project will probably have minimal or no significant effect on the environment.

LOCATION:

Hawaiian Home Lands situated at Waianae, Island of Oahu, identified as TMK No.: (1) 8.6.001:022 (por.)

AREA:

Containing an approximate land area that is yet to be determined

DISCUSSION:

WVHCAI (DCCA Certificate attached as Exhibit "B") submitted a land use request to DHHL on May 31, 2022 for approximately 2.67 acres (more or less), encompassing a portion of TMK: (1) 8.6.001:022 (por.) for the purposes of conducting due diligence necessary to validate feasibility, collaborations and resources related to developing the parcel the purposes of establishing a community-based economic development center that would provide 1.) a community-owned solar project to lower electricity costs for homesteaders and 2.) a crematorium service organization that will offer the homestead community an alternative to their end of life arrangements.

A beneficiary consultation meeting was conducted on November 14, 2022, to collect beneficiary input and feedback on WVHCAI's land use request. A beneficiary consultation report was submitted to the HHC in December 2022, for acceptance and consideration.

Issuance of a right of entry to WVHCAI for due diligence purposes will allow WVHCA to conduct studies necessary to determine project feasibility, land suitability, and identify potential partnerships for proposed future development of the site.

PLANNING AREA:

Waianae, Island of Oahu

LAND USE DESIGNATION:

Industrial Use, Oahu Island Plan (July, 2014), Figure 4.3 – Oahu Island Plan

CURRENT STATUS:
Vacant

CHARACTRER OF USE:

Community Use

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

Triggers:

Use of State Lands

In accordance with the Department of Hawaiian Home Lands Comprehensive Exemption List as Reviewed and Concurred Upon by the Environmental Council on June 30, 2015, the Right of Entry permit request is exempt from the preparation of an environmental assessment pursuant to Exemption Class #5, "Basic data collection, research, experimental management, and resource evaluation activities which do not result in serious or major disturbances to an environmental resource."

CONSISTENCY WITH DHHL PLANS, POLICIES AND PROGRAMS

DHHL General Plan (2002)
The recommended disposition is consistent with the following General Plan goals and objectives:

Land and Resource Management

Goals:

- Be responsible, long-term stewards of the Trust's lands and the natural, historic and community resources located on these lands.

Objectives:

- Manage interim land dispositions in a manner that is environmentally sound and does not jeopardize their future uses.

Waianae Lualualei Regional Plan (2018)

The site is designated for Industrial Use consistent with the Waianae Lualualei Regional Plan (2018)

AUTHORIZATION / LEGAL REFERENCE:

§171-55, Hawaii Revised Statutes, as amended, a "permit on a month-to-month basis may continue for a period not to exceed one year from the date of issuance; provided that the commission may allow the permit to continue on a month-to-month basis for additional one-year periods."

RECOMMENDATION:

Land Management Division respectfully requests approval of the motion as stated.





Exhibit "A"
Item No. F-3

DCCA State of Hawaii

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Website URL: http://hbe.ehawaii.gov/documents

Business Information

MASTER NAME	WAIANAE VALLEY HOMESTEAD COMMUNITY ASSOCIATION, INC.
BUSINESS TYPE	Domestic Nonprofit Corporation
FILE NUMBER	113284 D2
STATUS	Active
PURPOSE	TO FACILITATE PROGRAMS AND SERVICES WHICH WILL CONTRIBUTE TO THE COMMUNITY'S POSITIVE SOCIO- ECONOMIC, EDUCATIONAL AND CULTURAL WELL-BEING AND SERVE AS AN INFORMATION RESOURCE.
ORGANIZED IN	Hawaii UNITED STATES
INCORPORATION DATE	Sep 23, 1998
MAILING ADDRESS	P O BOX 601 WAIANAE, Hawaii 96792 UNITED STATES
TERM	PER
AGENT NAME	KEHAU HANOHANO
AGENT ADDRESS	85-1348 KAMAILEUNU ST WAIANAE, Hawaii 96792 UNITED STATES

Annual Filings

FILING YEAR	DATE RECEIVED	STATUS
2022	Jul 22, 2022	Processed
2021	Aug 23, 2021	Processed
2020	Jul 6, 2020	Processed
2019	Jul 10, 2019	Processed
2018	Jul 2, 2018	Processed
2017	Jul 5, 2017	Processed
2016	Aug 3, 2016	Processed
2015	Jul 1, 2015	Processed
2014	Jan 27, 2015	Processed
2013	Feb 15, 2017	Processed
2012	Jul 9, 2012	Processed
2011	Oct 4, 2011	Processed
2010	Aug 26, 2010	Processed
2009	Aug 12, 2009	Processed
2008	Feb 26, 2009	Processed
2007	Nov 5, 2007	Processed
2006	Sep 10, 2007	Processed
2005	Nov 5, 2007	Processed
2004	Sep 13, 2004	Processed
2003	Aug 9, 2004	Processed
2002		Not Required
2001		Processed
2000		Processed
1999		Processed

Officers

NAME	OFFICE	DATE
JURY,JOSIAH	P	Mar 10, 2021
MAKEPA,JAN	V	Jul 1, 2022
JURY,LINDA	S	Mar 10, 2021
NAVARRO,GEORGIANA	T	Mar 10, 2021
AYAU,WALLACE KIMO	SGA/D	Jul 1, 2022
KELIIKOA-KAMAI,DREENA KAPUA	ADS	Mar 10, 2021
KELIIKOA-PUA,JOCELYN LOKANA	D	Mar 10, 2021
HANOHANO,SUZETTE	D	Mar 10, 2021

Exhibit "B"
Item No. F-3

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19 – 20, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Peter "Kahana" Albinio, Jr., Acting Administrator
Land Management Division KA

Subject: Approval to Issue Right of Entry Permit to Waianae Coast Comprehensive Health Center, Waianae, Island of Oahu, TMK Nos.: (1) 8.6.001:012 (por.), :024 (por.), :025 (por.), :026 (por.), :027 (por.), and :028 (por)

APPLICANT:

WAIANAE COAST COMPREHENSIVE HEALTH CENTER "WCCHC"

RECOMMENDED MOTION/ACTION:

That the Hawaiian Homes Commission (HHC) authorize approval to a Right of Entry Permit, to "WCCHC" covering a combined portion of Hawaiian home lands identified by Tax Map Key Nos. (1) 8.6.001:012 (por.), :024 (por.), :025 (por.), :026 (por.), :027 (por.), and :028 (por) delineated more specifically on Exhibit "A" attached hereto consisting of a combined approximate land area of 25.0 acres (more or less,) of Hawaiian home lands situated at Waianae, Island of Oahu for the purposes conducting due diligence studies including but not limited to project master plan, business plan, and related Chapter 343, HRS compliance requirements and Chapter 6E, HRS compliance requirements.

Approval and issuance of this Right of Entry Permit (ROE) shall be subject to the following conditions:

1. Authorize the issuance of a Right-of-Entry permit to "WCCHC" covering the subject area under the terms and conditions cited above, which are by this reference incorporated herein and further subject to the following:

    A. The standard terms and conditions of the most current right-of-entry permit form, as may be amended from time to time;

    B. The premises shall be utilized strictly for purposes as proposed and described above ONLY and for no other purposes whatsoever;

    C. The term of the Right of Entry shall be month-to-month for up to thirty-six (36) months, commencing upon execution, with the option for tow (2) additional twelve (12) month extensions at the sole discretion of PERMITTOR;

D. The fee for the term of thei ROE shall be gratis;

E. PERMITTEE shall submit a Master Plan to include but not be limited to the following:

i. Narrative description that clearly articulates permittee's project goals for the project area and detailed description of each proposed programmatic element and land use by the permittee;
ii. Narratively and graphically describe characteristics of the project area including topography, portions of the project area susceptible to natural disaster events, access points for vehicle and pedestrian ingress and egress, identification of level of infrastructure improvements;
iii. Site plan drawing at scale of the project area depicting conceptual size and location of proposed improvements and programmatic use of the project area.

F. Such other terms and conditions as may be prescribed by the Hawaiian Homes Commission to best serve the interests of the Hawaiian Home Lands Trust;

2. Declare that, after considering the potential effects of the proposed disposition as provided by Chapter 343, HRS, and Chapter 11-200, HAR this project will probably have minimal or no significant effect on the environment.

LOCATION:

Hawaiian Home Lands situated at Waianae, Island of Oahu, identified as TMK No.: (1) 8.6.001:012 (por.), :024 (por.), :025 (por.), :026 (por.), :027 (por.), and :028 (por)

AREA:

Containing an approximate land area of 25.0 acres more or less.

DISCUSSION:

WCCHC (DCCA Certificate attached as Exhibit "B") submitted a land use request to DHHL on April 19, 2022 for approximately 25.0 acres (more or less) which encompasses a combination of portions of TMK Nos.: (1) 8.6.001:012 (por.), :024 (por.), :025 (por.), :026 (por.), :027 (por.), and :028 (por) for the purposes of conducting due diligence necessary to validate feasibility, collaborations and resources related to developing the parcels for purposes of developing health, human services, and cultural resource programs to meet the health, wellness and economic development needs of Native Hawaiian and other residents on the Waianae Coast.

A beneficiary consultation meeting was conducted on November 14, 2022, to collect beneficiary input and feedback on WVHCAI's land use request. A beneficiary consultation report was submitted to the HHC in December 2022, for acceptance and consideration.

Issuance of a right of entry to WCCHC for due diligence purposes will allow WCCHC to conduct studies necessary to determine project feasibility, land suitability, and identify potential partnerships for proposed future development of the site.

PLANNING AREA:

Waianae, Island of Oahu

LAND USE DESIGNATION:

Industrial Use, Oahu Island Plan (July, 2014), Figure 4.3 – Oahu Island Plan

CURRENT STATUS:
Vacant

CHARACTRER OF USE:

Community Use

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

Triggers:

Use of State Lands

In accordance with the Department of Hawaiian Home Lands Comprehensive Exemption List as Reviewed and Concurred Upon by the Environmental Council on June 30, 2015, the Right of Entry permit request is exempt from the preparation of an environmental assessment pursuant to Exemption Class #5, "Basic data collection, research, experimental management, and resource evaluation activities which do not result in serious or major disturbances to an environmental resource."

CONSISTENCY WITH DHHL PLANS, POLICIES AND PROGRAMS

DHHL General Plan (2002)
The recommended disposition is consistent with the following General Plan goals and objectives:

Land and Resource Management

Goals:

- Be responsible, long-term stewards of the Trust's lands and the natural, historic and community resources located on these lands.

Objectives:

- Manage interim land dispositions in a manner that is environmentally sound and does not jeopardize their future uses.

Waianae Lualualei Regional Plan (2018)

The site is designated for Community Use consistent with the Waianae Lualualei Regional Plan (2018)

AUTHORIZATION / LEGAL REFERENCE:

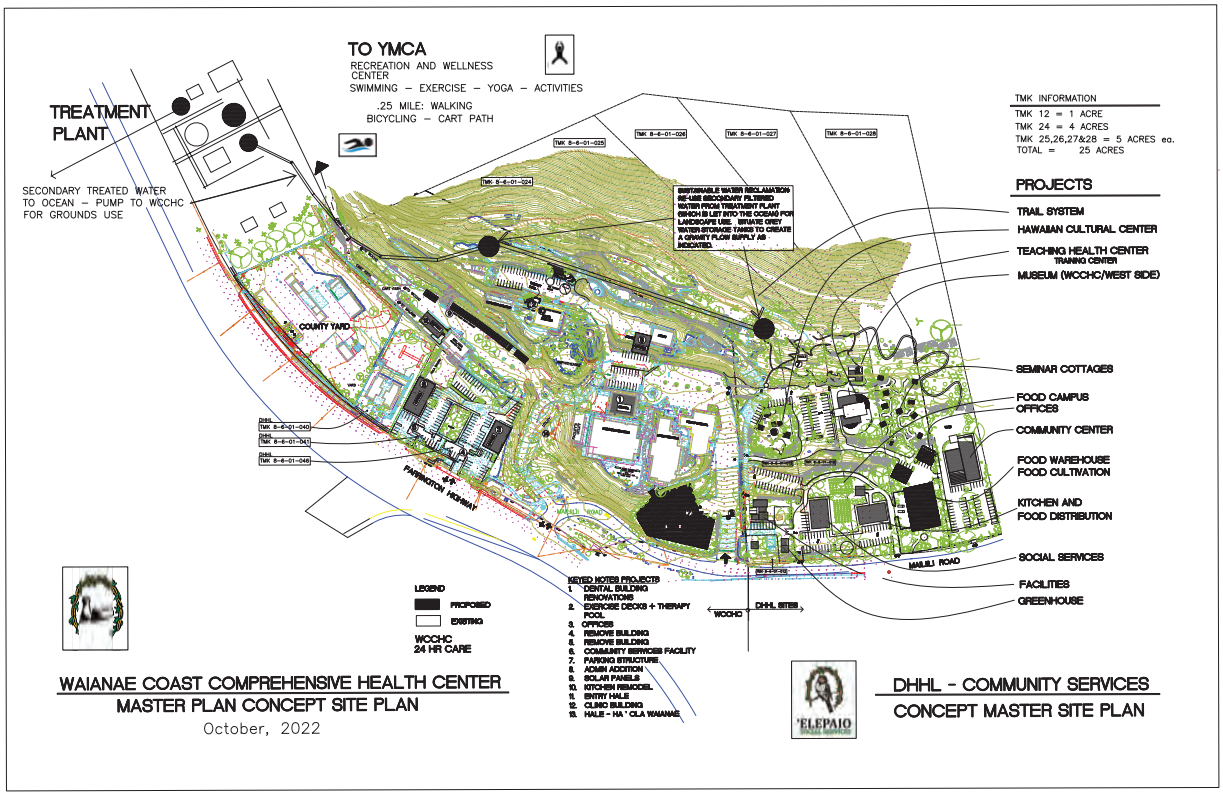
§171-55, Hawaii Revised Statutes, as amended, a "permit on a month-to-month basis may continue for a period not to exceed one year from the date of issuance; provided that the commission may allow the permit to continue on a month-to-month basis for additional one-year periods."

RECOMMENDATION:

Land Management Division respectfully requests approval of the motion as stated.



WAIANAE SUSTAINABILITY PLAN



WAIANAE COAST COMPREHENSIVE HEALTH CENTER
MASTER PLAN CONCEPT SITE PLAN
October, 2022

DHHL - COMMUNITY SERVICES
CONCEPT MASTER SITE PLAN

DCCA State of Hawaii

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Website URL: http://hbe.ehawaii.gov/documents

Business Information

MASTER NAME	WAIANAE DISTRICT COMPREHENSIVE HEALTH AND HOSPITAL BOARD, INCORPORATED
BUSINESS TYPE	Domestic Nonprofit Corporation
FILE NUMBER	17339 D2
STATUS	Active
PURPOSE	HEALTH CENTER, PROVIDES OUTPATIENT MEDICAL CARE SERVICES FOR THE COMMUNITIES OF THE WAIANAE COAST
ORGANIZED IN	Hawaii UNITED STATES
INCORPORATION DATE	May 6, 1969
MAILING ADDRESS	86-260 FARRINGTON HWY WAIANAE, Hawaii 96792 UNITED STATES
TERM	PER
AGENT NAME	RICHARD BETTINI
AGENT ADDRESS	86-260 FARRINGTON HWY WAIANAE, Hawaii 96792 UNITED STATES

Annual Filings

FILING YEAR	DATE RECEIVED	STATUS
2022	Jun 14, 2022	Processed
2021	Apr 21, 2021	Processed
2020	Jun 15, 2020	Processed
2019	Jun 21, 2019	Processed
2018	Jul 5, 2018	Processed
2017	May 3, 2017	Processed
2016	Jun 3, 2016	Processed
2015	May 20, 2015	Processed
2014	May 29, 2014	Processed
2013	May 13, 2013	Processed
2012	Nov 19, 2012	Processed
2011	Jun 1, 2011	Processed
2010	Apr 14, 2010	Processed
2009	Jun 2, 2009	Processed
2008	May 28, 2008	Processed
2007	Apr 12, 2007	Processed
2006	Jul 14, 2006	Processed
2005	Jun 2, 2005	Processed
2004	Jun 30, 2004	Processed
2003	Jun 27, 2003	Processed
2002		Not Required
2001	Aug 27, 2002	Processed
2000		Processed
1999		Processed

Officers

NAME	OFFICE	DATE
LLOYD,DANE KEOLA	C/3VC	Apr 1, 2022
FUATA,VIRGINIA	1ST VICE CHAIR	Apr 1, 2022
SUISO, LA JUAINE C.D.	2VC	Apr 1, 2020
GOMES,DANIEL	3RD VICE CHAIR	Apr 1, 2022
BETTINI,RICHARD P.	P/CEO	Apr 1, 2020
HAUGE, BILLIE	S	Apr 1, 2017
SUEHIRO,WAYNE	T	Apr 1, 2017
ISARA,CLIFFORD	D	Apr 1, 2012
AIPOALANI,MERRIE	D	Apr 1, 2012
BABSON, JUDITH	D	Apr 1, 2018
REGO,RENEE	D	Apr 1, 2012
AKEN,GENEVIEVE	D	Apr 1, 2022
KEAULANA, JERALD KIMO ALAMA	D	Apr 1, 2017
GUERRERO,KAIPO	D	Apr 1, 2022
PELL,FLORINE	D	Apr 1, 2017
HEW-LEN, CHARLES	D	Apr 1, 2017
NEKOTA, CAMERON	D	Apr 1, 2017
KELIIKOA,DENICE	D	Apr 1, 2017
PARIS,ANTHONY	D	Apr 1, 2022
KELIIKOA,DENICE	D	Apr 1, 2022
MALAMA,TESHA	D	Apr 1, 2022

Trade Names

NAME	TYPE	CATEGORY	REGISTRATION DATE	EXPIRATION DATE	STATUS
ALOHACARE	Service Mark	NO CATEGORY SELECTED	May 29, 1987	May 28, 1998	Cancelled
COMP HEALTH CONNECT	Trade Name	NO CATEGORY SELECTED	Jun 2, 2021	Jun 1, 2026	Active
COMP HEALTH CONNECTION	Trade Name	NO CATEGORY SELECTED	Jan 2, 2021	Jan 1, 2026	Active
COMPREHENSIVE PROFESSIONAL PHARMACY	Trade Name	NO CATEGORY SELECTED	May 19, 2020	May 18, 2025	Active
EWA WEST O'AHU COMMUNITY HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Feb 12, 2018	Feb 11, 2023	Active
HELEMANO HALE	Trade Name	NO CATEGORY SELECTED	Nov 20, 2014	Nov 19, 2019	Expired
HĀ OLA VILLAGE	Trade Name	NO CATEGORY SELECTED	Feb 9, 2018	Feb 8, 2023	Active
JAMES AND ABIGAIL CAMPBELL CLINIC	Trade Name	NO CATEGORY SELECTED	May 15, 2012	May 14, 2027	Active
JAMES AND ABIGAIL CAMPBELL CLINIC	Trade Name	NO CATEGORY SELECTED	Aug 9, 2006	Aug 8, 2011	Expired

KAMAILE OLAKINO MAIKA'I HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Jul 15, 2013	Jul 14, 2023	Active
KAPOLEI HEALTH CARE CENTER	Trade Name	NO CATEGORY SELECTED	Aug 9, 2006	Aug 8, 2011	Expired
KAPOLEI HEALTH CARE CENTER	Trade Name	NO CATEGORY SELECTED	May 9, 2012	May 8, 2027	Active
KAPOLEI KEIKI SMILE CENTER	Trade Name	NO CATEGORY SELECTED	Nov 18, 2020	Nov 17, 2025	Active
KAPOLEI KEIKI SMILE CENTER	Trade Name	NO CATEGORY SELECTED	Nov 1, 2010	Oct 31, 2020	Expired
KAPOLEI PROFESSIONAL PHARMACY	Trade Name	NO CATEGORY SELECTED	May 6, 2010	May 5, 2025	Active
KWIC	Trade Name	NO CATEGORY SELECTED	Apr 29, 2020	Apr 28, 2025	Active
KWIC	Trade Name	NO CATEGORY SELECTED	Apr 29, 2015	Apr 28, 2020	Expired
LEEWARD PEDIATRICS	Trade Name	NO CATEGORY SELECTED	Aug 28, 2007	Aug 27, 2022	Expired
MAKEKE MAHI`AI O NANAKULI	Trade Name	NO CATEGORY SELECTED	Aug 22, 2019	Aug 21, 2024	Active
MALAMA RECOVERY SERVICES	Trade Name	NO CATEGORY SELECTED	Aug 9, 2007	Aug 8, 2022	Expired
MILILANI HALE	Trade Name	NO CATEGORY SELECTED	Nov 20, 2014	Nov 19, 2019	Expired
MĀKEKE MAHIʻAI ʻO KAPOLEI	Trade Name	NO CATEGORY SELECTED	Jul 15, 2013	Jul 14, 2023	Active
MĀKEKE MAHIʻAI ʻO WAIʻANAE	Trade Name	NO CATEGORY SELECTED	Jul 10, 2013	Jul 9, 2023	Active
NANAKULI HALE	Trade Name	NO CATEGORY SELECTED	Nov 20, 2014	Nov 19, 2019	Expired
NANAKULI HEALTH CARE CENTER	Trade Name	NO CATEGORY SELECTED	May 19, 2020	May 18, 2025	Active
NANAKULI HIGH & INTERMEDIATE SCHOOL SCHOOL-BASED H...	Trade Name	NO CATEGORY SELECTED	Feb 13, 2018	Feb 12, 2023	Active
NANAKULI PROFESSIONAL PHARMACY	Trade Name	NO CATEGORY SELECTED	May 19, 2020	May 18, 2025	Active
PEARL CITY HALE	Trade Name	NO CATEGORY SELECTED	Nov 20, 2014	Nov 19, 2019	Expired
THE COMP AT TAMURA SUPER MARKET	Trade Name	NO CATEGORY SELECTED	Jan 7, 2021	Jan 6, 2026	Active
WAIANAE COAST COMPREHENSIVE HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Feb 26, 2009	Feb 25, 2024	Active
WAIANAE COAST COMPREHENSIVE HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Oct 30, 1995	Oct 29, 1996	Expired
WAIANAE COAST COMPREHENSIVE HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Sep 16, 2003	Sep 15, 2008	Expired
WAIANAE COAST COMPREHENSIVE HEALTH CENTER; WWW.WCC...	Service Mark	MEDICAL, BEAUTY AND AGRICULTURAL (44)	Jun 23, 2021	Jun 22, 2026	Active
WAIANAE FARMER'S MARKET	Trade Name	NO CATEGORY SELECTED	Jan 11, 2010	Jan 10, 2025	Active
WAIANAE HIGH SCHOOL SCHOOL-BASED HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Oct 29, 2015	Oct 28, 2020	Expired
WAIANAE HIGH SCHOOL SCHOOL-BASED HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Nov 18, 2020	Nov 17, 2025	Active
WAIANAE INTERMEDIATE SCHOOL SCHOOL-BASED HEALTH CE...	Trade Name	NO CATEGORY SELECTED	Nov 18, 2020	Nov 17, 2025	Active
WAIANAE INTERMEDIATE SCHOOL SCHOOL-BASED HEALTH CE...	Trade Name	NO CATEGORY SELECTED	Oct 29, 2015	Oct 28, 2020	Expired
WAIANAE PROFESSIONAL PHARMACY	Trade Name	NO CATEGORY SELECTED	Oct 15, 2002	Oct 14, 2023	Active
WAIANAE VISION CARE	Trade Name	NO CATEGORY SELECTED	Jun 22, 2015	Jun 21, 2025	Active
WAIANAE VISION CENTER	Trade Name	NO CATEGORY SELECTED	Jun 18, 2015	Jun 17, 2020	Expired
WAIOLA CLINIC	Trade Name	NO CATEGORY SELECTED	Aug 9, 2006	Aug 8, 2011	Expired
WAIOLA CLINIC	Trade Name	NO CATEGORY SELECTED	May 15, 2012	May 14, 2027	Active
WAIPAHU FAMILY HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	Aug 9, 2006	Aug 8, 2011	Expired
WAIPAHU FAMILY HEALTH CENTER	Trade Name	NO CATEGORY SELECTED	May 4, 2012	May 3, 2027	Active
WCCHC	Trade Name	NO CATEGORY SELECTED	Apr 27, 2017	Apr 26, 2027	Active
WEST O'AHU COMMUNITY HEALTH	Trade Name	NO CATEGORY SELECTED	May 7, 2018	May 6, 2023	Active

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19 – 20, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Peter "Kahana" Albinio, Jr., Acting Administrator
Land Management Division KA

Subject: Preliminary Approval to the Issuance of a General Lease to Kaala Farm, Inc., Nanakuli, Island of Oahu, TMK No.: (1) 8.5.005:036

APPLICANT:

KAALA FARM, INC. "KFI"

RECOMMENDED MOTION/ACTION:

That the Hawaiian Homes Commission ("HHC") grant its **PRELIMINARY** approval to the issuance of an initial 25-year general lease to KFI to use of approximately 97.764 acres of Hawaiian home lands located in Nanakuli, Island of Oahu, further identified by TMK Nos. (1) 8-5-005:036 (see Exhibit "A"), for the Kaala Farm, Inc., to continue the advancement of its cultural welfare of native Hawaiians through its ongoing cultural learning center operations.

This **PRELIMINARY** approval is intended to provide KFI, and its financiers with sufficient comfort to expend resources and pursue financial commitments.

The **PRELIMINARY** approval is subject to the following basic terms and conditions and is subject to **FINAL** approval by the Hawaiian Homes Commission:

(1) LESSEE: Waiohuli Hawaiian Homesteader Association, Inc., with the ability to assign the lease, subject to approval from the Chairman of the Hawaiian Homes Commission;

(2) TERM: Initial 25 year term w/ opportunities for term extensions not to exceed an aggregate maximum of 65 years;

(3) LAND AREA: Approximately 97.764 acres of Hawaiian Home Lands in Nanakuli, Island of Oahu

(4) PURPOSE**:** The site shall be used for KFI's continued advancement of its cultural welfare of native Hawaiians through its ongoing cultural learning center operation;

(5) BASE RENT: To be determined at a later date and on the final development plan on its cultural learning center operations;

(6) Before FINAL approval is brought to the HHC for consideration, KFI must complete the required HRS Chapter 343, Environmental Assessment and compliance with HRS Chapter 6E, Historic Preservation.

DISCUSSION

The KFI presently holds License Agreement No. 724 (LI 724) (Exhibit "B" attached) for its cultural learning center operations. KFI's intent is to acquire a disposition that would assist them with obtaining grant funding to continue its operation for future expansion.

A beneficiary consultation meeting was conducted on November 14, 2022, to collect beneficiary input and feedback on KFI's land use request. A beneficiary consultation report was submitted to the HHC in December 2022, for acceptance and consideration.

Prior to the FINAL Approval to the Issuance of a general lease, KFI will be required to conduct studies necessary to determine project feasibility, land suitability, and identify potential partnerships for proposed future plans of the site.

LOCATION:

Hawaiian Home Lands situated at Nanakuli, Island of Oahu, identified as TMK No.: (1) 8-5-005:036

AREA:

Containing an approximate land area of 97.764 acres more or less.

PLANNING AREA:

Nanakuli, Island of Oahu

LAND USE DESIGNATION:

Conservation, Oahu Island Plan (July, 2014), Figure 4.5 – Oahu Island Plan

CURRENT STATUS:
Vacant

CHARACTRER OF USE:

Community Use

CHAPTER 343 – ENVIRONMENTAL ASSESSMENT:

Triggers:

Use of State Lands

In accordance with the Department of Hawaiian Home Lands Comprehensive Exemption List as Reviewed and Concurred Upon by the Environmental Council on June 30, 2015, the Right of Entry permit request is exempt from the preparation of an environmental assessment pursuant to Exemption Class #5, "Basic data collection, research, experimental management, and resource evaluation activities which do not result in serious or major disturbances to an environmental resource."

CONSISTENCY WITH DHHL PLANS, POLICIES AND PROGRAMS

DHHL General Plan (2002)
The recommended disposition is consistent with the following General Plan goals and objectives:

Land and Resource Management

Goals:

- Be responsible, long-term stewards of the Trust's lands and the natural, historic and community resources located on these lands.

Objectives:

- Manage interim land dispositions in a manner that is environmentally sound and does not jeopardize their future uses.

Nanakuli Regional Plan (2018)

The site is designated as Conservation consistent with the Nanakuli Regional Plan (2018)

RECOMMENDATION:

Land Management Division respectfully requests approval of the motion as stated.


Exhibit "A"
Item No. F-5
85005005
85005006
85006001
85006004
85005007
85005032
WAIANAE VALLEY RD
85005008
85005036
85005022
85005035
85005027
85005014
375 ft

Exhibit "B"
Item No. F-5

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

LICENSE AGREEMENT NO. 724
(Non-Exclusive Benefit)

THIS LICENSE made and issued this 22 ND day of MAY, 2009, by the State of Hawaii, DEPARTMENT OF HAWAIIAN HOME LANDS, whose principal place of business is 91-5420 Kapolei Parkway, Kapolei, Hawaii 96707, and whose mailing address is P.O. Box 1879, Honolulu, Hawaii 96805, hereinafter called "LICENSOR," to KA'ALA FARM, INC., a Hawaii Non-Profit Corporation, whose address is P. O. Box 630, Waianae, Hawaii 96792, hereinafter called "LICENSEE."

WITNESSETH THAT:

LICENSOR, pursuant to the authority granted to it by Section 207(c)(1)(A) of the Hawaiian Homes Commission Act, 1920, as amended (HHCA), is authorized to grant licenses for the use of Hawaiian home lands for public purposes;

LICENSOR, pursuant to the provisions under Section 10-4-22, Title 10, State of Hawaii, Department of Hawaiian Home Lands, Administrative Rules 1998, as amended (DHHL Administrative Rules), may grant licenses for the public purposes for any length of time, subject to reverter to LICENSOR upon termination or abandonment, on such terms and conditions as may be prudently and reasonably set by the LICENSOR;

LICENSOR, pursuant to the provisions under Section 10-4-21, DHHL Administrative Rules, may allow the rental for licenses to be nominal should the use benefit LICENSOR or native Hawaiians;

FURTHER, LICENSOR believes and intends that the issuance of this non-exclusive benefit license will fulfill the purpose of advancing the cultural welfare of native Hawaiians by allowing LICENSEE to operate a cultural learning center on the property.

NOW, THEREFORE, LICENSOR, in consideration of the services to be provided by LICENSEE, and the terms, covenants and conditions herein contained on the part of LICENSEE to be kept, observed and performed, hereby grants and issues to LICENSEE the right and privilege to use Hawaiian home lands identified as Tax Map Key No. (1)8-5-05:36, containing an area of approximately 97.764 acres and

shown as the lined area on Exhibit "A" attached hereto (hereinafter "Premises") for the purpose of curatorship, conservation and operation of the Cultural Learning Center at Ka'ala.

AND LICENSOR and LICENSEE mutually agree to the following terms, conditions and covenants:

1. COMPLIANCE WITH LAWS. LICENSEE, in the exercise of the rights granted herein, shall comply with all the requirements of County, State and Federal authorities and observe all municipal ordinances and State and Federal statutes, rules and regulations, now in force or which may hereafter be in force.

2. TERM. The term of the license shall be for 25 years, commencing from July 1, 2008 and expires on June 30, 2033, or until such time as LICENSEE ceases to operate a Cultural Learning Center, whichever sooner occurs, unless this license is sooner terminated as hereinafter provided.

3. RENT. The rent for the entire term of this license shall be gratis. There is a processing and documentation fee of $275.00.

4. DUE CARE AND DILIGENCE. LICENSEE shall use due care and diligence in the operation and maintenance of the Premises and shall keep the grounds and improvements in good and safe condition and repair.

5. INDEMNITY. LICENSEE shall indemnify and hold harmless, LICENSOR from any and all claims and demands against LICENSOR, for any loss or damage or injury or death to persons or property resulting from, or in any way connected with, the condition or use of the Premises not caused by the negligence of LICENSOR, its agents, servants or employees acting within the scope of their employment, and from and against all damages, costs, counsel fees, expenses or liabilities incurred or brought thereon.

6. LIABILITY INSURANCE. LICENSEE shall procure, at his own cost and expense, and maintain during the entire period of this license, with an insurance company or companies acceptable to LICENSOR, a policy or policies of comprehensive public liability insurance with limits, with respect to any one accident, of not less than $200,000 for bodily injury to one person, $500,000 for bodily injury to more than one person per occurrence and $100,000 against the claims of third persons for property loss or damages. The policy or policies shall insure

against all claims for personal injury, death and property damage and shall cover the entire Premises and any lands adjacent to the Premises that are in the control of or used by LICENSEE. LICENSEE shall furnish LICENSOR with a certificate naming LICENSOR as additionally insured and showing such policy to be initially in force and shall furnish a like certificate upon each renewal of such policy, each such certificate to contain or be accompanied by an assurance of the insurer to notify LICENSOR of any intention to cancel any such policy prior to actual cancellation. The procuring of this policy shall not release or relieve LICENSEE of LICENSEE'S responsibility under this License as set forth herein or limit the amount of LICENSEE'S liability under this License.

7. SANITARY CONDITION AND WASTE AND ILLEGAL USE. LICENSEE shall keep the Premises and improvements thereon in a clean, sanitary and orderly condition, and shall not make, permit or suffer, any waste, strip, spoil, nuisance or unlawful, improper or offensive use of the Premises.

8. IMPROVEMENTS. LICENSEE shall not construct, install, place, repair, renovate, destroy or remove from the Premises land and building improvements of any kind and description whatsoever, except with the prior written approval of LICENSOR. LICENSOR and LICENSEE understand and acknowledge herein that all land, fences and permanent building improvements now existing and hereafter constructed, install or placed on the Premises are and shall always be the property of LICENSOR.

9. COST OF LITIGATION. In case LICENSOR shall, without any fault on its part, be made a party to any litigation (other than condemnation proceedings), commenced by or against LICENSEE, LICENSEE shall and will pay all costs and expenses incurred by or imposed on LICENSOR; furthermore, LICENSEE shall and will pay all costs and expenses which may be incurred by or paid by LICENSOR in enforcing the covenants and agreement of this License, in recovering possession of the Premises or in the collection of delinquent rental, taxes and any and all other charges hereunder payable by LICENSEE.

10. ABANDONMENT. In the event the Premises shall be abandoned or shall remain unused for the purpose granted for a continuous period of one (1) year, all rights granted hereunder shall terminate, and LICENSEE will restore the land as nearly as is reasonably possible to the condition existing immediately prior to the time of use, LICENSOR hereby consenting and agreeing to such removal. Failure of LICENSEE to restore the land within 90

days after notification to do same from LICENSOR by certified mail at LICENSEE'S last known address, will constitute a breach and LICENSOR may restore the land to a condition similar to that existing immediately prior to the time of use and LICENSEE will reimburse LICENSOR for all reasonable costs in connection with the restoration.

11. WITHDRAWAL. LICENSOR may withdraw all or any part of the Premises encumbered under this license upon 180 days written notice to LICENSEE, should LICENSOR require use of the property for other purposes authorized under the Hawaiian Homes Commission Act 1920, as amended, and may be modified, altered, and changed upon 60 days written notice should LICENSOR deem the modification to be in the best interest of the public.

12. TRANSFER OF LICENSE. LICENSEE may not transfer, assign or otherwise convey an interest in this license.

13. RIGHT TO ENTER. LICENSOR or any other governmental entity, and the agents or representatives thereof, shall have the right to enter and cross any portion of the demised easement area for the purpose of performing any public or official duties, provided, that in the exercise of such rights, LICENSOR or any other governmental entity shall not unreasonable interfere with LICENSEE'S use and enjoyment of the easement area.

14. BREACH. If LICENSEE shall fail to observe or perform any of the covenants, terms, and conditions herein contained, and on its part to be observed and performed, LICENSOR shall deliver written notice of the breach or default by registered mail or certified mail to LICENSEE at LICENSEE'S last known address, making demand upon LICENSEE to cure or remedy the breach or default within sixty (30) days from the date of receipt of the notice. Upon failure of LICENSEE to cure or remedy the breach or default within the time period provided herein or within such additional period as LICENSOR may allow for good cause, LICENSOR may terminate this License without prejudice to any other remedy or right of action.

15. SEVERABILITY. Whenever possible, each provision of this License shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of this License should be prohibited, or invalid under applicable law, such provision shall be ineffective to the extent of such prohibition or invalidity without invalidating the remaining provisions of this License.

16. SINGULAR/PLURAL. The singular or plural depends on its appropriate use.

17. AGREEMENT. This agreement shall be binding upon and inure to the benefit of the parties hereto and their respective legal successors and assigns.

18. SPECIAL CONDITIONS.

a) The purpose of this License is to allow LICENSEE to operate the Cultural Learning Center at Ka'ala as a facility for teaching the Hawaiian culture and cultivation of native Hawaiian plants and herbs. Other uses of the property are not allowed without the written consent of the LICENSOR.

b) The premises shall not be used for residential purposes.

c) Resident caretaker(s) shall not exceed two (2) adult persons for the purposes of providing security services for the property and Caretaker/Security Agreements will be executed and maintained by and between LICENSEE and the resident caretakers, copies of which will be provided to LICENSOR.

d) The center shall be made available to the native Hawaiian beneficiaries approved by LICENSOR, to experience and participate in the cultivation of native herbs, plants and foods.

e) Consumption of alcoholic beverages or use of illicit drugs shall not be allowed on the premises.

f) LICENSEE shall be allowed to erect signs on the premises for conservation and safety purposes.

g) LICENSEE shall be allowed to safely apply biocides for weed and insect control or other purposes as necessary.

h) LICENSEE shall be allowed to introduce, manipulate and eliminate flora and fauna, including the eradication of non-native plants and animals, and the taking of seeds seedlings or cuttings.

i) LICENSEE shall limit agricultural activity to the cross-hatched area depicted on Exhibit "A".

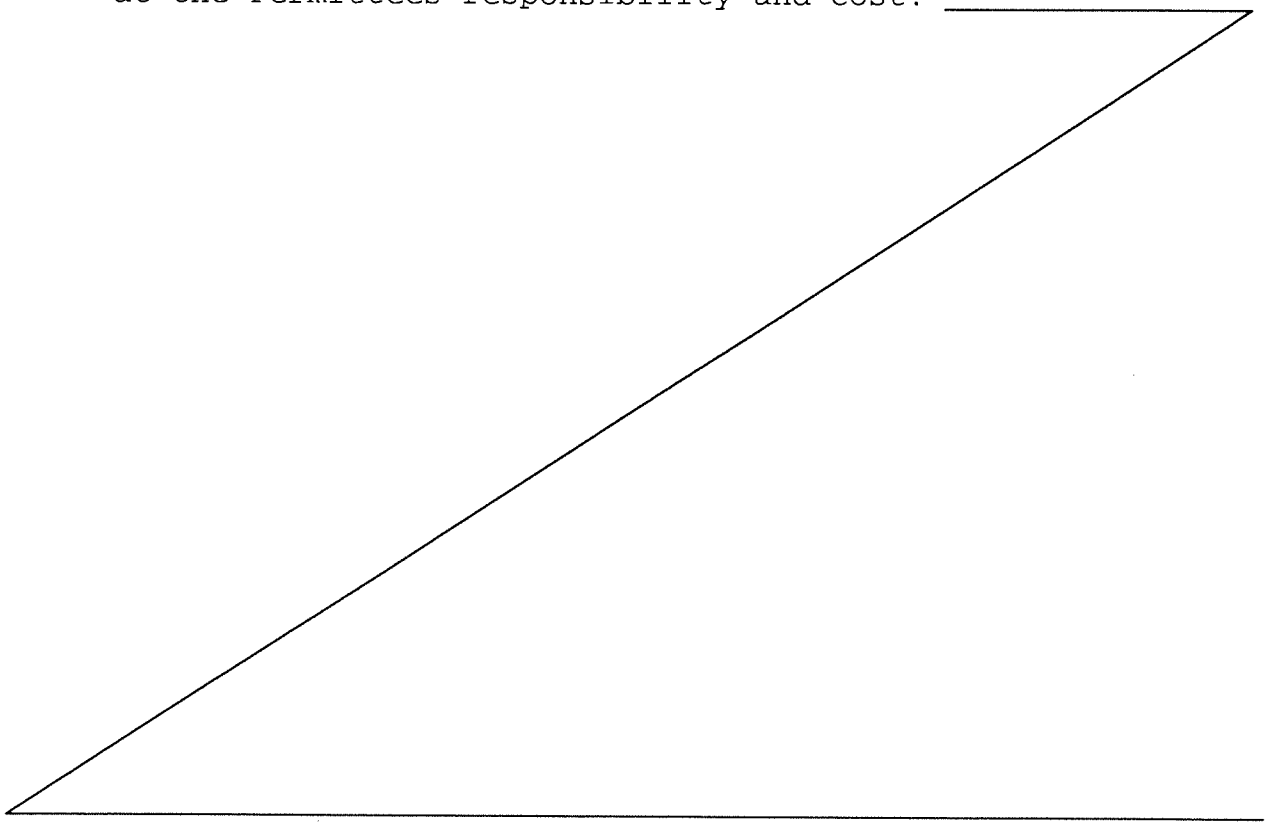
j) LICENSEE shall practice fire control and establish fire prevention practices (such as no campfires allowed) and will allow the proper governmental authorities full access to the Premises for fire suppression activities when necessary.

k) LICENSEE shall be allowed to limit access to the Premises by means of gates, barricades and locks.

l) LICENSEE understands and acknowledges herein that it shall furnish, at its sole expense, all materials, supplies, equipment and labor required to fulfill the purposes for which this License is issued.

m) LICENSEE is prohibited from using the premises for the storage, sorting, and sale of materials such as fill soil, rock, rubble, junk, waste, scrap, discarded or salvage items including machinery, automobiles, equipment, flammables and contaminants of every description whatsoever, except that which will be used by LICENSEE in direct conjunction with the purposes for which the License is issued.

n) LICENSEE understands that there are no utilities on the Premises. Any utilities needed on the site shall be at the Permittees responsibility and cost. _____



IN WITNESS WHEREOF, the parties hereto have caused these presents to be duly executed the day and year first above written.

State of Hawaii
DEPARTMENT OF HAWAIIAN HOME LANDS

Approved by the HHC at
Its meeting held on
June 17, 2008

By _____
Micah A. Kane, Chairman
Hawaiian Homes Commission

LICENSOR

APPROVED AS TO FORM
AND LEGALITY:

_____
Deputy Attorney General
State of Hawaii

KA'ALA FARM, INC., a Hawaii
Non-Profit Corporation

By _____
Eric Enos
Executive Director

LICENSEE

STATE OF HAWAII)
) SS
CITY AND COUNTY OF HONOLULU)

On this 18th day of June, 2009, before me personally appeared MICAH A. KANE to me known to be the Chairman of the Hawaiian Homes Commission and to be the person described in and who executed the foregoing instrument and acknowledged that HE executed the same as HIS free act and deed.

Notary Public, State of Hawaii

ABIGAIL L. TUBERA

(Printed Name of Notary Public)

My Commission expires: 11/21/2012

ABIGAIL L. TUBERA NOTARY 04-666 PUBLIC STATE OF HAWAII

Doc. Date: 5/22/09 # Pages: 10

Notary Name: Abigail Tubera First Circuit

Doc. Description: LA 724 between OHHL + Kaala Farm, Inc.

6/18/09
Signature Date

ABIGAIL L. TUBERA NOTARY 04-666 PUBLIC STATE OF HAWAII

STATE OF HAWAII)
) SS
CITY AND COUNTY OF HONOLULU)

On this 22nd day of May, 2009, before me personally appeared ERIC ENOS to me known to be the Executive Director of Ka'ala Farm, Inc. and to be the person described in and who executed the foregoing instrument and acknowledged that HE executed the same as HIS free act and deed.

PUAMANA TACGERE NOTARY PUBLIC Comm. No. 08-418 STATE OF HAWAII

Notary Public, State of Hawaii

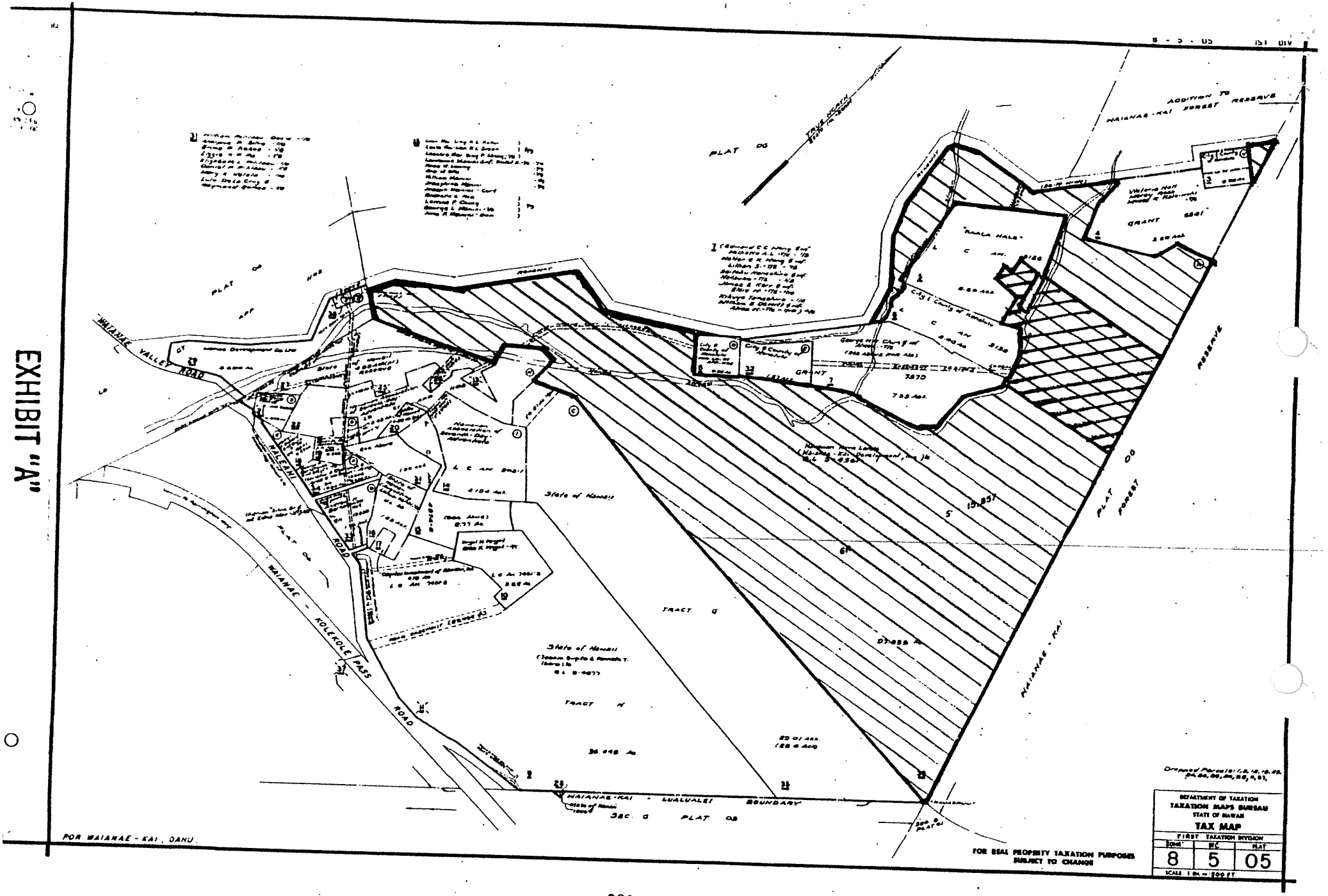
Puamana Tacgere
(Printed Name of Notary Public)

My Commission expires: 09/21/2012

Document Date: Undated # Pages: 10
Notary Name: PUAMANA TACGERE First Circuit
Doc. Description: License Agreement
Notary Signature 5/22/09 Date

PUAMANA TACGERE NOTARY PUBLIC Comm. No. 08-418 STATE OF HAWAII

EXHIBIT "A"



PLAT 06
ADDITION TO WAIANAE-KAI FOREST RESERVE
GRANT
WAIANAE VALLEY ROAD
WAIANAE - KOLEKOLE PASS ROAD
State of Hawaii
TRACT G
TRACT H
WAIANAE-KAI - LUALUALEI BOUNDARY
SEC. 6 PLAT 05
PLAT 06 FOREST RESERVE
WAIANAE-KAI
POR WAIANAE-KAI, OAHU
FOR REAL PROPERTY TAXATION PURPOSES SUBJECT TO CHANGE
DEPARTMENT OF TAXATION
TAXATION MAPS BUREAU
STATE OF HAWAII
TAX MAP
FIRST TAXATION DIVISION
ZONE 8
SEC 5
PLAT 05
SCALE 1 IN. = 200 FT.

ITEM NO: D-4
SUBJECT: Notices of Default/Revocation, Statewide

MOTION/ACTION

Moved by M. Pa, seconded by M. Kamaka. Motion carried unanimously.

ITEM NO: D-5
SUBJECT: Ka`ala Farms, Wai`anae, O`ahu

MOTION

Moved by P. Artates, seconded by T. Morikawa.

DISCUSSION

Ka`ala Farms demonstrated what can be done through education and the perpetuation of the Hawaiian culture at its presentation held the previous day. Chairman supports and commits to making this a part of the regional plan for the area. He also supports a site control of an adjacent parcel belonging to the Department of Agriculture. A site visit, to view its progress, is recommended.

ACTION

Motion carried unanimously.

ITEM NO: E-1
SUBJECT: Native Hawaiian Development Program - Regional Plan Priority Grant Awards for 2008-2009

MOTION

Moved by M. Kamaka, seconded by T. Morikawa.

COMMENT

Chairman Kane acknowledged the fine efforts of Elmer Ka`ai in coordinating the plans and in achieving an open communication with community organizations.

ACTION

Motion carried unanimously.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

June 17, 2008

- Eric Enos
- Kina Mahi Adm.

To: Chairman and Members, Hawaiian Homes Commission

From: Linda Chinn, Administrator
Land Management Division

Subject: Issuance of License Agreement, Ka'ala Farms, Inc., Waianae, Oahu

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission authorizes the issuance of a License Agreement to Ka'ala Farms, Inc. (LICENSEE), Waianae, Oahu, identified as Tax Map Key No. (1)8-5-005: 036, 97 Acres and shown on the map attached hereto as Exhibit "A", subject to the following conditions:

1. The term of the license shall be for twenty-five (25) years, commencing from July 1, 2008 to June 30, 2033, or until such time as LICENSEE ceases to operate a Cultural Learning Center, whichever sooner occurs, unless this license is sooner terminated as hereinafter provided.

2. For the entire term of the license rent shall be gratis.

3. The premises shall not be used for residential purposes. Resident caretakers shall not exceed two (2) adult persons.

4. LICENSEE shall pay, when due, all taxes, rates, assessments, charges, and other outgoings, of every nature and kind whatsoever, including all charges for utility services.

5. LICENSEE may enter upon the above-described property, construct facilities suitable for a Cultural Learning Center, and engage in all activities reasonably pertaining thereto.

6. LICENSEE shall undertake no construction until LICENSOR has examined and approved the plans for the proposed structure.

- Water rights - DLNR
- Neighborhood Boards presentation.

Item No. D-5

7. During the term of this license, LICENSEE shall repair and maintain all buildings and improvements hereafter erected upon said premises.

8. LICENSEE shall not do or commit, or permit or suffer to be done, any willful or voluntary waste or destruction in and upon the licensed premises. Additionally, there is to be no consumption of alcoholic beverages or use of illicit drugs.

9. LICENSEE shall not use the licensed premises, nor permit said premises to be used, in support of any policy that discriminates against anyone based upon race, creed, color, or national origin.

10. LICENSEE shall so conduct its activities within the licensed area as not to endanger any persons lawfully thereon. LICENSEE shall indemnify, save and hold harmless the LICENSOR and all of its officers, agents and employees from any and all deaths, losses, injuries and damages to persons or property.

11. LICENSEE shall practice fire control and establish fire prevention practices (such as no campfires allowed) and to allow the proper governmental authorities full access to the premises for fire suppression activities when necessary.

12. This license shall be nontransferable, and LICENSEE shall not in any manner transfer, assign, sublease, sublet, mortgage, pledge, or otherwise hold or agree so to do, for the benefit of any other person or persons or organizations or any kind.

13. This license may be cancelled by LICENSOR upon one hundred eighty (180) days advance notice in writing to LICENSEE should LICENSOR need to use the premises herein described for purposes of the Hawaiian Homes Commission Act of 1920, as amended, and may be modified, altered, and changed upon sixty (60) days written notice should LICENSOR deem the modification to be in the best interest of the public.

14. Upon the expiration of this license, or its sooner termination herein provided, LICENSEE shall peaceably and quietly leave, surrender and deliver up to LICENSOR possession of the premises.

15. The word "premises" when it appears herein includes and shall be deemed to include the lands described above and all buildings and improvements whenever and wherever erected or placed thereon.

16. The Chairman of the HHC shall have the option to extend the term of the license on a year to year basis based upon a satisfactory evaluation of LICENSEE'S use of the site.

17. Other standard terms and conditions of similar licenses issued by DHHL.

18. The license document shall be subject to the review and approval of the Department of the Attorney General.

19. Other terms and conditions deemed prudent by the Chairman of the Hawaiian Homes Commission.

DISCUSSION

License Agreement No. 475 was issued to Ka'ala Farms, Inc., for the use of a Cultural Learning Center in Waianae, Oahu. Said license was effective as of January 27, 1998 and expired on January 26, 2008. The current annual rental is gratis. - There is no provision for further extension

Ka'ala Farms currently gives daily tours to thousands of students annually from grades kindergarten to twelve, most of which resides on Hawaiian home lands. They have verbally indicated their desire to seek a new license agreement for the continued use of this site in Waianae Valley. This will allow Ka'ala Farms to continue to educate DHHL beneficiaries and other residents living in this area and throughout the State.

Ka'ala Farms has been a benefit to DHHL homesteaders who live on Leeward Oahu by providing many jobs and perpetuating the Hawaiian Culture. Over the last ten (10) years they have more than proven capable of showing how a Hawaiian Cultural Learning Center can be a useful tool to teach the younger generation the lost art of growing taro, making tapa, learning the Hawaiian language, and other Hawaiian traditions. Ka'ala Farms has done an outstanding job of educating others about our Hawaiian Culture.

According to DHHL Administrative rules, Title 10-4-21 (3), the department may negotiate the rental rate where the proposed use is a benefit to native Hawaiians. Based on the data provided and a verbal consent from Ka'ala Farms, our

recommendation is to maintain gratis status for the term of this license.

AUTHORITY

The authority for the Hawaiian Homes Commission to issue licenses is found in Section 207(c)(1)(A) and (3), HHCA, 1920, as amended. The procedure to implement this or similar type licenses is found in Sections 10-4-21 and 10-4-22, DHHL Administrative Rules, 1998, as amended.

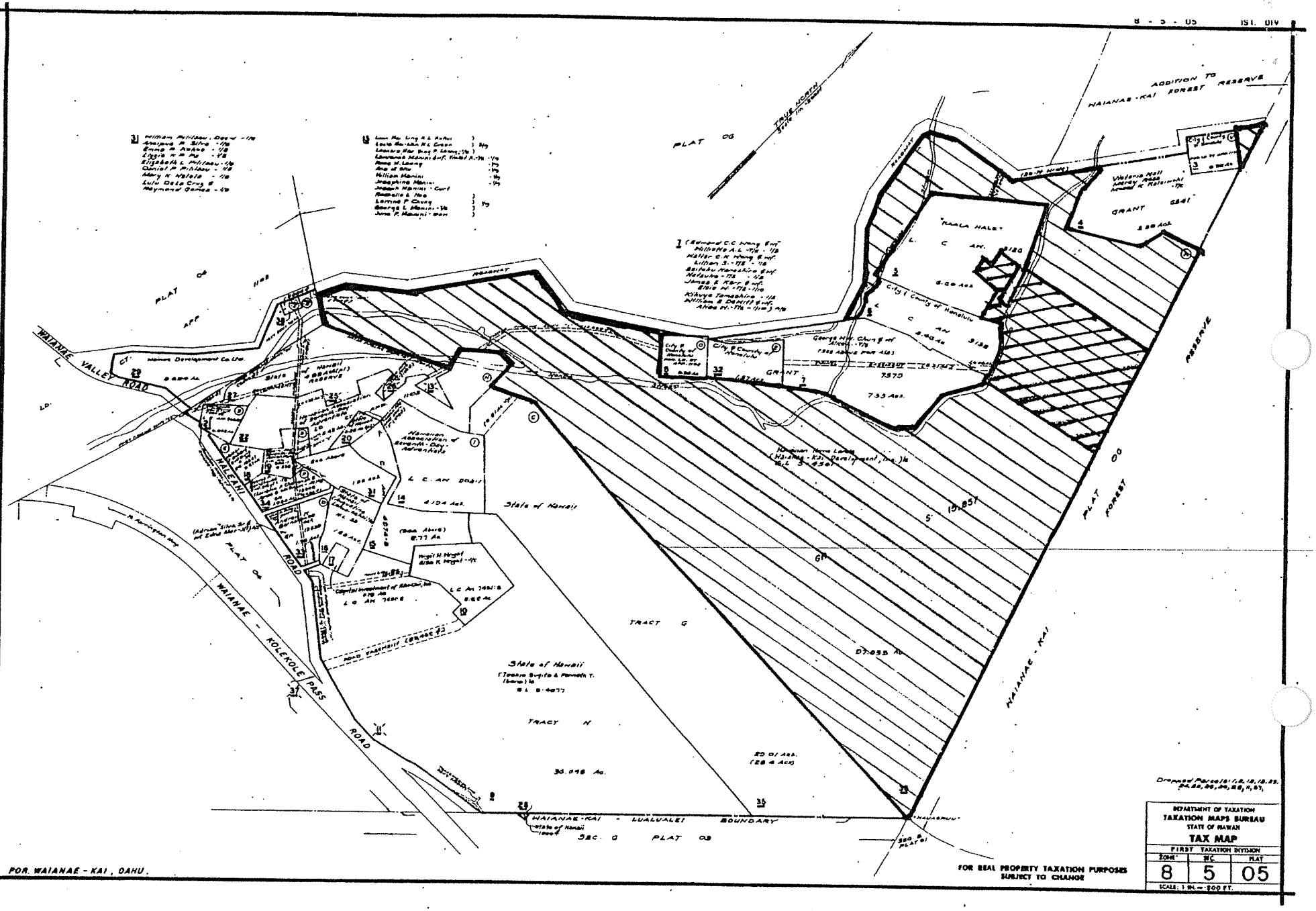
The same DHHL Rules permit DHHL, subject to the approval of the commission, to negotiate and consummate the rental rate (or license value) of a license, when prudent management does not dictate that the rental rate be established by appraisal. Further, the Administrative Rules allow for the issuance of licenses for public purposes on such terms and conditions as may be prudently and reasonable set by the department. LMD believes that the yearly rent of gratis and twenty five (25) year license set for LICENSEE is acceptable and justified.

RECOMMENDATION

Land Management Division recommends approval of the requested motion/action as stated.

EXHIBIT "A"

ITEM NO. D-5



POR. WAIANAE - KAI, OAHU.

DCCA State of Hawaii

Downloaded on December 8, 2022.
The information provided below is not a certification of good standing and does not constitute any other certification by the State.
Website URL: http://hbe.ehawaii.gov/documents

Business Information

MASTER NAME	KAALA FARM, INC.
BUSINESS TYPE	Domestic Nonprofit Corporation
FILE NUMBER	54211 D2
STATUS	Active
PURPOSE	CULTURAL LEARNING CENTER
ORGANIZED IN	Hawaii UNITED STATES
INCORPORATION DATE	Mar 9, 1983
MAILING ADDRESS	P O BOX 630 WAIANAE, Hawaii 96792 UNITED STATES
TERM	PER
AGENT NAME	ERIC ENOS
AGENT ADDRESS	86-088 #107 FARRINGTON HIGHWAY WAIANAE, Hawaii 96792 UNITED STATES

Annual Filings

FILING YEAR	DATE RECEIVED	STATUS
2022	Jan 4, 2022	Processed
2021	Jan 29, 2021	Processed
2020	May 15, 2020	Processed
2019	Jan 2, 2019	Processed
2018	Jan 3, 2018	Processed
2017	May 4, 2017	Processed
2016	Jan 27, 2016	Processed
2015	Jan 22, 2015	Processed
2014	Jan 21, 2014	Processed
2013	Jan 15, 2013	Processed
2012	Jul 31, 2012	Processed
2011	Jan 3, 2011	Processed
2010	Aug 2, 2010	Processed
2009	Sep 2, 2009	Processed
2008	Sep 4, 2008	Processed
2007	Jan 23, 2007	Processed
2006	Feb 17, 2006	Processed
2005	May 3, 2005	Processed
2004	Aug 19, 2004	Processed
2003	Jul 21, 2003	Processed
2002		Not Required
2001		Processed
2000		Processed
1999		Processed

Officers

NAME	OFFICE	DATE
PANG,BENTON	P	Jan 1, 2019
ENOS,KANOE	V	Jan 1, 2021
WAKINEKONA,LYNETTE	S	Jan 1, 2021
FUKUDA,KAY	T	Jan 1, 2021
ENOS,ERIC	ED	Jan 1, 2021
BROWN KAWAMOTO,JUANITA	D	Jan 1, 2021
ESQUIVEL, MONICA	D	Jan 1, 2017
CORREIA,ABE	D	Jan 1, 2021

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

G – ITEMS

PLANNING OFFICE

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 19 - 20, 2022

TO: Chairman and Members, Hawaiian Homes Commission

Through: Andrew H. Choy, Acting Planning Program Manager AC

FROM: Gigi O. Cairel, Grants Specialist GC

SUBJECT: Approval of Recommendations for various Grant Awards

RECOMMENDED MOTION/ACTION

(1) That the Hawaiian Homes Commission (HHC) approves (i) $7.5 million allocation from the State General Fund (one-time only); (ii) a $988,444 allocation from the Native Hawaiian Rehabilitation Fund (NHRF); and (iii) a combination thereof to fund the following organizations for the following grants (statewide).

a. RFP-23-HHL-001 Grant for improvements to existing facilities on Hawaiian Home Lands
b. RFP-23-HHL-002 Grant for existing programs and services in existing homesteads
c. RFP-23-HHL-003 Grant for Project implementation
d. RFP-23-HHL-004 Grant for Community capacity building

Grant for improvements to existing facilities on Hawaiian Home Lands (RFP-23-HHL-001)

$1,000,000 to **Ka Waihona O Ka Na'auao, Public Charter School** for renovations to the school kitchen and cafeteria. The facility is located makai of the Nanakuli homestead, on Hawaiian Home Lands, and was built in 1933.

$1,000,000 to **Moloka'i Homestead Farmers Alliance,** dba Moloka'i Homestead Farmers Alliance, for improvements to Lanikeha Center, built in 2000. Funds will be used to continue renovations, including restroom and sewer improvements. The

is an existing facility located in Ho'olehua on Hawaiian Home Lands.

$1,000,000 to **Princess Kahanu Estates Association,** dba Princess Kahanu Estates Association (PKE), for improvements to the community center and boat yard, built in 1995. Funds will be used for the planning, design and construction of a certified kitchen located on a portion of the boat yard. This is an existing facility located within the PKE homestead, on Hawaiian Home Lands.

$1,000,000 to **Waiohuli Hawaiian Homesteaders Association, Inc.,** dba Waiohuli Hawaiian Homestead Association, Inc. (WHHA) for improvements to the WHHA community center - He Piko No Waiohuli, built in 2016. Funds will be used to construct an enclosed improvement for the existing community kitchen and for safety lighting in parking areas. This is an existing facility located in the Waiohuli homestead, on Hawaiian Home Lands.

$980,000 to **Nanakuli Hawaiian Homestead Community Association,** dba Nanakuli Hawaiian Homestead Community Association, for improvements to the Nānākuli Village Center, built in 2019. Funds will be used for the interior build out of three units in the inline retail space to encourage local and Native Hawaiian-owned businesses to lease. This is an existing facility located on Hawaiian Home Lands.

$400,000 to **Kalamaula Homesteaders Association,** dba Kalamaula Homesteaders Association, for improvements to Kiowea Park, built in the 1990s. Proposed project is to address community safety concerns. Funds will be used for improvements to the parking lot to increase safety and accessibility for all those who use the park, especially Kupuna and those physically-challenged. This is an existing facility located on Hawaiian Home Lands.

Grant for existing programs and services in existing Homesteads (RFP-23-HHL-002)

$500,000 to **Habitat for Humanity International,** dba Habitat for Humanity Maui, Inc. to expand and support its 20-year old home repair program to specifically serve lessees. Funds will be used for home safety repairs for economically-disadvantaged lessees in the County of Maui - islands of Maui, Lāna'i and Moloka'i.

$500,000 to **Ke Kula Nui 'o Waimānalo,** dba Ke Kula Nui O Waimanalo (KKNOW) to expand and support its 13-year old Mini Ahupua'a for Lifestyle and Mea'ai through Aquaponics (MALAMA) program. Funds will be used to expand MALAMA to lessees in Kona and the island of Moloka'i in response to requests from those homestead areas. Funds will also be used to support lessees to maintain their existing aquaponics systems in Waimānalo, Maui and East Hawai'i homesteads. As part of MALAMA, KKNOW will continue to build homestead capacity to become trainers and local resources within their own homesteads.

$447,344 to **Kula No Na Po'e Hawai'i** to expand and support its two-year old Ho'okele Program to lessees in the Papakōlea region. Funds will be used to support 60 beneficiaries with housing placement, conduct 15 workshops and assist lessees to complete applications for additional wrap around services and programs.

$400,000 to **Moloka'i Homestead Farmers Alliance,** dba Moloka'i Homestead Farmers Alliance to support its four-year old COVID Relief program. Funds will be used to distribute food, produce, hot meals, home care packages and certificates for drugstore/prescription purchases for lessees island-wide.

$331,100 to **Aina Alliance** for its Makai Management project. Started in 2021, the project is for land restoration and community enrichment through aina-based learning and perpetuating cultural principles in the Anahola homestead. Funds will be used to support ongoing efforts to clear and

maintain over 400 acres of Hawaiian Home Lands to address concerns of homelessness, trash dumping and fire hazards. This effort also will serve as a safe, outdoor community learning environment.

$170,000 to **Waiohuli Hawaiian Homesteaders Association, Inc.,** dba Waiohuli Hawaiian Homesteaders Association, Inc. for its five-year old Waiohuli Economic Development Opportunities Program (WE-DO). This is a training and mentoring program for lessees in Waiohuli and Kēōkea homesteads to build capacity related to general construction and supportive services during the development process of a master-planned community.

Grant for Project Implementation (RFP-23-HHL-003)

$100,000 to **Ho'opili Farmers Association** for a mulching program to assist lessees with gardening and farming. The program includes training lessees in using mulch and inputs using the Korean natural farming techniques; and provide a delivery service to lessees who do not have access to mulch. HFA intends to use a peer-to=peer method, where beneficiaries are conducting the training for fellow beneficiaries. Proposed program delivery areas are Ho'olehua, Kalamaula, Kamiloloa, One Alii and Kapaakea homesteads.

$100,000 to **Kalamaula Homesteaders Association,** dba Kalamaula Homesteaders Association to address safety concerns within Kalamaula homestead. Secondly, funds will be used to purchase batteries for the photo-voltaic power system for the new Kiowea Park Pavilion.

$100,000 to **Kanehili Community Association,** dba c/o Hawaiiana Management Co., Ltd. for the Kapolei Regional Plan Project: *Preserve and Develop Parks to Service the Homestead Community*. Funds will be used to continue the planning phase and start the design of the Kānehili park (Phase 2). The park is intended to serve beneficiaries and the general public.

$100,000 to **Ka ʻOhana O Kahikinui, Inc.** (KOOK) for the Kahikinui Regional Plan Project: *Pūnāwai Project and Water Infrastructure Improvements*. The proposed project is an innovative fog drip water collection and distribution system to supply non-potable water for lessees in Kahikinui homestead. Funds will be used for protective fencing for the system and to supplement a current DHHL grant to KOOK for project cost overruns.

$100,000 to **ʻO Makuʻu Ke Kahua Community Center,** dba Makuʻu Farmers Market for planning and construction of a new community center located in the Makuʻu homestead. Funds will be used for updating plans, obtain permitting and to start construction.

$100,000 to **Princess Kahanu Estates Association,** dba Princess Kahanu Estates Association to establish a community-based landscaping service to maintain homestead common areas.

$100,000 to **Waiohuli Hawaiian Homesteaders Association, Inc.,** dba Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) to complete planning and due diligence (HRS Chapter 343 Environmental and 6E compliance) for approximately 150 acres of Hawaiian Home Lands. WHHA intends to use the land to serve as the site to implement the Waioihuli Economic Development Opportunities (WE DO) program.

Grant for Community Capacity Building (RFP-23-HHL-004)

$15,000 to **Hoʻopili Farmers Association** for board training, membership outreach, strategic planning and completing a business plan.

$15,000 to **ʻO Makuʻu Ke Kahua Community Center,** dba Makuʻu Farmers Market for strategic planning, developing collateral materials for future grant writing, and developing a grants management system.

$15,000 to **Princess Kahanu Estates Association,** dba Princess Kahanu Estates Association (PKEA), for membership outreach and to perpetuate cultural practices. Funds will be used to expand PKEA's Kanikapila sessions by adding ukulele classes and a Hula Halau for keikis.

$15,000 to **Waiohuli Hawaiian Homesteaders Association, Inc.,** dba Waiohuli Hawaiian Homesteaders Association, Inc. to secure technical assistance for board governance, leadership succession, program development, marketing and community outreach.

(2) That the HHC approves carrying over to the 2023 - 2024 fiscal year, any of the approved allocated funds that cannot be encumbered by contract by June 30, 2023.

BACKGROUND

As part of the Native Hawaiian Development Program Plan (NHDPP), Hawaiian Home Land Trust Grants are made available to nonprofit organizations provided the purpose of the assistance is to benefit native Hawaiians. Over the years, grants have been offered in several program areas — including COVID relief projects, Capacity Building, Project Implementation, Regional Plan Priority Projects, Community Economic Development, and Agriculture Peer-to-Peer — as a means of implementing the community development component of the NHDPP. Grant offerings reflect DHHL priorities and community interests.

The Hawaii State Legislature appropriated a one-time only $10 million in State General Funds to the Department of Hawaiian Home Lands (DHHL) for "services to existing homesteads."

The Hawaiian Homes Commission (HHC) at its regularly scheduled meeting on June 20 - 21, 2022, approved the department's agency budget for Fiscal Year 2023 (FY). The approval included allocating $7.5 million from the $10 million in State General Funds (as described above) to the DHHL Native Hawaiian Development Program Plan (NHDPP). These funds are to be used as a funding source for the DHHL Community Development Grants program to provide "services to existing homesteads."

Additionally, the HHC approved a $1 million allocation from the Native Hawaiian Rehabilitation Fund (NHRF) as a funding source for

the DHHL Community Development Grants program. This brings the total DHHL Grants budget for FY 23 to $8.5 million. These funds were administratively allocated as follows in Table 1 below.

TABLE 1
FY 2023 Grants Budget Amounts

Request for Proposal (RFP)	Budget amount	Source of Funds
RFP-23-HHL-001 Existing facilities on Hawaiian Home Lands	$3,000,000	State General Funds (one-time only)
RFP-23-HHL-002 Existing programs and services in existing homesteads	$4,000,000	State General Funds (one-time only)
Sub-Total	**$7,500,000**	**STATE**
RFP-23-HHL-003 Project Implementation	$700,000	Native Hawaiian Rehabilitation Fund
RFP-23-HHL-004 Community Capacity building	$300,000	Native Hawaiian Rehabilitation Fund
Sub-Total	**$1,000,000**	**NHRF**
TOTAL FY 2023 Grants Budget	$8,500,000	STATE and NHRF

The implementing action to deploy the funds is through the DHHL Community Grants program. Solicitation Notices for these grants follow the State Procurement rules using the Competitive Sealed process or "Request for Proposal." Notices were posted on July 27, 2022, with a October 6, 2022 deadline. Notices were posted on the State Procurement Website and the DHHL Website; email notifications sent to beneficiary organizations; and grant information meetings (virtual) were held on August 2, 3 and 5, 2022. Meetings were recorded and available on the DHHL website - https://dhhl.hawaii.gov/procurement/rfp-23-hhl-001-grant-for-improvements-to-existing-facilities-on-hawaiian-home-lands-statewide/. Grant eligibility was open to nonprofits designated by the US Internal Revenue Service as federally tax-exempt 501(c)(3); or, nonprofits incorporated under HRS 414D Nonprofit corporation act; or, associations incorporated under HRS 421J Planned Community (DCCR homesteads).

Table 2 below shows the timeline and process as published in all the RFP grant application packets.

Table 2
Deadline, Processing Time, and Project Timeframes
Subject to Change

As per Addendum No. 2, which was issued November 14, 2022

Key Dates and Times	Activity
July 27, 2022	RFP Release Date
• Tuesday, August 2, 2022 - 6:00 - 8:00 PM HST • Wednesday, August 3, 2022 - 6:00 - 8:00 PM HST • Friday, August 5, 2022 - 10 AM - 12 PM HST	Optional Pre-proposal orientation sessions. Please go to the DHHL website (dhhl.hawaii.gov/procurement/) for information on how to attend the pre-proposal orientation and obtain the recording.
August 12, 2022 by 4:00 PM HST	Deadline to submit written questions to DHHL.Grants@hawaii.gov
September 9, 2022m 4:00 PM HST	DHHL's response to questions. Responses to be posted at: https://hands.ehawaii.gov/hands/opportunities
September 30, 2022, 2:00 PM	Pre-proposal modification and withdrawal notice to DHHL shall be accepted at: DHHL.Grants@hawaii.gov
October 6, 2022 - 2:00 PM HST	Proposals' due date/time. Electronic submittals shall be accepted at: DHHL.GrantsRFP@hawaii.gov
October - November, 2022	Proposal evaluations by the DHHL Grant Review Committee
November 2022	Matrix of scores completed
~~November 21 - 22, 2022~~ DECEMBER 19 - 20, 2022	Award recommendations and Hawaiian Homes Commission's approval
~~December 2022~~ JANUARY 2023	Notifications to all applicants and grant agreement review
TBD	Estimated grant agreement start date

Dates subject to change

DISCUSSION

A total of thirty-two (32) grant applications were received by the October 6, 2022 deadline and email notifications were sent to each applicant to acknowledge receipt. See Table 3 below. One applicant submitted a revised application after the

October 6, 2022 deadline. The revised application was not accepted and the applicant was notified in writing.

Table 3
Number of applications received by island and received by the grant deadline

Applications received	Organizations submitting	Island
13	9	O'ahu
2	2	Kaua'i
7	3	Maui
6	3	Moloka'i
0	0	Lāna'i
4	3	Hawai'i
32	20	TOTAL

Per the RFPs, applications underwent two reviews.
Phase 1 review was for eligibility, completeness and compliance.

- Two applications were incomplete.
- The applicant for one application was ineligible.

The above three (3) applicants were notified in writing.

Out of the 32 received, 29 applications were then forwarded to the Grants Review Committee for the Phase 2 review. The committee consisted of qualified individuals and a mix of department staff and an external individual. The committee reviewed the proposed project goals, work plan scope, budget and timeline, and potential benefit to beneficiaries of the Hawaiian Homes Commission Act of 1920, as amended (HHCA). The grant application packets included a description of the review process, a detailed explanation of all the review factors, and stated that "applications with any missing items will be returned without being reviewed." A checklist was provided in the application packet to assist applicants. All required forms were also included in the application packet.

For RFP-23-HHL-001, a total of seven (7) applications were received by the October 6, 2022 deadline. All applications were complete and all applicants were in compliance with Hawaii Compliance Express. Thus, all seven (7) applications were forwarded to the Grants Review Committee for further review. The total amount requested was $5,380,000. This amount is far above the budget allocation of $3,000,000. Per the RFPs, the department

may supplement this RFP with the balance of un-allocated funds from any other RFP.

For RFP-23-HHL-002, a total of ten (10) applications were received by the October 6, 2022 deadline. All applications were complete and all applicants were in compliance with Hawaii Compliance Express, except for one. Thus, nine (9) out of the ten (10) total received were forwarded to the Grants Review Committee for further review. The total amount requested was $2,348,444. This amount is well within the budget allocation of $4,500,000. Per the RFPs, the department may move the balance of un-allocated funds to any other RFP. Such funds will be moved to supplemental recommended awards for RFP-23-HHL-001.

For RFP-23-HHL-003, a total of ten (10) applications were received by the October 6, 2022 deadline. All applications were complete and all applicants were in compliance with Hawaii Compliance Express, except for two (2). Thus, eight (8) of the ten (10) total received were forwarded to the Grants Review Committee for further review. The total amount requested was $700,000. This amount is equal to the budget allocation of $700,000.

For RFP-23-HHL-004, a total of five (5) applications were received by the October 6, 2022 deadline. All applications were complete and all applicants were in compliance with Hawaii Compliance Express. Thus, all applications were forwarded to the Grants Review Committee for further review. The total amount requested was $60,000. This amount is well within the budget allocation of $300,000. Per the RFPs, the department may move the balance of un-allocated funds to any other RFP. Such funds will be moved to supplemental recommended awards for RFP-23-HHL-001.

Table 4 below is a summary of grant budget amounts, grant application requested amounts and DHHL recommended amounts. Further details are found in Exhibits A, B, C and D.

TABLE 4
Summary of Budgeted, Requested and Recommended Amounts

Request for Proposal (RFP)	Budgeted amount	DHHL Funds Requested	Recommended Amount	Sources of Funds
RFP-23-HHL-001	$3,000,000	$5,748,034	$5,380,000	State NHRF
RFP-23-HHL-002	$4,000,000	$3,515,644	$2,348,444	State
RFP-23-HHL-003	$700,000	$795,000	$700,000	NHRF
RFP-23-HHL-004	$300,000	$75,000	$60,000	NHRF
TOTALS	$8,500,000	$10,133,678	$8,488,444	

The funding recommendations were made based on the following evaluation criteria. The criteria below were stated in each grant application packet and presented by DHHL staff at the grant informational meetings. Meetings were held virtually on August 2, 3 and 5, 2022, and recorded for later viewing.

Evaluation Criteria for all RFPs, except for RFP-23-HHL-004:

(1) Organizational Capacity: evaluates the applicant's capacity (ie, people resources, administrative systems, technical capacity) and track record to carry out the proposed project work plan and activities; to handle grant funds responsibly; and to promptly expend the grant funds.
(2) Project Readiness: evaluates the project's readiness including a clear project proposal, project team structure is operational, and project budget is realistic.
(3) Beneficiary Involvement and Partnerships: evaluates the extent to which beneficiaries identified the need for the project, beneficiary involvement with planning and participating in the project.
(4) Sustainability: evaluates the applicant's preparedness to maintain the project after the grant is completed; leadership succession planning; and sound business plan.

RFP-23-HHL-004 Community Capacity Building Evaluation Criteria:

(1) Building capacity: demonstrate how it will increase its own capacity, capability, knowledge and/or skills through a program of training and technical assistance.

(2) Target population: How many beneficiaries will be assisted? Describe your organization's current projects to serve beneficiaries.
(3) Soundness of approach: Is the plan for implementation viable? Does the proposal have SMART objectives? Do the results, benefits, and outcomes relate to a clearly defined need?
(5) Sustainability: How will the project be continued after DHHL funding? Is there a contingency plan if partial funding is awarded?

Matching funds and in-kind donations were optional; however, additional points were provided for match. For RFP 002 and 003, additional points were given for Regional Plan Priority Projects.

A summary list of funding recommendations and details of the grant applications that were reviewed are attached in Exhibits A, B, C, and D.

AUTHORIZATION

Community Grants are one form of assistance to implement the Community Development component in the NHDPP. The current 2022 - 2024 NHDPP was approved by the HHC in June 2022. The NHDPP is authorized under HAR Chapter 6.1 of Title 10. Further, the NHDPP shall be funded by NHRF, federal, state, county and private sources.

In consultation with the State Department of Accounting and General Services, State Procurement Office, DHHL's Community Development Grant Program is modeled after the State of Hawaii's procurement process known as Competitive Sealed Proposals or "Request for Proposals." The law and rules governing this form of procurement are covered under Hawai'i Revised Statues Section 103D-303 and HAR Subchapter 6.

RECOMMENDED MOTION/ACTION

DHHL staff respectfully requests approval of the recommended motion as stated above.

EXHIBIT A

RFP-23-HHL-001
Grant for Improvements to Existing Facilities on Hawaiian Home Lands (Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
Kaala Farm Inc.	$368,034	$0	$24,000	$392,034	$0
Kalamaula Homesteaders Association	$400,000	$200,000	$0	$600,000	$400,000
Ka Waihona O Ka Na'auau Public Charter School	$1,000,000	$1,000,000	$0	$2,000,000	$1,000,000
Moloka'i Homestead Farmers Alliance	$1,000,000	$0	$18,500	$1,018,500	$1,000,000
Nanakuli Hawaiian Homestead Community Association	$980,000	$0	$45,000	$1,025,000	$980,000
Princess Kahanu Estates Association	$1,000,000	$201,000	$0	$1,201,000	$1,000,000
Waiohuli Hawaiian Homesteaders Association, Inc.	$1,000,000	$0	$75,000	$1,075,000	$1,000,000
TOTAL	**$5,748,034**	**$1,401,000**	**$162,500**	**$7,311,534**	**$5,380,000**

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Kaala Farm, Inc.

Funds Requested	$368,034
Funds Recommended	$0

PROJECT DESCRIPTION

The roots of Ka'ala Farm and its Cultural Learning Center reach back to the early 1970s, when a group of youth involved with the Wai'anae Rap Center began hiking in the uplands of Wai'anae Valley. There, they stumbled upon rock terraces. Un-versed in their culture, they did not recognize them as lo'i kalo (wet taro fields). They took the time to find out what they were, and soon began a voyage of rediscovery.

Over the past 39 years, Ka'ala Farm has offered a stabled, enduring anchor for the community. Its founders have seized opportunities. The Children's Education Program provides elementary school children a hands-on opportunity to experience Hawaiian culture by planting kalo, making poi, creating kapa (bark cloth), and learning from kupuna in the ancient oral tradition. Wai'anae High School students in the Hawaiian Studies Program work with Ka'ala staff and volunteers to map pre-contact archeological sites and re-vegetate coastal and valley areas with native Hawaiian plants. Reaching out to the adult community, Ka'ala offers work therapy at the Learning Center for substance abusers and guided tours to interested visitors.

Kaala Farm Inc. is not structured as a membership-based organization. The proposal indicates that five out of the six board members are beneficiaries.

The proposed micro-grid project will add an off-grid energy system to power kitchen appliances at Ka'ala Farm. This system - consisting of ground-mounted solar and battery storage - will satisfy the energy needs for food production at the Ka'ala Farm cultural learning center The farm kitchen will have refrigeration, an electric stove, oven, steamer, mill, and other equipment for preparing kalo and other produce from the farm.

Kaal Farm conducted an energy audit and determined a need for 23 kilowatts of electricity, with a 41 kilowatt-hour battery to provide additional power overnight.

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RATIONALE FOR RECOMMENDATION

The proposal lacks detail about beneficiary involvement in Ka'ala Farm programs and the planning for this project. It is not clear how beneficiaries will benefit in the long term. There is no evidence of support from beneficiaries nor homestead associations. And, there was no budget narrative provided to explain the budget items and how they relate to the proposed project.

The committee recommends no funding.

Kalamaula Homesteaders Association

Funds Requested	$400,000
Funds Recommended	$400,000

PROJECT DESCRIPTION

Kalamaula was the first Hawaiian homestead community developed in 1921 as a demonstration project alongside the authoring of the Hawaiian Homes Commission Act. The Kalamaula Homesteaders Association (KHA) was founded in 1961 and received its federal 501(c)(3), charitable, tax-exempt in status in 2010. KHA was established to:

(1) Challenge and inspire youth who live on homestead land to achieve their full potential b providing support ad opportunities for advancement in education
(2) Promote better health for our Kalamaula community and homesteaders outside of Kalamaula through education
(3) Preserve and protect Hawaii's natural environment, including Kiowea Park in Kalamaula, through stewardship of our lands consistent with Hawaiian culture, values, and traditional resource management methods.

KHA is a membership organization and currently has 55 active and paid members. The proposal indicates that all seven board members are beneficiaries.

The proposed project addresses the safety and compliance issues with the parking infrastructure surrounding the existing Kiowea Park Pavilion. The goal is to resurface the current parking lot to provide wheelchair accessible parking; solar powered lights for parking lot safety; and a drainage system to avoid flooding. The proposed project also includes renovating the roofs covering the Pavilion and the detached restrooms. The shingle-cover rooftops on both buildings are the original from the 1990s. Lastly, the

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proposed project includes renovating the existing concrete walkway that connects the Pavilion to the restrooms. The current condition is old, crooked and uneven, thus unsafe footing for users, particularly for Kupuna.

RATIONALE FOR RECOMMENDATION

KHA has strong organizational capacity and track record. Though the proposed work plan is general, it indicates KHA's understanding of the process and steps to successfully complete the project. KHA's proposal included support letters from the Molokai Homestead Livestock Association, Molokai Hunting Club and Kula Kaiapuni o Kualapu'u, among others. Lastly, KHA has implemented one State Grant-In-Aid and several DHHL grants. One major accomplishment is that 90% completion of the construction of the new Kiowea Park Pavilion and kitchen.

Committee notes that additional efforts will be needed for preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

KHA is a current DHHL grantee and is performing well. KHA also has submitted two proposals to the current DHHL grants cycle.

The committee recommends full funding.

Ka Waihona o ka Na'auao Public Charter School

Funds Requested	$1,000,000
Funds Recommended	$1,000,000

PROJECT DESCRIPTION

Ka Waihona o ka Na'auao's mission is to create socially responsible, resilient, and resourceful young men and women by providing an environment of academic excellence, social confidence, and Hawaiian cultural awareness. Ka Waihona opened its doors in the school year 2002-2003. From its inception, Ka Waihona has had humble roots that continue to ground the work of all its staff members. Ka Waihona is structured to be responsive to the learning styles, Hawaiian cultural values, and future desires of the families in its community.

Ka Waihona provides educational opportunities (grades K - 8) to all students whose 'ohana resides in DHHL homestead areas,

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including Kapolei, Nānākuli, Lualualei, Mā'ili, Princess Kahanu Estates, Makaha Valley, and Wai'anae communities.

Ka Waihona took the time to conduct a survey in 2022

- Out of the 625 enrolled student body, 160 responded
- 38.8% (62) of the responses indicated they are beneficiaries
- 50 survey participants answered that they reside on Hawaiian Homestead land

The proposed project is to renovate the school cafeteria and kitchen with the goal to operate a fully-certified kitchen and cafeteria. The purposes of the proposed project are as follows:

- Provide a spacious kitchen area and sufficient eating space
- Proper ventilation for enclosed spaces and less hardware on the floor to avoid injury or spills
- Design to allow for a school meal service of at least 1,000 students
- Main objective is to secure a safe zone for anyone entering the building

RATIONALE FOR RECOMMENDATION

Ka Waihona has strong organizational and administrative capacity and provided a clear description of the project. There is a clear benefit to beneficiaries. Ka Waihona also is providing 1:1 cash match.

Ka Waihona has managed the existing facility and delivered programs for 18 years, however, there was no mention of previous construction experience. A $2 million improvements project is a major undertaking. Ka Waihona is relying on in-house staff to carryout this project. Ka Waihona was proactive in planning and took steps to consult with the State Department of Health and others to understand the process and approvals needed for such an undertaking. Additionally, Ka Waihona should be aware of DHHL processes and approvals, including addressing the State Hawaii Revised Statute (HRS) Chapter 343 Environmental, HRS Chapter 6E compliance, and DHHL design and construction plan approvals. Lastly, as DHHL has experienced with other construction projects due to the effects of the COVID pandemic and other economic issues, construction materials are limited, shipping times are lengthy, and costs have dramatically increased for construction labor, supplies and materials. Ka Waihona should be mindful of these factors and adjust its project timeline accordingly.

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Ka Waihona would be a first-time DHHL grantee. The committee recommends full funding.

Moloka'i Homestead Farmers Alliance

Funds Requested	$1,000,000
Funds Recommended	$1,000,000

PROJECT DESCRIPTION

MHFA was organized in 2005 by a group of homestead farmers advocating for beneficiary water and resources. MHFA's mission is to advocate for the protection of water rights for all homestead farmers evolving to all farmers in commercial operations, food safety, technical and subsistence farming.

MHFA is a membership organization with 202 members and over 1,000 family members registered and enrolled in MHFA programs and events. MHFA also has partnerships with the Ahupua'a o Molokai, Ho'olehua Homestead, Kalamaula Homestead and Makakuoha Cooperative.

MHFA has a License with DHHL to manage the Lanikeha Center in Ho'olehua. The facility was built by DHHL in 2000. With State Grant-In-Aid funds, MHFA recently completed major renovations, including replacement of hall floors; added ceiling fans; interior/exterior paint; new kitchen appliances; improved outside lighting; added a photovoltaic system, internet/wireless and speaker/sound system.

The proposed project is to continue renovations to Lanikeha Center, specifically to renovate the restrooms and repair the sewer system.

RATIONALE FOR RECOMMENDATION

MHFA is a well-established organization, with capacity and a strong track record. With the GIA, MHFA completed the Phase 1 renovation project in five years and during the COVID pandemic. Project cost was $1.75 million. The proposed project is shovel ready.

MHFA strengths and assets include its board and leadership; drive and focus to address community needs; ability to attract resources; and its broad and diverse network of volunteers, community organizations, and government agencies that contributed labor, donations, equipment and funding to support

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MHFA programs and services. The proposed project is shovel ready.

Committee notes that additional efforts will be needed to update MHFA's facility business and operations plan; and a financial plan for future facility operations and maintenance.

MHFA has successfully completed four prior DHHL grants. MHFA also submitted two proposals to the current DHHL grants cycle.

The committee recommends full funding.

Nanakuli Hawaiian Homestead Community Association

Funds Requested	$980,000
Funds Recommended	$980,000

PROJECT DESCRIPTION

The Nanakuli Hawaiian Homestead Community Association (NHHCA) was formed in 1987 and received its federal 501(c)(3) tax-exempt designation in 2001. NHHCA is an economic development organization on the Wai'anae Coast with a mission to protect the interest of native Hawaiians as they pertain to the Hawaiian Home Lands Trust and provide services to the homestead.

NHHCA has five board members and the proposal indicates all are beneficiaries. NHHCA has special members, who are kupuna serving as the recognized Hawaiian cultural experts from all Nānākuli Nei, for the expressed purpose to be guardians and gatekeepers of the language, culture, arts and protocols of the Native Hawaiian people. Associate membership is open to all individuals residing on Nanakuli Hawaiian Homestead Land.

NHHCA, with its partner Hawaiian Community Development Board (HCDB), developed the Nanakuli Village Center project in 2019. The center includes a multi-purpose learning center; a 48-unit affordable housing complex; a satellite clinic of the Wai'anae Coast Comprehensive Health Center; and Longs Drugs as the anchor tenant. Thus far, the center has benefitted the community in many ways, including bringing much-needed health care services to the area; offering employment opportunities; providing space for local businesses; and providing a gathering place for area residents.

The current dilemma that NHHCA is facing is that after three years in operation, NHHCA has not been able to realize any

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revenue. Operating costs and debt payments have exceeded and/or has been the same as the amount of revenue generated by commercial tenant rent payments, NHHCA is barely breaking even on an asset that was designed to generate revenue for NHHCA to fulfill its mission.

There are three (3) retail bays at the center's inline building that are still vacant. Typically, the development concept of leaving units un-improved was to give tenants the flexibility to design and build out their own space. The challenge is to fill the three units at this location and in the current market.

NHHCA is seeking DHHL grant funds to build out the interiors of these three units, thus making them more attractive for local businesses and nonprofits to consider leasing the spaces.

RATIONALE FOR RECOMMENDATION

NHHCA has demonstrated capacity and track record with completion of the Nanakuli Village Center in 2019. Much of the success was due to reliance on outside project management and partners. There is little indication of building community capacity. The organization is in a transitional stage, with aging leadership and capacity could change unexpectedly. The proposed project is shovel ready. However, there was no information on covering management and maintenance costs with future net profits to substantiate the proposed approach. The potential for local economic development to support NHHCA's mission and to achieve fiscal sustainability is a compelling reason for funding.

The committee recommends full funding.

Princess Kahanu Estates Association

Funds Requested	$1,000,000
Funds Recommended	$1,000,000

PROJECT DESCRIPTION

Incorporated in 1995 and achieved federal 501(c)(3) charitable, tax-exempt status in 2016, Princess Kahanu Estates Association (PKEA) is a homeowners association, serving 271 lessees. PKEA has a DHHL license for 0.97 acres, which includes the existing PKEA office, community center, boatyard and common areas. With various community partners and beneficiary involvement, PKEA has

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a long history of implementing community projects, including rental and maintenance of the boatyard, neighborhood watch, Kanikapila night, and annual turkey imu of Thanksgiving. Building on these earlier programmatic and project experiences, PKEA is poised to take on larger-scale projects.

PKEA was awarded a DHHL Regional Priority Project grant in 2020 to start the planning and due diligence to renovate and expand the existing community center, boatyard and begin plans for a new pavilion.

PKEA seeks additional funds to focus on the planning, design and construction of a certified kitchen on a portion of the existing boat yard.

RATIONAL FOR RECOMMENDATION

PKEA has strong administrative capacity and has demonstrated ability to obtain funds. It has minimal experience with construction projects as evidenced by the slow progress of the current open DHHL grant. This proposal shows a good team on board, so there is a strong likelihood of project success. The infusion of a significant amount of funds will also increase the likelihood of project success. The project description and work plan lack details and consultant roles and tasks still need to be clarified. Given these limitations, the committee believes that this project has great potential. The potential for local economic development to achieve fiscal sustainability is a compelling reason for funding.

Committee notes that additional efforts will be needed for preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

PKEA has had multiple grants from DHHL and has performed well. PKEA also has applied to all RFPs in this DHHL grant cycle (total of five proposals).

The committee recommends full funding.

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Waiohuli Hawaiian Homesteaders Association, Inc.

Funds Requested	$1,000,000
Funds Recommended	$1,000,000

PROJECT DESCRIPTION

Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) was formed in 1999 and is comprised of DHHL Lessees. WHHA was organized and established to unite under the mana of all Hawaii Nei, to protect, preserve and defend the Hawaiian Home Lands Trust and combine our efforts for the rehabilitation and betterment of all native Hawaiian beneficiaries.

In 2007, WHHA secured 5 acres within the Waiohuli homestead from DHHL for community use. In 2009, WHHA obtained an additional 12 acres. This is the current site of WHHA's existing community center and park, He Piko no Waiohuli, built in 2016.

The proposed project is to construct a 2,304 square feet enclosed attached improvement to existing community kitchen and to install exterior site lighting in the existing parking areas.

RATIONALE FOR RECOMMENDATION

WHHA has demonstrated capacity and track record with completion of the current facility. Much of the success was due to reliance on outside project management and partners. WHHA also has brought in funding and in-kind donations of labor and equipment from non-DHHL sources. In another grant proposal, WHHA intends to establish a training and mentoring program to build community capacity in project management, construction and related support services. The project is shovel ready.

Committee notes that additional efforts will be needed for preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

WHHA has only had one grant from DHHL. Previous funding is from State Grants-In-Aid and other sources. For this current DHHL grant cycle, WHHA submitted proposals to each RFP.

The committee recommends full funding.

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EXHIBIT B

RFP-23-HHL-002
Grant for Existing Programs and Services in Existing Homesteads
(Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
Aina Alliance	$331,100	$0	$0	$331,100	$331,100
College-In-7, Inc.	$167,200	$0	$0	$167,200	$0
Habitat for Humanity International	$500,000	$0	$0	$500,000	$500,000
Ka 'Ohana O Kahikinui, Inc.	$500,000	$0	$0	$500,000	$0
Ke Kula Nui O Waimānalo	$500,000	$0	$84,000	$584,000	$500,000
Kula No Na Po'e Hawai'i	$447,344	$93,813	$0	$541,157	$447,344
Moloka'i Homestead Farmers Alliance	$400,000	$7,000	$44,700	$451,700	$400,000
Princess Kahanu Estates Association	$500,000	$0	$0	$500,000	$0
Waiohuli Hawaiian Homesteaders Association, Inc.	$170,000	$170,000	$0	$340,000	$170,000
TOTAL	**$3,515,644**	**$270,813**	**$128,700**	**$3,915,157**	**$2,348,444**

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Aina Alliance

Funds Requested	$331,100
Funds Recommended	$331,100

PROJECT DESCRIPTION

Aina Alliance formed to address a community need. Over the years, the community witnessed the growing problem of homelessness, trash dumping and fires in the un-used lands and coastline. Fishing areas were obstructed by illegal camping. Significant amounts of abandoned vehicles and household goods littered the area. Community was faced with this derelict state of the environment that was once had beautiful beaches and coastline.

Aina Alliance has accomplished great success in a short time to mitigate fire hazards and remove waste. This was possible with the help of community partners, volunteers and resource agencies who turned out in droves to assist the clean up efforts.

Aina Alliance is keen to capacity building, including attention to succession planning; preparing a business plan; and setting up committees to involve community and others to participate in Aina Alliance's efforts and be the driving force towards achieving Aina Alliance's goal.

The proposed project - Makai Management - is to clear and maintain over 400 acres of Hawaiian Home Lands for the purposes of land restoration and community enrichment through aina-based learning and perpetuating cultural principals. Specific tasks include the following.

- Clear heavy brush and reduce fire fuel loads
- Clear and maintain fire breaks and access roads
- Remove abandoned vehicles and household goods/appliances
- Install security fencing

RATIONALE FOR RECOMMENDATION

On its own initiative with the Anahola community, Aina Alliance has gained project experience and good partnerships in a short period of time. In February 2022, Aina Alliance obtained a DHHL Right-of-Entry and is seeking a DHHL License. Additionally, Aina Alliance has been actively participating in the recent DHHL Anahola regional plan process and beneficiary consultations. Many individuals affiliated with Aina Alliance and project volunteers

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are beneficiaries, including two out of the four board members. This organization is off to a good start. Project workplan, budget and timeline are reasonable. And, with the numerous partners, this will help ensure adequate volunteers to complete the work.

An initial investment from DHHL comes at a good time for this organization to grow, take on the land management kuleana in the homestead area, and continue presence and the project momentum. Project is shovel ready.

Committee notes that additional efforts will be needed for fund development to sustain Aina Alliance's efforts after land clearing; completing Aina Alliance's business plan; and a financial plan to sustain the Makai Management program.

Aina Alliance would be a first-time DHHL grantee.

The committee recommends full funding.

College-In-7, Inc.

Funds Requested	$167,200
Funds Recommended	$0

Project Description

College-In-7 (Ci7) is an emerging nonprofit organization seeking to enhance the educational opportunities of students (grades 7 to 12) in Nanakuli to develop sound reasoning skills, social confidence, and Hawaiian cultural appreciation. Though Ci7's focus is on math tutoring, Ci7 seeks to encourage students to find their passions and to do their best efforts to pursue prosperous and respectable lives. Ci7 provides school supplies, math textbooks and Report Card Awards. Ci7 began assisting students in 2017 by providing a summer Math Camp for four Nanakuli students. Additional Math Camps were also conducted in 2019, 2021 and 2022, each with four students. Location of the camps were varied, based on partnerships and space availability for a learning environment and storage of supplies. Ci7's biggest challenge has been recruiting students in the Nanakuli homestead. The ultimate goal is to work with students over a six year period and to guide them into college in the seventh year.

The proposed project is to support the Ci7 Math Camp and Extended Services. Specifically, funds will be used for an

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executive director and a teacher aid position; program staff; supplies for the Match Camp and other services.

RATIONALE FOR RECOMMENDATION

College-in-7 is a startup nonprofit with limited administrative capacity and limited track record. Though three Math Camps were conducted, results and long-term impacts remain to be seen. The proposed project does address a Priority Project in the DHHL Nanakuli Regional Plan. However, there was no indication from the proposal of the community's interest and involvement in this project, specifically from homesteaders themselves and homestead associations.

The committee recommends no funding.

Habitat for Humanity International

Funds Requested	$500,000
Funds Recommended	$500,000

PROJECT DESCRIPTION

Habitat Maui was established in 1996 and became an affiliate of Habitat for Humanity International in 1997. Habitat serves low-income residents in the County of Maui. Its mission is to build decent housing and renovate substandard housing - in partnership with community volunteers and potential homeowners - so that homelessness and substandard housing in Maui County are eliminated. Habitat Maui is not a membership organization.

Habitat Maui has worked with DHHL and lessees for more than 20 years and formalized a Memorandum of Understanding with DHHL in 2002. Habitat Maui completed five homes in Paukūkalo, two homes in Wai'ehu Kou III, 12 homes in Wai'ehu Kou IV, and 13 homes in Waiohuli-Kēōkea (with six more in the construction pipeline).

In 2019, Habitat Maui expanded its service area to include Molokai and, most recently, completed extensive safety repairs for five kupuna beneficiaries. Currently, Habitat Maui has 14 applications from Lessees in Maui County, including from the Ho'olehua homestead for home repair projects.

The proposed project is to expand and support Habitat Maui's existing home repair program by offering services specifically to qualifying lessees. Habitat Maui proposes to serve a total of

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50 lessees. Safety-related repairs will be offered at no cost to Lessees. Over time, small safety issues that can be addressed early on, can prevent more serious and more expensive repairs and remediation later on. The long term impact of Habitat's assistance is to help the Lessee save significant future expenses, minimize stress and physical injury in the long term.

RATIONALE FOR RECOMMENDATION

Habitat Maui clearly has strong capacity and a strong track record. Work plan and Budget are aligned and reasonable This project is shovel ready.

- Over 20 years providing repair/renovation services to the general public as well as experience providing financial assistance to qualifying DHHL lessees.
- Strong administrative capacity, including grants management, is evident in the proposal, with citations of grant funding from Office of Hawaiian Affairs and Maui County; and description of Habitat's process and procedures for project participant intake, home repair assessment and follow up, including before and after photos to document job completion.

Habitat Maui is self-aware of its capacity and lessons learned. Habitat Maui has Identified the following capacity areas and is making efforts to address:

- Leadership succession, as its original Executive Director will be stepping down.
- "One of the biggest takeaways is the importance of open and honest communication on all levels throughout the organization's transition process to ensure that all parties affected can build trust and move forward together."
- Having a Strategic Plan. Habitat Maui completed a Strategic Plan in 2016. It proved to be helpful to map out what was needed when confronted with unexpected situations such as the COVID pandemic. Habitat Maui commits to undertake another Strategic Planning process in the early term of the new Executive Director.

Beneficiary involvement

- Has an MOU with DHHL since 2002.
- Completed total of 32 new homes in Paukūkalo, Wai'ehu Kou Phase 3 and 4, and Waiohuli-Kēōkea homesteads.

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- Pipeline includes one home under construction in Waiohuli-Kēōkea and five more new homes.
- In 2019, Habitat Maui expanded its services to Molokai and, more recently, completed safety repairs for 5 kupuna lessees.
- For repair/renovation projects, Habitat Maui has 14 applications from DHHL Lessees, with the most recent requests from Molokai.

- Planning phase includes on-site Assessment, Lessee may also provide "sweat equity" in working with Habitat staff and volunteers, evaluation by participating in the final walk through and follow up surveys.

Committee notes that additional efforts will be needed for fund development to sustain the program after DHHL grants end.

Habitat would be a first-time DHHL grantee.

The committee recommends full funding.

Ka ʻOhana o Kahikinui, Inc.

Funds Requested	$500,000
Funds Recommended	$0

PROJECT DESCRIPTION

Ka ʻOhana O Kahikinui (KOOK) is a federal 501(c)(3) charitable, tax-exempt organization that was started in 1992 by native Hawaiian beneficiaries of the Hawaiian Home Lands Trust to provide DHHL beneficiaries the opportunity to re-settle and restore the Moku of Kahikinui on the island of Maui. KOOK's main purpose is to improve and enrich the lives of all Kahikunui residents as well as be good stewards of the land. KOOK's primary focus is to assist Hawaiians in resettling the land, establishing a community, and pursuing community-based economic development. KOOK also engages in and supports reforestation efforts to improve water, agricultural, cultural and economic resources that are associated with a healthy upland forest. KOOK has been involved with Leeward Haleakala Watershed Restoration Partnership (LHWRP)/ Uhiwai O Haleakalā since DHHL joined with adjacent landowners to protect and restore over 43,000 acres of native watershed forest through LHWRP's creation in 2003.

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The proposed project - Kahikinui Forest Restoration - will continue the process of community-based restoration by seed collection, invasive species management, outplanting and outreach efforts. 40,000 plants will be planted across 340 acres. The project is an identified Priority Project in the DHHL Regional Plan for Kahikinui -- *Resource Management and Develop a New Stewardship Economy.*

RATIONALE FOR RECOMMENDATION

Ka ʻOhana O Kahikinui (KOOK)has limited capacity to carryout a project of this scale. More than half of the funds is to be contracted out to KOOK's partner, Uhiwai o Haleakalā, for staff salaries. Little information was provided about the partner, who will be doing the work. The project description and beneficiary involvement is very general. Lastly, the proposal indicates that KOOK nor its partner, Uhiwai, have a business plan nor intend to pursue one for this long term undertaking.

Further, KOOK has an open DHHL grant since 2018 and progress has been minimal. The grant recently was time-extended a second time. And, the project is on a much smaller scale compared to this proposed reforestation project.

KOOK submitted two proposals to the current DHHL grants cycle.

The committee recommends no funding.

Ke Kula Nui o Waimānalo

Funds Requested	$500,000
Funds Recommended	$500,000

PROJECT DESCRIPTION

Ke Kula o Waimānalo (KKNOW) is a grassroots, community-based nonprofit established in 2017 by individuals from the Waimānalo ahupuaʻa. The organization's vision is Kūkulu Kaiāulu or building community. KKNOW's mission is to provide a community of practice through collaboration with Kānaka to promote strong and healthy Ahupuaʻa. KKNOW aims to help community become self-sustainable in every way, from the mountain to the sea. The KKNOW aquaponics program grew out of a community-driven initiative in 2009 to address food sovereignty and food insecurity in Native Hawaiian communities. Since then, over 200 families in Waimānalo participated in the backyard aquaponics workshops and have home aquaponics in their backyards.

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The proposed project is to build on KKNOW's long-standing program to address food sovereignty and food security in Native Hawaiian communities, MALAMA - "Mini Ahupuaa for Lifestyle and Mea'ai through Aquaponics." MALAMA began as a community-driven initiative in Waimānalo in 2009. The program innovatively merges modern technology of aquaponics with traditional Native Hawaiian practices to create a mini-ahupua'a system in home backyards to provide constant access to fresh fruits, vegetables and fish. Unlike gardens, aquaponics vegetable and fruits mature in a shorter time span and require minimal maintenance with fewer demands on time and skills.

Specifically, KKNOW proposes to expand its MALAMA program and to collaborate with homestead associations to offer MALAMA to homestead families.

- Recruit new families on Hawaii island (10 families in Kona) and Molokai (20 families)
- Deliver MALAMA 2.0 in Waimānalo, Maui and Hawaii islands, to support them to maintain and sustain their existing aquaponics systems - Waimānalo, Pa'upena, Piihonua, Maku'u and Kaumana

KKNOW included support letters from the following homesteads: Waimā Unalo, Piihonua, Kaumana, Pa'upena, La'i 'Opua and Ho'olehua. Requests for the MALAMA program also came from Maku'u, Kamiloloa and One Ali'i homesteads.

Rational for RECOMMENDATION

KKNOW clearly has capacity, experience and a strong track record to carryout the proposed project. Workplan, budget and timeline are clear and reasonable. Project is ready to implement.

KKNOW's MALAMA program has been in operation for 13 years. Under a DHHL grant in 2020, KKNOW assisted 30 families total in 5 homesteads: Waimānalo, Oahu; Hawaii island homesteads of Piihonua, Maku'u, and Kaumana; and Maui homesteads in parternship with Pa'upena Community Development. KKNOW's efforts reached a total of 167 beneficiaries. This was accomplished during the height of the COVID pandemic.

KKNOW's program also includes a thoughtful vision for sustainability and succession planning.

- KKNOW will continue to train beneficiaries within each homestead area to become trainers themselves and local technical resources for their own homesteads.

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- KKNOW's Opio Leadership Academy. 93% of participants are homesteaders. This program is the start of KKNOW's succession planning and training our youth to be the next leaders.

The committee recommends full funding.

Kula No Na Po'e Hawai'i

Funds Requested	$447,344
Funds Recommended	$447,344

PROJECT DESCRIPTION

Since 1992, Kula No Na Po'e Hawai'I (KULA)serves the Papakōlea region, consisting of Papakōlea, Kewalo and Kalāwahine Hawaiian homesteads, working to build a resilient, healthy and thriving lahui. KULA has been at the forefront of providing homesteaders with a plethora of education, health and culture-based programs, along with annual community events. KULA has successfully implemented over 50 programs and received $15 million in grants, contracts and donations over its 30 years of service.

KULA is a non-member organization.

The proposed project is to expand KULA's community-driven social services network that promotes long-term tenancy and self-sustainability of homestead beneficiaries. KULA's Ho'okele Program has been in operation for two years and will offer the following services.

- Support 60 individuals with housing placement
- Coordinate 15 educational workshops
- Complete 150 applications for additional wrap around services and programs

RATIONALE FOR RECOMMENDATION

KULA clearly has capacity and a strong track record, including extensive experience with grants management and program administration. Project description and expected outcomes are clear. Budget items are reasonable and clearly relate to the project activities. Excellent strategy for long term sustainability. Proposed project is ready to implement.

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Committee notes that additional efforts will be needed for fund development to sustain the program, after DHHL grant funds end.

KULA would be a first-time DHHL grantee.

The committee recommends full funding.

Moloka'i Homestead Farmers Alliance

Funds Requested	$400,000
Funds Recommended	$400,000

PROJECT DESCRIPTION

Molokai Homestead Farmers Alliance (MHFA) was organized in 2005 by a group of homestead farmers advocating for beneficiary water and resources. MHFA's mission is to advocate for the protection of water rights for all homestead farmers evolving to all farmers in commercial operations, food safety, technical and subsistence farming.

MHFA is a membership organization with 202 members and over 1,000 family members registered and enrolled in MHFA programs and events. MHFA also has partnerships with the Ahupuaa o Molokai, Hoolehua Homestead, Kalamaula Homestead and Makakuoha Cooperative.

The proposed project is to support MHFA's ongoing COVID Relief program (monthly) to provide food relief, hot meals, home care packages, drugstore/prescription gift certificates, and clothing giveaways. What started off as a simple idea with the Moloka'i farmers to donate food and produce to respond to beneficiary needs at the start of the COVID pandemic, blossomed into a monthly program to address basic life necessities for families in need. MHFA.

RATIONALE FOR RECOMMENDATION

This is an existing program that MHFA and its partners initiated, organized and executed quickly in April 2020, as a first response to the COVID pandemic.

Moloka'i is our most rural and remote homestead area so needs are great and food, supplies, health care and social services are in decline as businesses struggle to keep doors open, and government agencies and nonprofit service providers have reduced or eliminated their services on island. MHFA brings to this project

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a well-established, functioning and broad network of partners and diverse resources.

Committee notes that additional efforts will be needed for fund development to sustain the program, after DHHL grants end.

MHFA has successfully completed prior DHHL grants. MHFA submitted two proposals to this current DHHL grants cycle.

The Committee recommends full funding.

Princess Kahanu Estates Association

Funds Requested	$500,000
Funds Recommended	$0

PROJECT DESCRIPTION

Incorporated in 1995 and achieved federal 501(c)(3) charitable, tax-exempt status in 2016, Princess Kahanu Estates Association (PKEA) is a homeowners association, serving 271 lessees. PKEA has a DHHL license for 0.97 acres, which includes the existing PKEA office, community center, boatyard and common areas. With various community partners and beneficiary involvement, PKEA has a long history of implementing community projects, including rental and maintenance of the boatyard, neighborhood watch, Kanikapila night, and annual turkey imu of Thanksgiving. Building on these earlier programmatic and project experiences, PKEA is poised to take on larger-scale projects.

The proposed project is for preventive maintenance for PKEA common areas, including the following:

- Irrigation system - have entire system inspected and prioritize the work before a major repair is required
- Re-pave existing parking lots for the Community building/ office and boat yard
- Paint office and common areas
- Inspect and upgrade security system with cameras
- Internet and WiFi access
- Automatic gate operations
- PKEA signage
- Inspect, upgrade the existing building air conditioning system

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RATIONALE FOR RECOMMENDATION

PKEA has experience handling grant funds and maintaining facilities. However, it is not clear from the proposal or the workplan what the project entails. The proposal mentions repairs to the boatyard and center and the budget lists "inspection" of a number of facilities; however, there are no details describing the improvements or what the cost estimates are based on. Given the lack of a clear workplan and schedule, the committee is concerned that this project will struggle to get started and completed in a timely manner.

PKEA currently has an open DHHL grant for major renovations to the existing center and boatyard. PKEA submitted multiple applications (total of five) for the current DHHL grant cycle, included a $1 million request to continue the center/boatyard major renovations. It appears some tasks in this $500,000 proposal could be incorporated as part of the larger project to improve the center and boatyard. Lastly, the committee expressed concern on taking on more projects than PKEA may have capacity for.

The committee recommends no funding.

Waiohuli Hawaiian Homesteaders Association, Inc.

Funds Requested	$170,000
Funds Recommended	$170,000

Project Description

Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) was formed in 1999 and is comprised of DHHL Lessees. WHHA was organized and established to unite under the mana of all Hawaii Nei, to protect, preserve and defend the Hawaiian Home Lands Trust and combine our efforts for the rehabilitation and betterment of all native Hawaiian beneficiaries.

Since 2017, the Waiohuli Economic Development Plan has been an indeterminate method for obtaining mentorship from contractors and professionals hired to assist WHHA complete its community initiatives. Homestead residents could learn multiple skills and disciplines related to construction and supportive services from this process. Resident participation further enabled wHHA to enhance the results of grant funds almost 3-to-1. As a result of this synergy, the Waiohuli Economic Development Opportunities initative - WE DO - was conceived in 2018.

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WE DO's purpose is to create economic opportunities through employment and services derived from the development of a master-planned community on Hawaiian Home Lands. The proposed project is for WHHA to establish, implement, manage and evaluate a master economic development plan. The primary task is to create a custom-fit economic development training program that promotes local jobs and small business opportunities, through the development process of a master=planned community.

RATIONALE FOR RECOMMENDATION

Waiohuli Hawaiian Homesteaders Association, Inc. clearly has demonstrated capacity, experience and a track record. The concept of building economic development capacity in coordination of a master planned community is a solid strategy. While the project is in concept stage, WHHA intends to contract with a service provider with a track record to develop successful training programs and a provider with experience working with DHHL and homestead communities. WHHA will task the provider to conduct a community assessment to guide the creation of the training program.

WHHA proposes to leverage DHHL grant funds 1:1 with its recent State Grant-In-Aid (GIA). WHHA has performed well with previous GIAs, administered by DHHL.

The committee recommends full funding.

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RFP-23-HHL-003
Grant for Project Implementation (Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
Ho'opili Farmers Assocation	$100,000		$60,000	$160,000	$100,000
Kalamaula Homesteaders Association	$100,000	$27,800	$22,200	$150,000	$100,000
Kanehili Community Association	$100,000	$30,000	$0	$130,000	$100,000
Ka 'Ohana O Kahikinui, Inc.	$100,000	$96,958	$0	$196,958	$100,000
La'i'opua Community Development Corporation	$95,000	$0	$78,000	$173,000	$0
'O Maku'u Ke Kahua Community Center	$100,000	$50,000	$0	$150,000	$100,000
Princess Kahanu Estates Association	$100,000	$0	$0	$100,000	$100,000
Waiohuli Hawaiian Homesteaders Association, Inc.	$100,000	$0	$0	$100,000	$100,000
TOTAL	**$795,000**	**$204,758**	**$160,200**	**$1,159,958**	**$700,000**

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Ho'opili Farmers Association

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

Ho'opili Farmers Association (HFA) was established in 2021 by farmers and ranchers who felt that they needed more knowledge of different ways to farm that could keep costs down and minimize the need for bringing in inputs from other islands and for ranchers to minimize cost of livestock feed, especially during times of drought. Although this association is fairly new, members come from diverse backgrounds in business, agriculture, construction, farming and ranching. HFA's mission is to assist and promote small farmers, ranchers and ivestock producers, with knowledge of cultural and organic farming techniques, production of livestock using natural farming procedures, sound business and marketing recesses, and methods to ensure their success and sustainability throughout the generations.

HFA is led by three board members – the proposal indicates that two of the three are beneficiaries. HFA is a membership organization and currently has 5 Farms as members and 32 individual members.

The proposed project is to provide educational and training opportunity for homesteaders on using mulch and inputs using the Korean natural farming techniques. The project is intended to be conducted as a peer-to-peer methodology where beneficiaries are the trainers and mentors to assist other beneficiaries to make mulch on their own. Proposal indicates homestead areas to be served are Ho'olehua, Kalamaula, One Ali'i and Kapa'akea.

RATIONALE FOR RECOMMENDATION

Though HFA is a new organization, HFA's board and key volunteers have worked successfully together in the past. They also have strong backgrounds in farming, ranching, business and construction.

Committee notes that additional efforts will be needed for fund development to sustain the program, after DHHL grant funds end.

HFA is an existing DHHL grantee is performing well. HFA submitted two proposals to the current DHHL grants cycle.

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Though the proposal did not provide target goals for the number of beneficiaries to be served by this project nor number of workshops to conduct, such information will be captured in the grant reports.

The committee recommends full funding.

Kalamaula Homesteaders Association

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

Kalamaula was the first Hawaiian homestead community developed in 1921 as a demonstration project alongside the authoring of the Hawaiian Homes Commission Act. The Kalamaula Homesteaders Association (KHA) was founded in 1961 and received its US IRS Section 501c3, charitable organization status in 2010. KHA was established to:

(1) Challenge and inspire youth who live on homestead land to achieve their full potential b providing support and opportunities for advancement in education
(2) Promote better health for our Kalamaula community and homesteaders outside of Kalamaula through education
(3) Preserve and protect Hawaii'ls natural environment, including Kiowea Park in Kalamaula, through stewardship ofour lands consistent with Hawaiian culture, values, and traditional resource management methods.

KHA is lead by a seven-member board – all of whom indicated they are beneficiaries. KHA is a membership organization and currently has 55 members.

The proposed project addresses (1) safety concerns within Kalamaula homestead and (2) construction for Phase 2 of the new Kiowa Park Pavilion. Specifically, the proposed project includes the following:

- Tree trimming to provide safety for motorists
- Removal of abandoned cars. Up to 100 were reported in a KHA survey
- Batteries for the new Photo-voltaic system for the new Pavilion

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RATIONALE FOR RECOMMENDATION

KHA has a strong track record and good capacity, especially in board skills and volunteer capacity. As a community, KHA took the initiative to address safety concerns for homesteaders and the general public and proposes to contract out the services for tree trimming and removal of abandoned cars. Such services from government are limited. For transparency, in its workplan, KHA laid out its procurement process to seek contractor bids.

The purchase of batteries is part of a larger project, KHA's photovoltaic system for the new Pavilion at Kiowea park. Construction for the new Pavilion started a few years ago and is funded by a State Grant-In-Aid and DHHL grant funds.

KHA has implemented one State Grant-In-Aid and several DHHL grants. One major accomplishment is that 90% completion of the construction of the new Kiowea Park Pavilion and kitchen.

KHA is a current DHHL grantee and is performing well. KHA also has submitted two proposals to the current DHHL grants cycle.

Committee notes that additional efforts will be needed for preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

The committee recommends full funding.

Kanehili Community Association

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

Kanehili Community Association (KCA) is a Native Hawaiian, community-based organization in Kapolei. It was formalized in 2009 and received its federal 501c3 tax exempt status in 2019. KCA's mission is to identify and address the needs of its community, be good stewards of its lands, and enhance community quality of life.

KCA is led by a board of five members, all of whom are beneficiaries. KCA is organized under the State of Hawaii Planned Community law, thus homeowners are required to be association members. KCA has 404 leased lots and approximately 2,020 members.

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KCA is seeking funds to continue its planning and design phases for a new community park located within the Kanehili homestead. This park will be accessible to beneficiaries and the general public. Specifically, funds are to be used for the pre-construction phase – land entitlement process, schematic design, and community engagement.

RATIONALE FOR RECOMMENDATION

KCA has good experience having completed construction of Phase 1 of the park, which is in operation. The KCA project team in Phase 1 is the same for the proposed Phase 2. The proposal is well thought out and there is a clear strategy for keeping beneficiaries informed.

KCA has an open grant (awarded in 2021) for the initial planning and due diligence for the Phase 2 of the park. Under this open grant, KCA seems to have a good team and several tasks were completed. However, KCA and its team have struggled with the major milestone - completing the HRS Chapter 343 Environmental.

Committee notes that additional efforts will be needed for fund development to complete construction; preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

The committee recommends full funding.

Ka ʻOhana o Kahikinui, Inc.

Funds Requested	$100,000
Funds Recommended	$100,000

Project Description

KOOK is a federal 501(c)(3) charitable, tax-exempt organization that was started in 1992 by native Hawaiian beneficiaries of the Hawaiian Home Lands Trust to provide beneficiaries the opportunity to re-settle and restore the Moku of Kahikinui.

KOOK has a board of seven members – all of whom are beneficiaries. KOOK is a membership organization, with 40 members. And KOOK is organized under State HRS 421J Planned Community law where as a leaseholder, you are automatically a member of the association.

The proposed project – Punawai and Water Infrastructure Improvements – is to install an innovative fog-drip system to

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capture water through a series of screens; store the water in tanks; distribute the water through a pipe system; and make available for the Kahikinui homestead at a collection area.

KOOK currently has an open grant for this same project, which started in 2018, before the COVID pandemic. Additional funds are needed for required Environmental compliance. (SHPD section 6E), cost overruns due to COVID pandemic (materials and shipping) and un-anticipated costs such as fencing to prevent ungulate damage to above-ground water system components (ie water collection lines).

RATIONALE FOR RECOMMENDATION

KOOK has limited administrative and organizational capacity, grants management and program management experience, though there appears to be good partnerships. Delays of the initial phase with the current open DHHL grant is attributed to COVID, yet no explanation was provided why the project did not get started in the two years prior to COVID. This year, there has been an infusion of new board members with skills and experience to assist and support the proposed project. The original grant scope has been amended to more realistically address the initial project planning phase, due diligence and DHHL Right-of-Entry requirements.

KOOK has known for some time that additional funds are needed to complete the original grant scope – installation of the fog-drip system. Unfortunately, it appears little progress has been made on fund development, other than this proposal to DHHL.

The committee was surprised to see that the proposal makes reference to using the water for domestic and household use. KOOK had advised DHHL that, initially, this fog-drip system will be for non-potable use, due to the astronomical costs to construct and maintain a water system that would meet federal and state water quality standards for human consumption (drinking, cooking, bathing). KOOK's current grant was amended to reflect this.

KOOK submitted two grant proposals in this current DHHL grant cycle. Both proposals brought attention to the need for fund development, the committee would like to see active efforts towards fundraising and resource development for this proposed project.

The committee would also like to see efforts made to prepare a business and operations plan, including a financial plan to operate, maintain and repair (as needed) the proposed fog drip system, its components and the proposed fencing.

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Because this project can provide important information for other homesteads, DHHL and HHC in considering access to water, the committee recommends full funding.

La`i`opua Community Development Corporation

Funds Requested	$95,000
Funds Recommended	$0

PROJECT DESCRIPTION

Incorporated in 2009, La`i`opua Community Development Corporation (CDC) is a Kona-based federal 501(c)(3) charitable, tax-exempt organization, whose primary purpose is to promote the betterment of the community in the La`i`opua homestead region. According to the proposal, La`i`opua CDC serves as a chartable arm for the Villages of La`i`opua master association, which is the homeowners association for DHHL subdivisions in Kona.

The proposed project is to initiate the State HRS Chapter 343 Environmental Assessment for an exploratory well on private land. La`i`opua CDC's intent is to begin the planning and development process for water source development, which will eventually serve future DHHL homestead development projects and community facility projects.

RATIONALE FOR RECOMMENDATION

La`i`opua CDC has demonstrated capacity to create partnerships and to oversee construction projects. The project description and workplan are thorough. However, the proposal lacks any reference to DHHL's role or support for the proposed project, so it is unclear if the eventual construction of an exploratory well is likely. An unsigned Memorandum of Understanding (MOU) between County of Hawaii, Three W Corporation (landowner) and DHHL is included in the proposal supporting documents with no reference or explanation in the proposal narrative. Three W Corporation is named as the landowner of the property where the EA and test well will be constructed. There is no mention of Three W in the proposal narrative or a letter of agreement between Three W and La`i`opua CDC to allow this work to take place on their land.

The proposal narrative makes several references to two community entities and La`i`opua CDC's intentions to partner and support their efforts, plans and projects - Villages of Lai Opua Association and Lai Opua 2020. However, no support letter or other evidence of interest on their part was included in the proposal.

EXHIBIT C

The committee recommends no funding.

'O Maku'u Ke Kahua Community Center

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

'O Maku'u Ke Kahua Community Center (OMKKCC) is a federal 501(c)(3) charitable, tax-exempt nonprofit located in Maku'u in the moku of Puna. 'OMKKCC was developed in 2019 in order to continue the voyage approved and set forth by the founders of Maku'u Farmers Association in 1997. 'OMKKCC's mission is to promote and perpetuate Native Hawaiian values and traditions. To provide educational and employment opportunities, while also developing small businesses and to become self-sufficient. 'OMKKCC is governed by a board of 11 directors - all of whom have extensive experience in the Maku'u homestead community and have lifelong, genealogical connection to the area. Of the 11 directors, more than a majority are lessees, successors or other beneficiaries.

The proposed project is to plan, design and build a community center to promote and perpetuate native Hawaiian values, traditions and resilience while also providing educational and employment opportunities.

RATIONALE FOR RECOMMENDATION

Though a relatively new organization, 'OMKKCC is grounded by the Maku'u Farmers Association and its founders. 'OMKKCC has been delivering programs and services for more than 20 years and formally incorporated in 2019. 'OMKKCC clearly has capacity and experience, has a strong board, and a broad and diverse network of partners and resources.

The proposed workplan is to update prior plans, obtain County permits and initiate the construction phase. Without DHHL funds, 'OMKKCC has been able to complete the initial planning phase for such an undertaking.

Committee notes that additional efforts will be needed for fund development to complete construction; preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

EXHIBIT C

Committee notes that additional efforts will be needed for fund development to complete construction; preparation of a facility business and operations plan; and a financial plan for future facility operations and maintenance.

'OMKKCC submitted two proposals for the current DHHL grants cycle. The second proposal is for capacity building. 'OMKKCC is self-aware and thoughtful of its capacity and areas to strengthen.

The committee recommends full funding.

Princess Kahanu Estates Association

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

Incorporated in 1995 and achieved federal 501(c)(3) charitable, tax-exempt status in 2016, Princess Kahanu Estates Association (PKEA) is a homeowners association, serving 271 lessees. PKEA has a DHHL license for 0.97 acres, which includes the existing PKEA office, community center, boatyard and common areas. With various community partners and beneficiary involvement, PKEA has a long history of implementing community projects, including rental and maintenance of the boatyard, neighborhood watch, Kanikapila night, and annual turkey imu of Thanksgiving. Building on these earlier programmatic and project experiences, PKEA is poised to take on larger-scale projects.

The proposed project is to establish a landscape maintenance service from within the community. Funds will be used for the association to purchase needed equipment and establish the service.

RATIONALE FOR RECOMMENDATION

PKEA has organizational capacity and project management experience. The proposed project is a good idea for PKEA to explore further. The idea is to promote promising landscapers from within the homestead community to gain experience and become the landscapers themselves for the homestead. And, should the homesteader leave PKEA, they will have marketable skills for other areas.

Committee would like to see some funds put towards a business plan.

EXHIBIT C

PKEA has had multiple grants from DHHL and, generally, has performed well. PKEA also submitted proposals (total of five) to all the RFPs in this current DHHL grant cycle.

The committee recommends full funding.

Waiohuli Hawaiian Homesteaders Association, Inc.

Funds Requested	$100,000
Funds Recommended	$100,000

PROJECT DESCRIPTION

Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) was formed in 1999 and is comprised of DHHL Lessees. WHHA was organized and established to unite under the mana of all Hawaii Nei, to protect, preserve and defend the Hawaiian Home Lands Trust and combine our efforts for the rehabilitation and betterment of all native Hawaiian beneficiaries.

The proposed project is to prepare the State HRS Chapter 343 Environmental Assessment (EA) on a large parcel located within the Waiohuli homestead. The parcel is to become the base of WHHA's economic development initiative, WE DO. WHHA currently has a DHHL Right-of-Entry to conduct due diligence, including the EA.

RATIONALE FOR RECOMMENDATION

WHHA clearly has significant experience with construction projects. This proposal comes at a good time as WHHA has secured a DHHL Right-of-Entry for the 150-acre property and, as part of due diligence, the EA is required. It is unclear as to the beneficiary involvement in the planning and desire for the uses of the property and proposed spaces. However, WHHA intends to reach out and consult with beneficiaries as part of the EA process and beneficiary consultations to pursue a DHH License.

Since 2012, WHHA has successfully implemented previous State Grants-In-Aid, administered by DHHL. WHHA has not relied on DHHL grant funds over the years and has a proven track record in leveraging cash and other resources (labor, equipment, materials etc.) to make improvements to the Waiohuli homestead and enhance community quality of life.

The committee recommends full funding.

EXHIBIT C

EXHIBIT D

RFP-23-HHL-004
Grant for Community Capacity Building (Statewide)
Grant Applications
Funding Recommendations

Applicant	DHHL Funds Requested	Other Funds	In-Kind	Total Project Cost	Recommended Amount
Ho'opili Farmers Association	$15,000	$0	$7,500	$22,500	$15,000
'O Maku'u Ke Kahua Community Center	$15,000	$3,700	$3,800	$22,500	$15,000
Princess Kahanu Estates Association (1)	$15,000	$0	$0	$15,000	$15,000
Princess Kahanu Estates Association (2)	$15,000	$0	$0	$15,000	$0
Waiohuli Hawaiian Homesteaders Association, Inc.	$15,000	$0	$0	$15,000	$15,000
TOTAL	**$75,000**	**$3,700**	**$11,300**	**$90,000**	**$60,000**

EXHIBIT D

Ho'opili Farmers Association

Funds Requested	$15,000
Funds Recommended	$15,000

PROJECT DESCRIPTION

Ho'opili Farmers Association (HFA) was established in 2021 by farmers and ranchers who felt that they needed more knowledge of different ways to farm that could keep costs down and minimize the need for bringing in inputs from other islands and for ranchers to minimize cost of livestock feed, especially during times of drought. Although this association is fairly new, members come from diverse backgrounds in business, agriculture, construction, farming and ranching. HFA's mission is to assist and promote small farmers, ranchers and livestock producers, with knowledge of cultural and organic farming techniques, production of livestock using natural farming procedures, sound business and marketing recesses, and methods to ensure their success and sustainability throughout the generations.

HFA is lead by three board members – the proposal indicates that two of the three are beneficiaries. HFA is a membership organization and currently has 5 Farms as members and 32 individual members.

The proposed project is for board training, strategic planning, business plan, and membership recruitment and outreach. Funds will also be used for travel to workshops and to purchase supplies and equipment.

RATIONALE FOR RECOMMENDATION

HFA is an emerging nonprofit with skilled and experienced board members. This capacity building project comes at a good time as HFA is in the start up phase of the nonprofit life cycle. Workplan and budget are reasonable.

HFA applied for two grants in this current DHHL grant cycle. HFA has an open DHHL grant and is performing well, partnering with the Ahupua'a o Moloka'i and Napualei o Hina.

The committee recommends full funding.

EXHIBIT D

'O Maku'u Ke Kahua Community Center

Funds Requested	$15,000
Funds Recommended	$15,000

PROJECT DESCRIPTION

'O Maku'u Ke Kahua Community Center (OMKKCC) is a federal 501(c)(3) charitable, tax-exempt nonprofit located in Maku'u in the moku of Puna. 'OMKKCC was developed in 2019 in order to continue the voyage approved and set forth by the founders of Maku'u Farmers Association in 1997. 'OMKKCC's mission is to promote and perpetuate Native Hawaiian values and traditions. To provide educational and employment opportunities, while also developing small businesses and to become self-sufficient. 'OMKKCC is governed by a board of 11 directors - all of whom have extensive experience in the Maku'u homestead community and have lifelong, genealogical connection to the area. Of the 11 directors, more than a majority are lessees, successors or other beneficiaries.

The proposed project is to engage in strategic planning, fund development and grants management, and formalizing its organizational structure and procedures.

RATIONALE FOR RECOMMENDATION

Though a newly formalized organization. 'OMKKCC has an experienced board and a strong track record. 'OMKKCC is self-aware of its current organizational capacity in the "growth" stage - the stage at which a nonprofit and its programs have taken hold in the marketplace, but where service demand usually exceeds current structural and resource capabilities. The workplan is clear and detailed. Overall, the proposed project is well thought out.

'OMKKCC would be a first time DHHL grantee.

The committee recommends full funding.

Princess Kahanu Estates Association

Funds Requested	$15,000
Funds Recommended	$15,000

Project Description

EXHIBIT D

Incorporated in 1995 and achieved federal 501(c)(3) charitable, tax-exempt status in 2016, Princess Kahanu Estates Association (PKEA) is a homeowners association, serving 271 lessees. PKEA has a DHHL license for 0.97 acres, which includes the existing PKEA office, community center, boatyard and common areas. With various community partners and beneficiary involvement, PKEA has a long history of implementing community projects, including rental and maintenance of the boatyard, neighborhood watch, Kanikapila night, and annual turkey imu of Thanksgiving. Building on these earlier programmatic and project experiences,

The proposed project is one way to increase beneficiary involvement with the homestead association and to perpetuate Hawaiian culture. Funds will be used to continue the Kanikapila sessions as a foundation, add in ukulele classes, and a Hula Halau for the keikis.

RATIONALE FOR RECOMMENDATION

PKEA has strong administrative capacity and has demonstrated ability to obtain funds for programs. This proposal is a direct result from positive feedback from project participants from a similar project funded by a previous DHHL grant to PKEA. This project comes at a good time to also address social needs for in-person gatherings, after the height of the COVID pandemic.

PKEA has had multiple grants from DHHL and, generally, has performed well. PKEA also submitted proposals (total of five) to all the RFPs in this current DHHL grant cycle.

The committee recommends full funding.

Princess Kahanu Estates Association

Funds Requested	$15,000
Funds Recommended	$0

PROJECT DESCRIPTION

Incorporated in 1995 and achieved federal 501(c)(3) charitable, tax-exempt status in 2016, Princess Kahanu Estates Association (PKEA) is a homeowners association, serving 271 lessees. PKEA has a DHHL license for 0.97 acres, which includes the existing PKEA office, community center, boatyard and common areas. With various community partners and beneficiary involvement, PKEA has a long history of implementing community projects, including

EXHIBIT D

rental and maintenance of the boatyard, neighborhood watch, Kanikapila night, and annual turkey imu of Thanksgiving.

The proposed project is to create a friendly environment focused on providing native Hawaiian self-sustainable plants (Ti leaf, coconut, Kalo, Awapui, Banana and Hala). Plants will be given away to lessees as an incentive to clear delinquent association dues.

RATIONALE FOR RECOMMENDATION

PKEA has strong administrative capacity and has demonstrated ability to obtain funds for programs. The general concept of rewarding people for bringing their dues up to date is good; however, this proposed plant giveaway approach is not completely developed, needs more planning and details. For example, the proposal did not provide information on how many people are delinquent and by how much. Therefore, it is difficult to determine if a plant is enough incentive, especially if lessees have a significant amount due.

PKEA has had multiple grants from DHHL and, generally, has performed well. PKEA also submitted proposals (total of five) to all the RFPs in this current DHHL grant cycle.

The committee recommends no funding.

Waiohuli Hawaiian Homesteaders Association, Inc.

Funds Requested	$15,000
Funds Recommended	$15,000

PROJECT DESCRIPTION

Waiohuli Hawaiian Homesteaders Association, Inc. (WHHA) was formed in 1999 and is comprised of DHHL Lessees. WHHA was organized and established to unite under the mana of all Hawaii Nei, to protect, preserve and defend the Hawaiian Home Lands Trust and combine our efforts for the rehabilitation and betterment of all native Hawaiian beneficiaries.

The proposed project is for board training, leadership succession planning, program development, marketing and community outreach.

EXHIBIT D

RATIONALE FOR RECOMMENDATION

WHHA has demonstrated capacity and track record with completion of its current facility on 17 acres, plans for a new facility on 150 acres, and initiating the Waiohuli Economic Development Opportunities (WE DO) program. Given WHHA's experience, they understand the need to continue to strengthen organizational capacity to sustain their efforts, inform and involve more beneficiaries, and increase their technical expertise in community economic development.

In recent years, WHHA had one grant from DHHL and performed well. WHHA has successfully obtained funds from State Grants-In-Aid and other funding sources. For the current DHHL grant cycle, WHHA submitted proposals to each RFP (total of four).

The committee recommends full funding.

EXHIBIT D

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

December 21-22, 2022

To: Chairman and Members, Hawaiian Homes Commission

Thru: Andrew H. Choy, Planning Program Manager

From: Nancy M. McPherson, Planner

Subject: Approval of South Molokai Shoreline Erosion Management Plan (SM-SEMP)

RECOMMENDED ACTION

That the Hawaiian Homes Commission:

1) Approve the South Molokai Shoreline Erosion Management Plan (SM-SEMP)(Exhibit A); and

2) Authorize dissemination of the South Molokai Shoreline Erosion Management Plan (SM-SEMP).

BACKGROUND

Context

The Planning Office (PO) last updated the Hawaiian Homes Commission (HHC) on the South Molokai Shoreline Erosion Management Plan (SM-SEMP) project at its January 2022 and March 2022 meetings. Acknowledging that the Community Engagement Program for the SM-SEMP had been significantly impacted by the COVID-19 pandemic restrictions, and after receiving additional feedback from the HHC and beneficiaries, a decision was made to allow for additional time to conduct community outreach with Molokai coastal homesteaders. A second focus group meeting was held on Tuesday April 5, 2022 with four beneficiaries participating, including the Molokai Hawaiian Homes Commissioner.

A larger Community Meeting to review the Draft Plan had been tentatively scheduled for summer 2022 as an in-person and virtual hybrid meeting, but due to conflicting schedules, the final meeting was delayed until an Open House could be

held with the consultants in Kalama‘ula, Molokai on October 14, 2022.

After the Open House, Planning Office staff continued work on the project, incorporating additional beneficiary feedback into the SM-SEMP before requesting final approval by the Hawaiian Homes Commission. A Final SM-SEMP is now presented to the HHC for review and requested approval. See Exhibit A.

In spite of the delays and challenges, the SM-SEMP has incorporated a significant amount of information from the community that has guided the recommendations for DHHL policies and actions included in the plan. Molokai coastal homestead lessees shared their time, ‘ike and aloha, influencing recommendations for types of erosion responses and supporting a preference for nature-based solutions for shoreline restoration and stewardship grounded in cultural and subsistence practices.

DISCUSSION

Need for the Project

The HHC has been briefed regularly over the last several years on current and anticipated climate change impacts, both globally, nationally and here in our islands, as well as on the need for the project to address sea level rise and accelerated shoreline erosion on Molokai, as articulated in the last four updates on the SM-SEMP to the HHC (April 2019, April 2021, January 2022 and April 2022).

Climate Change and Sea Level Rise (SLR) Projections

The latest sea level rise models have been adjusted so that the high projections have now become the moderate projections, therefore putting the State of Hawai‘i and DHHL on notice that “Sea level is committed to rise for centuries to millennia due to continuing deep-ocean warming and ice-sheet melt and will remain elevated for thousands of years (high confidence).”[1] In order to avoid the worst impacts to our coastal homestead communities, sea level rise mitigation and adaptation measures must be put in place within the next 20 to 30 years.

[1] IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change. P. SPM-28. https://www.ipcc.ch/report/ar6/wg1/

Adjustments to Project Methodology and Timeline

- The planning team produced a Draft SM-SEMP for beneficiary review and comment and held a second focus group meeting in early April 2022. Feedback was incorporated into Chapter Five, Shoreline Erosion Management Options and Chapter Six, Implementation Strategy.
- Information on the Draft SM-SEMP was shared at the HHC Community Meeting held on Molokai on April 19, 2022.
- PO staff participated in Lā Pilina, a community outreach event held by Sust'Āinable Molokai to showcase community resilience and climate change adaptation efforts, on November 12, 2022. A display presented major components of the Draft Plan, and visitors to DHHL's table were given a copy of Sea Grant's Homeowner's Handbook to Prepare for Natural Hazards. Staff was on hand to answer questions and encourage participation in the upcoming Open House and future Community resilience Plan.
- DHHL PO staff and consultants held an in-person Open House for coastal homesteaders on Molokai on November 14, 2022 to share information and get feedback on the findings and recommendations of the Draft SM-SEMP and offer opportunities for beneficiary participation in the implementation phase. Attendees were given a copy of Sea Grant's Homeowner's Handbook to Prepare for Natural Hazards.
- Once the final SM-SEMP is approved by the HHC, PO staff will begin the planning process for the "Developing Community Resilience for Molokai Coastal Homesteads" project, to take place over the next two years.

The DHHL Planning Office will continue its coastal community outreach at every opportunity in order to reach the greatest number of homesteaders living in the coastal communities of Kalama'ula, Kapa'akea and Kamiloloa-One Ali'i. It is important that lessees and their 'ohana learn more about the SM-SEMP's recommended mitigation and adaptation measures and the roles that DHHL, other state, federal and county agencies, and the lessees will need to play in successful implementation of the SM-SEMP recommendations.

This effort will be rolled into the subsequent preparation of a Community Resilience Plan for the ahupua'a of Kalama'ula, Kapa'akea, Kamiloloa and Makakupa'ia, and the DHHL-owned portion of Malama Park in the ahupua'a of

Kaunakakai. This next project is supported by funding from the National Fish and Wildlife Federation (NFWF). The project is scheduled to begin in the first quarter of 2023 and will continue for the next two years.

Organization of the Final SM-SEMP

The Final SM-SEMP is still organized into six chapters, with an Executive Summary, References and four Appendices. For an aerial map of the Project Area, see Figure 1, below.

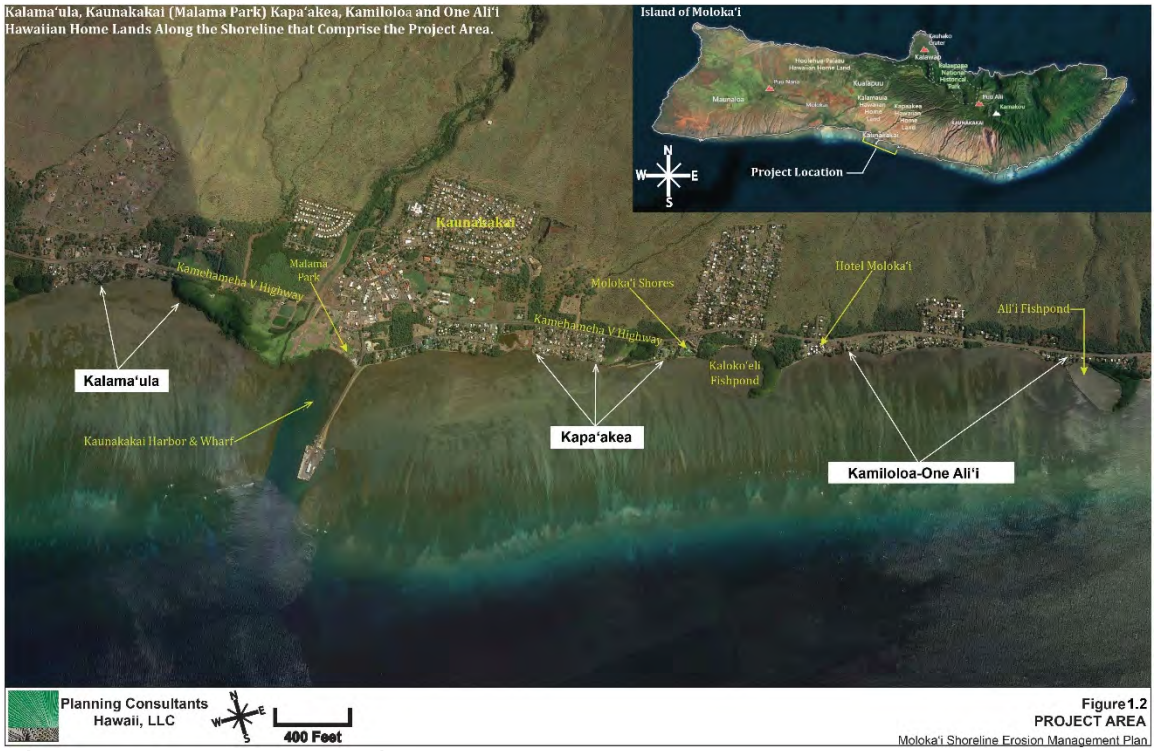


Figure 1, SM-SEMP Project Area

Synopsis of Plan Organization

Executive Summary

Chapter 1 Introduction

- Provides overview of project area's relationship to island as a whole and to coastline of south central Moloka'i.
- Identifies SM-SEMP's purpose and objectives, discusses severity of the erosion problem, and identifies the cultural and ecological benefits of a healthy shoreline.

Chapter 2 SM-SEMP Planning Process

- Documents five-phase planning process used to prepare Draft SM-SEMP
  - Phase 1 - Desktop Research
  - Phase 2 - Field Surveys
  - Phase 3 - Stakeholder Outreach
  - Phase 4 - Stakeholder Vetting of Draft Recommendations
  - Phase 5 (Prepare Draft Final SM-SEMP)
    - Prepare HHC Review Draft, Draft for Community Review and Final SM-SEMP using information generated through Phases 1-4.

Chapter 3 Place and Context

- Analyzes project area spatially and temporally within context of Kona Moku and the five ahupua‘a that have a direct influence on DHHL properties within SM-SEMP study area, with special emphasis on how human-induced change has affected coastal resources and shoreline processes.
- Describes socio-economic environment and planning and regulatory conditions that may influence appropriate responses to shoreline change.

Chapter 4 Coastal Hydrodynamics

- Identifies and describes factors that influence wave energy and physical form of coastline, e.g. wave conditions, currents, tidal changes, storm surge, bathymetry, sediment characteristics, and sources of sediment.
- Identifies four littoral (beach) cells fronting DHHL communities, defining hydrogeological and geographic areas needed to analyze forces affecting shoreline erosion, and prepare mitigation measures.

Chapter 5 Shoreline Erosion Management Options

- Discusses erosion management strategies and describes mitigation approaches ranging from soft, nature-based remedies to hard, man-made structures.
- Explores concept of adapting to shoreline change by realigning structures to reduce exposure to coastal hazards.

Chapter 6 Implementation Strategy *(This section received additional beneficiary input)*

- Offers strategies and actions designed to discourage building in harm’s way and encourage long-term sustainability and shoreline resiliency

- Provides more specific remedies for areas threatened by erosion within Littoral Cells A through D.

Appendices

- APPENDIX A: Stakeholder Outreach
- APPENDIX B: Five Molokai Land Divisions
- APPENDIX C: Flood Zones, Shoreline Setbacks, and State Certified Shoreline
- APPENDIX D: Shoreline Erosion Assessment (Severity and Risks)

Existing Conditions and Recommended Implementation Strategy

Table 1, below, lists the SM-SEMP's Core Strategies and some of the plan's highlighted actions.

CORE STRATEGIES	Action Highlights[1]
Restore natural shoreline function.	• Remove and replace invasive plants and trees with climate adapted, drought tolerant native grasses, shrubs, and trees such as 'aki'aki grass, pōhuehue, naupaka, and milo. • Develop a detailed vegetation management plan to guide shoreline and dune restoration within the SM-SEMP Area. • Remove man-made debris between the high and low water line including tires, appliances, vehicle parts, concrete and asphalt rubble, CMU blocks, pallets, steel and plastic drums, and other non-indigenous materials and dispose of it properly.
Educate beneficiaries on the causes and consequences of sea level rise and coastal erosion, including appropriate mitigation measures.	• Provide beneficiaries living in flood prone areas with the following information: ▪ "*Answers to Questions about Substantially Improved / Substantially Damaged Buildings*", FEMA publication 213, August 2018. ▪ "*Homeowners Handbook to Prepare for Natural Hazards*" 4th Edition, by Dennis Hwang and Darren Okimoto, Sea Grant, University of Hawai'i. ▪ Flood zone and sea level rise exposure maps.
Strengthen the regulation and management of shoreline resources.	• Recommend consistency with identified State of Hawai'i and Maui County regulations governing buildings and construction, the shoreline, and flood hazard areas. • Recommend consistency with Federal and State DLNR regulations regarding shoreline surveys, armoring, and coastal construction on submerged lands.

CORE STRATEGIES	Action Highlights[1]
Adapt structures and systems to better withstand coastal hazards.	• Require new dwellings to be elevated above flood hazard zones (base flood elevation, SLR inundation) by more than one foot in elevation (freeboard). • Encourage lessees to reconfigure dwellings by moving the kitchen mauka and elevating food preparation areas so that stove, refrigerator, and appliances are elevated or located at the highest, driest part of the property. • Convert cesspools to septic systems wherever feasible to reduce the risk of contaminated water and protect beneficiary health.
Prepare for the relocation or retirement of structures out of areas threatened by sea level rise and coastal erosion.	• 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. • Prepare and implement a planned obsolescence strategy for infrastructure at risk of damage from SLR, coastal erosion, and flooding including roads, drainages, wastewater treatment, and centralized utility systems and services.

[1] This table includes a sample of the SM-SEMP's highlighted actions. A complete list of the Plan's actions is in Chapter 6.

Table 1 (Table ES-1) Highlighted Actions

Results of Additional Community Outreach

DHHL received an invitation to share information about the Planning Office's climate adaptation and community resilience efforts on Molokai at the Lā Pilina community resilience event held by Sust'ainable Molokai on November 12, 2022 at Mitchell Pau'ole Center in Kaunakakai. Attendance was high, as the event offered live music and free food for participants. Approximately twenty beneficiaries stopped by DHHL's table and asked questions about the SM-SEMP and the Community Resilience Planning project. Approximately ten beneficiaries expressed interest in participating in either implementation of the SM-SEMP or development of the Community Resilience Plan, or both.

While perhaps not the best venue to collect focused beneficiary input on the SM-SEMP, tabling at the event was an effective way to "get the word out" on DHHL's efforts to address shoreline erosion and climate change impacts on Molokai's southern coastline. It was also a good opportunity for DHHL to interact with other governmental agencies and nonprofits doing climate change-related work on the island.

DHHL Planning Office staff and project consultants, with assistance from the Molokai District Office, then held an Open House on November 14, 2022 to share the Draft SM-SEMP with Molokai coastal lessees. The Open House was held at the Hālau at Kūlana ʻŌiwi in Kalamaʻula. Nine beneficiaries attended. There were six stations arranged in a horseshoe shape, with 32 poster-sized displays taped to the tables due to the wind in the Hālau. Multiple copies of the Draft SM-SEMP were available for attendees to leaf through. The stations followed the general organizational structure of the Draft SM-SEMP, with the following focus areas:

I. Introduction / Project Overview
II. Project Area & Existing Conditions
III. Shoreline Erosion Management Options
IV. Draft Recommendations
V. Implementation and Next Steps
VI. Resource Table

While the turnout was small, as has been the case lately for in-person outreach events on Molokai, the feedback that was received was thoughtful and insightful. Major comments received supported the restoration of native coastal flora, requested more information and suggestions on specific plants for revegetation of the shoreline, and expressed support for allowing beneficiaries to conduct activities that will preserve and protect their shoreline lots from erosion.

Again, while the event didn’t produce a lot of written comments, it was a good opportunity to talk story with shoreline lessees, answer their questions and discuss exhibits such as historical maps, the four littoral cells and the recommendations for shoreline erosion mitigation. As is usually the case, the planners learned a lot more from the beneficiaries than they probably learned from us.

Molokai people are the experts on their island home, and most if not all either grew up on the shoreline or spent many, many hours of their childhoods there. Many still use the shoreline and nearshore waters regularly for subsistence. They have seen the changes that have occurred over time, and their participation in shoreline erosion mitigation, climate change adaptation and coastal stewardship activities will be crucial to the success of DHHL’s implementation efforts in the coming years.

Implementation Phase

While the SM-SEMP meets the definition of a shoreline erosion management plan, the document will be utilized in the near term as a technical background study that will provide best practices, site-specific data and recommendations for action to support the next phase of work, which will be preparation of a Community Resilience Plan for the project area's ahupua'a.

As discussed previously, DHHL has been awarded a National Coastal Resilience Fund (NCRF) grant from the National Fish and Wildlife Federation (NFWF) for a project titled "Developing Community Resilience for Molokai Coastal Homesteads". Grant funds will be used to procure a consultant who will work with Molokai coastal homestead lessees, the larger beneficiary community, DHHL staff and other governmental agencies and non-governmental organizations to prepare a Community Resilience Plan for the project area, which has been enlarged to include the entire subject ahupua'a, beginning in the first quarter of 2023.

One outcome of the SM-SEMP planning process has been identification of additional climate change-related impacts such as groundwater upwelling, cesspool failures, and flooding from stormwater runoff during heavy rain events. A more comprehensive, ahupua'a-based approach, in coordination with other landowners, governmental agencies at all levels, and Molokai-based nonprofits will be needed to adequately address erosion and flooding impacts affecting low-lying coastal homestead areas.

Now that the HHC has approved the update of DHHL's General Plan, it is anticipated that the next update of the Molokai Island Plan will have an evaluation of projected sea level rise and other climate change-related impacts anticipated to occur within the twenty-year planning timeframe, with an emphasis on adaptation and mitigation measures and ways to increase community resilience in a more extreme climate.

RECOMMENDED ACTION

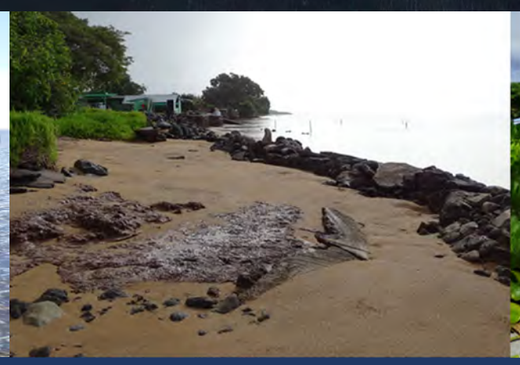
Staff respectfully requests that the Hawaiian Homes Commission approve the action as requested.

DRAFT FINAL
South Moloka‘i Shoreline Erosion Management Plan



ITEM G-2
EXHIBIT A







Prepared by:

Planning Consultants Hawai‘i, LLC

and

Coastal Planners, LLC

Prepared for:

State of Hawai‘i
Department of Hawaiian Homelands

Revised November 2022

Suggested citation:
DHHL, 2022. *South Moloka‘i Shoreline Erosion Management Plan*. State of Hawai‘i. Department of Hawaiian Home Lands. Prepared by Planning Consultants Hawai‘i, LLC and Coastal Planners, LLC. November 2022.

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EXECUTIVE SUMMARY ii

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EXECUTIVE SUMMARY

Project Background and Purpose

The overwhelming consensus of climate scientists is that "our planet's average temperature could be between 2 and 9.7°F (1.1 to 5.4°C) warmer in 2100 than it is today" (NOAA, 2012). As temperatures rise, Moloka'i will see stronger and more frequent storms which will result in severe and dangerous floods, greater stress on mauka watersheds, and increased sediment discharge into coastal waters.

For Department of Hawaiian Home Lands (DHHL) communities living along the south shore of Moloka'i, this means preparing for the impacts of increasing sea levels and shoreline erosion. Climate change will make low lying areas between Kalama'ula and Kamiloloa-One Ali'i more vulnerable to flooding. According to recent studies, "with 3.2 feet of sea level rise, low-lying coastal areas around the island...may become chronically flooded within the mid- to latter-half of this century" (Tetra Tech 2017, 115). Furthermore, as sea levels rise, more wave energy will be telegraphed further inland, above and over the offshore reef fronting the South Moloka'i shoreline. As this happens, more and stronger waves will contact the area's beaches causing more frequent and severe shoreline erosion events and loss of sandy beach.

In recognition of the deleterious impact of this erosion on the Hawaiian Homestead communities of Kalama'ula, Kapa'akea, and Kamiloloa-One Ali'i, the DHHL commissioned this South Moloka'i Shoreline Erosion Management Plan (SM-SEMP). Its purpose is to provide a strategy to proactively manage shorelines that are vulnerable to erosion to make them more resilient to the effects of sea level rise.

This is to be achieved using: a. traditional ecological knowledge gathered from the project area's native Hawaiian homesteaders and lineal descendants; b. a scientific evaluation of coastal conditions; and c. published literature on the causal factors contributing to shoreline erosion. Recommendations are further informed by community input as well as thoughtful consideration of South Molokai's socioeconomic conditions and cultural, natural, and recreational resources.

The SM-SEMP team used the ahupua'a as a geographic construct to better understand the interconnected and interdependent relationship between South Molokai's land and ocean ecosystems, and the reciprocal relationship between DHHL homesteaders and the environment. SM-SEMP recommendations were designed within the context of how those recommendations could affect mauka and makai lands, waters, and communities. Within the SM-SEMP Area, emphasis was also placed on the littoral cell[1], rather than the individual parcel, as a means to more effectively study the causes and consequences of shoreline erosion and to devise appropriate recommendations to mitigate the effects of shoreline erosion.

The Planning Process

Preparing the SM-SEMP consisted of five phases as follows:

Phase 1 (Desktop Research)
Document the project area's mo'olelo, history, terrestrial environment, physical coastal processes, and erosion hotspots within the context of the project area's ahupua'a.

Phase 2 (Field Surveys)
Conduct field observations of shoreline conditions to gather valuable background data and photographs of past flooding, shore conditions, shore reference features, and shoreline change.

Phase 3 (Stakeholder Outreach)
Work with Hawaiian Homestead beneficiaries, lineal descendants, government, and community stakeholders to identify shoreline erosion threats and appropriate management responses.

Phase 4 (Stakeholder Vetting of Draft Recommendations)
Prepare conceptual draft recommendations for vetting by a diverse group of Hawaiian Homesteaders and other stakeholders.

> *"Over time, as sea level continues to rise, low-lying, populated coastal communities such as Kapa'akea would experience increased frequency and severity of flooding ultimately leading to permanent inundation, making some areas of the coast impassable or uninhabitable" (*Tetra Tech 2017, 116*).*

PHASE 5 (Prepare the Draft and Final SM-SEMP)
Prepare the Draft and Final SM-SEMP using information generated through the first four phases.

Issues and Challenges

The SM-SEMP Area faces an unusual number of climate change-induced challenges in the future because of its location in a low-lying coastal area, environmental attributes, and the number of homesteaders residing in the area. Among the most important challenges caused by rising sea levels and coastal erosion are the following:

- Coastal flooding
- Damage to critical infrastructure such as Kamehameha V Highway and Kaunakakai Harbor and Wharf
- Loss of land and structures
- Damage to property
- Cesspool and septic system failure
- Impact on native flora and fauna
- Impact on cultural resources
- Access to and along the shoreline
- Diminished coastal water quality



Photo: *A panorama of the informal shoreline armoring along a portion of Kapa'akea (Source: DHHL).*

[1] A littoral cell is a coastal compartment that contains a complete cycle of sedimentation including sources, transport paths, and sinks (Inman, 2005).

Key Recommendations for the SM-SEMP

The following six core strategies describe the broad strategic action that will be taken to make the SM-SEMP's shoreline more resilient to the effects of sea level rise and coastal erosion.

- Restore natural shoreline function.
- Educate beneficiaries on the causes and consequences of sea level rise and coastal erosion, including appropriate mitigation measures.
- Strengthen the regulation and management of shoreline resources.
- Adapt structures and systems to better withstand coastal hazards.
- Prepare for the relocation or retirement of structures out of areas threatened by sea level rise and coastal erosion.

Each strategy is further implemented through related actions. Table ES-1 highlights key SM-SEMP actions.

Next Steps

The 2020 – 2022 Covid-19 pandemic severely limited the ability of the planning team to carefully review the SM-SEMP's recommendations with affected beneficiaries. As such, the DHHL will conduct further outreach with the project area's beneficiaries in the second half of 2022 and update the SM-SEMP's recommendations accordingly.

The DHHL was awarded a National Fish and Wildlife Foundation (NFWF) grant to develop a Community Resilience Plan for Molokai's coastal homestead communities. Using the SM-SEMP as a foundation, the Resilience Plan will further expand scientific analyses and modeling of projected sea-level rise, flooding, groundwater upwelling and other increasing climate change-related hazards like hurricanes. The Resilience Plan will identify priorities for projects that will stabilize and restore shorelines, mitigate coastal flooding and sedimentation, and emphasize culturally grounded, nature-based solutions.

Subject to funding availability, the DHHL will also conduct the following SM-SEMP implementation activities:

1. Develop a detailed vegetation management and berm restoration plan with detailed topography and design renderings.
2. Prepare best management practices (BMP's) for shoreline hardening in Kapa'akea to support dry stack walls, sills, and fishpond restoration.
3. Remove man-made debris along the shoreline, and where necessary, replace with native *pōhaku* using traditional Hawaiian techniques for the construction of dry stack walls, or *uhau humu pōhaku*.
4. Prepare an environmental assessment and pursue other governmental permits required for SM-SEMP implementation.

Plan Organization

The SM-SEMP is organized into the following six chapters:

Chapter 1 (Introduction) provides an overview of the project area's relationship to the island as a whole and more specifically to the coastline of south central Moloka'i.

Chapter 2 (SM-SEMP Planning Process) documents the process the planning team used to prepare the SM-SEMP.

Chapter 3 (Place and Context) analyzes the project area within the context of the moku and the five ahupua'a that have a direct influence on the DHHL properties within the SM-SEMP study area, focusing on Kalama'ula, Kaunakakai, Kapa'akea, Kamiloloa, and Makakupa'ia.

Chapter 4 (Coastal Hydrodynamics) identifies and describes the factors that influence wave energy and the physical form of the coastline within the SM-SEMP study area, including: wave conditions, currents, tidal changes, storm surge, bathymetry, sediment characteristics, and sources of sediment. Chapter 4 then identifies four littoral cells fronting the DHHL communities. The planning team used the littoral cell boundaries to define the geographic area in which to analyze the forces affecting shoreline erosion, and to prepare mitigation measures.

Chapter 5 (Shoreline Erosion Management Options) explores erosion management strategies and describes mitigation approaches ranging from soft, nature-based remedies to hard, man-made structures. Chapter 5 also explores adapting to shoreline change by realigning structures to reduce their exposure to coastal hazards.

Chapter 6 (Implementation Strategy) offers strategies and actions for the overall SM-SEMP area to discourage building in harm's way and to encourage long-term sustainability and shoreline resiliency. Chapter 6 then provides more specific remedies for areas threatened by erosion within defined littoral cells A through D.

CORE STRATEGIES	Action Highlights[1]
Restore natural shoreline function.	• Remove and replace invasive plants and trees with climate adapted, drought tolerant native grasses, shrubs, and trees such as 'aki'aki grass, pōhuehue, naupaka, and milo. • Develop a detailed vegetation management plan to guide shoreline and dune restoration within the SM-SEMP Area. • Remove man-made debris between the high and low water line including tires, appliances, vehicle parts, concrete and asphalt rubble, CMU blocks, pallets, steel and plastic drums, and other non-indigenous materials and dispose of it properly.
Educate beneficiaries on the causes and consequences of sea level rise and coastal erosion, including appropriate mitigation measures.	• Provide beneficiaries living in flood prone areas with the following information: ▪ "*Answers to Questions about Substantially Improved / Substantially Damaged Buildings*", FEMA publication 213, August 2018. ▪ "*Homeowners Handbook to Prepare for Natural Hazards*" 4th Edition, by Dennis Hwang and Darren Okimoto, Sea Grant, University of Hawai'i. ▪ Flood zone and sea level rise exposure maps.
Strengthen the regulation and management of shoreline resources.	• Recommend consistency with identified State of Hawai'i and Maui County regulations governing buildings and construction, the shoreline, and flood hazard areas. • Recommend consistency with Federal and State DLNR regulations regarding shoreline surveys, armoring, and coastal construction on submerged lands.
Adapt structures and systems to better withstand coastal hazards.	• Require new dwellings to be elevated above flood hazard zones (base flood elevation, SLR inundation) by more than one foot in elevation (freeboard). • Encourage lessees to reconfigure dwellings by moving the kitchen mauka and elevating food preparation areas so that stove, refrigerator, and appliances are elevated or located at the highest, driest part of the property. • Convert cesspools to septic systems wherever feasible to reduce the risk of contaminated water and protect beneficiary health.
Prepare for the relocation or retirement of structures out of areas threatened by sea level rise and coastal erosion.	• 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. • Prepare and implement a planned obsolescence strategy for infrastructure at risk of damage from SLR, coastal erosion, and flooding including roads, drainages, wastewater treatment, and centralized utility systems and services.

[1] This table includes a sample of the SM-SEMP's highlighted actions. A complete list of the Plan's actions is in Chapter 6.

***Table ES-1**: Highlighted Actions*.

CHAPTER 1: INTRODUCTION

The complex interaction of coastal processes and generations of human-induced changes to the natural environment has had a profound impact on the South Moloka'i shoreline. The interaction of these forces, along with rising sea levels, has resulted in significant erosion of some sections of the South Moloka'i shoreline which is threatening private property, critical infrastructure, and natural, cultural, and recreational resources.

In recognition of the deleterious impact of this erosion on the Hawaiian Homestead communities of Kalama'ula, Kapa'akea, and Kamiloloa-One Ali'i, the Department of Hawaiian Home Lands (DHHL) commissioned this South Moloka'i Shoreline Erosion Management Plan (SM-SEMP). Its purpose is to develop a strategy to proactively manage shorelines that are vulnerable to erosion to make them more resilient to the effects of climate change.

This is to be achieved through a scientific evaluation of coastal conditions, the use of traditional ecological knowledge gathered from the project area's Hawaiian homesteaders and lineal descendants, and published literature on the causal factors contributing to shoreline erosion. Recommendations are further informed by community input as well as thoughtful consideration of South Moloka'i's socio-economic conditions and cultural, natural, and recreational resources.

1.1 Regional and Local Setting

Moloka'i is the fifth largest of the six developed southern Hawaiian Islands, being as much as ten miles wide and thirty-eight miles long. The island has approximately eighty-eight miles of shoreline that circumscribes the 260 square mile island. Moloka'i has shorelines that are dynamic and can change rapidly in response to natural forces such as storms, high winds, and large surf.

On Molokai's West End, Pāpōhaku Beach is the longest, most intact coastal dune system in the southern Hawaiian Island chain. The East End of Moloka'i, known as Mana'e, is considerably more humid and lush owing to its exposure to the prevailing trade winds. The volcanic island rises some 4,961 feet above sea level and has some of the highest sea cliffs and waterfalls in Hawai'i along its north shore. In contrast, Molokai's south shore is not exposed to the prevailing northwest ocean swells and storms and forms a coastal plain. It is also somewhat protected from waves, storms, and swells from the south by the islands of Lāna'i and Kaho'olawe, as illustrated by Figure 1.1. Given this protection, Molokai's south shore has the longest continuous fringing reef in the United States, and it has sites with the best coral coverage in the developed Hawaiian Islands (Ogston and Field, 2010).

There are many ahupua'a incorporating watersheds or sub-basins within the Kona moku or division of land on the island of Moloka'i. Of these, five ahupua'a have a direct influence on the DHHL properties within the SM-SEMP study area: Kalama'ula, Kaunakakai, Kapa'akea, Kamiloloa, and Makakupa'ia. The neighboring Kawela ahupua'a to the east also has considerable influence on sediment transport and stormwater influx to the coastline.

The DHHL subdivisions are adjacent to other residential developments along and within the coastal plains of Molokai's south shore and begin about one mile east of Kaunakakai Town, extending approximately 3.5 miles from town (Figure 1.2).

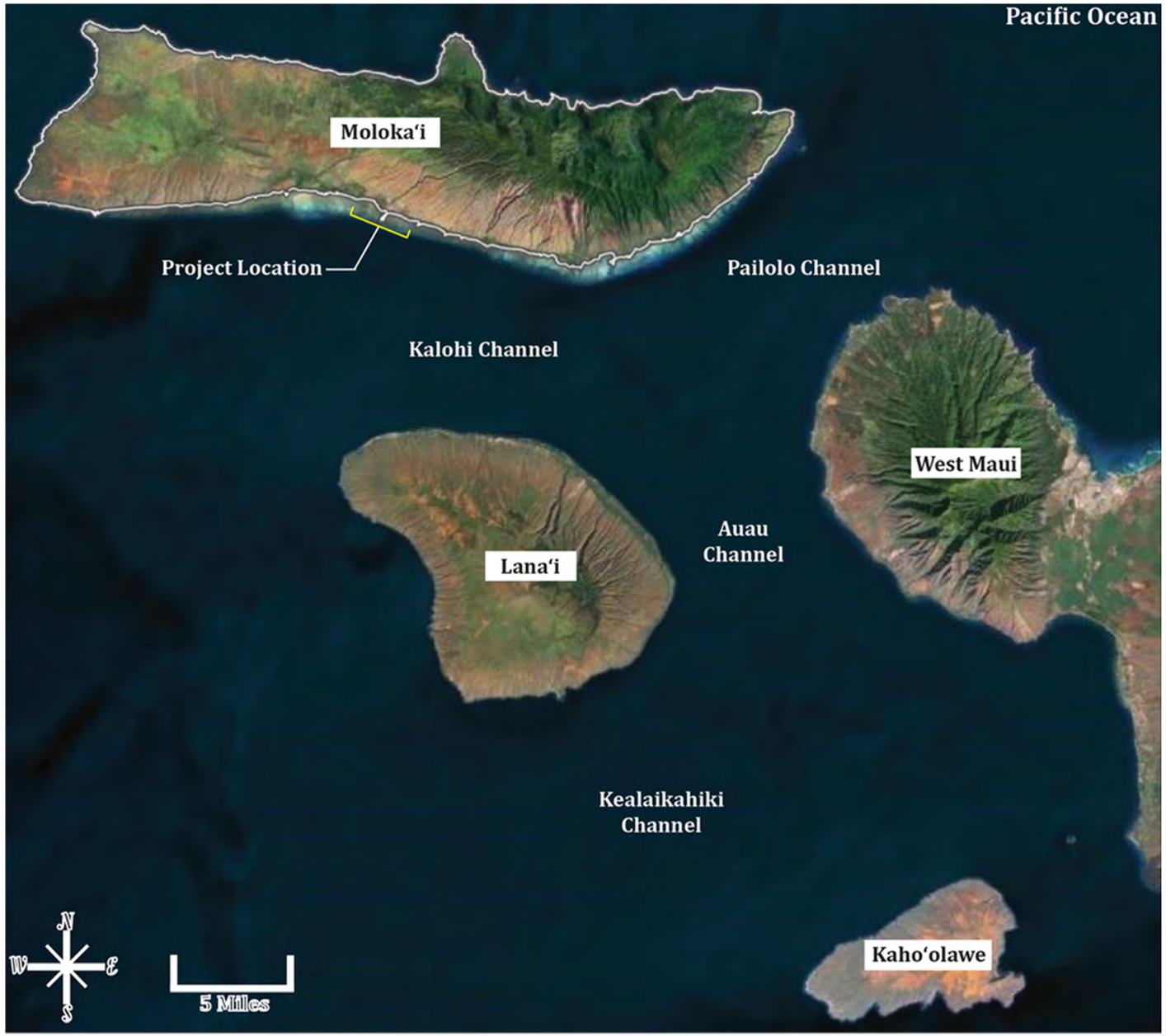


Figure 1.1: *Location of the study area in the context of neighboring islands.*

Kalamaʻula, Kaunakakai (Malama Park) Kapaʻakea, Kamiloloa and One Aliʻi Hawaiian Home Lands Along the Shoreline that Comprise the Project Area.



Kaunakakai

Malama Park

Kamehameha V Highway

Kamehameha V Highway

Molokaʻi Shores

Hotel Molokaʻi

Aliʻi Fishpond

Kaloko'eli Fishpond

Kalamaʻula

Kaunakakai Harbor & Wharf

Kapaʻakea

Kamiloloa-One Aliʻi

Planning Consultants Hawaii, LLC

N W E S

400 Feet

Figure 1.2
PROJECT AREA
Molokaʻi Shoreline Erosion Management Plan

All of these communities are served by Kamehameha V Highway. There are fifteen homestead lots in the makai Kalamaʻula community, five of which are located along the shoreline. In Kapaʻakea there are forty-seven residential lots, seventeen of which are along the shoreline. The community is bordered by wetlands on either side and has concrete culvert drainages to divert heavy upland rainstorms to the ocean. Fourteen beneficiary lots within the Kamiloloa-One Aliʻi community are located along the shoreline to the east of Hotel Molokaʻi. In addition, thirteen residential lots within the community are located between the Kamehameha V Highway and the Aliʻi fishpond. In total, there are thirty-six oceanfront beneficiary lots within these DHHL communities (Table 1.1).

DHHL Homestead Lots Makai of Kamehameha V Highway			
DHHL Community	**# of Oceanfront Homestead Lots**	**# of non-oceanfront Homestead Lots**	**Total Homestead Lots**
Kalamaʻula	5	10	15
Kapaʻakea	17	30	47
Kamiloloa – One Aliʻi	14	13[1]	27
[1]Thirteen residential lots within the subdivision are located between the Kamehameha V Highway and the Aliʻi fishpond.			

***Table 1.1**: DHHL Homestead Lots within SM-SEMP Area Communities*.

1.2 The Erosion Problem

The three and one-half mile discontinuous stretch of coastline fronting the Hawaiian Homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa-One Aliʻi has experienced substantial change over the years. Shoreline erosion has resulted in the loss of homestead property, limited shoreline access, and harmed cultural and environmental resources.

DHHL homesteaders living along this portion of Molokai's southern shore have observed changes to the shoreline over their lifetimes, and they have expressed concerns about how best to address these changes. Correspondingly, DHHL is studying what measures should be taken to respond to shoreline change and what actions would be prudent and appropriate to adapt to future states of the coastline, especially in light of sea level rise.

1.3 Purpose and Objectives of the SM-SEMP

In the future the effects of climate change, sea level rise, and more frequent extreme weather and king tide events are expected to increase coastal erosion and expose DHHL homesteads to coastal hazards such as flooding, storm surge, and beach and land loss. To address these risks, the DHHL contracted Planning Consultants Hawaiʻi, LLC, and Coastal Planners, LLC, to assist with the preparation of a shoreline erosion management plan for the coastal homestead communities of Kalamaʻula, Kapaʻakea, and Kamiloloa-One Aliʻi along Molokai's southern coast.

The purpose of this SM-SEMP is to provide DHHL and its lessees with a strategy to manage shoreline erosion in the project area. Specific objectives are to:

1. Enable DHHL to proactively plan for and manage shoreline erosion;
2. Investigate underlying causes of shoreline erosion, and likely future progression;
3. Identify effective and sustainable shoreline erosion management strategies that maintain natural processes and consider community needs; and
4. Educate the community as to the causes of shoreline erosion and appropriate management responses.

The intent is to offer a workable management plan that can be readily implemented by DHHL, homesteaders, and community members.

1.4 Structure of the SM-SEMP

The SM-SEMP describes the existing marine, terrestrial, and socioeconomic environment within the project area. Using available reports, peer reviewed studies, traditional ecological knowledge, and community input, this SM-SEMP provides a description of the physical coastal processes and geomorphology that affect shoreline function and health.

The SM-SEMP recommends actions that can help restore the natural function of the coastline fronting the project area. Where manmade actions have altered the shoreline and it is no longer feasible to restore the shoreline's natural function, the SM-SEMP provides construction and land use techniques to help prevent or mitigate the potential damage to land and coastal structures from shoreline erosion. While primarily focused on oceanfront properties, the suggestions and recommendations contained in the SM-SEMP could benefit mauka homes located in low-lying areas of Molokai's coastal plain.

The SM-SEMP also discusses ineffective shoreline management methods so that time, money, and energy are not spent on ideas that may appear to have merit, but usually are detrimental when compared to other methods of shoreline intervention. The SM-SEMP also provides recommendations that will build community resilience in the face of sea level rise.

1.5 Benefits of a Healthy Shoreline

A healthy Hawaiian shoreline is an extremely dynamic place. Natural forces sort out sediment into coarse and fine materials. Coarse materials such as rocks, cobbles, pebbles, and sand remain as waves, wind, and water affect the land-water interface. Finer materials such as silt and clay are washed away or diluted and dissolved into the water to be carried away by currents. The wind blows grains of sand, and waves push sand mauka where it can become entrained in the fine web of roots of native plants such as ʻakiʻaki grass, ʻākulikuli, pōhuehue, naupaka, beach heliotrope, and naio.

1.5.1 Flood Reduction

The native plants mentioned above help to build vegetated berms and sand dunes to support a healthy shoreline. Berms and dunes store sand aggregate for use during large storm events where waves can overtop the edge of the shoreline and spread out into rear yards resulting in flooding. During moderate storms, waves run up the beach but do not crest the berm, thereby avoiding the flooding of inland areas. However, large waves may overtop the berm and spread out over inland areas resulting in flooding, but with less force and depth of water than would occur without the berm.

Sand dunes and vegetated berms along the edge of the shoreline are nature's way of blocking and buffering incoming wave energy. The sand and aggregate contained within these natural features are released by having waves chew into them, which spreads the sand into the nearshore area making it shallower. This causes the wave to break sooner and further offshore. Naturally vegetated berms or dunes rise slightly higher than the coastal plain (or rear yard in many cases) offering a modicum of protection from seawater inundation into the mauka areas along the coastal plain. Berms and dunes are nature's way of buffering the dynamic forces along the shoreline.

1.5.2 Shoreline Access

A healthy, unobstructed shoreline can function as a pathway providing access to and along the coastline for community members to fish, glean, gather, and recreate. As shorelines erode and become narrow, the community's ability to access the coastline can be hindered. Access can be further diminished by human-made structures such as seawalls, rubble mounds, boulder piles, or other types of armoring placed on the coastline.

Excessive vegetative growth can form impenetrable thickets that also hinder access along the shoreline. Thick stands of non-native kiawe trees are a common hindrance to shoreline access that impedes lateral access along the shoreline in the project area. Additionally, kiawe tree roots can inhibit the free flow of sand and sediment causing erosion scarps to form. The trees also dry out the soil, reducing moisture needed for native plants to grow.



Photo: *Kiawe can impede access along the shoreline for subsistence gathering, particularly at high tide.*

1.5.3 The 'Ice Box'

A healthy shoreline can contribute to a healthier reef, which in turn provides food for the people. For generations DHHL beneficiaries living in the SM-SEMP area have relied on the ocean and springs for their sustenance.

> *"Went crabbing, lay net before for the small fish – pua – small mullet. Her 'ohana only took what they could eat. Mother gathered limu... She knew where the freshwater was coming out – all the way from Kimball's place (now Penny's) one… Our kupuna would tell us stories about all the sweet potato, vegetables being grown to feed the people of Kalama'ula".*
>
> **Kanani Negrillo, Kalama'ula Lessee**

Fishing is more productive on a healthy coral reef with clean water than on a reef covered in sediment and having murky water. The pollution that harms coral reefs can also degrade nearshore and shoreline flora that is an important source of food and fiber for native Hawaiians. For instance, limu is a type of edible seaweed, of which at least eight species are popular in Polynesian and Hawaiian dishes (Preskitt, 2002). Some of these, like limu ogo (*Gracilaria parvisipora*) now occur in excess along Molokai's southern shores, whereas other more preferred species of limu like 'ele'ele (*Enteromorpha prolifera*) are scarce or have become absent. Factors contributing to these changes may include species introductions, overharvesting, increased turbidity in the water column (i.e., murky water), degraded water quality along the shoreline and inner reef, and shoreline erosion and subsequent shoreline armoring.

1.5.4 Cultural and Recreational Practices

Access to and along the shoreline for cultural and subsistence purposes is vitally important to the well-being of native Hawaiians. The native Hawaiian people "access and use the shoreline area for many purposes, including fishing; gathering limu, 'opihi, and other ocean resources; and for recreation" (MacKenzie, M.K., 1991). Native Hawaiian traditional and customary rights are impeded when access to and along the shoreline is lost due to erosion and subsequent shoreline armoring activities. A healthy shoreline, backed by native plants and grasses, is important for the perptuation of the Hawaiian culture.

Boating can be a subsistence, commercial, or recreational activity. Small fishing boats, kayaks, and outriggers can easily be anchored near the shore along Molokai's relatively calm, shallow, southern shoreline. However, access to mooring opportunities are diminishing along the project area's eroding shoreline. On an eroding beach, boaters will frequently need to wade through shallow water along the shoreline to reach a mooring. If the nearshore is too silty, one may get stuck or lose footwear that becomes stuck in the silty muck. If the sand is scoured away, an outrigger or small boat's hull can be damaged or leak as a result of being dashed against the rocks.

In addition, as coral reefs diminish in vitality, larger waves could penetrate further inland breaching the offshore fringing reef. Such large waves could overturn small boats and cause them to sink or cause them to break free of their moorings, resulting in lost or damaged watercraft.

Stand up paddling is one type of fitness and recreation that allows one to see through the water into the undersea menagerie. Kayaking is also a popular form of recreation with similar attributes. Both are more enjoyable in clean, rather than murky, ocean waters. Outrigger paddling, either solo or in a group, is a favorite pastime and traditional activity in Hawai'i. It can be a competitive or social sport that improves mental and physical fitness and instills traditional Hawaiian values of collaboration and community, especially for youth. But the enjoyment of the experience may be diminished if the water is murky from silt, the sandy launch is scoured away, or if there is high wave reflection from shore armoring.



"For recreation (stand-up paddle boarding), food, mālama, health and wellness, growing limu, restoring kupe'e (cowries), and enjoying the beauty of our place. Stewardship - teaching our youth traditional practices, how to mālama the shoreline."

Kenneth "Boom" & Doreen "Pinky" Gaspar, Kapa'akea Lessees

Photo: *Alluvial layers of red clay can pollute nearshore waters with fine silt and sediment that smothers coral reefs.*

CHAPTER 2: SM-SEMP PLANNING PROCESS

To proactively manage erosion and strengthen community resilience, the DHHL has conducted various integrated coastal zone management activities in recent years. These efforts, aimed at building resiliency, informed the SM-SEMP planning process. Two of these efforts are highlighted below.

2.1 Building Resiliency

In 2014, DHHL and select homestead residents were invited to a day-long workshop to develop post-disaster reconstruction guidelines and protocols sponsored by the Maui County Planning Department. The multiyear project resulted in nearly seventy recommendations, some of which were tailored from input received from DHHL homesteaders. For Molokaʻi, repair and reconstruction of homes are the community's highest priority, even with houses that are damaged by more than 50% of their replacement value. If Molokaʻi's residents have habitable accommodations it is less likely they would need to leave the island. Thus, a strong preference was expressed to focus limited resources and personnel on repairing and reconstructing habitable structures rather than constructing pools, carports, and other non-essential structures.

In 2015, DHHL sponsored a coastal resilience workshop for DHHL communities wherein the DHHL gathered input from the homestead communities of Kapaʻakea and Kamiloloa-One Aliʻi. In support of the project, the University of Hawaiʻi Department of Urban and Regional Planning prepared a coastal disaster resilience guidance manual. In coordination with community members, they identified areas and assigned levels of risk confronting the homestead communities from a wide range of coastal hazards. Among those hazards, the severity of the shoreline erosion was discussed and the need for further study and action identified.

2.2 The SM-SEMP Planning Process

The SM-SEMP team built upon recent planning efforts intended to build resiliency on Molokaʻi. Through desktop research the team gathered, reviewed, and documented existing relevant research and data. The team also gathered a wide variety of input from the community and stakeholders through multiple outreach techniques including agency meetings, community orientation meetings, stakeholder interviews, a focus group meeting, and a community workshop. The DHHL compared, analyzed, and synthesized the data from each outreach technique to capture a wide array of input and to assess the validity of the results.

In the plan preparation phase, the SM-SEMP team used the data collected through the desktop research, field survey, and outreach phases as a foundation to prepare the Preliminary and Final Draft SM-SEMP. The SM-SEMP planning process is depicted in Figure 2.1. The following subsections provide a more detailed description of the planning process.

2.2.1 Phase 1 - Desktop Research

The SM-SEMP Team started the project by conducting desktop research of publications, maps, and studies of Molokai's south shore. The team reviewed studies and articles about the project area's offshore coral reefs, sediment transport patterns, drainage, wind and currents, flooding, terrestrial environment, land use, and socioeconomic conditions. The team gave attention to studies of the areas between Kalamaʻula and One Aliʻi Park. The team undertook an analysis of coastal hazards and risk exposure using digital maps and resources as part of the desktop research. Team members also conferred with academics and researchers at the University of Hawaiʻi who have studied Molokai's south shore to gain feedback, test ideas, frame remedies, and narrow discussion.

2.2.2 Phase 2 - Field Surveys

The SM-SEMP team obtained observations of shoreline conditions during site visits held in February, October and November 2019. The February site visit was three consecutive days and involved traversing the project area's shoreline. The route was selected based on findings from the desktop assessment and by reviewing various sources of aerial imagery. Most areas were observed during low tide to maximize information capture about shore conditions. The site visits included a visual observation and assessment of the following shoreline features:

- Physical coastal processes;
- Shoreline access points;
- Drainage ditches and swales;
- Wetlands and stream mouths;
- Erosion hotspots;
- Flood prone areas;
- Proximity of buildings and accessory structures to the ocean both in terms of horizontal distance and elevation above the shoreline;
- Shoreline armoring;
- Parks and publicly used open space;
- Land, resources, physical infrastructure, and structures impacted by erosion; and
- Natural and man-made improvements to address erosion.

The February site visit began at the causeway to the Kaunakakai Wharf and extended to One Aliʻi Park. It was separated into a number of discrete segments that could be covered on foot. A few locations were not accessible, including the outer walls of fishponds and undeveloped wetland areas. Special site visits to the 22-acre Koheo Wetland adjacent to Kapaʻakea and the Kalokoʻeli and Aliʻi Fishponds were led by local experts familiar with these unique areas and their history.

Several oceanfront property owners hosted opportunities to see shoreline change firsthand and provided valuable background data and photographs of past flooding, shore conditions, shore reference features, and shoreline change. Site observations were supplemented with aerial and DHHL-authorized drone images, archival maps, and photographs.

The SM-SEMP team used the October and November 2019 site visits to ground truth observations made in February, revisit and reaffirm empirical findings at specific locations, such as taking measurements at erosion hot spots, and gather information and conduct interviews in the Kalamaʻula ahupuaʻa.



Photo: *Measuring shoreline change.*

2.2.3 Phase 3 - Stakeholder Outreach

The SM-SEMP team met with agency regulators and experts in the coastal management field to discuss DHHL land use and coastal issues. Discussions shed light on the difficulties of obtaining financing for home improvements for sites within flood hazard zones, emergency response and evacuation, fishpond creation and restoration, invasive species control, regulatory permitting and bifurcated jurisdictions, misconceptions about building permit processes, and a variety of other challenges that DHHL and beneficiaries may face in creating more resilient communities and shorelines.

> ʻAʻohe hana nui ke alu ʻia.
> No task is too big when done together by all.
> - Pukui, ʻOlelo Noʻeau #142

DHHL staff provided updates to the community during regular Hawaiian Homes Commission meetings. In January/February 2019 the SM-SEMP team interviewed key stakeholders, conducted a resident survey, and hosted an orientation meeting on Molokaʻi to gather insight and perspective from residents, leaders, and stakeholders in the DHHL community. During the orientation meeting the SM-SEMP team presented the initial findings of the desktop research through PowerPoint presentations, handouts, and large format maps. Participants shared their knowledge of place by identifying erosion and flood prone areas and describing problematic locations on maps of the south shore. Discussion ensued about the project during an interactive question and answer period and in small groups and one-to-one discussion.

The SM-SEMP team distributed a survey at the meeting to help quantify issues that residents face in each homestead subdivision. The survey responses highlighted erosion-related concerns, themes, and problem areas and helped direct the SM-SEMP team to erosion hot spots and areas of concern.

Personal interviews were held with more than a dozen individual residents, families, and stakeholders that reside along the shoreline or had specific involvement in shoreline issues such as caretaking, stewardship, fishpond, or wetland restoration. The interviews followed the survey in format but were sufficiently open ended to allow for broad discussion and fluidity in conversation. The SM-SEMP team was privileged to meet a variety of knowledgeable people and kūpuna who were willing to share their ideas, generate remedies, and share their manaʻo in keeping with sound stewardship of the ʻāina. Appendix A provides a list of interviewees.

2.2.4 Phase 4 - Stakeholder Vetting of Draft Recommendations

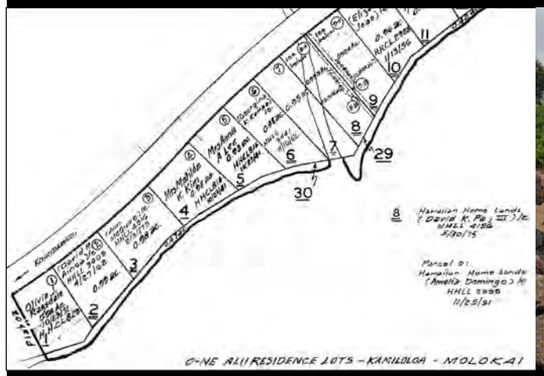
Using the data collected through the first three phases, the vetting phase included DHHL preparation of draft recommendations for review by a diverse group of stakeholders. The DHHL hosted focus group meetings with stakeholders and will hold a community open house to gather input on the draft recommendations and to discuss and resolve outstanding issues through this and/or subsequent planning processes.

2.2.5 Phase 5 - Prepare the Draft and Final SM-SEMP

Using the input collected during the previous phases, DHHL will prepare the Draft SM-SEMP for review and final approval by the Hawaiian Homes Commission.

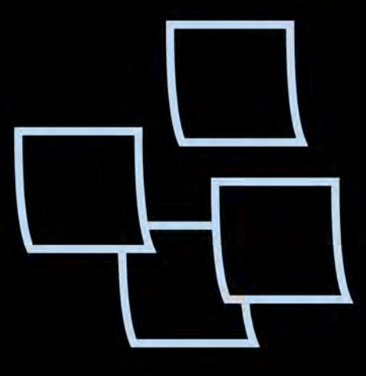


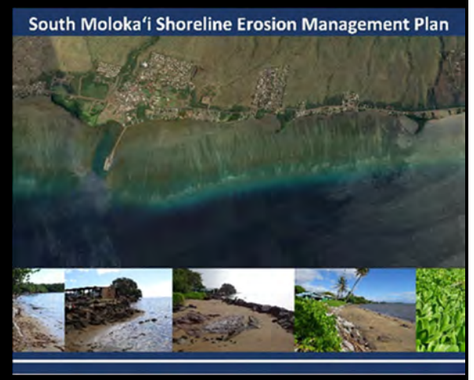
Photos: *Community stakeholders identify erosion-related problems, details, and concerns through facilitated group discussion.*











PHASE 1 Desktop Research	PHASE 2 Field Surveys	PHASE 3 Stakeholder Outreach	PHASE 4 Stakeholder Vetting of Draft Recommendations	PHASE 5 Prepare the Draft and Final SM-SEMP
Document the project area's mo'olelo, history, terrestrial environment, physical coastal processes, and erosion hotspots within the context of the project area's ahupua'a.	Conduct field observations of shoreline conditions to gather valuable background data and photographs of past flooding, shore conditions, shore reference features, and shoreline change.	Work with Hawaiian Homestead beneficiaries, lineal descendants, government, and community stakeholders to identify shoreline erosion threats and appropriate management responses.	Prepare conceptual draft recommendations for vetting by a diverse group of Hawaiian Homesteaders and other stakeholders.	Prepare the Draft and Final SM-SEMP using information generated through the first four phases.

Figure 2.1: *SM-SEMP Planning Process.*

CHAPTER 3: PLACE AND CONTEXT

The island of Molokaʻi is elongated with its highest point being Kamakou, a high volcanic peak that rises 4,961 feet in the east. The island's central and eastern terrain forms steep mountain slopes with deeply eroded gulches and valleys, especially on the wetter east side of the island. The West End of Molokaʻi has much lower tablelands and is barren owing to its arid state. Its people have long recognized the important connection between the land and the sea.

The poetic name Molokai Nui a Hina and its legendary origin establishes kuleana (duty, responsibility, privilege) to care for the island's resources (Halealoha Consulting, 2021, 5):

> … the island of Molokaʻi, like a child, is small and fragile – unlike a large continent. The resources of an island are finite, and these finite resources need to be nurtured by the island's "family" if the people are to grow strong, healthy and prosper. Many of the families of Molokaʻi trace their roots on the island back to antiquity, making the island an integral part of their ancestral family. Molokaʻi's modern-day stewards have a special responsibility to care for the island as they would care for a member of their own family – a responsibility bequeathed to them by Hina, birth mother of this island (Molokaʻi Community Service Council, 2020).

Traditional poetic names of the island include *Molokai ʻāina momona* (fat, fertile lands of Molokai), which refers to verdant lands that produce an abundance of food from loʻi kalo (taro patches), loko iʻa (fishponds), kai (near-shore) and moana (deep-sea) fishing grounds. Another name, *Molokai nō ka heke* (Molokai is greatest, foremost) refers to the celebrated athletes of the Makahiki competitions held at Naʻiwa and Kainalu. One of the most famous is *Molokai pule oʻo* (Molokaʻi of powerful prayer), a reference to the powerful kahuna trained at Puʻu Anoano and ʻIliʻiliʻopae Heiau, in particular the ones who practiced ʻanāʻanā (black magic, evil sorcery). The other well-known name is *Molokai nui a Hina* (Great Molokai, Child of Hina) (Halealoha Consulting, 2021, 5).

3.1 Ancient Molokaʻi Land Divisions

Ancient Hawaiians subdivided the mokupuni (island) of Molokaʻi into subareas to enhance the stewardship of the island's resources (Figure 3.2). The initial land divisions were the Koʻolau (windward) and the Kona (leeward) districts, or moku-o-loko (Summers, 1971). In 1859 the Kona and Koʻolau districts were dropped, and the island was made into just one district, called Molokaʻi district. In 1909, the present division into Molokaʻi and Kalawao districts was made (ibid.).

Each of Molokaʻi's moku is further divided into ahupuaʻa which incorporate watersheds or sub-basins (Figure 3.1). Of these, five have a direct influence on DHHL properties within the SM-SEMP study area including Kalamaʻula, Kaunakakai, Kapaʻakea, Kamiloloa, and Makakupaʻia (Figure 3.3). Each of these ahupuaʻa is briefly described below. Please see Appendix B for more detailed insights into the origins of Molokaʻi, its place names, and its ancient land divisions.

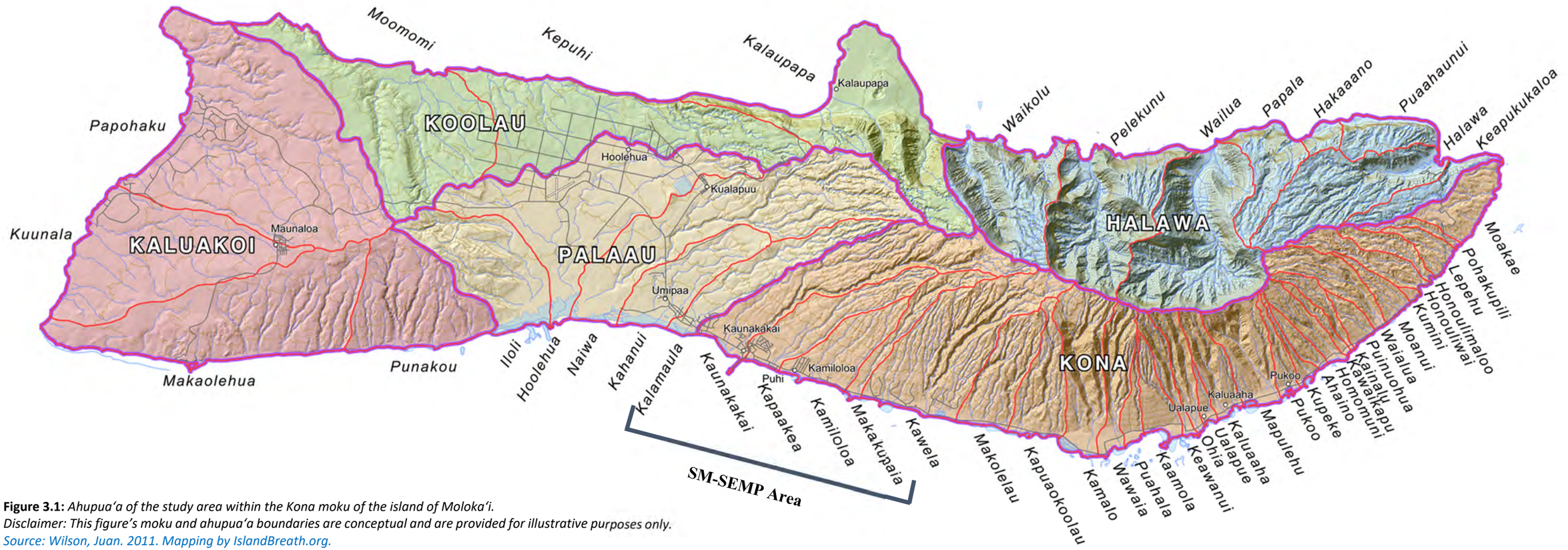


Figure 3.1: *Ahupuaʻa of the study area within the Kona moku of the island of Molokaʻi.*
Disclaimer: This figure's moku and ahupuaʻa boundaries are conceptual and are provided for illustrative purposes only.
Source: Wilson, Juan. 2011. Mapping by IslandBreath.org.

3.1.1 Kalamaʻula Ahupuaʻa

Kalamaʻula translates to mean "the red torch or red lama tree." The Kalamaʻula ahupuaʻa is located west of Kaunakakai (Pukui, 1974, 74). The ahupuaʻa rises gradually from sea level upland to Puʻu Luahine before ascending to 1,800 feet above sea level (ADS 2013, 21). Kalamaʻula is one of three watershed areas in the Pālāʻau region comprising 5,838 acres with no perennial streams (CRAMP, 2008). Known water names include ʻOloʻolo (pool/spring), Waianui (spring) and Makehe Stream (Halealoha Consulting 2021, 10).

In 1925 Kalamaʻula became the first Hawaiian Homestead community in the Hawaiian islands. Today Kalamaʻula has a "growing homestead residential community in the coastal lowlands and kula (upland) region, wetlands in the southwestern corridor, pastoral use, Kapuāiwa Grove, Church Row, and Kūlana ʻŌiwi Multi-Service Center (Kūlana ʻŌiwi), which houses the offices of DHHL, Office of Hawaiian Affairs, Queen Liliʻuokalani Children's Center, Kamehameha Schools, Alu Like and Na Puuwai. The area acts as a rural transition between industrial and agricultural uses to the northwest, and the more urban uses of Kaunakakai, Molokaʻi's country town, to the east" (ADS 2013, 21).

Catherine Summers identifies the special places in Kalamaʻula including ponds, a fishpond, heiau, a pool, kahua maika (stone rolling fields), petroglyphs, a spring, and house sites (Halealoha Consulting 2021, 6). Some of Kalamaʻula's special places include:

1. Kahua Maika near Puʻu Luahine. (The only one of old left in all the islands.)
2. Childhood home of Keōpūolani, sacred wife of Kamehameha the Great.
3. "Kapuāiwa," coconut grove planted by Kamehameha V.
4. Kamaloko Fishpond, with all kinds of fish. *(awa, āholehole,* large *ʻoʻopu,* and *ʻalamihi* crab)
5. Kahokai/Kakokahi Fishpond: "mess up the work." (now filled)
6. ʻŌhiʻapilo Fishpond: "smelly *ʻōhiʻa* tree." (now filled)
7. ʻUmipaʻa Fishpond: "stifle firmly." (now a dry land section)

The area was also known for its food cultivation on land and the abundance of fish and other ocean foods gathered in the nearshore area. The entire shoreline was called Hīlīa, "an off-shore area extending eastward from Pakanaka Pond through Kalamaʻula, it is now covered with mud, but formerly the shores had sandy beaches. Fish were very numerous here especially small mullet which often came in great schools near the shore. At times they were so numerous that 'This little fish darkened all of the beaches" (Tomonari-Tuggle, 1983 and Tomonari-Tuggle, 1990).

The ʻōlelo noʻeau for this shoreline area is:

Ka iʻa kā wawae o Hīlīa
The fish of Hīlīa, kicked by the feet (Summers, 1971).

There was extensive cultivation of ʻuala (sweet potato) in the kula (upland) areas (Halealoha Consulting 2021, 7).

3.1.2 Kaunakakai Ahupuaʻa

"The old name for Kaunakakai was Kaunakahakai, "Resting-(on) -the beach." It was the place for the canoes to come, for here there were plenty of fish (Pukui, personal communication)." (Summers, 1971)

The Kaunakakai ahupuaʻa gradually rises from sea level to approximately 1,300 feet where it enters the Molokaʻi Forest Reserve before terminating at Kahanui Apana 3. The ahupuaʻa is bound by the Koheo Wetland and Puʻu Maninikolo to the east and the western extent of the Kalanianaole Colony to the west. The makai portion of the ahupuaʻa is nearly 6,400 feet wide, but the ahupuaʻa gradually narrows before reaching its uppermost elevation. The Kaunakakai Stream transects the ahupuaʻa and flows continuously. The upper portions of the ahupuaʻa are mostly forested while the dry uplands and lowlands mauka of the coastal plain are mostly comprised of shrubland or bare earth. The small country town of Kaunakakai lies at the foot of the ahupuaʻa and serves as Molokaʻi's commercial, educational, and government center.

West of the approach to the Kaunakakai Wharf is a platform that was part of Kamehameha V's home, "'Malama'… The beach in front of this site was used exclusively by the *aliʻi* for sun bathing" (Halealoha Consulting 2021, 15). The coastal flats along Kaunakakai's shoreline were rich in salt pans. It is said that the salt pans were made "something like a taro patch" and the salt was "not too sour…" (Summers, 1971).

3.1.3 Kapaʻakea Ahupuaʻa

The literal meaning of Kapaʻakea is "the coral or limestone surface" (Pukui, 1974, 86). The Kapaʻakea ahupuaʻa is pie shaped and ascends gradually from the seashore to the South Fork of Kaunakakai Gulch where it becomes very steep. The ahupuaʻa is bound on the west by Koheo Wetland and Puʻu Maninikolo, and bordered on the east by Molokai Shores and Kamiloloa Heights. Along its makai side the ahupuaʻa is roughly 3,000 feet wide and extends from Kamiloloa in the east to Koheo Wetland in the west. There are no perennial streams in the ahupuaʻa. Two intermittent streams run during heavy rains and were diverted around the west and east boundaries of the Kapaʻakea Cemetery. The first stream is named Kamiloloa, and the name of the second stream is unknown (Halealoha Consulting 2021, 18). The upper portion of the ahupuaʻa is mostly forested while the dry uplands and lowlands mauka of the coastal plain are mostly comprised of shrubland or bare earth. The ahupuaʻa includes the homestead community of Kapaʻakea.

The Kapaʻakea ahupuaʻa is also adjacent to the Kōheo Wetlands, Ka Laʻi o Ke Kioea Bird Sanctuary, which is a 10-acre coastal salt marsh (Halealoha Consulting 2021, 18). *Ka laʻi o kioea*, "The tranquil spot of the kioea" was the name of a place where the homesteads are now located in Kapaʻakea. "Here there were numerous plover and curlews. The curlews are said to have called to the canoes to go out to sea to fish. Hence the saying, 'Molokai i ke kioea hoʻolale ka waʻa (Molokai where the kioea urge on the canoes)'" (Halealoha Consulting 2021, 18).

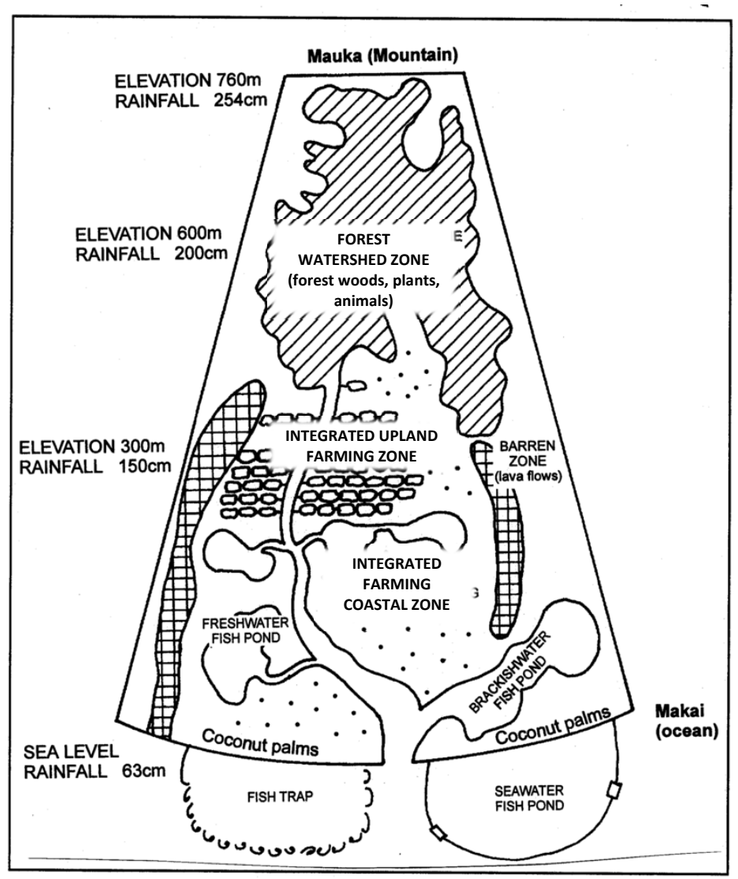


Figure 3.2: The Ahupuaa System of Ancient Hawaiʻi (Source: adapted from Costa-Pierce 1987, Pg. 324)**.**
In ancient Hawaiʻi land was divided into units called ahupuaʻa. Ahupuaʻa boundaries typically spanned the valley between two ridgelines and extended from the uplands to the sea. Ahupuaʻa often included a variety of resources, available within different ecological zones, to sustain human life. As shown in Figure 3.2, the mauka forested areas provide a variety of plants and animals for food, clothing, medicinal, and cultural purposes. In the mid-to-lower elevations streamwater is diverted to support farming and aquaculture. Coconut trees and other coastal plants and animals provide an additional source of food for the community. Coastal fishponds and coral reefs provide important resources from the sea. In ancient days the Kanaka Maoli carefully managed their ahupuaʻa and gave special consideration to the relationship of mauka and makai resources when making resource management decisions.

3.1.4 Kamiloloa Ahupua‘a

Two adjoining land sections comprise the Kamiloloa ahupua‘a. The section to the west is referred to as “Government” while the section to the east is known as “Konohiki.” Kamiloloa literally means “the tall milo tree” (Pukui, 1974, 82)

The ahupua‘a is pie shaped and rises gently from the seashore to about the 1,000 foot elevation before it gradually becomes steeper and is hemmed in by the Makakupa‘ia ahupua‘a to the east and the Kapa‘akea ahupua‘a to the west. The ahupua‘a includes the community of Kamiloloa in the west and the community of One Ali‘i and the Ali‘i fishpond in the east. The intermittent Kamiloloa stream runs through the ahupua‘a. The dry uplands and lowlands mauka of the coastal plain are mostly comprised of shrubland or bare earth.

The Kamiloloa ahupua‘a is also the home of Kaloko‘eli Pond which is known as “The dug up pond,” it was a loko kuapa having an area of 27.6 acres in 1901 (Summers 1971, 88). Another well-known historic site is Ka Lua Na Moku ‘Iliahi, which is known as “The pit of the sandalwood ships.” Located in the Moloka‘i Forest Reserve, it is a roughly 110-foot-long trench in the ground that is shaped like the hull of a ship. Following the development of the commercial sandalwood trade it was built at the direction of the chiefs to measure how much ‘iliahi would fit in the hull of a ship. Commoners would gather the ‘iliahi from the forests and carry it down to the pit where it would be stored until it could be sold to passing trading ships.

3.1.5 Makakupa‘ia Ahupua‘a

The roughly 2,000 foot wide by 14,000 foot long Makakupa‘ia ahupua‘a rises gradually from the Ali‘i Fishpond to roughly 1,000 feet before it becomes much steeper as it meets, and is enveloped at its upper reaches by, the Kawela ahupua‘a to the east and the Kaunakakai ahupua‘a to the west. Two adjoining land sections comprise the Makakupa‘ia ahupua‘a. The land section to the west was referred to as “Government” while the land section to the east was referred to as “Konohiki.”

Makakupa‘ia is the home of the roughly 26-acre Ali‘i Pond. The wall of this *loko kuapa* is 2,710 feet long, about 4 feet wide, and 4.5 feet high. There was one *mākāhā*. In 1957 the pond was filling with mud and about 4 acres along the eastern wall and inshore line were covered with mangrove. The *makaha* was broken… (Summers 1971, 90).

There is one intermittent stream that appears to be named Onini and a second stream that does not have a name. No spring names were found to be associated with Ali‘i Pond or Kaoaini/Kaonini Pond (Halealoha Consulting 2021, 23).

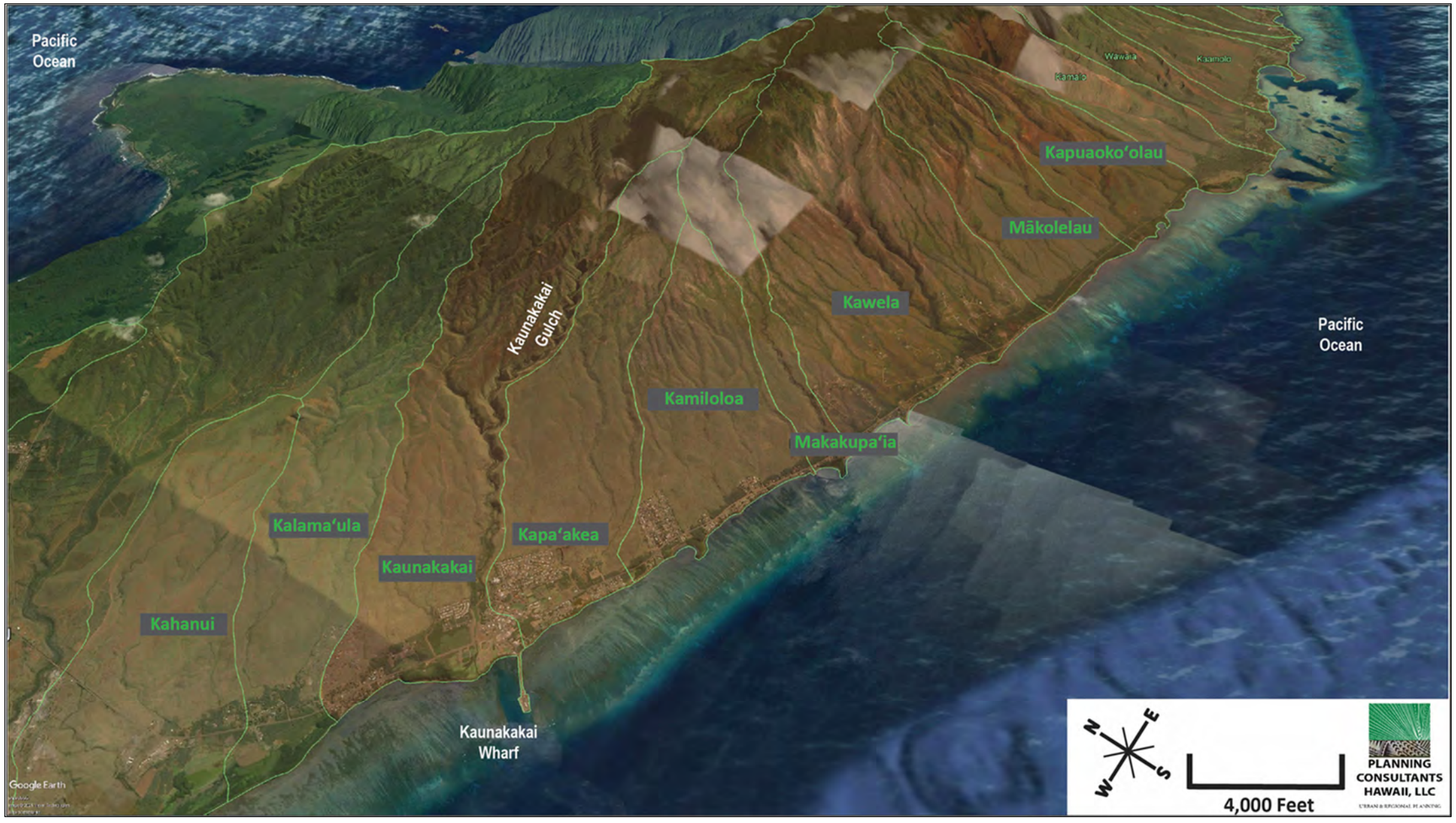


Figure 3.3: *The South Moloka‘i shoreline in the context of the area’s ahupua‘a.*
Disclaimer: This figure’s moku and ahupua‘a boundaries are conceptual and are provided for illustrative purposes only

In the water off Kamiloloa was a sea fishery known for the he‘e (Monsarrat, n.d.e:183)
“Formerly the he‘e found here were the i‘a kapu of Bernice P. Bishop. The time for catching them was from November to March 1…”

(Summers 1971, 88).

3.2 HUMAN-INDUCED CHANGE, PRE-CONTACT TO THE PRESENT

3.2.1 Pre-contact (600 A.D – 1777)

The first polynesian settlement on Moloka'i occurred on the east coast of the island in the area of Halawa in roughly 600 A.D (Roberts, Lucile M and Field, Michael E. 2008, 123). In the ensuing years, settlement spread west along Molokai's southeastern coastline and into the adjacent valleys. Southeastern Moloka'i offered settlers deep valleys with an abundance of fresh water, low-lying coastal plains with fertile, arable soil, and an an expansive reef rich in marine life (ibid, 123).

Subsistence farming activity was the primary land use and it was characterized by the clearing and tilling of the land for sweet potatoes, taro, coconuts, bananas, and other "canoe crops" the early settlers brought to Hawai'i from Polynesia. Settlements were small (a single or a few *hale*) and generally spread out along the coast and in the valleys. Between 600 A.D and roughly 1,000 A.D. human settlement had minimal impact on terrestrial and coastal processes.

Commencing around 1,000 A.D., Molokai's early Hawaiian settlers began building fishponds on the reef flats to capture and raise fish for consumption. By the early 15th century, they had constructed over 50 stone-walled fishponds (ibid, 123-124) stretching along the south coast between Kumimi to Kaunakakai and beyond (Chris Hart & Partners 1993, F-2). Figure 3.4 illustrates a portion of Molokai's Southeastern coast with and without fishponds.

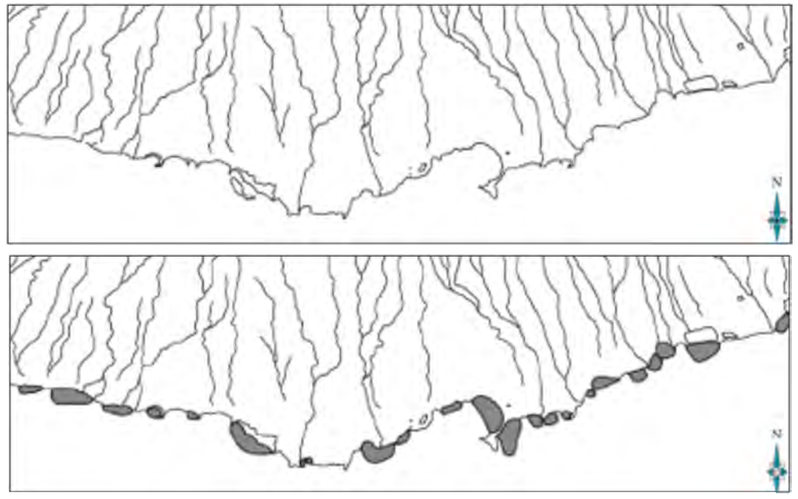


Figure 3.4: *Portion of Southeastern coast of Moloka'i with and without fishponds.* (Roberts, Lucile M., 4)

The fishponds altered the natural flow of southeastern Molokai's ocean waves, currents, and nearshore sediment. The fishponds also disrupted the natural pathway for the movement of stormwater and sediment from mauka areas to the coast. Sediment washed downslope during heavy rains would be deposited in the fishponds or settle in the nearshore waters between the fishponds (Roberts, Lucile M and Field, Michael E. 2008, 124). These alterations had a significant impact on coastal geomorphology, water quality, and the physical form of the coastline.

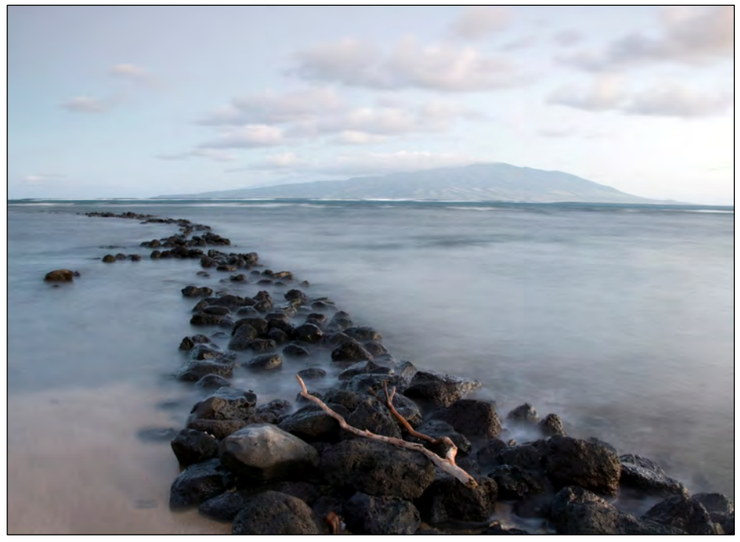
As the population continued to grow during this period, the terrestrial environment also saw significant change as settlers constructed extensive 'auwai (irrigation ditches), taro lo'i (ponded terraces) and habitat sites to sustain the growing population. Mauka of the fishponds along the lower kula slopes a more extensive system of stone terraces were constructed to support the cultivation of 'uala (sweet potato), wauke (paper mulberry) plants, and other crops (Native Register 1848: vol.7). These human interventions began to alter the natural flow of stream water from the mauka reaches of southeastern Moloka'i's watersheds to the shoreline and marine environment.

3.2.2 1778 – 1879

Captain James Cook, the first westerner to view Moloka'i, described the island as follows: "Morotoi is only two leagues and a half from Mowee to the West North West. The Southwestern coast, which was the only part near which we approached, is very low; but the land rises backward to considerable height; and, at the distance from which we saw it, appeared to be entirely without wood. Its produce, we were told, consists chiefly of yams. It may, probably, have fresh water, and, on the South and West sides, the coast forms several bays, that promise good shelter from the trade winds" (King 1784, 114).

The arrival of western explorers, merchants, whalers, and missionaries forever changed the natural, physical, and social landscape of the Hawaiian Islands.

One of the most devastating impacts to Molokai's natural environment brought by western contact was the introduction of sheep, deer, goats, and cattle. These grazing animals were welcomed by the native Hawaiian community as an excellent source of food. However, the newly introduced hooved animals, along with the pigs brought to Hawai'i by early Polynesian settlers, thrived in Molokai's temperate climate. They soon became feral and migrated deep into Moloka'i's valleys, and ascended its mountains, where they burrowed for edible roots and foraged on native grasses, shrubs, and small trees.





Photos (Left to Right): *Fishpond of East Moloka'i (Velvateen Waters, Flicker.com);* Kapuāiwa Coconut Grove planted in the 1860s by Kamehameha V (Photo taken on May 24, 2016, Flicker.com).

By the middle of the 19th century, south-central Molokai's hillsides were largely denuded of vegetation by the rapidly growing population of feral ungulates and the commercial harvesting of sandalwood. With the loss of vegetation to hold the soil, heavy rains began to transport increasing amounts of soil onto southeastern Molokai's coastal plain and reef flats.

Soil loss likely accelerated in the mid-1800s when cattle ranching intensified and plantation monoculture was introduced (Roberts, Lucile M and Field, Michael E. 2008, 125). The clearing necessary for sugar and pineapple cultivation heightened the susceptibility of the soils to erosion in the lower coastal areas resulting in the deposit of greater loads of sediment into the marine environment (ibid., 126).

Molokai's rainfall patterns also changed because of the extensive damage to its forests and the denuding of its hillsides of vegetation. The loss of much of Molokai's plant life reduced the amount of atmospheric moisure through evapotranspiration resulting is less rainfall. With less rainfall many perennial streams became intermittent.

3.2.3 1880 - 1920

In the 1880s the coastline between Kalama'ula and the Ali'i Fishpond was characterized by mudflats, sandy beach, wetlands, salt pans, and a limited number of structures and habitation sites (Figures 3.5 and 3.6). Jackson's 1882 survey of Kaunakakai Harbor (Figure 3.5) was prepared prior to the construction of the Kaunakakai Wharf. The Jackson survey documents a wide sandy beach and mud and sand flats that are partially dry at low water. Lands just west of the "village" of Kaunakakai are described as low level "sterile land" that is swampy in rainy weather. Lands just to the east are described as "grasslands".

Makai of the small village of Kaunakakai there was a long, sandy beach fronting a natural break in the reef. It is here that Malama, the royal residence of King Kamehameha V, was situated. The house was described by a guest in 1870: "It is a grass hut, skillfully thatched, having a lānai all around...On the north west side of the house is a large grass house, and it seems to be the largest one seen to this time...There are four other fine, big houses, mostly thatched...The King's yard covers about three acres and is planted with trees, mostly coconuts, that are thriving nicely" (Holoholopinaau 187O:Ke Au 'Oko'a). By the time Jackson surveyed the Harbor in 1882 Malama had passed to Princess Ruth Ke'elikōlani, one of the last descendants of the Kamehameha dynasty (Fitzpatrick, Gary L and Moffat, Riley M 2004, 86).

The break in the reef fronting Malama served as a natural entry to the shoreline for the transport of goods to and from Moloka'i. Prior to the construction of the wharf small boats would carry goods between the larger ships anchored offshore and the sandy beach. The 1882 Jackson Government Survey map illustrates a handful of structures along this beach to support shipping activities (Figure 3.5).

By 1886, the Hawaiian Government Survey prepared by M.D. Monsarrat shows a government road running east-to-west just mauka of the coastline (Figure 3.6). In 1889 a small stone-wharf was built fronting Malama, near the opening in the reef. Eight years later a more substantial wharf was constructed next to the old one (Figure 3.7) to serve the growth of plantation agriculture in Central Moloka'i. The expansion of plantation agriculture is noted in the American Sugar Company's year 1900 survey of Kaunakakai and Vicinity (Figure 3.7) that documents the planting of sugar cane to the east and west of Kaunakakai.

Like the fishponds, the construction of the wharf altered the natural flow of ocean waves, currents, and nearshore sediment between Kaloko'eli Fishpond and Kalama'ula which changed the coastal geomorphology, water quality, and the physical form of the coastline in this area.

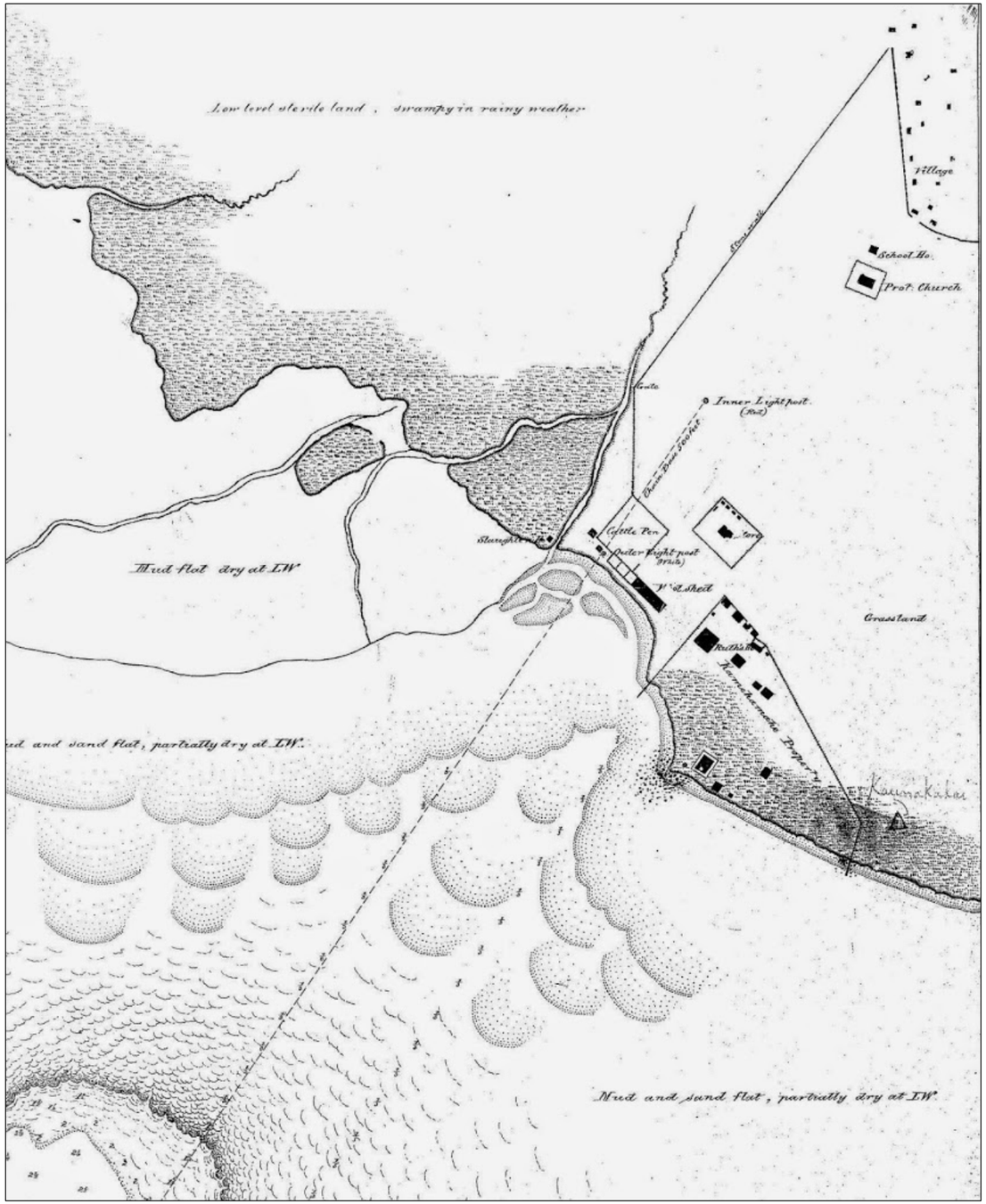


Figure 3.5: *Kaunakakai Harbor, Moloka'i, by G. E. G. Jackson, 1882.*

A 1924 land court map identifies four large salt evaporation ponds on either side of Kaunakakai Stream that were developed by the residents of Kaunakakai in 1910 (Chris Hart & Partners 1993, F-11). In 1902 the American Sugar Company introduced mangroves to stabilize the coastal mudflats at Pālā‘au in south-central Moloka‘i and to hold back the soil washed down by heavy rains into the sea (Allen 1998, 62). Since its introduction the mangrove has migrated eastward taking over much of the coastline. In doing so, it has reduced the area of wetland habitat important for endemic waterbirds, and it has also encroached onto the reef flat, coastal beaches, and fishponds making many of these areas inaccessible. Despite these negative outcomes, mangrove has reduced the amount of sediment that is transported from the watershed to coastal waters and the reef. It has also reduced erosion caused by coastal wind and wave energy (Roberts, Lucile M and Field, Michael E. 2008, 134).

3.2.4 1921 – 1950

The development of the ranching, sugar, and pineapple industries brought new migrants to Moloka‘i, and as the population grew there was a demand for new businesses, services, infrastructure, and homes to support the growing population.

With its central location and proximity to the wharf, Kaunakakai grew quickly during the 1920s and 1930s to become Molokai’s main business center. In 1935 Kaunakakai‘s growth was further stimulated when “all County buildings were permanently moved intact from ‘Ualapu‘e to Kaunakakai where they are situated today” (Chris Hart & Partners 1993, F-5).

During the 1920s Kalama‘ula’s population also grew after the United States Congress passed the Hawaiian Homes Commission Act in 1921. By 1922 seventy-nine Hawaiian Homesteading families moved to Kalama'ula, which contributed to the demand for commercial services in Kaunakakai and its subsequent population growth

The physical growth of Kaunakakai is evident when comparing the 1900 survey that describes Kaunakakai as a “native village”, and documents just a handful of structures (Figure 3.7), with aerial imagery of Kaunakakai taken in 1950 (Figure 3.8) that captures a town with several defined roadways serving a node of residential and commercial structures.



Figure 3.6: *Cropped survey of Moloka‘i’s south-central coastline. Taken from: Hawaiian Government Survey, Molokai Middle & West Section, M.D. Monsarrat 1886.*

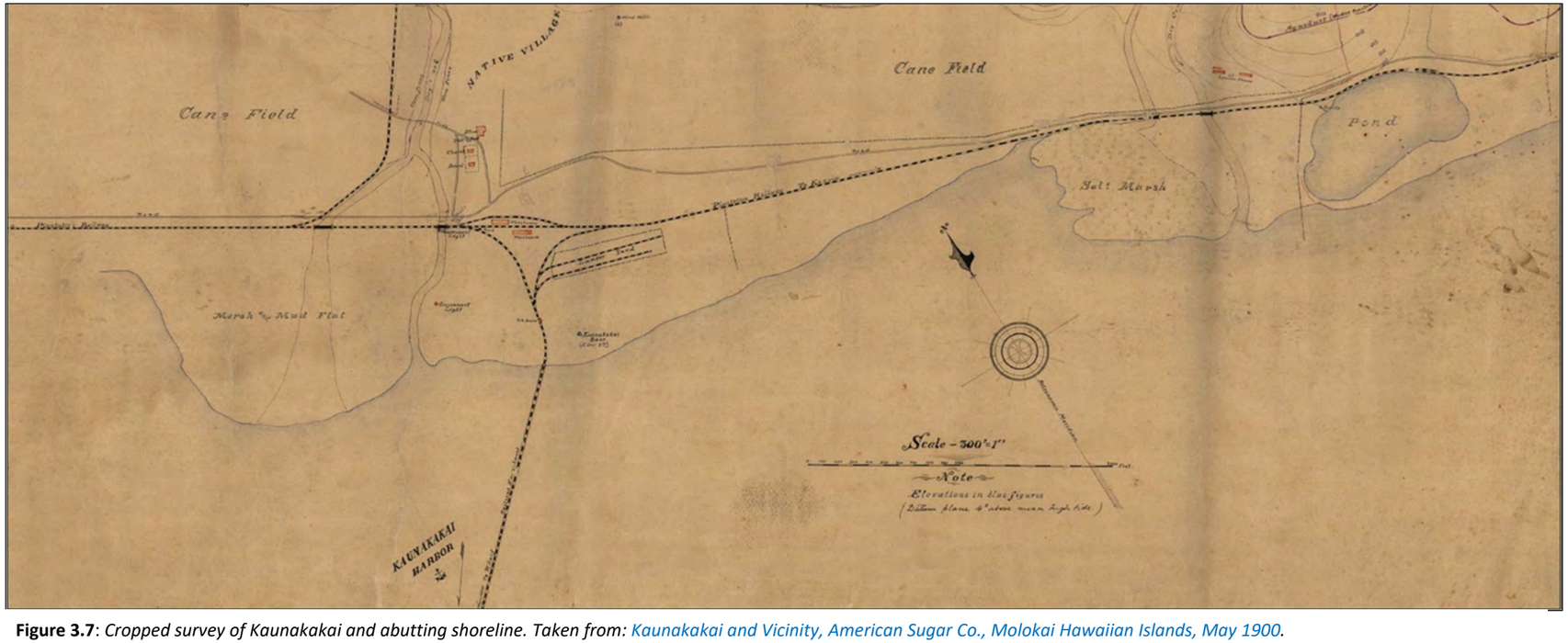


Figure 3.7: *Cropped survey of Kaunakakai and abutting shoreline. Taken from: Kaunakakai and Vicinity, American Sugar Co., Molokai Hawaiian Islands, May 1900.*

In 1934 the wharf at Kaunakakai was lengthened to nearly one-half mile and expanded and fortified so it could carry a two-lane road and handle additional shipping capacity. These improvements further disrupted the along-shore currents, waves, wind, and the transport of sediment between Kapa‘akea and Kalama‘ula.

By 1930, much of the island was devoted to plantation agriculture or to grazing. Both activities continued to alter the land of the Ho‘olehua Saddle and the coastal plain. As Handy (1931) noted, most fishponds by this time had been abandoned and were filled with mud (Roberts, Lucile M and Field, Michael E. 2008, 126).

In 1945, the Seaside Inn, precursor to the Pau Hana Inn, opened (Chris Hart & Partners 1993, F-13). Between 1945 and the 1980s additional visitor accomodation and commercial services would be developed along the coastline within the SM-SEMP area.

In response to episodic flooding, in 1950 the Army Corps of Engineers built a levy along both sides of Kaunakakai Stream to divert floodwater away from the town and towards the sea (ibid., F-14).

As illustrated in Figure 3.8, by 1950 the mudflats between Kalama‘ula and Kaunakakai Stream had largely been overtaken by invasive mangrove. This photo also depicts the coastal marsh and wetlands of Kapa‘akea prior to the development of residential lots in the mid-1950s. As of 1950, the shoreline between the Kaunakakai Wharf and the community of Kamiloloa-One Ali‘i was still largely sandy beach, interrupted only by the Kaloko‘eli Fishpond.

“My mother could walk from this lot [in Kalama‘ula} to the wharf [unimpeded]. All mangrove now”.

Penny Martin, Kalama‘ula Shoreline Lessee (Multi-Generational)



Figure 3.8: *USGS, aerial imagery of Kaunakakai and adjacent coastline. February 27, 1950.*

Figure 3.8: *USGS, aerial imagery of Kaunakakai and adjacent coastline. February 27, 1950.*

3.2.5 1951 – Present

In the late 1940s much of the coastal plain between the Seaside Inn (Pau Hana Inn) and the eastern side of the Kaloko‘eli fishpond was undeveloped. Historically, much of this area was wetland and salt marsh fed by two gulches and the ocean where the Kapa‘akea Homestead now exists. Material from Kaunakakai’s trash incinerator was allegedly placed as fill in the marsh (Nancy McPherson, personal communication January 31, 2019). After World War II the marsh was filled to make the land for the development of the Kapa‘akea subdivision in the early 1950s (ibid.). By 1964 the Kapa‘akea Homestead subdivision is largely developed as seen in Figure 3.9. Appendix D provides a more detailed history of these early subdivisions.

At one juncture, commercial interests attempted to fill portions of the 23-acre Koheo Wetland leading to citizen action that prevented development and resulted in the wetland’s undeveloped status (Arleone Dibben personal communication, January 31, 2019).

The Hotel Moloka‘i was built in 1968 just east of the Kaloko‘eli Fishpond, and the Moloka‘i Shores was built in 1977 just west of the Kaloko‘eli Fishpond. These facilities were built to accomodate an increasing number of visitors to the island.

The growth of the resident and visitor population between Kalama‘ula and the Ali‘i Fishpond led to an increase in sewage discharge. The Kaunakakai wastewater reclamation facility was developed in 1969 to meet the needs of Kaunakakai residents. The facility’s detention pond is visible in aerial imagery taken in 1977 (Figure 3.10). The facility pumps its treated wastewater into injection wells that are located just north of town. Many of the older houses in the area use cesspools to process their wastewater while newer residences use septic systems. Some of the larger commercial establishments and condominiums use private treatment systems to process their wastewater (Roberts, Lucile M and Field, Michael E. 2008, 127). “There is a potential—as yet undocumented—impact on the reef from the migration of sewage through ground-water seepage. Nutrients in the sewage may contribute to blooms of undesirable algae” (ibid., 127).

Figures 3.9 and 3.10 illustrate the increasing coastal development that occurred over the thirteen years from 1964 to 1977. As of 1977 sandy shoreline is still visible between the Kaunakakai Wharf and the beach fronting the Hotel Moloka‘i. However, the beach appears to have receded between the Hotel Moloka‘i and the Ali‘i Fishpond (Figure 3.10).





Figure 3.9 (Top): *Southcentral Moloka‘i, EKO - 2CC - 43, December 28, 1964.* **Figure 3.10 (Bottom):** *Southcentral Moloka‘i, USGS, January 6, 1977.*

Since 1977 there has been significant spread of invasive mangrove in both the Kaloko'eli and Ali'i Fishponds (Figures 3.11 and 3.12).

Aerial imagery taken in 2000 (Figure 3.11) and 2021 (Figure 3.12) also illustrate the significant loss of sandy shoreline that has occurred in the SM-SEMP area since the 1970s. In response, there has been a proliferation of shore armoring installed along oceanfront lots in Kapa'akea but not much armoring has been erected in Kamiloloa-One Ali'i. The armoring (seawalls, rocks, rubble mounds, etc.) has contributed to down drift erosion, creating a domino effect which leads to more armoring of the coastline as down drift landowners try to protect their property from the erosion caused by seawalls updrift of their property.

The various walls are indicative of attempts to retain land behind the wall rather than allowing the land to migrate to its natural state and grade. Oceanfront properties in Kamiloloa have fallen trees and short embankments along the seaward edge of their property that are indicative of shoreline retreat and coastal erosion. Most oceanfront residents consistently noted that their lot used to extend further seaward, and those seaward portions of their lot are now submerged regularly, not just during high tide events.

A root cause of the erosion is rising sea levels. According to coastal scientists, "over the next 30 to 70 years, homes and businesses located near the shoreline will be impacted by sea level rise" (Hawai'i Climate Change Mitigation and Adaptation Commission 2017, 115). According to the Hawaii Sea Level Rise Vulnerability and Adaptation Report, "Coastal portions of Hawaiian Home Lands, such as in Kalama'ula…would be flooded with sea level rise displacing native Hawaiian families that live in this area. In addition, fishing and cultural practices taking place along the shore would be impacted as beaches erode. In a recent study of multiple coastal hazards, four of the six Hawaiian Home Lands on Moloka'i, Kamiloloa-Makakupā'ia (assessed together due to proximate geography), Ho'olehua-Pālā'au, Kalama'ula, and Kapa'akea, are estimated to have the greatest potential for people to be displaced by tsunamis, waves, and sea level rise" (ibid. 129).





Figure 3.11 (Top): *Aerial Imagery, South Shore Moloka'i, May 16, 2000.* **Figure 3.12 (Bottom)**: *Aerial Imagery, South Shore Moloka'i, 2021 (Google Earth Image 2021 Maxar Technologies, Data SOEST/UHM)*

3.3 The Sociocultural Environment

Despite its modest size and population, Molokaʻi is often referred to as the "last Hawaiian Island" due to its abundance of cultural resources and continuation of cultural traditions. Roughly 63% of Molokai's population is either Native Hawaiian or part-Hawaiian or other pacific Islander, the largest proportion in the State of Hawaiʻi (DBEDT, 2011, Table 6). As Hawaiʻi's population continues to grow, Molokaʻi has been able to retain its close-knit communities and laid-back lifestyle. Many residents cherish their subsistence lifestyle and view access to fishing, hunting, and gathering sites to be of great importance as highlighted in a personal interview with DHHL homesteader Aunty Leilani Wallace:

> "Important to get food from ocean – our icebox is from One Aliʻi [beach park] down to Kalamaʻula. Not the beach. Crab, pua – ʻamaʻama [baby mullet], ʻōʻio [bonefish], āholehole [menpachi], and pāpio [jack]. Outside the reef – kala [unicorn fish], kole [surgeon fish], manini [tang], uhu [parrotfish], palani [eyestripe surgeonfish]..."

For Molokaʻi as a whole, "a reported 40% of the population rely on subsistence farming, hunting, and fishing" (Molokai Health Center, 2021).

Molokaʻi's population declined to 6,275 persons in 2019 (American Community Survey, 2019), from 7,404 persons in 2000 (2010 State of Hawaiʻi Data Book, Table 1.10) a 15% decline. In 2020 Molokaʻi had 2,229 households spread over 260.46 square miles (2020 State of Hawaiʻi Data Book, Tables 1.10 and 1.12). Of the total island population, there are approximately 1,821 people residing on DHHL lands (American Community Survey, 2019, Table DPO2). Kaunakakai is the most populous area of the island with a population of 3,038 (American Community Survey, 2019, Table S0101) and a median age of 44.1 (ibid.).

Over the past few decades, several of Molokaʻi's large businesses such as the Kaluakoi Resort, Del Monte, Dole, Pau Hana Inn, and the Lodge at Molokaʻi Ranch have closed, leaving many residents with few employment options. Many residents have taken multiple part time or seasonal jobs, often without benefits, to compensate. As of May 2021, Molokai's non- seasonally adjusted unemployment rate was 7.3% (DLIR 2021, 2). The median household income in East Molokai (census tract 317) was $41,705 (U.S. Census Bureau's American Community Survey 2015-2019, Table 2).

In 2019, the Kalamaʻula Homestead had an estimated population of 322 people (American Community Survey 2019, Table DPO2). Median household income was $61,875. There were more females (180) than males (142), and the median age was 35.6 (ibid.). Household size averaged 3.54 people, and roughly 88% of the neighborhood's residents were native Hawaiian or part Hawaiian (ibid.).

The Kapaʻakea Homestead had an estimated population of 166 people in 2019 (ibid.), roughly half as many people as the Kalamaʻula Homestead. Median household income in the Kapaʻakea subdivision was $32,813. Similar to Kalamaʻula, the Kapaʻakea homestead had more females (85) than males (81), but the median age was younger at 34.5 years old. Household size averaged 3.25 people, and nearly 98% of the Kapaʻakea's residents were native Hawaiian or part Hawaiian (ibid.).

The Kamiloloa-Makakupaʻia Homestead was the least populated of the three homestead areas having roughly 75 residents in 2019 (ibid.). Median household income was $32,500. Unlike Kalamaʻula and Kapaʻakea, the Kamiloloa-Makakupaʻia Homestead had more males (45) than females (30). The median age was 35.2 years old (ibid.). Household size averaged 2.68 people, and roughly 89% of the neighborhood's residents were native Hawaiian or part Hawaiian (ibid.). Please see Table 3.1 for select demographic data.

Table 3.1	**SELECTED DEMOGRAPHIC ESTIMATES HAWAIIAN HOME LAND COMMUNITIES**		
	Kalamaʻula	**Kapaʻakea**	**Kamiloloa-Makakupaʻia**
Population	322	166	75
Males	142	81	45
Females	180	85	30
Median Age	35.6	34.5	35.2
Hawaiian/Part Hawaiian	88.2%	97.60	89.3%
Housing Units	108	61	39
Households	91	51	28
Avg Household Size	3.54	3.25	2.68
Median Household Income	$61,875	$32,813	$32,500

Table 3.1. ***Source:*** *American Community Survey, 2019, ACS 5-Year Estimates Data Profiles. Table DP02.*



Photo: *Coastal structure Kamiloloa, Molokaʻi.*

3.4 The Terrestrial Environment

Scientists and native practitioners know there is a direct correlation between the health of the forest and the health of the reefs, beaches, and shores. Without a healthy forest to hold the soil and resist the erosive effects of heavy rain, large amounts of sediment and silt wash off steep mountain slopes and into the ocean, polluting streams, destroying coral reefs, and degrading coastal fishing resources (TNC, 2013).

Of the eight watersheds in central Moloka'i, the Kamiloloa and Kapa'akea watersheds drain 7,935 acres including the eastern portion of the study area from Kaunakakai Harbor to One Ali'i. The western portion of the project area, including Kalama'ula, is within the 5,931 acre Kaunakakai watershed (Jokiel 2006, 1). The latter watershed includes Kiowea Park and the freshwater springs and seeps of the neighboring Kapuāiwa Coconut Grove, revered for its cultural significance, beautiful coconut trees, and swiftly moving groundwater adjacent to the ocean.

3.4.1 Moloka'i Forest Reserve

These watersheds extend upland to portions of the Moloka'i Forest Reserve which ends at the Waikolu Valley Lookout at 3,550 feet. (Figures 3.13 and 3.14). The soils in the Moloka'i Forest Reserve are varied. Of the 12 soil types present in this section, five are classified as highly erodible land and six are potentially highly erodible land (DLNR 2009, 9). The area receives over 32 inches of annual rainfall given its elevation (ibid.).

Within the forest reserve, the upper reaches of the Kamiloloa and Kaunakakai watersheds are considerably disturbed and degraded. However, there are strands of remaining montane forest with a tree canopy dominated by 'ōhi'a and an understory of native trees, ferns, and grasses. (DLNR 2009, 20). Along the larger gulches within the upper headlands of the watersheds, native plants predominate in communities that are relatively intact, and are minimally disturbed but retain a component of non-native plants (more than 10%). Surrounding the headlands are areas that are severely degraded or highly altered from their natural state. On the lower western side of the reserve, the vegetation does not reflect a naturally evolved species composition, but rather a mixture of small remnant patches dominated by native plants, patches of largely invasive weedy alien plants, and areas of mixed native and non-native plants. For instance, there are some open 'ōhi'a forest and native shrubland mixed with native-alien forest in the upper reaches of the forest reserve. Whereas alien forest, alien shrubs and grasses, and Lantana shrubland tend to dominate the lower portions of the reserve (DLNR 2009, 17-20).

Access to the upper headlands of the Kapa'akea and Kamiloloa ahupua'a is provided by Maunahui Road, necessitating four-wheel drive. Within the reserve is critical habitat for plants and the Blackburn's Sphinx Moth (DLNR 2009, 22). Below these protected areas but well above and mauka of Kapuāiwa Grove and Kaunakakai Town is the Kalama'ula Nature Resource Management and Subsistence Access Area owned by DHHL. The lower mauka portions of the watershed have been substantially altered by centuries of ungulate grazing; both domestic and feral, that has damaged native plants and fundamentally changed the hydrology of the ecosystem.

3.4.2 Dry Uplands and Lowlands Mauka of the Coastal Plain

Kamehameha V Highway runs parralell to the project area and provides a hardened boundary between the undeveloped mauka dry areas and the more developed makai areas of the coastal plain and the project area.

Prior to human settlement, leeward Molokai's dry lowland and mesic communities were likely comprised primarily of dry forests, woodlands, and shrublands. It is likely that native lowland grasslands were infrequent or even nonexistent, and lowland forests, woodlands, and shrublands were widespread, probably extending to the coast in many places (Cuddihy and Stone, 1990, 13).

With Polynesian settlement, many of the dry lowland forests were cleared for subsistance agriculture making way for the dry grass and shrublands that were characteristic of leeward lowlands at the time of western contact.

During the western contact period axis deer, horses, cattle, goats, pigs, and sheep were introduced to Moloka'i. Many of the introduced ungulates were let loose to graze on the native shrubs and grasses throughout the watershed. Moreover, there was a kapu on the harvest or control of some species, such as axis deer. Over time, significant populations of feral ungulates overgrazed low and upland portions of the watershed leaving a rocky, barren landscape, denuded of vegetation and ripe for soil loss due to wind and rain.

The large population of feral ungulates are also particularly hard on an island's upland slopes because their hooves compress tropical soils, trampling shallow plant roots, making it more difficult for the soil to absorb and retain moisture. Compacted soils are prone to erosion during rainstorms, and they increase stormwater runoff.

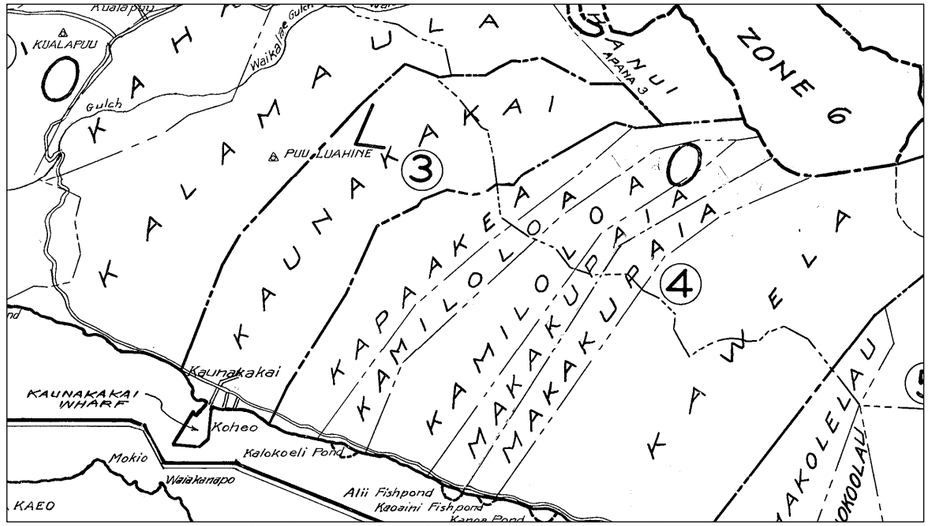


Figure 3.13: *Sections 3 and 4 of Zone 5 of the Island of Moloka'i plat map (Maui County, M5000). Ref: https://www.mauicounty.gov/1193/Tax-Map-Zone*

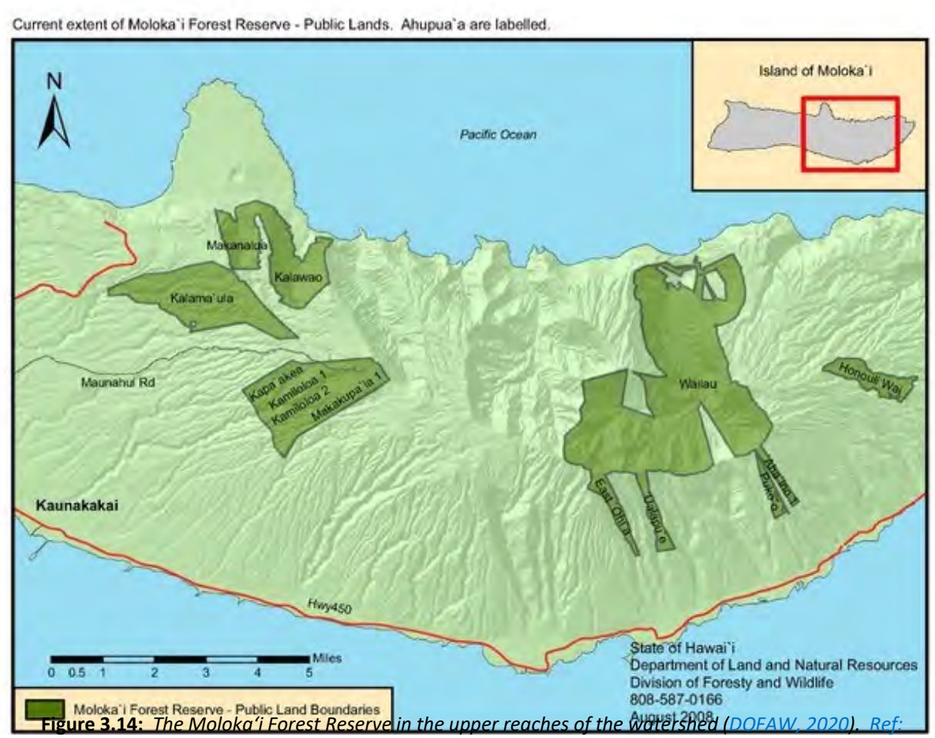


Figure 3.14: *The Moloka'i Forest Reserve in the upper reaches of the watershed (DOFAW, 2020). Ref: https://dlnr.hawaii.gov/forestry/frs/reserves/maui-nui/molokai*

Western contact also brought deforestation and the loss of sandalwood trees through direct harvest. Land clearing for sugarcane production also destroyed much of the native vegetation. As a result of these human activities, endemic plants quickly declined and large areas of the low and upland portions of the Kamiloloa and Kaunakakai watersheds became barren.

Along with water diversions, these vegetative changes caused perennial streams that flowed nearly continuously to become ephemeral, flowing only occasionally or intermittently (Jokiel, 2006). These terrestrial changes further accelerated erosion of upland soils and the deposition of sediment into nearshore ocean waters during heavy rainstorms which caused the inner reef to become inundated with layers of silt and mud that smothered corals. This excessive input of sediment into nearshore areas also filled fishponds and harmed their productivity.

3.4.3 Lowlands within the Coastal Plain

Much of the lowlands between Kamehameha V Highway and the shoreline have been developed with housing and graded for associated roadways, drainage, and wastewater infrastructure. The natural ecosystem in this area has been heavily modified by human activity.

Historically, there was a salt marsh fed by two gulches and the ocean where DHHL's Kapa'akea subdivision now exists. Based on an American Sugar Company map circa 1900's, a railway line to Kawela ran parallel to and just makai of the Kamehameha V Highway, abutting the salt marsh that became the Kapa'akea Homestead lots.

In 1961, serious flooding caused substantial damage to the homes in Kapa'akea, inundating them with two to three feet of standing water. To address chronic flooding at Kapa'akea, drainage improvements were made between 2007 and 2011 including grading the edge of the roadway, installing fords at two locations on the loop road, and lining the drainage ditches with geotextile fabric mesh for erosion control. Additional flood mitigation improvements underwent an environmental assessment in 2016 but have yet to be permitted or constructed. These efforts address flooding, but not erosion or shifting of the shoreline's location, or sea level rise.

3.4.4 Coastline

The project area's coastline primarily consists of low-energy, shallow, nearshore waters along a sandy, silty, sediment-laden shoreline that is absent of cliffs, bluffs, or steep embankments. The coastline is interspersed with wetlands, mangrove forests, stream outlets, drainages, fishponds, and shoreline hardening structures that, along with the causeway to the Kaunakakai Wharf and Harbor, substantially influence the dynamics of the shoreline and the movement of sediment along the shore and within the inner reef zone.

Sediment along the shore comes from both upland sources and the reef offshore. Sand excreted by grazing herbaceous fish, shells from invertebrates, and coral fragments that break free of a main colony during storms contribute to the sediment supply and the formation of sandy beaches.

On many of the oceanfront properties along the Kamiloloa-One Ali'i shoreline, the natural berm mauka of the shore, with its native vegetation and raised topography, has been lost or heavily altered. In many cases, the crest or slight rise between the shore and inland areas has been graded for property development. The alteration has resulted in lost capacity to absorb wave energy and runup and limit or prevent flooding. Dense thickets of kiawe trees also occurr along this shoreline altering sediment transport and reducing brackish or groundwater influx.

The shoreline fronting the Kapa'akea community has largely been hardened with seawalls, boulders, and other anthropogenic material.

3.5 The Marine Environment

3.5.1 Reef Zone Characteristics

The coral reef that parallels Molokai's south shore is the largest continuous fringing reef in the main Hawaiian Islands (Ogston and Field, 2010). The shallow reef flat has depths around 6.5 feet or less and extends nearly a mile offshore in the Kaunakakai area, rising to a reef crest that is partially exposed at low tide (Cochran-Marquez, 2005). Figure 3.15 illustrates the transition from the inner reef flat, which is covered in sediment, to the reef crest exposed at low tide, to the fore reef which harbors coral growth (Field, Cochran, Logan, and Storlazzi, 2008).

The inner portion of the reef flat is a wide, shallow depression extending offshore from fishponds and a shoreline that has a band of fine-grained sediment. Much of this inner reef flat is covered with a thick mixture of terrigenous (land-based) mud, silt, and carbonate sand. Sand patches and coral-covered pavement become more dominant along the seaward edge of the reef flat and coral coverage increases with distance from shore (Figure 3.15). The mid-to-outer reef flat has live corals and patches of fine-grained sediment and grooves of sand and gravel (Calhoun and Field, 2008 in Ogston and Field, 2010). The reef crest has a diverse array of coral species that are wave resistant.

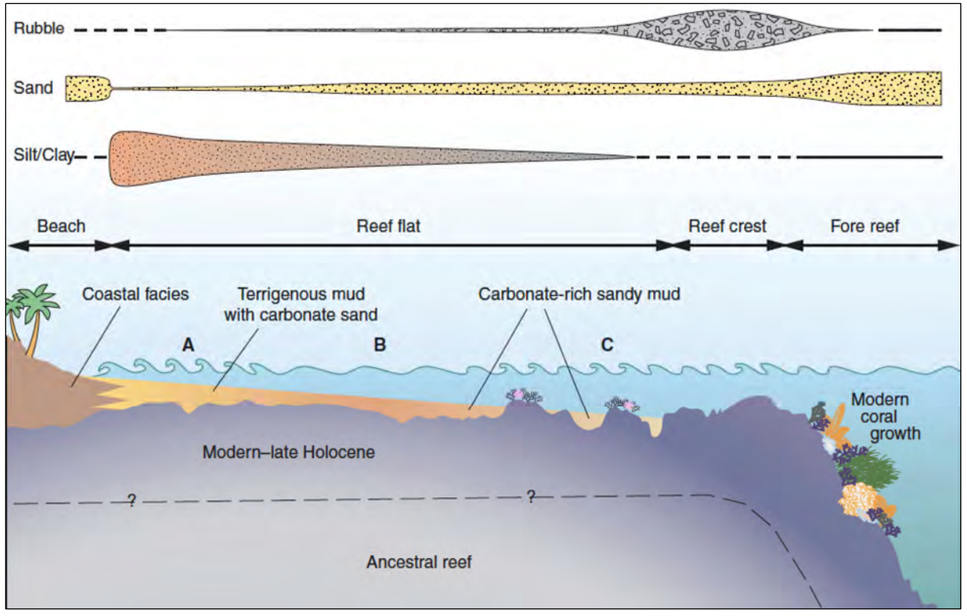


Figure 3.15: *Major anthropogenic stressors the affects Moloka'i's south shore reef habitat (Field, Ogston, and Storlazzi, 2011).*

Seaward of the reef crest, the fore reef alternates between abundant reef and barren hard pavement**.** The fore reef platform fronting Kamiloloa-One Ali'i and extending west to Kaunakakai has barren areas that form a "dead zone" relative to coral growth (Cochran-Marquez, 2005). The outer reef is mostly comprised of live coral, reef rubble, and sand-sized carbonate sediment. This area follows a pattern of spur and groove morphology that drops in depth to ninety feet, where it transitions into a sloping sand-covered plain of the shelf zone (Cochran-Marquez, 2005).

3.5.2 Marine Flora and Algae

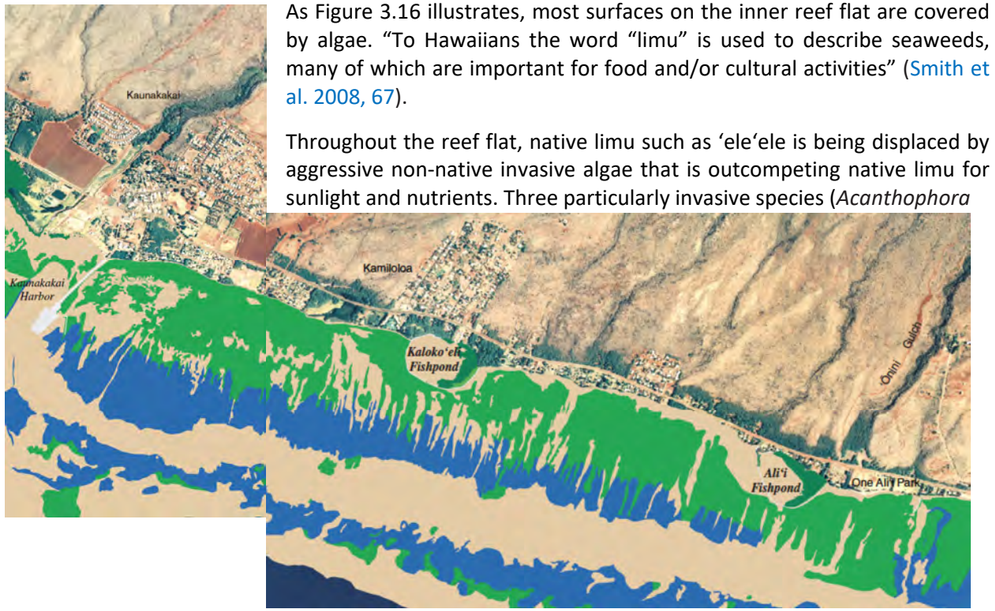


Figure 3.16: *Biological coverage along Moloka'i's south shore indicating algae (green), coral (blue) and uncolonized (tan) areas (Cochran-Marquez, 2005).*

As Figure 3.16 illustrates, most surfaces on the inner reef flat are covered by algae. "To Hawaiians the word "limu" is used to describe seaweeds, many of which are important for food and/or cultural activities" (Smith et al. 2008, 67).

Throughout the reef flat, native limu such as 'ele'ele is being displaced by aggressive non-native invasive algae that is outcompeting native limu for sunlight and nutrients. Three particularly invasive species (*Acanthophora spicifera*, *Hypnea musciformis*, and *Gracilaria salicornia*, commonly known as gorilla ogo) are outcompeting native limu for sunlight and nutrients (Smith et al. 2008, 70). *Hypnea musciformis* is also known to wash up onto the beaches throughout the project area creating an unsightly mess.

"In 2005, we used to have twenty-five different species of limu. Limu kala disappeared eight years ago."

Noelani Lee Yamashita,
Former Executive Director, Ka Honua Momona

While under threat from invasive algae, several edible forms of native limu can still be found within the project area's shallow reef flat including limu nanauea (Gracilaria coronopifolia), long ogo (Gracilaria parvispora), limu pālahalaha (*Ulva fasciata*), and limu 'ele'ele (*Enteromorpha prolifera*).

The inner and middle reef flat is also rich in native seagrasses (*Halophila hawaiiana*). These seagrasses play an important role in the marine ecology by stabilizing sediment which would otherwise drift onto the reefs. Seagrasses are also a food source for many marine organisms and provide habitat for several species of fishes and marine invertebrates (Smith et al. 2008, 70).

The green alga Halimeda kanaloana is abundant seaward of the project area's fore reef in deep sandy areas. Halimeda kanaloana is an important part of the ecosystem and is known to be a source of sand (Smith et al. 2008, 74). Its skeleton is made of calcium carbonate which accumulates in quiescent conditions but can break down quickly from abrasive wave action. The plant forms productive meadows of habitat on the seafloor that is important for smaller fish, shrimp, urchins, invertebrates, and other marine life.

3.5.3 Fish Assemblage

South Molokai's reef flats support an assembalege of fish, many of which are harvested for subsistence consumption. A range of fish families are represented, with the following six families comprising roughly ninety percent of the total fish biomass (Friedlander and Rodgers 2008, 61):

1. Surgeonfishes;
2. Parrotfish;
3. Triggerfishes;
4. Wrasses;
5. Snappers; and
6. Jacks.

Herbivores tend to dominate both shallow and deeper waters along the reef flat. Kamiloloa is a notable exception where benthic surveys found that invertebrate feeders comprised a majority of fish biomass. This was a function of the overall low biomass at Kamiloloa (Friedlander and Rodgers 2008, 62). Subsistence fishing, and the harvesting of other marine resources, is vitally important to both the Hawaiian culture and the economic security of many DHHL lessees within the project area. "A variety of fishing techniques ranging from trolling, bottom fishing, netting, and spearing are utilized. Gathering of limu (seaweed), shellfish and crustaceans is widely practiced" (Jokiel 2006, 11).



Photo: *Subsistence fishing, South Shore Moloka'i.*

"In the old days, was lots of crab – kūhonu crab, alamihi crab. They still get, but not like before".

Henry Paleka, Kalama'ula Shoreline Lessee

3.5.4 Coastal Fauna

Hawai'i has three main edible crabs: Kona, kuahonu, and Samoan. Kūpuna noted a significant change in the abundance and predominance of the Samoan crab, an invasive species, along the sandy silty shorelines in the study area. Several observed a distinct change from smaller, native crabs to Samoan crabs (aka mud crab) who have larger, stronger, front claws. This invasive is tastier and more edible according to the kūpuna, and thus more preferred and harder to find (personal communication, February 2nd, 2020). The Samoan crab was introduced in Kaneohe Bay, Oahu in 1926 by the State with the intent to establish a commercial fishery on Oahu, and the Big Island (Cazar, 2015)(Cascorbi, 2011, 5). The crab inhabits muddy bottoms in brackish water along the shoreline, mangrove areas, and river mouths; environments that are common in the study area. The crabs can grow to 20 cm, and weigh several pounds, and are omnivorous eating both plants and other mollusks including other crabs.

The Koheo Wetland, also referred to as the Ka La'i o Ke Kioea Bird Sanctuary, is a 10-acre coastal salt marsh that abuts the western end of the Kapa'akea Homestead subdivision. "It is now home to dozens of species of native shorebirds, including one of the rarest shorebirds in the world and Kaunakakai's official bird, the kioea, also known as the bristle-thighed curlew" (Chao, E. 2012). Other protected species have been observed by local ornithologist Arleone Dibben-Young on the mudflats offshore during low tide in the vicinity. They include the federally endangered ae'o or Hawaiian Stilt and Whimbrel's that are protected by the Migratory Bird Treaty Act (Manera, 2013, 33).

The coastline along the DHHL homesteads does not appear to have ideal habitat for endangered species, although in 2005 it was reported that a captively raised monk seal frequented the harbor area until it was removed. Separately, a downed 'Ua'u kani, or Wedge-tailed shearwater was observed about a mile southeast of the harbor (Manera, 2013, 33).

A number of protected species can be found on Moloka'i and may occasionally be observed within the coastal areas of Molokai's south shore. Protected birds include:

- Nēnē, Hawaiian goose **(***Branta sandvicensis***),**
- 'Ua'u kani, Wedge-tailed shearwater (*Puffinus pacificas chlorhynchus*),
- 'Ua'u, Hawaiian Petrel (*Pterodroma sandwichensis*),

- ‘A‘o, Newell’s shearwater (*Puffinus auricularis newelii*),
- Ae‘o, Hawaiian stilt (Himantopus mexicanus knudseni)
- ‘Alae ke‘oke‘o, Hawaiian coot (Fulica alai), and
- ‘Alae ‘ula, Hawaiian Gallinule (Gallinula chloropus sandvicensis)

Other protected species include:

- Honu, threatened green sea turtle (*Chelonia mydas*),
- ‘Ilio-holo-i-ka-uaua, Hawaiian monk seal (*Monachus schauinslandi*),
- ‘Ōpe‘ape‘a, Hawaiian hoary bat (*Lasiurus cinereus semotus*), and
- Blackburn’s sphinx moth (*Manduca blackburni*).

The relative isolation and small sizes of the populations of these protect species on Moloka‘i make them extremely vulnerable to perturbations or disruptions of their lifestyle or the habitat they depend on, for example degradation or development of their feeding, resting, roosting, or breeding areas. Because the populations are small, unexpected disasters such as hurricanes or wildfires could have an outsized negative effect and lead to their extinction.

More traditional activities such as development of formerly undeveloped areas (especially along the southeastern coast) can lead to the loss or disturbance of habitat that is critical to the native species long-term survival. Improper grading techniques near stream corridors or gulches can result in sedimentation and degradation of terrestrial, freshwater, and marine habitat. Improperly situated development along the coastal plain can increase nutrients in the ground water that contribute to non-native algal blooms which affect fish populations and coral habitats negatively.

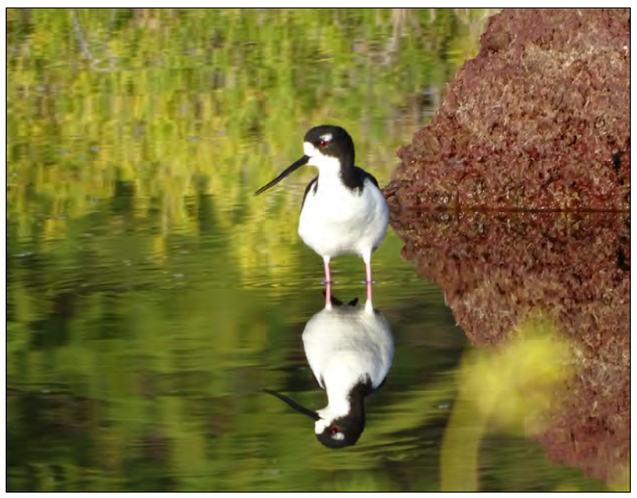


Photo: *An endangered Hawaiian Ae‘o, South Shore Moloka‘i.*

3.5.5 Terrestrial Erosion and the Marine Environment

Upland sediment has a major influence on the project area’s coastal geomorphology. Rainstorms can dislodge terrigenous soils, rocks, and silt from upland sources and this sediment is then carried by streams, gulches, and drainageways to the shore. Ancient Hawaiians built at least fifty-two fishponds on the south shore of Moloka‘i (Wyban, 1992 in Jokiel, 2006). Many of these fishponds have formed catchment basins for upland sediments that are released during heavy, but infrequent, rainstorms.

The dominant sediment input to the marine environment is from infrequent kona storms that occur several times per winter and place fine sediment in fan deposits near the mouth of drainage gulches (Field et al., 2008 in Ogston and Field, 2010). This fine sediment becomes trapped on the shallow inner reef flat where it is stored in thin deposits and trapped by macroalgae (Ogston and Field, 2010). The deposition of sediment has caused the inner reef to become inundated with layers of silt and mud that has smothered corals and altered both down-slope and along-shore sediment transport patterns. Sediment transport along shore is now dependent on wind strength and direction, nearshore currents, and fishpond size and shape (Jokiel, 2006).

The filling of the project area’s wetlands has amplified the impact of upland erosion on the marine environment. Wetlands capture and filter upland sediment before it reaches the ocean. As the wetlands were filled sediment laden storm runoff, with greater amounts of dirt and silt, flowed into nearshore waters clouding the water, choking fisheries, and polluting nearshore reefs.

3.5.6 Sediment

Sediment concentrations of 10 mg/l or more in the water column are detrimental to coral reefs. This level of suspended sediment results in fewer coral species, less live coral, lower coral growth rates, and decreased rates of production (Rogers, 1993 in Jokiel, 2014). Sediment in the water column can block sunlight needed by corals to photosynthesize and sediment accumulation can eliminate or cover recruitment sites. Sediment can stress individual corals and bury coral colonies. These detrimental conditions for coral (i.e., high sediment-driven turbidity) happen almost daily on Moloka‘i’s south shore, especially during the afternoon when trade winds blow at moderate to high speeds (Ogston and Field, 2010) and tides are high (Ogston, Storlazzi and Field, 2004). The situation causes sediment to be resuspended, further impacting reef vitality and degrading reef health and function (Figure 3.17).

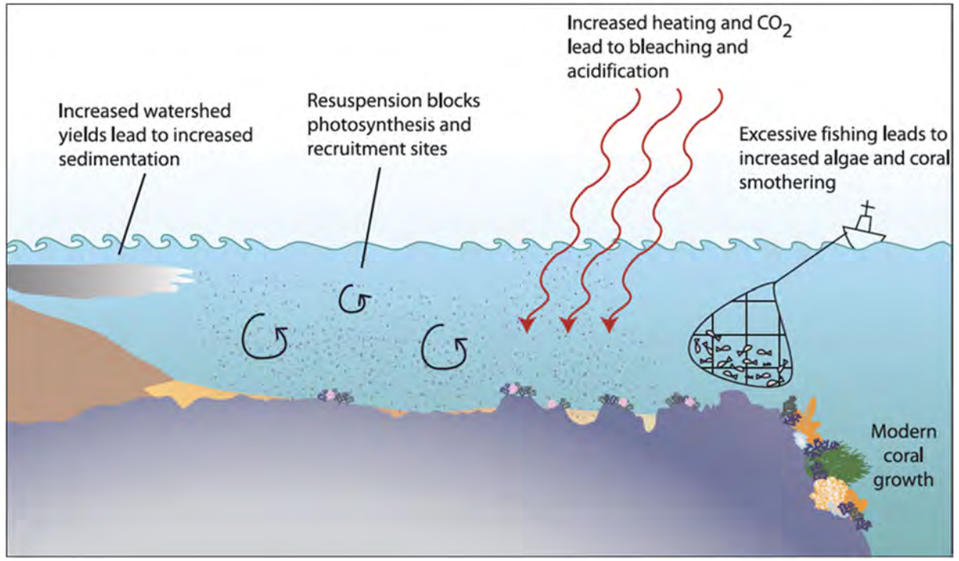


Figure 3.17: *Major anthropogenic stressors the affects Molokai’s south shore reef habitat (Field, Ogston, and Storlazzi, 2011).*

The recirculated sediment continues to have an adverse impact as it recirculates again and again in the water column until it is flushed out of the marine ecosystem through the reefs spur and groove morphology.

The frequency and duration of turbidity is critical for determining the stress induced on corals. In some cases, rather than causing actual coral mortality, the sediment inhibits coral settlement and recruitment. Coral growth offshore of Kamiloloa and Kawela showed a significant increase with distance from the shore and there was a reduction of macroalgae as one moved further from the shore (Jokiel, 2014). There was a strong inshore to offshore turbidity gradient due to extensive terrigenous sediment discharge from multiple drainage basins, of which Kawela was the most significant (ibid). Sediment moves from east to west due to the predominant wind direction, but it is eventually flushed out by traveling through the spur and groove reef system to be discharged offshore into deeper open ocean waters. The frequent resuspension of terrigenous sediment on the reef is related to wind speed and tide-controlled water depth (Ogston and Field, 2010). These sediment inputs predominantly originate from upland sources, erodible soils, and barren hillsides within the watershed.

In the three kilometer stretch east from Kaunakakai Harbor, coral abundance decreases drastically from the reef average of 90% to values as low as 10%. The cause of the decrease has not been determined, but the role of sediment suspended on the reef flat, and its seaward advection is one possible factor (Ogston, Storlazzi, Field, and Presto, 2004, 567). More recent findings by (Jokiel, et.al., 2014) suggest that the lack of suitable hard substrate, macroalgal competition, and blockage of [coral polyp] recruitment on available substrate account for low coral coverage in areas of high turbidity. Whereas the direct impact of high turbidity on coral growth and mortality is of lesser importance (ibid.).

3.6 Planning and Regulatory Conditions

The entire State of Hawai'i, from its mountain tops to the reefs offshore, are within the coastal zone. Federal waters begin at the mean high-water mark and extend 200 miles offshore. This overlaps State waters and submerged lands which extend three miles offshore.

In 1972, the federal Coastal Zone Management Act (CZMA) was enacted to better coordinate and regulate coastal activities between the federal, state and county / municipal levels of government. In 1978, Hawai'i's Legislature enacted the Hawai'i CZM law, HRS 205A, to regulate actions and activities within the state's coastal zone. Any federal activities that would affect the state's coastal zone must be consistent with the CZMA's policies and objectives. Similarly, any state or local projects funded by federal monies or requiring federal permits must be consistent with the state's CZM program. For instance, dredging or fill for the construction of an offshore breakwater would require federal permits from the U. S. Army Corps of Engineers. The State Office of Planning and Sustainable Development issues Consistency Determinations that afford state government the opportunity to review, influence, and modify federal agency decisions affecting the coastal zone.

The Hawai'i CZM program also delegates the authority to regulate "development" along the coastline to each island's Planning Commission (for O'ahu, it's the Honolulu City Council). This delegation allows for decision making to be local influenced within each island's Special Management Area (SMA) and Shoreline Setback Area (SSA). The SMA encircles Moloka'i extending at least 300 feet inland of the shoreline including Hawaiian Home Lands. The SSA is based on individual lot size and ranges from 40 feet to 150 feet inland of the shoreline, including DHHL oceanfront properties.

The State's regulatory shoreline's location is constantly changing because it is the highest wash of the waves during the highest tide of the year. The debris or vegetation line can also indicate its location. Areas mauka of the shoreline are within Maui County and/or the Moloka'i Planning Commission's jurisdiction, whereas areas makai of the shoreline are within the State Department of Land and Natural Resources (DLNR) jurisdiction. Areas below the mean tide line are within both state and federal jurisdiction. Thus, if one walked from the pavilion at One Ali'i Park down the dry beach, onto the wet sandy beach, and then stepped into the ocean waters, one would pass through three sets of government regulation: County/Planning Commission, State DLNR, and shared state/federal jurisdictions. On a seawall or revetment, these multiple jurisdictions are compressed together and can make permitting of the structure complex.

The CZM law encourages home rule and community decision making. On non-Homestead land in Moloka'i, the Planning Commission reviews development proposals and may add conditions of approval. It also concurs with the County Planning Department Director's recommendations for more minor items or exempt activities that are not development. A private landowner proposing construction makai of Kamehameha V Highway would submit an assessment to the Maui County Planning Department, as it would be a project proposed in the SMA or SSA. The individual owner would have to obtain Commission approval or the Commission's concurrence with the Planning Director's recommendation for an SMA minor permit or SMA exemption.

The State CZM law, HRS 205A-43.6(c) clarifies that the Board of Land and Natural Resources has jurisdiction over shoreline armoring that is seaward of the shoreline, including unauthorized armoring. Any armoring proposed in, or on the edge of the water, as opposed to entirely on dry land, would require approvals by both the State DLNR and the U.S. Army Corps of Engineers because it involves shared federal/state waters in the coastal zone.

In addition, the SSA and/or State permits would trigger compliance with HRS 343, Hawaii's Environmental Review law. This would require public input, notification, and consultation through the preparation of an Environmental Assessment or Environmental Impact Statement and the acceptance of the environmental document by the "accepting authority." If an individual fee-simple landowner proposed the shore armoring, the Moloka'i Planning Commission or DLNR would be the accepting authority. In contrast, the Hawaiian Homes Commission would be the accepting authority if either DHHL or its lessees or licensees were proposing the armoring.

In Hawai'i, a property owner is ***not*** entitled to protect their oceanfront land at the public's expense in terms of lost coastal resources or access. Thus, the likelihood of gaining approval for shoreline armoring is low and its effectiveness questionable because of rising sea levels, bigger waves reaching the shore, and the rise in ground water saturating the soils inland of a seawall due to sea level rise. There are also multiple opportunities for legal challenge by an affected party. Thus, protecting the coastline with a seawall, revetment, or rubble mound; or building an offshore structure such as a groin, breakwater, crib wall, or rubble mound requires considerable time (i.e., years), planning and expense, and has uncertain outcomes given their potential adverse cumulative effects. Instead, natural methods that mimic nature are often less costly, easier to permit, and more effective in the long-term.

Since DHHL is a state government agency, its actions must be determined to be consistent with the Hawai'i CZM law's ten objectives and thirty-five policies. This "Consistency Determination" would be made by the State Office of Planning, not the Moloka'i Planning Commission. However, HRS 205A-22 defines an "Applicant" as "any individual, organization, partnership, or corporation including any utility or **ANY** agency of government" (emphasis added). However, DHHL would like to pursue an alternative approach, and the preferred scenario is that DHHL may choose to either exercise its power of sovereign immunity or voluntarily seek to obtain the Moloka'i Planning Commission's or Maui County Planning Department's concurrence for any seawall, revetment, or armoring fronting any of the homestead subdivisions. Relative to the SMA, actions proposed by DHHL may require consultation with the State Office of Planning and a voluntary request for concurrence from the Moloka'i Planning Commission or Maui County Planning Department. All construction proposed by a homestead lessee must first secure approval by DHHL, and plans are reviewed by the Planning Office for conformance with shoreline setbacks and CZM best management practices. DHHL looks forward to developing standard operation procedures and resolving these complex jurisdictional issues in consultation with the various Counties, the State Office of Planning and Sustainable Development - Coastal Zone Management (OPSD-CZM), and the State Department of Land and Natural Resources - Office of Conservation and Coastal Lands (DLNR-OCCL).

Other public health and safety regulations apply equally to DHHL, individual landowners, and beneficiaries when constructing new buildings or structures. New buildings must comply with federal flood zone regulations and obtain a Flood Development Permit (FDP) administered by the Zoning Administration and Enforcement Division of the Maui County Planning Department (Dack, 2015). This mitigates the risk that a structure will incurr flood inundation and helps reduce the risk of flood damage. The FDP is usually processed by the County in conjunction with a building permit but may be applied for separately.

Building permits may be required by DHHL for new structures on homestead properties to ensure occupants' health and safety. However, the Definitions section (MCC 16.26B.202) was amended in 2012 to read:

> JURISDICTION. The County of Maui of the State of Hawaii, excluding lands placed in the state land use commission's conservation districts and lands set aside under the Hawaiian Homes Commission Act. (Ord. No. 3928, § 1, adopted March 12, 2012).

Grading permits are needed when walls or terraces retain more than four feet of material or soil between their front and back sides. This helps ensure that the wall does not fall over and the soils behind it do not slump forward or shift. Trenching for utilities, excavation for a septic tank, and moving less than 50 cubic yards of material may be exempt from a grading permit in the subject subdivisions, provided erosion control measures are implemented. Changes in the ground's contour or elevation because of fill should not increase flooding on a neighboring or adjacent property and should not be used in a V or VE flood zone as it could be eroded away exposing a slab or foundation.

Primary coastal sand dunes cannot be graded because they buffer incoming waves, replenish the beach with sand, and filter silt out of ponded stormwater. Only clean sand, not dirt or unclean fill, can be placed in the SSA and shoreline area given that dirty fill could easily pollute the ocean. Grading and fill are regulated by Maui County's Department of Public Works, Development Services Administration, pursuant to MCC 20.08. Placing sand or fill seaward of the shoreline is regulated by the State DLNR and could trigger additional federal and/or state regulatory reviews. Retaining a berm vegetated with native plants in the rear yard adjacent to the shoreline is a natural, effective means of controlling flooding and erosion.

Appendix C provides additional information on flood zone, shoreline setback, and state certified shoreline regulations.

CHAPTER 4: COASTAL HYDRODYNAMICS

4.1 Coastal Hydrodynamics

Molokai's relative exposure to winds, waves, and swell are depicted in Figure 4.1. Average wave height for the south shore is predominantly influenced by exposure to prevailing northeast trade winds throughout the year, and to a lesser extent southern swell. In summer months, south swells can bring large waves that overtop the fringing reef and reach the shore, particularly during extreme tide events such as full moon or king tides.

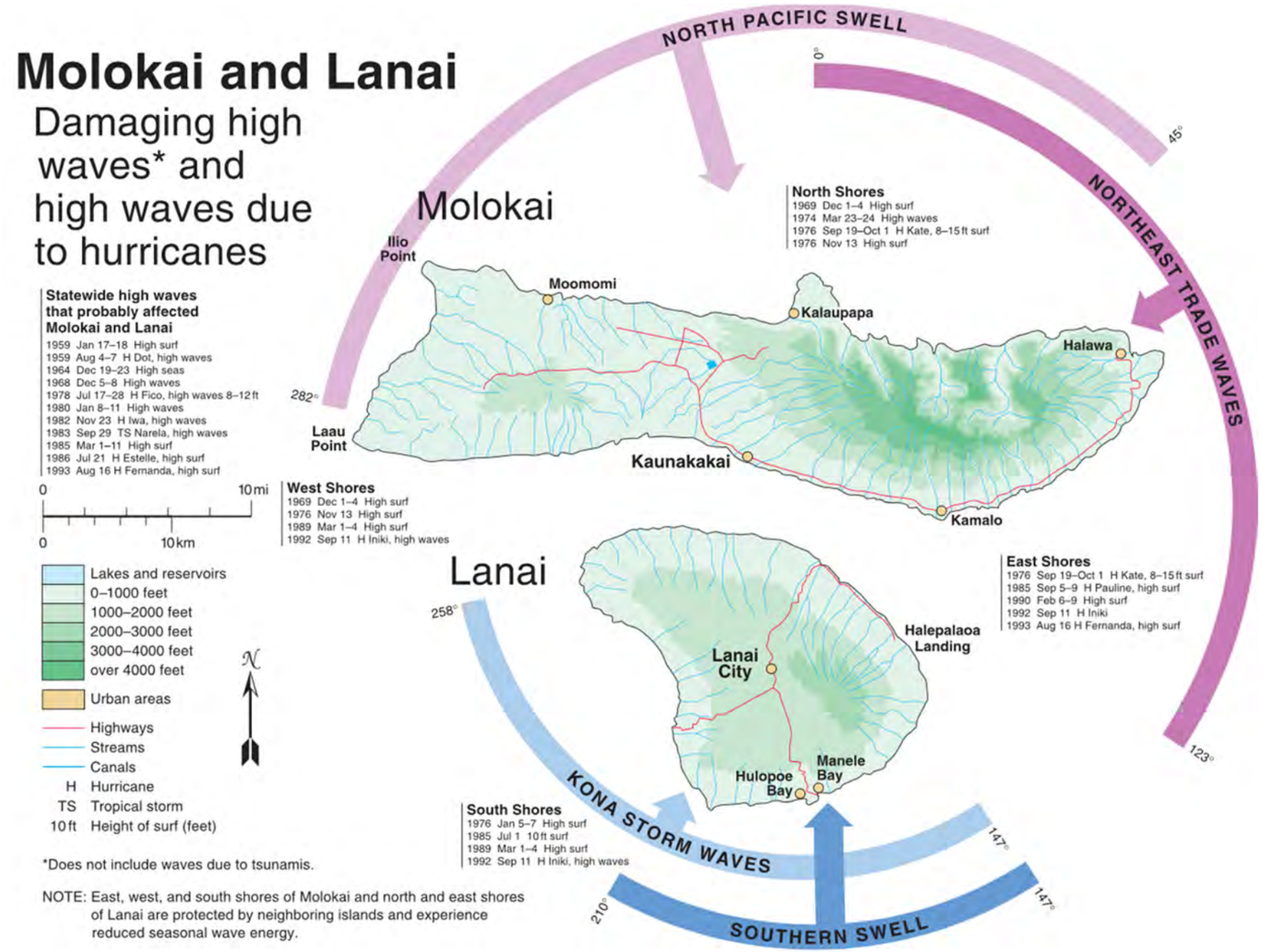


Figure 4.1: *Prevailing wind and wave patterns for Moloka'i and Lāna'i (Fletcher, C., Grossman, E., Richmond, B., Gibbs, A. 2002).*

Factors that influence wave energy and dynamics include: wave conditions (height, period or interval between them), currents (direction, speed), tidal changes, storm surge, bathymetry (depth variations, rugosity), sediment characteristics, and sources of sediment. These factors combine to create the force and energy that alters the physical form of the coastline.

4.1.1 Wind and Currents

Trade wind conditions occur 83% of the time between May and November and 37% of the time between November and May (Ogston and Field 2010, 1029). The wind has a heavy influence on Moloka'i's south shore currents because of the inner reef flat's shallow nearshore area and the extensive offshore fringing reef. The prevailing wind is from the east and picks up in speed and intensity in the afternoon (Figure 4.1). This often creates small churning waves and hastens movement along the shore.

The trade winds are a dominant factor driving sediment flux, resuspension, and transport along the reef. The relative orientation of the south Moloka'i shoreline to the prevailing winds contributes to the nearly 1,640 feet wide band of fine silt and sediment along the inner edge of the reef flat (Ogston and Field, 2010, 1029). Bands of fine sediment within the reef flat are particularly apparent between Kawela Gulch and the Kaunakakai Wharf causeway (Jokiel, et.al., 2014, 7).

Trade wind generated waves, currents, and tidal elevations on the reef flat control the frequency and duration of turbidity events which impact reef health. Findings from various studies suggest a high level of recirculation of sediments driven by afternoon wind, especially at high tide, with some findings suggesting sediment can be stirred up and recirculated as much as seven times before being flushed out of Moloka'i's south shore reef system (Ogston, Storlazzi, Field, and Presto, 2004).

4.1.2 Waves

Large waves generated in deep water usually break and expend their energy on the edge of south Moloka'i's offshore reef and have less influence on the nearshore environment (Ogston and Field, 2010). As shown in Figure 4.2, significantly more wave energy reaches the shore at high tide than low tide, regardless of the offshore wave height (Field, Cochran, Logan, and Storlazzi, 2008).

The amount of wave energy reaching the shoreline is relatively consistent and is constrained by the water-surface elevation, not the offshore wave height (Ogston and Field, 2010). Instead, the waves generated by trade winds are the prevailing influence along Molokai's south shore as they move sediment along the shore and resuspend sediment due to wave growth over the shallow reef (ibid.).

4.1.3 Tides

Tides have a significant influence on south Molokai's waves and currents because of the shallow, broad, and wide extent of the reef flat. The tide typically ranges from two to just over three feet in height. Although the tidal range is relatively small, it represents a doubling in water depth over much of the reef flat. This tidal variation over the reef flat is important for sediment resuspension and transport because wave heights are limited by the depth of water. During higher tides, the effects of offshore waves are greater on the reef flat because more wave energy is telegraphed into the nearshore and wave energy can be transferred through the deeper water over the reef crest. The greater water depth also allows for larger local wave formation on the reef flat (Field, Cochran, Logan, and Storlazzi, 2008).

4.1.4 Coastal Erosion

Coastal erosion is a natural process whereby the shoreline retreats inland over time due to wind, waves, prevailing currents, and storms. Shorelines are highly dynamic and shift frequently through time. In Hawai'i, shoreline retreat may occur slowly over time, or rapidly because of acute or episodic erosion events, normally associated with large surf, storm events, and seasonal changes in wave regime. In contrast to episodic erosion, chronic coastal erosion occurs over long periods of time where the shoreline retreats inland because of sea level rise, wind scouring, soil dissolution, and wave action.

Chronic coastal erosion can be exacerbated when sand supplies are confined, sand transport hindered, or sand reservoirs are constrained behind groins, seawalls, revetments, and other similar structures. Slab-on-grade foundations can constrain sand underneath the foundation's weight, preventing the sand from moving freely along the coastline. Hindering sand movement can deprive down drift properties of the sand or sediment necessary for buffering the erosive effects of waves, currents, and storms.

Armoring a sand or sediment starved area can lead to flanking erosion of areas down drift, and particularly at the end of the armoring. The armoring redirects wave energy to the end of the armored area where the wave's energy can wrap around the end of the armoring and scour softer materials away. This can result in down drift property owners armoring their property which then stimulates additional down drift armoring until the entire coastal cell is armored. This domino effect is best prevented by evaluating coastal erosion on a regional or littoral (sediment) cell basis, instead of making decisions on a parcel-by-parcel basis.

On a healthy beach where sand and sediment transport are not hindered, the shoreline typically changes with the seasons, with one season being more erosional and the other season facilitating accretion. The width of the beach, which narrows during one season, normally recovers as seasonal wave and current patterns return the previously displaced sand. While sand may shift daily, weekly, monthly, or seasonally, over the long-term the width of the beach remains about the same and the ebb and flow of sand continues unhindered.

A sandy beach serves as a buffer to the incoming waves that cause erosion by absorbing and dispersing wave energy. A healthy reef system contributes to a healthy, functional shoreline and vice-versa.

4.2 Littoral Cells

Within the project area shoreline erosion is caused by waves approaching the shore and removing sediment, and by structures interrupting the movement of sediment along the shoreline. Along Molokai's south shore currents naturally move sediment, sand, and silt along the coast from east-to-west. However, between One Ali'i and Kalama'ula the alongshore transport mechanism is interrupted by structures that extend seaward from the shoreline including the Ali'i and Kaloko'eli Fishponds and the Kaunakakai Harbor and Wharf.

Although the fishponds are now part of the coastal environment, they have altered the geomorphology of the coast. Aerial photographs depict an accumulation of sediment on the eastern side of both the Ali'i and Kaloko'eli Fishponds and a deficit or scalloped, concave area indicative of shoreline erosion on the western side of each fishpond. The eastern walls of both fishponds break the wind and slow and redirect both incoming wave energy and the current moving along the shoreline from east to west. As a result, the movement of water along the coastline slows and sediment suspended in the water column settles out of the slowed water by gravity. Areas that are upwind and upcurrent of both fishponds accumulate sediment. In contrast, the areas down drift of both fishponds are deprived of the sediment flowing along the coastline, and this loss of sediment contributes to shoreline erosion.

The Kaunakakai Wharf used to be accessible via an elevated roadway over the water. However, as larger trucks and containers became necessary for supplying Moloka'i's needs, a causeway was built. The addition of the causeway to the Kaunakakai Wharf in more recent years redirected and further slowed the prevailing along-shore current by blocking the water's flow. This added to the deposition and accretion of silt and mud adjacent to the causeway. The causeway further exacerbated sediment accumulation by slowing the along-shore current, allowing more sediment to fall out of suspension, accumulate, and make the area shallower, which in turns slows the current.

Moreover, the addition of a rock breakwater to protect the small boat harbor on the eastern, updrift side of the Wharf, further restricted the natural flow of seawater. Sediment and current patterns may form an eddy and the flushing of sediments from nearshore waters into deeper ocean currents has been impaired. The U.S. Army Corps of Engineers has studied several options to restore the flow of currents through or underneath the causeway but determined that the negative impacts could outweigh the positive benefits of altering the existing situation (Bottin and Acuff, 2001).

The deposition of upland sediment into the project area's coastal waters is also changing the geomorphology of the project area's shoreline. The Kaunakakai, Kapa'akea, and Kamiloloa streams, as well as and several drainage outlets, carry sediment from the Kaunakakai and Kamiloloa Watersheds to the shoreline fronting the project area. The fishponds capture and stabilize some of this sediment that is released during heavy rains, much like stormwater detention ponds.

Soils and sediment including fine clay, silt, sand, pebbles, cobbles, rocks, stone (pohaku) and boulders move down to and along the shoreline. Lighter aggregate materials can be carried by wind, but most aggregate is moved by water, such as rushing streams, stormwater cutting through dry gulches, or strong waves approaching the shore. This results in sediment flowing in a foreseeable fashion.

Sediment flow can be divided into four littoral cells, "A, B, C, and D", fronting the DHHL communities, as shown in Figure 4.3. A littoral cell is a coastal compartment that contains a complete cycle of sedimentation including sources, transport paths, and sinks (Inman, 2005). Setting a littoral cell's boundaries helps to define a specific geographical area in which the sediment budget can be analyzed, and management strategies can be appropriately designed.

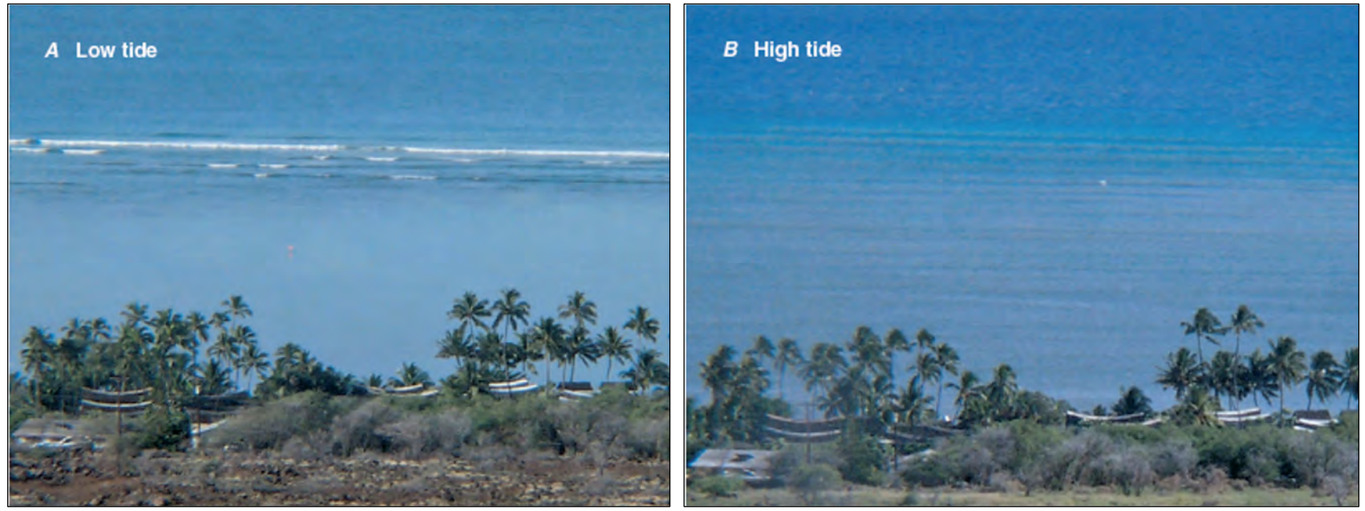


Figure 4.2: *Reach of wave energy between low and high tide at Kamiloloa (Field, Cochran, Logan, and Storlazzi, 2008).*

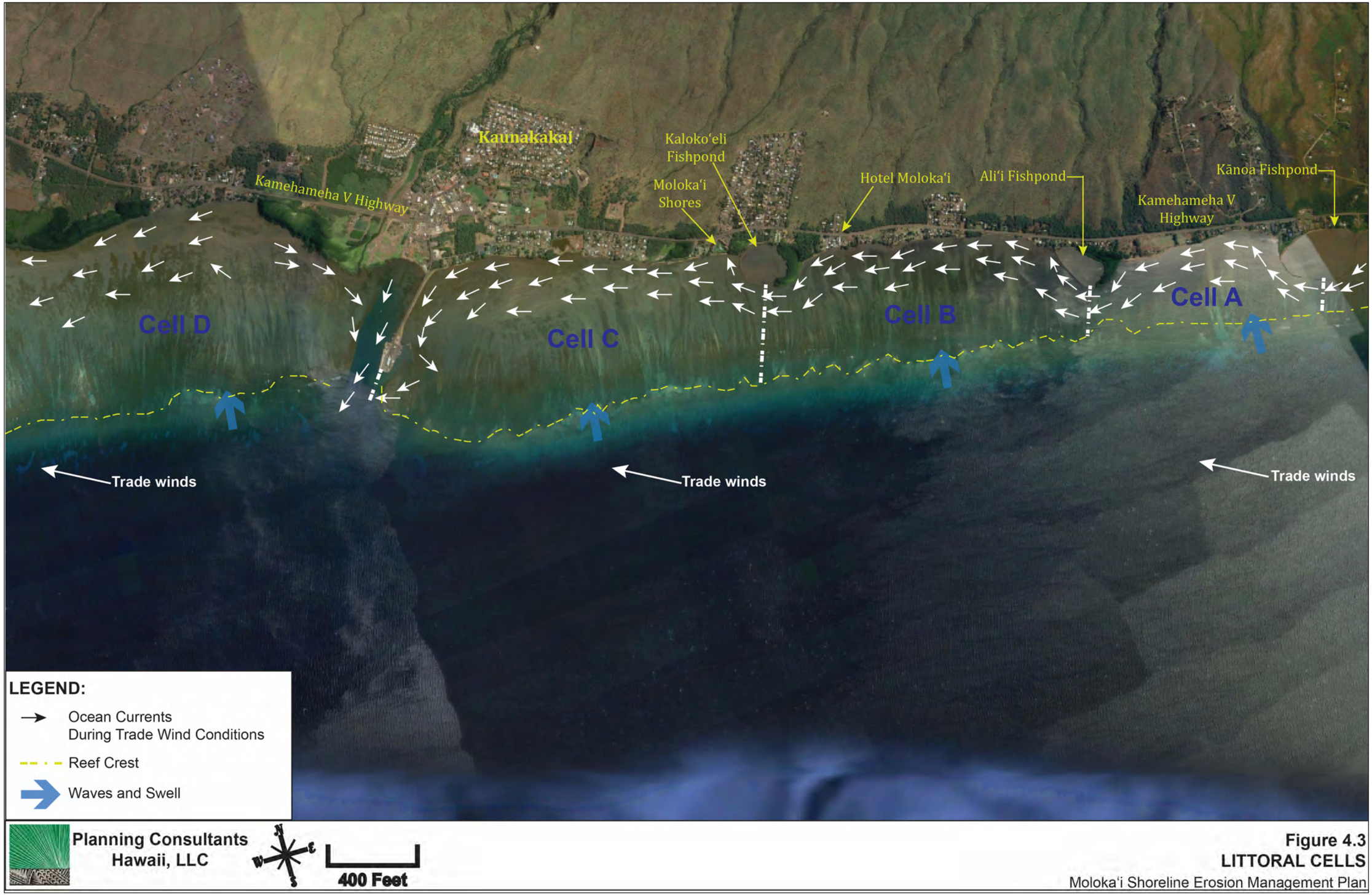


Figure 4.3
LITTORAL CELLS
Moloka'i Shoreline Erosion Management Plan

4.2.1 Kānoa Fishpond to Ali‘i Fishpond (Cell A)

Cell “A” is bound by the Kānoa Fishpond to the east and the Ali‘i Fishpond to the west as depicted in Figure 4.4. On the western side of the Kānoa fishpond, a series of private properties extend to the west, but they are not part of this study. They are located between the ocean and Kamehameha V Highway and the lots generally become wider to the west towards the wide, sandy beach fronting the One-Ali‘i Beach Park (which is just east of the Ali‘i Fishpond).

East of Ali‘i Fishpond, sediment has built up against the fishpond’s wall in Cell “A” resulting in shoreline accretion. Over the years, much of the Ali‘i Fishpond has filled with sediment and mangrove trees. The wall interrupts the amount of sediment flowing along the coast, depriving sediment from the western side of the fishpond, resulting in shoreline erosion in Cell “B” down drift of the fishpond.



Photos (Left to Right): *1. A sample of beach sand, One Ali‘i Park; 2. Looking east from the the backshore of One Ali‘i Park.*





Photos (Top to Bottom): *1. Looking east fronting One Ali‘i Beach Park; 2. Looking west along One Ali‘i Beach Park.*

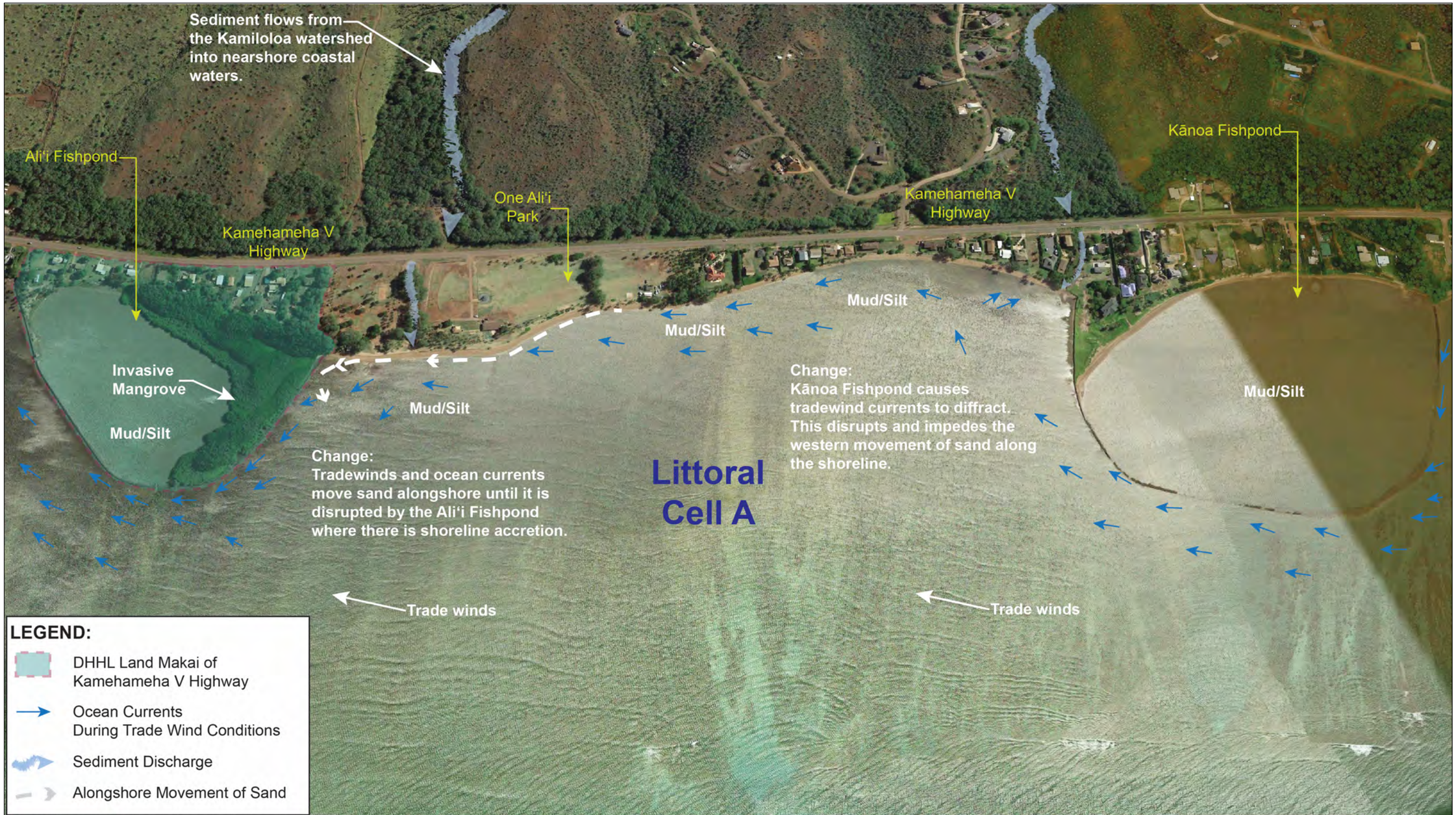


Figure 4.4
LITTORAL CELL A:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

4.2.2 Ali‘i Fishpond to Kaloko‘eli Fishpond (Cell B)

Cell “B” is bound by the Ali‘i Fishpond to the east and the Kaloko‘eli Fishpond to the west as depicted in Figure 4.5. Sandwiched between the ocean and Kamehameha V Highway lies the Kamiloloa subdivision, just to the west of the Ali‘i fishpond. Most of the Kamiloloa oceanfront lots are located down wind and down drift of the Ali‘i fishpond and to the east of the Hotel Moloka‘i. Some of the lots exhibit small embankments due to erosion but most of the lots have more natural gradients to the ocean than the lots at the Kapa‘akea subdivision further to the west. In some cases, the grade or embankment has been impacted by man-made impediments. On the western, downwind side of the Ali‘i fishpond is a section of Kamehameha V Highway that has experienced coastal erosion and is exposed to wave and tidal action.

Like Cell “A”, there is considerable accretion at the western end of Cell “B” updrift of the Kaloko‘eli fishpond, between the Hotel Moloka‘i and the fishpond’s eastern wall. This is evidenced by three adjoining lots east of the fishpond’s wall that have experienced considerable accretion since the lots were platted approximately eighty-six years ago. The accretion, as opposed to erosion on the down drift side of the fishpond, illustrates the significant influence that sediment transport plays in the littoral system along Moloka‘i’s south shore.

The Kaloko‘eli fishpond separates and divides sediment transport along the shore between Cells “B” and “C”, as evidenced by a smooth, concave curve to the shoreline down drift of the fishpond.

Similar to the Ali‘i Fishpond, much of the Kaloko‘eli Fishpond has filled with sediment and mangrove trees. This changes the ecology of the fishpond and impedes muliwai flow (fresh and brackish water inputs) and ground water flows that may have helped transport sediment in the past.

Sediment transport within the littoral cells is often disrupted by shoreline armoring, as well as dense thickets of invasive Kiawe trees. This can be seen in Cell “B” fronting and just east of the Hotel Moloka‘i. The Hotel Moloka‘i has fixed the seaward edge of its property causing water to come right up to its wall. The Hotel Moloka‘i is to the east of the Kaloko‘eli fishpond and the hotel’s restaurant, bar, and pool areas are built upon a foundation that serves as a seawall. The seawall provides protection during high tide and large surf, but the beach is submerged at those times. Seawater regularly reaches the face of the wall during high tide events. A dense thicket of vegetation, just east of the Hotel Moloka‘i, also disrupts sediment transport along this stretch of shoreline and many milo trees have taken root in the accumulated soils.







Photos (Clockwise from Top): *1. Looking east along an eroding shoreline fronting Kamiloloa; 2. Informal, shoreline armoring fronting Kamiloloa; 3. Panorama view of informal shoreline armoring and the use of naupaka along Kamiloloa (Source: DHHL).*

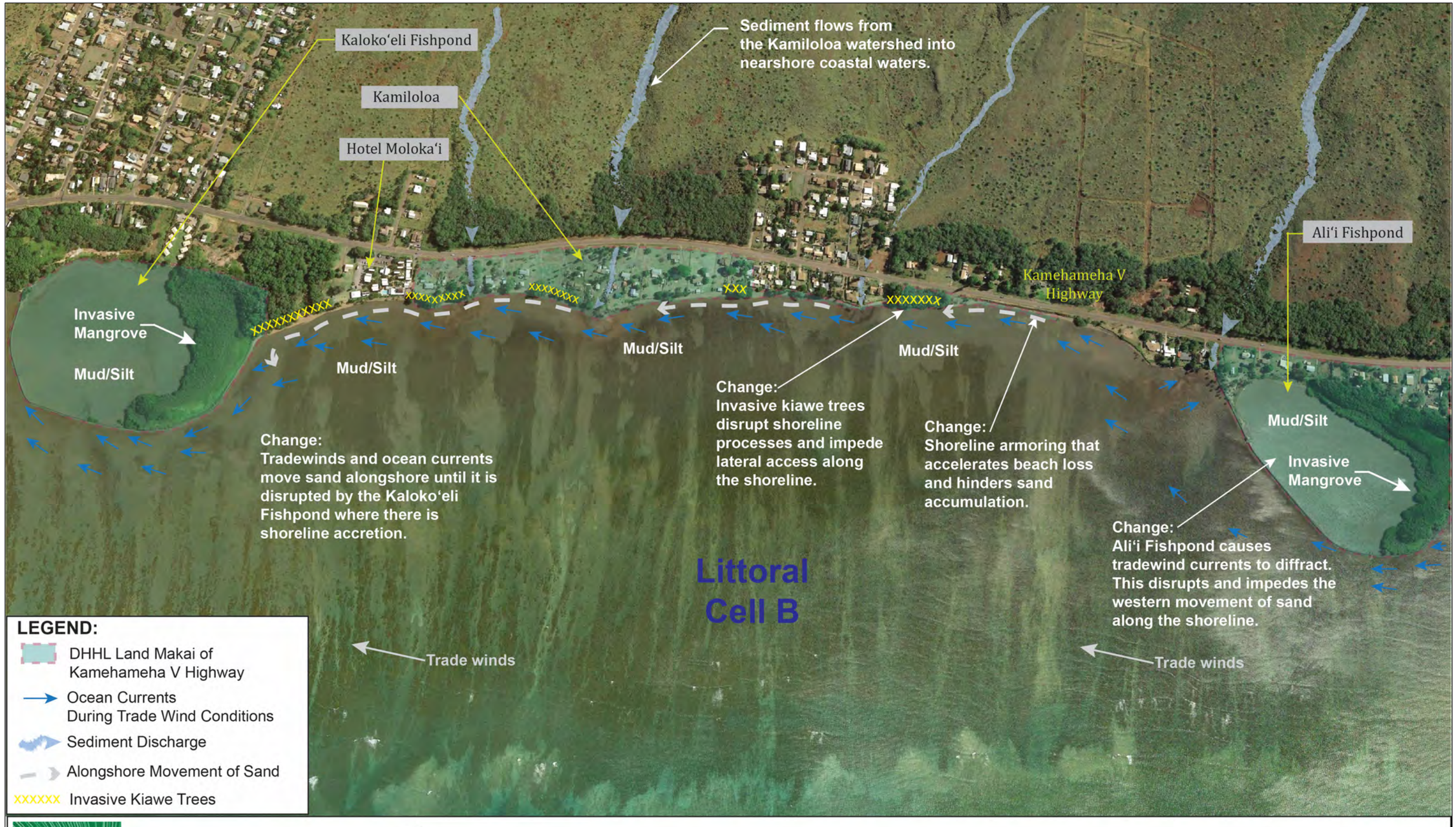


Figure 4.5
LITTORAL CELL B:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

4.2.3 Kaloko‘eli Fishpond to Kaunakakai Wharf (Cell C)

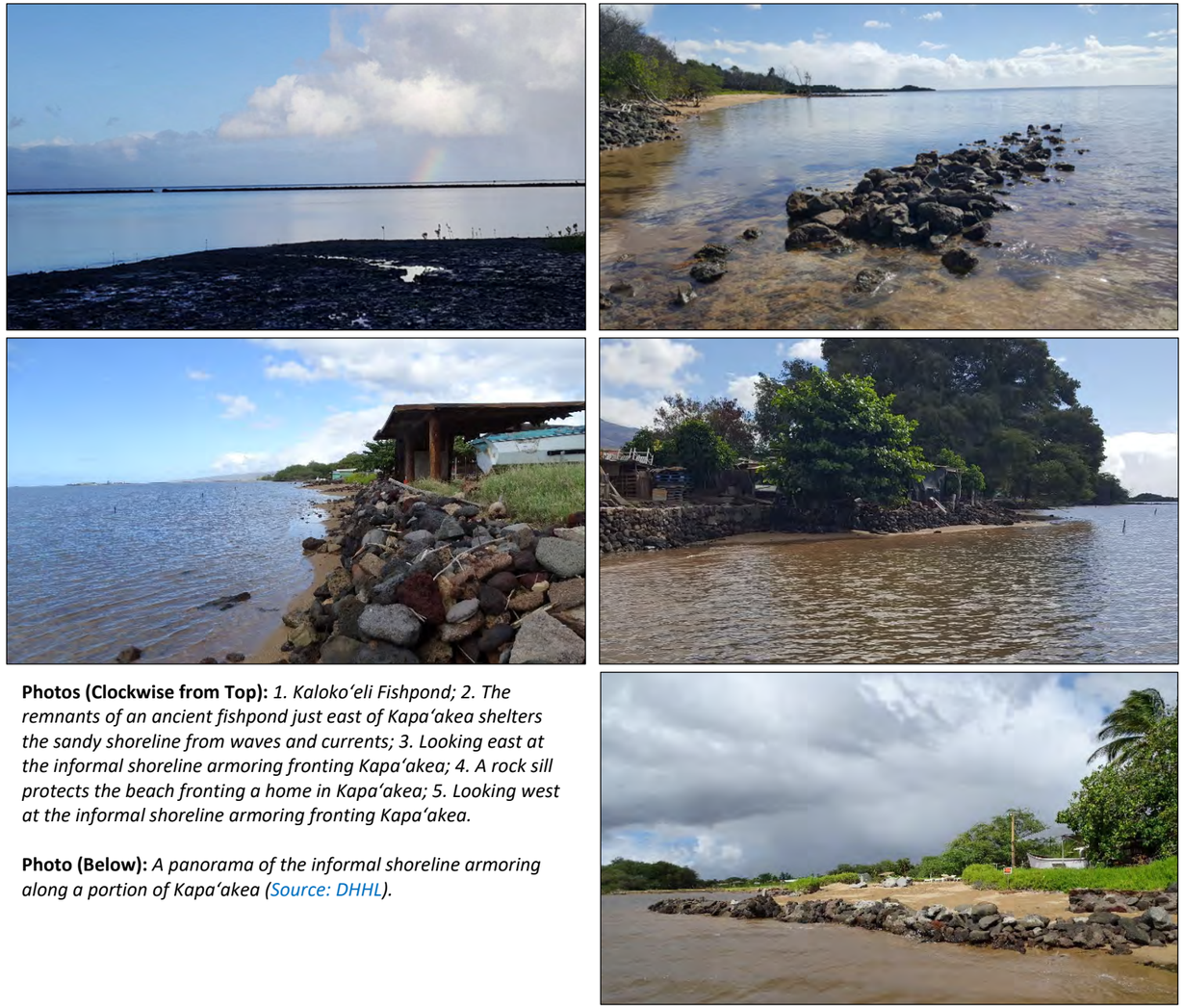
Cell “C” is bounded by the Kaloko‘eli Fishpond to the east and the Kaunakakai Wharf to the west as depicted in Figure 4.6.

Just down drift of the Kaloko‘eli Fishpond is the Moloka‘i Shores in Cell “C” which has a sandy berm along its seaward edge that is stabilized by naupaka plants. This vegetative berm moves, and its contents are redistributed, in response to natural forces. This natural process is unlike shoreline armoring which redirects the force of waves and currents to neighboring down drift properties. Just down drift of the vegetated berm is a private residence with an approximate three feet high erosion scarp. This scarp has formed, in part, due to kiawe tree roots retaining the sandy soils along the coastline and preventing the formation of a beachfront that has a gentler slope and profile. While the kiawe has preserved the land, it has done so at the cost of a gradually sloping sandy beach. Fallen branches and slumping tree trunks have further hindered access along the shoreline to the west. The two properties illustrate the contrast between having native and non-native vegetation along the shore.

The Kapa‘akea subdivision is situated between the swampy remnant of the Kapa‘akea fishpond to the east and the Koheo Wetland to the west. Both wetlands help to capture, filter, slow, and stabilize sediment and stormwater that originates from the Kapa‘akea and Kamiloloa streams and flows downhill into nearshore marine waters. Despite the high amount of upland sediment input, the Kapa‘akea subdivision’s oceanfront properties continue to experience land loss as the coastline moves inland and the shoreline retreats. In response, virtually all of DHHL’s oceanfront residential lots have some form of coastal armoring in an attempt to halt or diminish shoreline retreat. The armoring, as well as shoreline reference features provided by knowledgeable long-time observers, suggests that the coastline has been gradually moving inland over time. The shoreline hardening at Kapa‘akea has exacerbated shoreline erosion fronting both the Koheo Wetland and the down drift properties along the eastern third of Seaside Street.

The western end of Cell “C” is the causeway to the Kaunakakai Wharf. The flow of sediment through Cell “C” has been substantially altered by the modification of the roadway to the harbor’s Wharf. Originally, the roadway was elevated upon posts, but it was changed as fill was placed atop discharge pipes to form a causeway. The modification slowed the speed of the current and redirected its flow offshore. This increased the deposition of sediment along the coastline and along the eastern edge of the causeway, compounding the sediment discharge problem. Moreover, the addition of groins and a rock mound on the eastern side of the harbor’s Wharf to protect the small boat harbor further altered the natural flow within the littoral cell causing additional deposition of sediment within the terminus of Cell “C”.

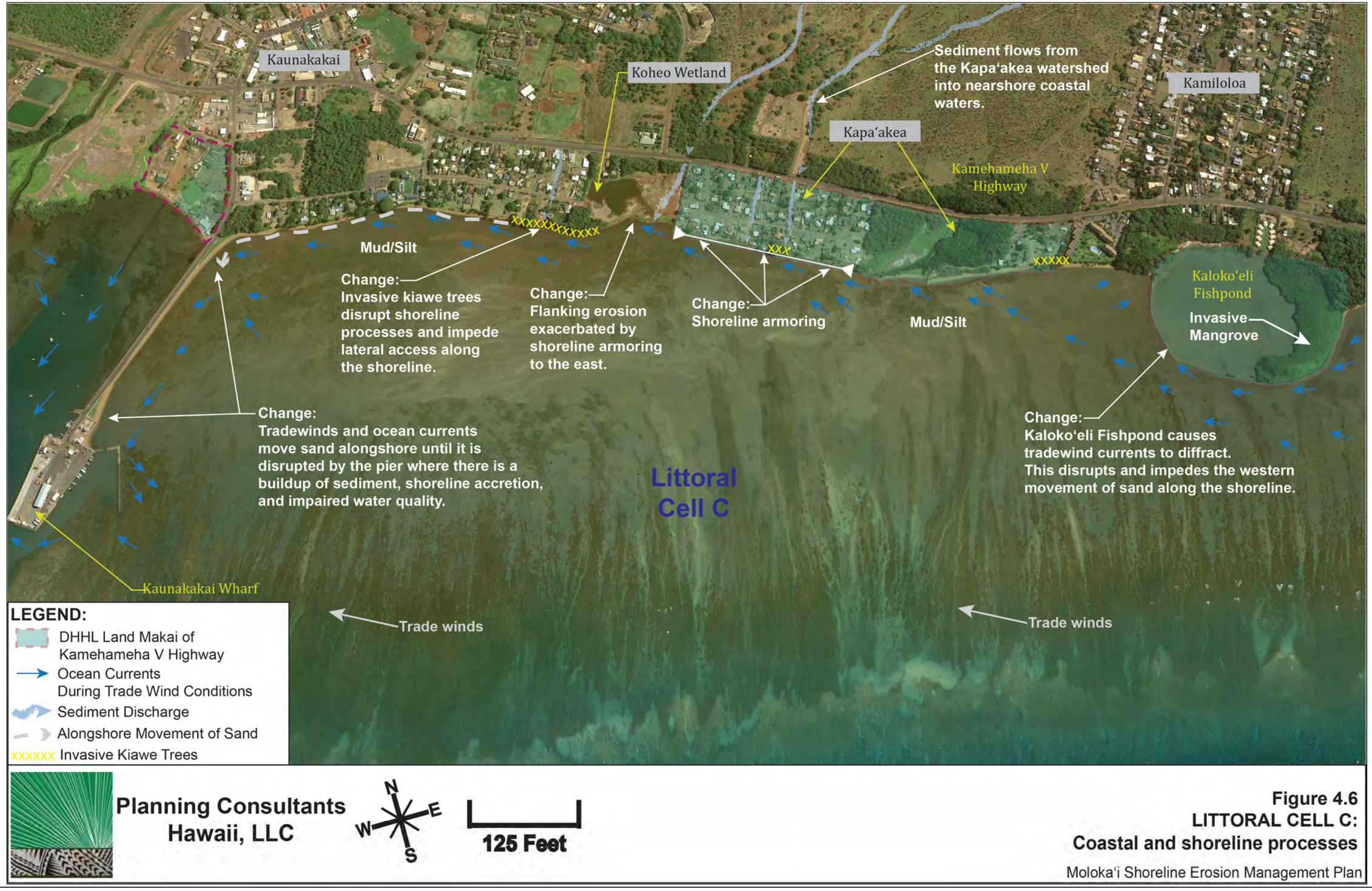
The U.S. Army Corps of Engineers conducted experiments to increase the amount of water that could flow down drift by adding culverts under the causeway (Bottin and Acuff, 2001). They reported that culverts could restore flow but would create eddies on the western side of the causeway and erode the fill used to create the causeway and the land on its down drift side. Removal of the existing fill, and the inner portion of the causeway, would eliminate these eddies and result in improved wave-induced current and sediment transport patterns. However, restoring along-shore flow would accelerate erosion and land loss and create stronger cross currents immediately west of the causeway where outrigger canoe paddling is popular.



Photos (Clockwise from Top): *1. Kaloko‘eli Fishpond; 2. The remnants of an ancient fishpond just east of Kapa‘akea shelters the sandy shoreline from waves and currents; 3. Looking east at the informal shoreline armoring fronting Kapa‘akea; 4. A rock sill protects the beach fronting a home in Kapa‘akea; 5. Looking west at the informal shoreline armoring fronting Kapa‘akea.*

Photo (Below): *A panorama of the informal shoreline armoring along a portion of Kapa‘akea (Source: DHHL).*





Planning Consultants Hawaii, LLC

Figure 4.6
LITTORAL CELL C:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

4.2.4 Kaunakakai Wharf to Kahanu Avenue (Cell D)

Cell D (Figure 4.7) is considerably different than the other three littoral cells that are within the study area. Cell D is both downwind and downdrift of the Kaunakakai Wharf so sediment transport within the study area of the cell is only marginally influenced by the prevailing east to west winds and currents. Due to the presence of the Kaunakakai Wharf, the nearshore current is not as influenced by wind and incoming ocean swell. Currents that are pushed by trade winds and swell tend to diffract and bend when they encounter the Wharf and its causeway. This impairs water quality and disrupts and impedes the east to western movement of sand, silt, and pebbles along the shoreline. The causeway itself forms a barrier that prevents sand from moving along the shoreline from Cell C into Cell D.

The Kaunakakai Stream mouth, just west of the Wharf creates an influx of sediment that spreads out like a fan. But much of this sediment is carried by bottom currents into the deeper channel adjacent to the Wharf that leads offshore. Unlike Cells A, B, and C where the sediment moves from east to west, some of the sediment in cell D moves in the opposite direction, from west to east, due to the influence of the deep channel along to the Wharf's western side. This channel begins near the shore and extends out beyond the reef where it has been carved into the submerged terrain by the Kaunakakai Stream over thousands of years. Since the channel is considerably lower in elevation and deeper than the surrounding shallow flats, it acts like a drain that pulls nearshore waters, sediment, and silt into the channel where it is transported offshore and into the deeper ocean.

In comparison to the littoral cells to the east (Cell A-C), the nearshore area of Cell D receives much greater influxes of freshwater and upland sediment. High amounts of upland sediment and freshwater are discharged from the Kaunakakai Stream mouth just west of Malama Park and the Wharf. Freshwater seeps and groundwater flow through the Kapuāiwa Coconut Grove creating visible springs and brackish pools within the grove. This groundwater empties into the nearshore flats just offshore of Kalama'ula and since freshwater is lighter than saltwater, it has the potential to carry upland dissolved minerals, sediment, and silt further offshore.

Sediment transport along the coastline is largely inhibited by thick stands of Red Mangrove, an invasive species. In the early 19th century, upland mauka areas had become barren and denuded by free-ranging feral ungulates, such as Axis Deer which were introduced but kapu for hunting. After rainstorms, brown turbid stormwater full of silt and clay would wash downhill and out into the nearshore reef and marine waters. Ranch hands on horseback distributed seedlings of mangrove along Pālā'au's south shore in the 1900's in an attempt to capture the upland soils before they smothered the offshore reef, and the invasive then spread from that ahupua'a to the rest of the coastline.

Mangroves have adapted to cope with saltwater immersion and wave action and their tangled root system breaks up and dissipates wave energy until its effects are nearly negligible. The mangroves have a complex intertwined root system that slows the movement of water to a near standstill. The quiet, shaded waters are good for juvenile fish to avoid predators but can become anoxic (lacking in oxygen) resulting in fish kills when the tide or current subsides.

The shoreline flanking both sides of the Kalama'ula subdivision has been overwhelmed with thick stands of invasive mangrove. This has fundamentally interrupted the natural sediment transport mechanisms along the shoreline. Over the past century, a considerable amount of swampy land has formed between the east side of Kalama'ula subdivision and the Kaunakakai Stream mouth. Similarly, from Pond Place and Kapuāiwa Place that borders the Kapuāiwa Coconut Grove, a large, long, thicket of invasive mangrove has slowed the movement of sediment to the west of the subdivision causing a muddy, silty flat to form in nearshore waters.

The areas flanking the Kalama'ula subdivision are accreting due to slowed currents, sediment deposition, and conversion to swamplands by mangroves. Meanwhile, the Kapuāiwa Coconut Grove and Kiowea Beach Park shorelines are eroding. Exposed root balls of coconut trees along the shore and the cracking and slippage of concrete slabs at the park's oceanside p ort th



Photos (Clockwise from Top Left): *1. The shoreline fronting Malama Cultural Park; 2. The Kalama'ula shoreline while looking east towards Kaunakakai Wharf; 3. An eroding shoreline fronting Kiowea Beach Park; 4. Invasive mangrove between Kalama'ula and Kaunakakai Wharf. 5. A view of the Kalama'ula shoreline looking west. 6. The Kapuāiwa Coconut Grove.*



Figure 4.7
LITTORAL CELL D:
Coastal and shoreline processes
Moloka'i Shoreline Erosion Management Plan

4.3 Shoreline Erosion Assessment (Severity and Risks)

Coastal erosion can be measured over time to provide an estimate of historic shoreline change. The amount of change can be indicative of future states of the coastline and its likely location should erosion continue unabated. This subsection summarizes the findings of Appendix D which analyzes the rate of shoreline change within the project area by analyzing and comparing the project area's historic plat maps against existing shoreline conditions. Please see Appendix D for a more complete discussion of this analysis.

The Kapa'akea plat maps were drawn in 1950 and identify the length of drainage easements and access paths from Kapa'akea Loop (the main internal roadway) to the ocean. The plat map also lists dimensions for individual homestead lots. A July 21, 1950, map also illustrates a DHHL-owned strip of land (Parcel 1) located between the individual homestead lots and the ocean. However, Parcel 1 is now entirely submerged, suggesting the shoreline has moved inland approximately 66 feet on the western side and roughly 52 feet on the eastern side of the subdivision over the past 70 years. This equates to an average annual erosion rate of about 0.84 feet/year.

The Kamiloloa and One Ali'i subdivisions also have a separate, DHHL-owned, strip of land between the individual homestead lots and the ocean. While the plat maps do not provide specific dimensions for these lands, they do list the acreage of these buffer strips, allowing their original width to be estimated from the parcel's length. Erosion of these lands suggest similar, albeit lower, rates of shoreline change and retreat.

The calculations of shoreline change based on the plat maps are consistent with the personal observations made by long-time residents and historical reference features identified by kupuna. Accordingly, new buildings, infrastructure, and development in areas that are prone to erosion should be avoided since they may be underwater during the structure's lifespan. This precautionary approach is a logical and culturally appropriate way to keep people and their investments out of harm's way.

4.3.1 Sediment & Sea Level Rise

As the sea level rises (SLR), more wave energy is anticipated to be telegraphed further inland, above and over the coral reef system. Waves will skate over the top of the reef with progressively less interruption as the surface of the ocean rises. The reef's friction effect that breaks and reduces wave energy will be negated and more waves will contact the nearshore environment and cause or contribute to shoreline erosion. Offshore waves will tend to extend further inland because the reef's roughness will have less of a dampening effect on incoming wave energy, similar to the differences presently observed between high and low tide (Figure 4.2).

Some studies predict that significant erosion of the shoreline will occur when the tide is high and where the shoreline is characterized by low, flat, erodible terrain (Ogston and Field, 2010). But shoreline erosion only adds a small amount of sediment to the reef flat budget compared to wind generated resuspension (ibid.). The authors predict more intense and longer periods of wave generated resuspension of sediment, coupled with increased turbidity due to shoreline erosion in the future. They predict a four-fold increase (9% to 37%) in turbidity events that exceed acceptable levels, and longer durations of those events (ibid.). The higher turbidity would occur during daylight hours when reefs are photosynthesizing. Silt in the water column would block the sunlight which corals need to survive and would inhibit their fitness. Reef growth will not keep up with the increase in sea level rise. As a result, more sediment will be released by wave energy that reaches the coastline only to be recirculated again within the coral reef ecosystem. However, these projections assume that the ground inland of the shoreline is comprised of erodible silt, alluvial soils, clay, or loam, and not sandy substrate. Coarse sand does not get resuspended as easily as silt and does not create as turbid conditions that are detrimental to corals.

The negative feedback loop created by SLR could cause significant change to the morphology and ecology of Molokai's south shore. The result of this increased shoreline erosion could further degrade the reef's ability to dissipate wave energy and to serve as a sustainable food resource.

With rising seas, more energy from offshore waves will propagate over the reef crest across the reef flat and attack the shoreline leading to erosion and shoreline retreat. With the SLR predicted this century, fringing reefs could be adversely impacted by an increased frequency and duration of the resuspension of fine sediment of reef flats and an increase in shoreline erosion that would release more sediment into nearshore waters (Field, Ogston and Storlazzi, 2011). As such, even small changes in water elevation could have broad implications on sediment management and reef health along Molokai's south shore. These adverse effects can be minimized by management activities that decrease sediment input from upland sources in the watershed, increase the number and diversity of herbivorous fish that eat algae, and limit or reduce other stresses to reef habitat.

4.4 Sea Level Rise and Elevated Water Tables

Climate change would have three predominant effects on Molokai's south shore: more rainfall, bigger and higher storm surge, and rising seas (i.e., sea level rise). The climate in arid locations is predicted to become dryer over time and wet areas would tend to have more intense and frequent rainfall events (IPCC, 2007). Severe rainfall events are likely to occur more frequently and with more intensity, generating more stormwater and rainwater sheet flow. Current drainage infrastructure has limited capacity to prevent flooding of DHHL properties and the surrounding coastal plain on Molokai's south shore.

The Pacific Ocean is warming, resulting in higher tides, more frequent episodes of strong storms, big waves, and strong surge events where more wave energy and water are telegraphed to shore. This is likely to lead to more acute episodes of beach erosion, and a trend towards higher rates of chronic coastal erosion. Although the exact amount of SLR is still in question, most scientists estimate that SLR of one meter (3.3 feet) by year 2100 is probable (Norcross et al., 2008). Some experts anticipate a meter of SLR in the Hawaiian Islands as early as year 2060 (Hawai'i Climate Change Mitigation and Adaptation Commission, 2017) and believe adverse effects are already being realized. For instance, during the past decade, many beaches on the neighboring island of Maui have experienced higher rates of erosion, more frequent severe erosion events, and less seasonal recovery of sandy beaches after erosion events than in previous years. Importantly, SLR will occur in an exponential, non-linear fashion with small changes at first, but increasingly more significant events over time that occur more frequently.

Ascertaining the impacts from climate change and sea level rise is challenging, but the most prudent way of avoiding these impacts is to build out of harm's way. There are multiple ways to avoid these impending risks to DHHL properties, either by adaption and realignment, accommodation, or protection.

In the future, the effects of climate change, sea level rise (SLR), and more frequent extreme weather scenarios could increase coastal erosion or change the morphology and shape of the project area's coastline. These changes in the coastline's features could, in turn, increase the exposure of the homestead areas to coastal hazards such as flooding, rising waters, storm surge, and/or loss of dry, firm land. SLR and shoreline erosion will also reduce access to, and along, the shoreline for fishing, gathering, subsistence, recreation, and cultural activities. As sea's rise, salt water will intrude further inland and underground causing more groundwater to become contaminated with salt. Salt water is 32 times heavier than fresh water and can displace or contaminate a disproportionate amount of potable water. As a result, saltwater intrusion can turn potable wells brackish and contaminate shallow drinking wells on the coastal plain.

Separate from erosion or shoreline change, as SLR increases more groundwater will be contaminated with salt, disrupting the biological action in wastewater treatment systems leading to reduced performance or failure. Rising sea levels could also cause homestead infrastructure, such as cesspools and leach fields, to fail along the coastal plain. This would lead to backups in plumbing, raw waste overflows, and contamination of nearshore waters with sewage or pathogenic liquid effluent that can make people sick. SLR can result in a rising groundwater table that could infiltrate and inundate cesspools with brackish or saltwater. This can cause cesspools to fail as toilets, showers, and sinks have no down gradient place to flow resulting in back up or overflow. Furthermore, the salt in seawater tends to kill the microbes within a cesspool and those in adjacent soil layers such as a leach field that decompose human waste into benign organic materials. The loss of these microbes can be counteracted by adding yeast and other microbe-enhancing compounds to a cesspool or septic system to improve their effectiveness.

The presence of a higher or more brackish water table can cause wastewater effluent in the cesspool to mix with groundwater which can then be drawn into the ocean and nearshore waters as the tide drops. Wastewater effluent is high in nitrogen, a fertilizer that fuels algae growth. The added algae in nearshore waters are detrimental to reef health and can reduce game fish diversity and biomass. Wastewater effluent can also soak the soil leading to its saturation, which in turn

can lead to further dissolution of alluvial clay within the soil that can leach out of the substrate and create turbid nearshore waters. The dissolved clay and silt in the water column can settle on corals and be harmful to their health.

4.5 Natural Hazard Exposure

Flooding, severe storms, large waves, and other natural hazards contribute to shoreline change, often in a dramatic fashion. Exposure to natural hazards can result in large waves overtoping the fringing reef and reaching the shore. This exposure is of particular concern to oceanfront residents during extreme high tide events, such as full moon or king tides. Interviews with residents in the DHHL subdivisions attest to waves overtopping seawalls and shore armoring, particularly in Kapa'akea during the summer months when there is a full moon or king tide.

The Pacific Disaster Center provides an online atlas that ranks the vulnerability of the Kawela coast to natural hazards. The relative exposure of DHHL properties is similar given their proximity within the coastal plain. Figure 4.8 illustrates the intensity of coastal hazards for the Kawela to Kaunakakai coastline as published in the *Natural Hazards and Vulnerability Atlas* (Fletcher, C., Grossman, E., Richmond, B., Gibbs, A. 2002). Coastal hazard rankings for this section of Moloka'i's south shore range from 1 (low) to 4 (high).

The overall hazard assessment for the Kawela coast is moderately low, except at the Kawela Stream mouth in Nalulua due to its history of high stream flooding. Rankings for seismic activity, sea level rise, and storms are the greatest hazards (3), followed by big waves, erosion, and tsunami (2), and stream flooding (ranked 1 to 2). Historically, flooding of Kapa'akea in the 1990's inundated the DHHL properties with two to three feet of water and mud from mauka lands. This flooding covered the highway and inundated homes and buildings resulting in considerable damage and cleanup efforts. Overwhelmed streams, gulches, and drainage infrastructure did not have sufficient capacity for the events and excessive flooding ensued. While DHHL has improved drainage infrastructure since that time, SLR data was nascent, and the improvements probably did not envision the capacity necessary to accommodate climate change.

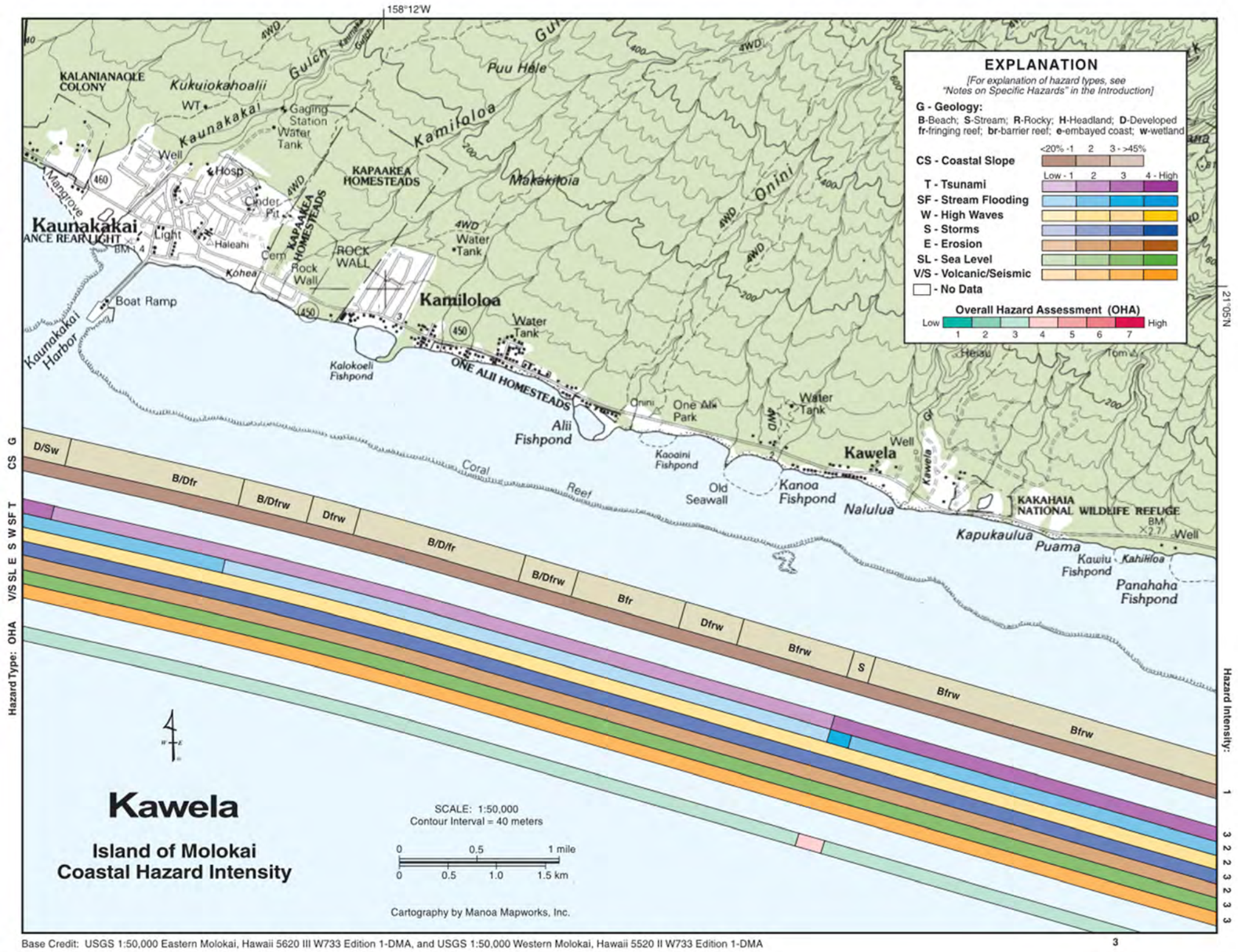


Figure 4.8: *Map of Coastal Hazard Intensity for Kawela, Moloka'i. Source:* Fletcher, C., Grossman, E., Richmond, B., Gibbs, A. 2002.

CHAPTER 5: SHORELINE EROSION MANAGEMENT OPTIONS

5.1 Sea Level Rise Adaptation Strategies

Considering SLR and its potential adverse impacts, the Hawai'i State Office of Planning Coastal Zone Management Program (OP CZM) has identified three main adaptation strategies for addressing coastal hazards: Managed Retreat, Accommodation, and Protection (DBEDT, 2019).

It is important to consider these strategies in response to the variety and types of impacts that are likely to result from exposure to SLR and shoreline change. It is also important to understand the degree of coastal hazard exposure for those residing on the coastal plain. It is wise to consider the advantages, disadvantages, limitations, and potential natural and cultural impacts of each strategy before implementing an erosion or hazard exposure response. Among these strategies, managed retreat has the greatest certainty of reducing risk and damage from coastal hazards.

5.2 Adaptive Realignment

Managed Retreat or ***adaptive realignment*** is a form of relocation that incrementally moves development inland and mauka from the coastline. The strategy involves the creation of a proactive plan to relocate vulnerable buildings, infrastructure, and public facilities out of harm's way by avoiding erosion, flood, and hazard prone areas during a building's lifespan. If the cost of protecting a vulnerable structure from SLR exceeds the cost of relocating the structure out of harm's way, adaptive realignment can make economic and practical sense. If the cost to repair and maintain a building in harm's way exceeds the cost of adapting to natural hazards, it may be prudent to fully implement a managed retreat strategy. These costs should also factor in the human costs of lost life, personal injury, and damage to property and possessions including repetitive losses. Adaptive realignment may occur within the confines of a parcel, between parcels, or within a community.

Adaptive realignment can be accomplished in several ways. First, through the physical relocation of structures that are situated in at-risk areas. Second, through the incremental improvement of buildings and infrastructure located outside of hazard prone areas. Third, through policy that restricts development, substantial improvements, or infrastructure upgrades in hazard prone areas. Such policy should prevent inappropriate building practices in at-risk areas, such as slab-on-grade home and building construction, the pushing of erodible soils into mounds for house pads, the filling of natural drainage ways, construction in gulches, and the use of cesspools. The policy should account for the cumulative costs of development including differences in property insurance costs, association maintenance fees, and special assessment or reserve fees. Fourth, the strategy should direct capital improvement and infrastructure enhancements to areas that are not at risk of damage by coastal and natural hazards. Finally, the strategy should incentivize development of new areas that are located outside of hazardous areas and the retirement of buildings in at-risk areas.

A planned obsolescence strategy can also be implemented where buildings and infrastructure located within hazardous areas are retired at the end of their useful lifespan rather than repetitively repaired, which may cumulatively cost more than replacement.

For DHHL, implementing an adaptive realignment strategy with both short- and long-term policy objectives and implementation strategies could offer substantial efficacy relative to achieving its mission to provide safe, affordable, and functional homesteads.

5.3 Hazard Accommodation

A second strategy is ***hazard accommodation***, which involves adapting existing structures and systems to allow them to better withstand the impact of a coastal hazard. Elevating a structure by a foot or two above the base flood elevation is one way to accommodate flooding while ensuring the building remains functional. For instance, plantation-style homes are built on posts, that if securely anchored, could allow flood waters to flow under the building unhindered. Reorienting a building to be perpendicular to the shoreline rather than parallel to it can reduce the area of the building that faces the ocean and the surface area that must withstand the forces of wind, rain, waves, and water.

Adding hurricane clips that connect the roof to the rafters, and the rafters to the walls with metal brackets, will help prevent the roof from lifting and being blown away in a hurricane or under strong wind conditions. Creating a continuous load path, where the roof, rafters, walls, posts, piers, and foundation are all connected using metal straps like Simpson Strong-Ties can anchor the whole house and prevent it from being carried away by flood waters or blown apart by high winds and the vacuum and low pressure created by spinning coastal storms and hurricane force winds.

Reconfiguring an existing home is also a means of accommodation such as moving the kitchen to the inland, mauka side of the home, along with elevating expensive electrical appliances that can easily be damaged by seawater. Elevating the kitchen using posts and piers can make it cooler and more comfortable as prevailing breezes can flow under the kitchen flooring. Likewise, flood waters could flow under the kitchen without damaging expensive appliances like the stove, refrigerator, and electrical appliances if they are located sufficiently above ground. Waterproofing electrical outlets, placing electric lines in waterproof conduit or PVC pipes, and using breakaway walls in low-lying structures accommodates floodwaters without causing the loss of the building, especially if its post and piers are reinforced to withstand the force of waves or arranged so that debris cannot form a dam that places more pressure or stress upon the building's posts, piers, or upright beams.

5.4 Protection from Coastal Hazards

A third strategy is ***protection from coastal hazards***. This strategy can involve "soft" or "hard" techniques to respond to coastal dynamics and shoreline change. It is an intervention between the building or infrastructure to be protected and the sea. Soft techniques are intended to create a buffer to absorb or reduce the ocean energy reaching the shore, whereas hard techniques typically involve the placement of hard structures that are intended to refract or deflect incoming energy at a fixed location between the land and sea. In all cases human involvement, intervention, and maintenance of the protection is a necessary component of this strategy. Some forms of protection require more maintenance than others and each has its benefits and shortcomings. Shoreline protection should be tailored to the specific location and its risk or exposure profile, noting that combinations of protective strategies may be most effective.

5.5 Soft or Nonstructural Techniques

There are several natural responses to shoreline erosion, flooding, and coastal hazards. Building in harmony with natural shoreline processes is one of the most effective and efficient means of protecting inland assets. This approach, known as "living shorelines," is designed to achieve multiple, interrelated goals including:

- Stabilizing the shoreline to reduce shoreline erosion and storm damage;
- Providing ecosystem services by restoring habitat for fish, birds, crabs and shellfish, benthic organisms (infauna), limu, and aquatic marine life;
- Restoring native plants and propagating vegetation, typically by encouraging the use and maintenance of climate adapted, salt tolerant, drought resistant, and obligate submerged plant species;
- Increasing the capacity to store and stabilize flood waters until they recede; and
- Maintaining mauka to makai connections between terrestrial and marine ecosystems to enhance resilience and restore shoreline functions.

In designing a living shoreline, a first step is to identify what needs to be protected, its permanency, replacement cost, adaptability, and resiliency to perturbations, storms, and coastal hazards. To evaluate responses, it is important to assess the setting by understanding the shoreline energy conditions. A determination should be made if the shoreline is experiencing episodic, seasonal, or more long-term chronic erosion. For instance, is the erosion related to a singular storm or king tide event, or does the beach disappear intermittently only to recover the next season, or has the ocean consistently moved inland, year after year, submerging land and coming closer to buildings over time. These three forms of erosion (episodic, seasonal, chronic) can lead to a retreating shore, but their cause and response can differ. As such, it is important to capture long-term observations from people familiar with a particular stretch of shoreline, identify shoreline reference features, and review old, archived maps and photographs, to help identify changes in the shoreline's location.

Homesteaders should observe the location and extent of wave-driven versus wind-driven inundation in the shoreline and rear yard areas. Marking heights of flood water inundation and points of reference for later measurement is useful, particularly for immobile items such as large rocks or natural features that will not move over time. Trees may serve as reference points, but since they can fall or change over time it is better to use nonliving items as shore reference features.

Homesteaders should also observe the extent of inundation from high tide and king tides. Mark these areas for later reference and photograph them with immobile reference features and items of scale in the background. Note any barren yard areas, areas entrained with sand or coral fragments (versus pebbles or black stone) as the coral fragments indicate the inland extent of ocean water and waves. Scorched brown and yellow grass, white salt crystals on the top of dried soils, and barren areas are also indicative of seawater inundation areas. Areas consisting of compacted clay (red, rust brown) or alluvial soils should also be delineated since they erode differently than sandy areas. In some cases, sand may be 'perched' atop a harder lava rock or firmer clay/alluvial soil layer that may erode at a different rate.

5.5.1 Vegetative Buffers

Leaving a green, vegetated buffer strip of native vegetation between the ocean and vulnerable structures will stabilize the shoreline and reduce the risk of damage, property loss, and loss of life from coastal hazards. Shorelines exposed to higher waves and intense storms require a larger setback for buildings and habitable structures, and thus a wider vegetated buffer. For instance, a 50 feet wide buffer of grasses and reeds can absorb nearly half of all incoming wave energy in a coastal wetland or marsh (TNC, 2017). When coastal storms or hurricanes flatten this vegetation, they resurrect themselves shortly afterwards because they are pliable and adapted to the environment. This pliability contrasts greatly to the rigidness of man-made structures that can crack, shift, slide or be compromised by the force of the ocean.

Building with nature is often more successful than working against nature. For Molokai's south shore, it is important to use native plants that are accustomed to the harshness of the shoreline. Some native plants thrive in the harsh coastal environment where other plants wither and die. Special plants, called obligate wetland plants, can tolerate being dried out or totally inundated with salt water, while exposed to strong sunlight without dying. Sedges are a family of plants that have pliable stems with edges that allows them to deflect and absorb wave energy. Sedges are obligate plants that can grow in direct sunlight, which is prevalent along the project area's coastline. Two native species of sedge are 'aka'akai and kaluhā (UH, 2019). Both can grow in clay or sandy soils and in fresh or brackish water. Both are salt and sun tolerant with kaluhā being more drought tolerant. When planted 1 to 3 feet apart, their roots and shoots will spread out to form new stalks and plants with 'aka'akai forming one-foot-wide clumps and kaluhā forming mats of vegetation. Kaluhā is excellent for reconstructing natural Hawaiian wetlands, and its roots form a thick interwoven mass that helps prevent soil erosion and filters stormwater runoff preventing pollution from entering the ocean.

These species of plants may be appropriate on sheltered shorelines with low wave energy and an influx of fresh water provided by drainages, seeps, springs, and other similar features. They should be tested in locations near or down gradient of cesspools to evaluate their tolerance of a consistent influx of nitrogen and fresh water into these nearshore environments. Bivalves and shellfish may also grow well in nearshore areas that are brackish due to cesspool inputs, but they are not edible.

There are also unique plants that have adapted to Hawai'i's hot, dry, sunny, salty, and windy coastal environment and can be used to restore sand dunes. Dune restoration plants have shallow roots that quickly spread horizontally (rhizomatic) rather than extending deep into the ground. The stems and leaves of the plant capture windblown sand grains which are then covered by the plant's quickly spreading roots. The accumulated sand forms a mound or dune that serves as a reservoir that resupplies the beach with sand during storms and large wave events. These sand reservoirs are built up in the backshore area and remain covered in vegetation until large waves eat into the dune and pull stored sand down onto the wet beach and spread it along the shore. This makes the nearshore waters shallower, which in turn causes waves to break further offshore and reduces their erosive energy.

Sand dunes also prevent storm surge from flooding inland areas by forming a berm that is slightly higher in elevation than the surrounding area. Sand berms also block sediment laden stormwater coming from mauka areas from entering the ocean. The berm slows the water, so it ponds, and silt, dirt, debris, and rocks settle and are filtered before the water enters the ocean.

5.6 Plants

The native dune friendly plant species listed below could help to restore Molokai's south shore. Table 5.1 provides a summary of each plant.

The plants are viewable at https://www.forestryimages.org/browse/ and Bugwood.org from photographs taken by Kim Starr or Starr Environmental, Maui, Hawaii.

'Aki'aki grass has shallow roots that spread quickly on sandy shores and sand dunes. The grass captures windblown sand and spreads new roots over the captured sand to build up a reservoir in a berm. The sand remains in place until large waves expend their energy by pushing and/or pulling the sand into another shape and morphology. It is best to plant near the end of the rainy season so it can be well-established before the hot, dry, summer months. The grass can collect sand burs.



Source: *Forest and Kim Starr, Starr Environmental, Bugwood.org*

Pōhuehue or beach morning glories have extensive runners (rhizoids) for roots that hold sand, berms, and dunes in place. The runners retreat or creep seaward naturally in response to waves and tide action. The plants grow easily but need drip irrigation to start. Drip irrigation lines can be patterned for the landscape and there should be one keiki plant per drip hole. The plants can have purple or white flowers depending on the species selected and both do well for restoration.



Source: *Forest and Kim Starr, Starr Environmental, Bugwood.org*

Naupaka is better suited for the backshore area and can grow profusely once established. It is saltwater and salt spray tolerant. Naupaka also captures floatables such as driftwood and human induced pollution such as styrofoam and plastics which become entrained in their stocks and roots. Naupaka hedges have been artificially induced through irrigation to grow seaward and down the beach face, thereby limiting shore access, which is prohibited by the State.



Source: *Forest and Kim Starr, Starr Environmental, Bugwood.org*

‘Ākulikuli is a native plant that readily grows along the shoreline in salt laden environments. The plant needs salt spray to thrive and needs inundation by fresh or brine waters. It can also grow on hard packed clay and alluvial soils. This low ground cover has very succulent green leaves with bright red stems and purplish pink flowers that can be used for lei. It is one of the most salt-tolerant of all coastal plants, and is an excellent ground cover for beach areas, saline soils, xeric landscaping, and in and around water features. It should not be confused with pickleweed (‘Akulikuli kai) an introduced competitor species.



Photos: *Native ‘Ākulikuli (left) and Non-native pickleweed (right)*
Sources: *Forest and Kim Starr, Starr Environmental (left) and Bryan Harry, NPS (right).*http://www.botany.hawaii.edu/basch/uhnpscesu/htms/kahoplnt/fish_pops/bataceae/plant01.htm

Pōhinahina leaves smell like sage or spice when crushed. They have bell-shaped flowers with blue violet corollas and the plant attracts butterflies and caterpillars. It is an indigenous plant that can grow into a shrub. It is naturally found on sandy beaches, rocky shores, and dunes on most of the islands to about 50 feet above sea level.



Source: *Forest and Kim Starr, Starr Environmental*
http://www.starrenvironmental.com/images/

Ilima forms an excellent groundcover and shrub for open, sunny and/or windy coastal areas. Its leaves range from one-half inch to over 5 inches long and can be glabrous (without hairs) to very fuzzy. The plant has small yellow flowers that are not fragrant but are attractive in the landscape.



Source: *Forest and Kim Starr, Starr Environmental*
http://www.starrenvironmental.com/images/

Naio is a fast to medium growing landscape shrub or tree. It can grow to 5 or 6 feet tall in a few years. It does not require much care after the plant is established. They form hardy shrubs that can tolerate both dry and moist conditions and have a near continuous flowering period followed by colored fruits. Flowers are small and white or white with light to dark pink or lavender centers.



Source: *Forest and Kim Starr, Starr Environmental.*
http://www.starrenvironmental.com/images/

Bulrush are sedges that consist of round dark green stalks that range from 8 to 10 feet tall. The stalks are buoyant and grow directly in the water and in full sun. They can grow into clumps and form thick mats of pliable vegetation. The stalks absorb wave energy and can buffer storm surge. They are excellent for reconstructing natural Hawaiian wetlands and provide habitat and food for waterfowl. The California bulrush, *Schoenoplectus californicus,* shown below is common in Hawai‘i.



Source: *Forest and Kim Starr, Starr Environmental.*
http://www.starrenvironmental.com/images/

Source: *Forest and Kim Starr, Starr Environmental.*
http://www.starrenvironmental.com/images/

Milo can be found growing naturally at the high tide line above mangrove and at the top edge of the sandy beach berms. They can readily tolerate seawater and occasional tidal inundation as well as wind and salt spray. Milo offers shade and can grow 30 to 40 feet in height. The trees produce leaf litter and dry seed capsules year-round. However, these seeds tend to be soft and not hard on bare feet.

Beach Heliotrope is a woody plant with a trunk. It has shallow roots that help hold sand in place, even during episodic erosion events. The tree does not grow very tall and often forms gnarled, intertwined branches that when combined with its broad leaf foliage, can offer shade along the shore. The leaves and stems contain a milky sap that attracts Monarch butterflies, and they can often be observed alighting on the Milo tree's leaves and stems. The trees are salt tolerant and grow well in arid, windy, sunny, coastal environments.



Source: *Forest and Kim Starr, Starr Environmental. http://www.starrenvironmental.com/images/*

Seashore paspalum grass or Paspalum vaginatum is a warm-season perennial (long-lasting) grass that spreads by stolons or runners to enhance its growth. It thrives in salty, sandy environments and is commonly observed in landscaped parks and lawns for oceanside lots. However, because of its thick root system it can cover, obscure, or hide erosion impacts such as sinkholes and under scour occurring under its surface. It is not recommended for areas immediately inland of shore armoring but is commonly used given its ease in maintenance and comfort underfoot.



Source: *Forest and Kim Starr, Starr Environmental. http://www.starrenvironmental.com/images/*

Kiawe trees are a non-native, invasive species. They displace native species and have an adverse impact on soils and hydrology. They can artificially hold soils along a coastline which contributes to the formation of escarpments or embankments. When the embankment becomes too steep or soft, the trees slump seaward and can become hindrances to access along the shoreline.

Kiawe accumulate nitrogen in their roots and trunk. When the tree is removed, this nitrogen store can serve as an available fertilizer for new young plants. As such, removing the tree and replanting with native drought tolerant plants can be successful. The dead dried wood makes for exceptional barbeque charcoal and has a pleasant scent for cooking. Removal of kiawe is advantageous for the coastal environment, its use, and its ecology.

There are both male and female trees. The tree has high rates of evapotranspiration, meaning that it pumps out more water from the ground than it uses only to discharge the groundwater withdrawn into the air. The tree's action dries out the soil making it harder for native plants to grow. This competitive advantage created by damaging the natural hydrology of the soil creates long-term damage to our groundwater supply and native ecosystem. In addition, the males grow long thorns that can easily pierce the bottom of shoes, boots, and flipflops making for a painful experience when walking along the shoreline.



Photo: *An invasive kiawe tree along Moloka'i's southern shoreline.*

Table 5.1: Dune & Coastal Friendly Plants

Names	Scientific Name	Specifics	Planting notes
ʻAki ʻaki grass Dropseed Indigenous	*Sporobolus virginicus*	Drought tolerant roots spread quickly, with leaves and stems that capture windblown, and wave pushed sand to form dunes and berms. Prevent foot traffic so fragile roots are not trampled.	Prefers moist conditions until established. Plant stolons or plugs 4 to 10inches apart to allow room for the grass to grow and the seeds to regenerate themselves.
Pōhuehue Blue beach morning glories Indigenous	*Ipomoea pes-caprae subsp. brasilinsis*	Good plant for beach front properties, and sandy, rocky, salt-spray or windy locations. Provides erosion control with vines that quickly adapt to tide variations. Vines spread 7 to 15 feet and have attractive pink to lavender flowers with purple centers.	Water for two weeks then only in times of prolonged drought. Allow room for the vines to spread. Will form a dense groundcover. Can be susceptible to pests including slugs, snails, sweet potato weevil, red spider mites, and leaf spot disease fungus.
Hunakai White beach morning glory Indigenous	*Ipomoea imperati*	Once plants are well established, water only in times of prolonged drought. The plant has bright white flowers with a yellow, occasionally purple, throat. Its vines spread 7 to 15 feet.	The vine requires plenty of room to spread, is easy to grow and maintain, and stays very low to the ground. Prefers full sun, brackish and salt water, sand, or coral. Very drought tolerant.
Naupaka Indigenous	*Scaevola taccada and gaudichaudiana*	The xeric plant requires minimal maintenance and watering. Plants can form a hedge and serve as a windbreak against prevailing sea breeze. The shrub tends to capture floatable trash in its thick leaves and stocks.	Coastal naupaka kahakai is often planted on the makai side of the house and naupaka kuahiwi on the mauka side. Plants prune well, growing back thickly at cut branches and twigs. Best to hand prune.
ʻĀkulikuli Sea purslane Indigenous	*Sesuvium portulacastrum*	One of the most salt-tolerant of all coastal plants, it forms excellent ground cover for beach areas, saline soils, clay soils, and coastal wetlands. A short, ground cover plant that spreads from 1 to 4 feet or more in width. Full sun is optimal but tolerates some shading for part of the day. The plant can tolerate a limited amount of foot traffic.	Once established, water only in times of prolonged drought. This groundcover will grow in moist or wet conditions, such as coastal wetlands, and can tolerate periods of complete inundation or dry out. Space 6 to 12 inches apart and the plants will grow together forming a nice groundcover.
Pōhinahina Beach vitex Indigenous	*Vitex rotundifolia*	Forms low medium sized shrubs 6 to 8 feet wide with a height to width ratio of 1:2. Its leaves are aromatic with a sage-like spicy odor when crushed. It has bell-shaped flowers with blue violet corollas (petals). The flowers and pungent leaves are used today in lei work. The plant attracts butterflies.	Allow a lot of room to spread. Out plant with ʻaʻaliʻi and native trees like wiliwili or naio. The plant prunes well, forming thick hedges or ground covers. Under very wet conditions or prolonged rainy periods a leaf rot fungus or powdery mildew may appear but usually will clear up when water decreases. Plants should be spaced between 2 to 4 feet apart.
ʻIlima Indigenous	*Sida fallax*	A low shrub with a 4-to-8-foot spread. Excellent groundcover for open, sunny and/or windy coastal areas. Has bright yellow, orangish small flowers that bloom year-round and attract pollinators. Pruning encourages new growth but avoid pruning severely.	Do not locate near automated sprinklers since heavy watering can lead to fungal rot and/or black sooty mold that will affect its health and vigor. They should be planted 3 to 6 feet apart.
Naio Bastard Sandalwood Endemic	*Myoporum*	The plant prefers very sunny, dry locations. Reduce watering after established. Poor drainage and damp soil will eventually kill these plants, which favor arid conditions. Flowers are small and white or white with light to dark pink or lavender centers.	Plants are prone to ants, scale, mealy bugs, spider mites, and aphids. The shrubs should be spaced 3 to 6 feet apart.
Kaluhā Bulrush Indigenous	*Bolbchoenus maritimus*	Grass-like sedge that grows 2.5 feet tall, in soils with pH of 6.0-9.0 in fine clay, silty loam, or sand and is tolerant of alkaline and saline soils. The roots form a thick interwoven mass that helps with soil erosion in wetland sites and filters waste from the water. Excellent sedge for reconstructing natural Hawaiian wetlands.	After plants send up foliage, flowers and setting fruits, it then dies back partially or completely year-round. Use caution when harvesting seeds as they have small hairs that irritate the skin, inducing a rash-like sensation and appearance. Provides a food source and shelter for native waterfowl.
ʻakaʻakai Bulrush Indigenous	*Schoenoplectus tabernaemontani*	The stalks of this bulrush range from 8-10 feet tall and are buoyant. They are good for visual screening or as a hedge in water features. Best grown directly in the water and in full sun but can tolerate some shade during the day. Excellent for wetland restoration and can dissipate wave swell energy.	Plant in clumps of at least 1 foot wide to ensure there will be sufficient shoots (rhizomes) to spread out and form new stalks. Space clumps of plants at least 1-3 feet apart and they will grow together at a slow to moderate rate to form a dense mat.
Portia tree Milo	*Thespesia populnea*	Milo is easy to grow and care for, but it drops numerous leaves and dry seed capsules year-round. They can be found growing naturally at the high tide line above mangrove but can tolerate an occasional brackish water tidal inundation. Milo can tolerate wind and salt spray.	Milo has a nice spicy fragrance when freshly cut, disappearing when carved into finished wood products. The trees canopy creates shade along the beach and back shore. Milo means to twist, curl, or spin.

Source: www.nativeplants.hawaii.edu

5.7 Coir

Coir is often used to restore and build living shorelines. Because it is a natural material it is far better for the marine environment and does not pollute the ocean. It consists of coconut fiber woven material that is heavier and coarser than burlap but somewhat similar in texture and color. Coir itself has minimal structural strength, but it can be effective at retaining soils, sand, and sediment and helps planted vegetation become established to hold sand and sediment in place. Coir is useful for gentle slopes and mounds. It can be placed as a mat over an area to be planted, rolled down over the face of a slope or embankment, fashioned into logs or tight rolls to form toe protection at the bottom of a stabilized slope, or laid out flat with the ends wrapped around a sand center and woven together to form a sand-filled tube or so-called burrito. Coir comes in bags, tubes, mats or blankets, and rolls. Coir can be used in dry areas where plants will be installed, and it helps encourage the plants rhizomatic (horizontal) root growth that holds sandy soils and sediment in place. Drip irrigation lines and vegetation should be placed atop the sand covering the coir material. Individual drip tanks can be used where there is an absence of hose bibs or an irrigation water source.

Coir mat consists of a chemically treated woven coconut material which decomposes into organic materials. The material should be covered with sand and not directly exposed to sunlight or inundated with water as this will cause the coir to deteriorate much more quickly. The longevity of coir is typically greater in areas where its placement is protected by fringing reef, reef shelves, rocky headlands, sills, remnant fishpond walls, wetlands, marsh, dry sandy beach, or higher elevation beach flats. The life of coir can be extended by placing it where the coir material is not exposed to direct sunlight and not subject to erosion from tides and waves, and where it is seldom inundated or soaked by seawater. Similarly, the placement of coir and its orientation to the prevailing wind direction should be accounted for in design so that loose sand covering the coir material is not easily blown away, thereby exposing the coir to sunlight. Groundwater seepage can also cause coir to degrade more quickly than planned, but wave and seawater exposure, and exposure to direct sunlight, are typically the main things that degrade coir materials. To extend the life and function of coir, it should be kept dry and out of direct sunlight.



Photos: *Examples of a sand-filled coir 'burrito' at King's Park, Newport, RI*
Photos courtesy of Janet Freedman (TNC, 2017).

5.7.1 Bank Stabilization

An embankment along the shoreline can be indicative of coastal erosion or it can be a natural berm that separates the coastal plain from the active beach, shore, and surf zone. Natural coastal bank protection can be restored for most tide ranges, topographic slope, or sand grain size, provided that the toe of the embankment is situated above the mean high-water mark where it will not be regularly inundated by seawater, currents, or wave action. Coir rolls can be used to help protect the toe of the slope from erosion and reinforce the embankment's stability. However, they are most effective in areas with higher beach elevations, with some dry beach at high tide, and where the rolls are not constantly subject to erosion from tides and waves. Installing coir rolls at the toe of a bank stabilization project can provide increased stability while the vegetation becomes established. For larger areas, natural fiber blankets can be placed on the face of an embankment above the coir rolls, covered with sand, and planted with native, salt tolerant grasses and shrubs. However, the rolls, blankets, and vegetation require ongoing maintenance, such as resetting, anchoring, or replacement, to ensure their success. Coir rolls should be securely anchored, such as with wooden stakes, to prevent the roll's dislodgement by waves and/or tidal action.

Care should be taken in designing embankment stabilization to consider upland stormwater runoff and groundwater flows when using coir along an embankment's face or along its toe. Excess stormwater or subsurface ground water flows can create hydrostatic pressure that can push tightly woven coir away from an embankment's surface if the coir is not properly anchored, fastened, or secured. Sediment or loose sand may be required as fill to cover coir material and to establish a stable slope and angle for an embankment. Coir rolls are typically 12-20 inches in diameter and 10-20 feet long. They are packed with coir fibers and held together by mesh, and they can be pre-vegetated to get a head start on the plant growing process. A high-density roll may be necessary at the toe, while lower-density rolls could be used on the face of the embankment or slope above. Wooden stakes for blankets, earth anchors for rolls, or a combination of the two may be necessary to anchor the system.

Salt-tolerant, climate adapted native vegetation with extensive root systems are best and should be used in conjunction with coir fiber rolls to help stabilize a site. Natural fiber coir mat blankets can be used to stabilize the ground surface while plants become established. It is recommended that coir blankets be run up and down the slope rather than horizontally across it. As the coir rolls disintegrate, the plants take over the job of bank stabilization as their roots grow into an interconnected network to capture and hold sediment, sand, and sandy soils. Native plants growing on the berm or embankment should respond naturally to the ebb and flow of the ocean through changes in tides and seasons. For example, beach morning glories will extend runners and stems seaward during dry periods and will quickly rescind their leaves and stems when regularly inundated with seawater.

If an embankment's slope is too steep or is undercut it may fail, slide, or sluff due to wave and wind action, especially erosion of the toe of the embankment. For this reason, a slope should be dressed and groomed, so that it is not too steep before covering or reinforcing it with coir materials and planting it with native vegetation. To reduce the angle of the slope to a gentler grade, it is best to regrade it by removing sediment and material from the top of the embankment rather than adding sediment to its toe, since the upper slope rests upon the toe, which is more susceptible to erosion. The plants should not be exposed to stormwater runoff from adjacent yards that could erode away the plants, soils, and materials during heavy rainstorms.

The ends of the extent of coir rolls should be carefully designed to minimize any redirection of waves onto adjacent or down drift properties. Tapering the rolls down in number and height where they end so that they blend with the topography or mirror adjacent grades and stabilized banks can help address this problem. If pavement, driveways, lanais, or lawns extend all the way to the edge of the top of the embankment, they may have to be cut back or repositioned inland, otherwise the bank may become too steep and fail or slump. The weight of concrete or asphalt atop a sandy berm can artificially hold the sand in place causing scarping and bank erosion to occur more quickly than a naturally maintained slope and crest. Proper maintenance of a vegetated buffer using native plant species between the back yard and the edge of the embankment will help minimize and mitigate bank failure and loss. Creating and maintaining a vegetated buffer using rhizomatic plants with spreading root systems will help prevent the loss of sand and sediment resulting in more stable conditions that reduce the chance that the embankment may slump or collapse.

Planted vegetation and weed control is necessary at first. The vegetation should be monitored monthly throughout the growing season to ensure plant success. Temporary irrigation by hand, using jugs, or drip irrigation lines may be necessary until the native, drought tolerant species become firmly established along the face of the embankment and preferably along its toe. The coir material should be inspected seasonally, at least twice a year, and after any storms, high waves, heavy rain events, or king tides, especially during a full moon. Regular, ongoing maintenance is often needed, including replanting barren or denuded spots. It may also be necessary to retighten the fiber roll and the coir mat, coir blankets, or their anchoring system after severe weather events.

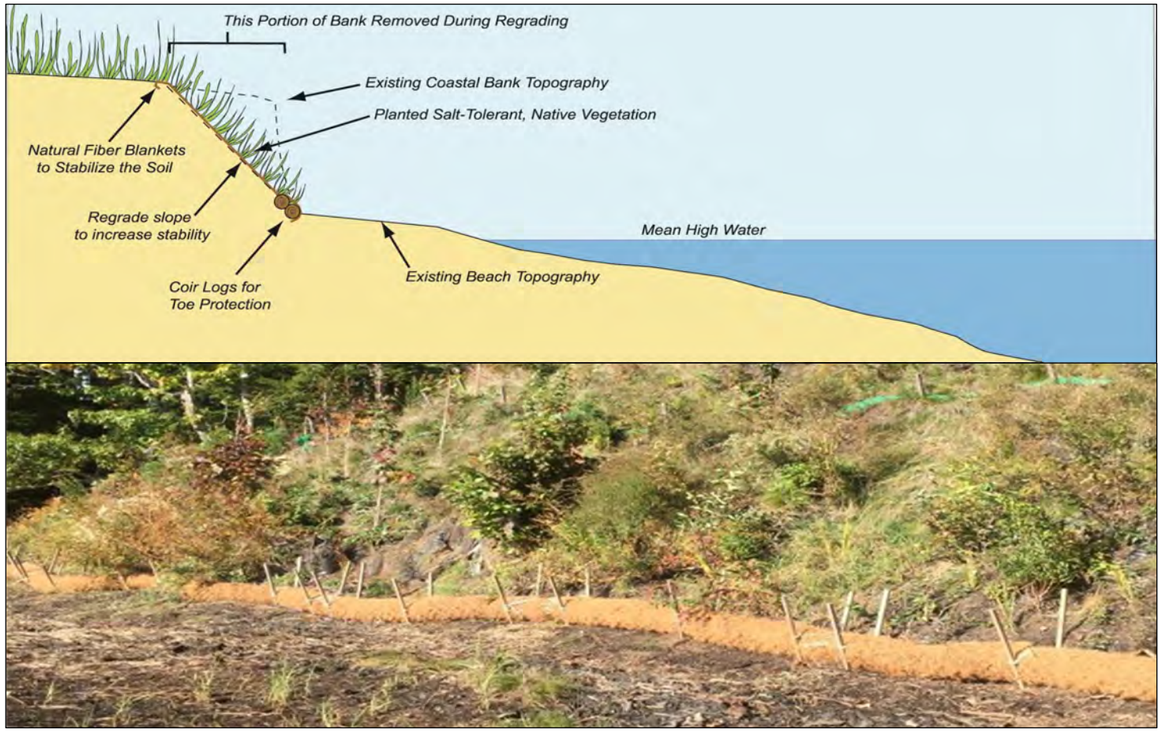


Figure 5.1: *Conceptual and actual bank stabilization using coir rolls.*
Source: *Bustins Island, Freeport, ME. Photo courtesy of Troy Barry (TNC, 2017).*

5.7.2 Reinforced Sand Berm

In conducting site investigations of the DHHL homestead subdivision there were no primary sand dunes observed. A primary coastal dune is protected under the County's grading ordinance. Primary dunes are the first sand mound that extends along or parallel to the shoreline, such as those that are visible along Pāpōhaku Beach on the Island's west end. Despite the absence of primary sand dunes at the DHHL homesteads, sandy berms are present that rise slightly above the coastal plain before descending to the beach and into nearshore waters. Berms were present along the back yard of some homestead lots and areas that had not been graded or altered from their natural state. For instance, sandy berms are evident along the makai edge of Ali'i Park.

Sandy berms play an important function in protecting the coastal plain and ecosystem. They allow for the capture, ponding, filtering, and percolation of upland storm water runoff in the back shore, which reduces water pollution and helps improve water quality in the 'ice box' nearshore. Sandy berms also protect the coastal plain from wave inundation and flooding. Naturally, some king tides or large wave events over a year may overwhelm the crest of the berm, but then the wave loses its energy as it spreads over the coastal plain. Figure 5.2 below shows how coir can be used to reinforce and help build a sandy berm to emulate a sand dune's natural morphology and beneficial properties.

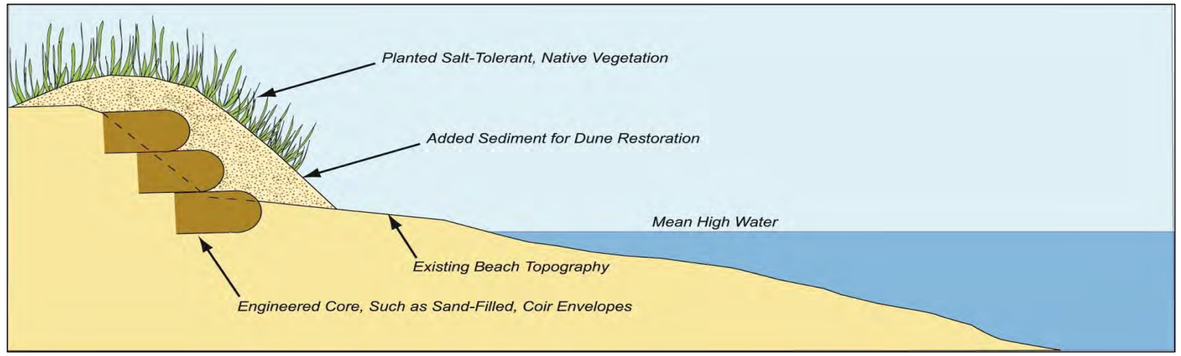


Figure 5.2: *Diagram of a sand berm or embankment reinforced with a sand-filled coir burrito (TNC, 2017).*

A number of lots in Kamiloloa had low spots in their yards that were lower than Kamehameha V Highway, and lower than the oceanfront edge of the property, suggestive of a berm. Berms are a physical feature usually located mid-beach and characterized by a break in the slope, separating the flatter backshore from the seaward-sloping foreshore (Norcross-Nu'u, Fletcher and Abbott, 2008). Berms can also be described as a terrace formed by wave action, or a mound or accumulation of sand and/or aggregate. The backshore is generally a dry portion of the beach between the berm crest and the vegetation line that is submerged only during very high sea levels and eroded only during moderate to strong wave events.

Constructed berms are a form of green, soft structure that can respond naturally to shoreline retreat, particularly where wave energy is low to moderate. They emulate a sand dune but are not as large, nor take as much space, as a primary sand dune.



Photo: *Sandy berm with a sand-filled coir burrito before planting at Kahana Bay, Maui, HI.*

For lots in Kamiloloa, coir mat, sandbags, or coir burritos could be placed on top of the embankment or along the seaward edge of the rear yard and covered with sand and then vegetated with native plants. They can be stacked atop one another (3-2-1 or 2-1) like a pyramid or as a wedge against an erosion scarp or embankment parallel to the shore to form a single, continuous berm.

Any opening in the berm would allow waves or seawater to inundate and spread out behind the berm, potentially eroding the mauka portion of the berm as wave surge and swash is pulled back towards the ocean. This type of flanking erosion can also occur at the ends of coir reinforced embankment if not properly designed or protected. If an opening is required, then it should be offset between two overlapping rows of the berm and face opposite of the prevailing wind direction, as wind can displace sand easily. Artificial berms should be constructed behind embankments and as far mauka as feasible, while close enough to the shore to serve as a sediment reservoir during an extreme storm event.

The ends at the extents of coir rolls should be carefully designed to minimize any redirection of waves onto adjacent or down-drift properties to prevent end scour. Tapering the rolls down in number and height so the project blends into the adjacent landscape, will help address this problem. Ending coir at rocky outcrops or headlands is also recommended, especially if there is risk to the coir of being cut by rocky substrate or rocks tossed, turned, and moved by wave action.

5.8 Sand Dune Restoration

Sand dune restoration relies on the importation and placement of beach quality sand to compensate for sediment lost from the littoral cell. The sand must be of similar grain size and color, as well as free of silt, clay and other of contaminates that could pollute nearshore waters if washed into the ocean.

A sand dune is a reservoir of sand to buffer, absorb, and reduce a coastal storm's erosive energy. The dry dune holds sand for when it is needed during storms and large wave events. During these extreme events, incoming waves draw the sand out making the nearshore area shallower which causes the waves to break further offshore thereby reducing the wave's energy when it reaches the shore. Over time the sand dune is rebuilt by currents, wind, and wave action pushing the sand up and into the backshore provided that native plants remain to help capture the grains of sand that build the dune. Planting the dune with native, salt-tolerant vegetation that can quickly grow an extensive root system will help hold the sediment in place untilit is needed. The plant's roots extend seaward to capture sand pushed up the slope by seawater and rescind back up the face of the dune when inundated with saltwater. Through this natural process of vegetative growth and die back, the dune grows higher, wider, and remains in equilibrium with the coastal environment. Pāpōhaku Beach on Molokai's West End has natural sand dune formations that reflect this natural phenomenon.

Sand dunes can be created by placing compatible sand or sediment on an existing dune, or by building up a mound of sediment at the back of the beach to create an artificial dune. The sand dune is intended to be sacrificial; its contents will erode away but will buffer and absorb wave energy that would otherwise not be dissipated. Sediment (i.e., sand) can be brought in from an offsite source, such as a sand pit, land being graded for development, offshore depression, stream mouth, drainage outlet, or a coastal project such as a harbor dredging or clearing of a stream mouth. However, the sand must be sufficiently clean and coarse enough for the location, and sieve analysis and grain size tests should be conducted. There are also important cultural considerations that need to be evaluated before moving, relocating, or reusing sand in this manner.

Because the roots of sand-tolerant plants are fragile, they can easily be crushed by foot traffic. Therefore, directing access paths and shore users with signage and low impact roped pathways is highly recommended. To prevent blow out of the dune sand, pathways should be oriented at an acute reverse angle to the prevailing wind direction, or the path should approach the shore from behind the dune and use a wooden cross over to bridge the dune. A beach or shoreline access path should never face directly into the wind, as this will cause a loss of the placed sand and deflation of the dune's volume. Sand fencing can also be installed to trap windblown sand to help maintain and build the volume of a dune. The use of educational illustrative placards, signs, marked and delineated footpaths, fencing, and wind-fencing all help to protect the vegetation that naturally covers and holds the dune's sand and sediments in place.

The seaward slope of the dune should be less steep than 3:1 (base to height). Dunes with vegetation perform more efficiently than dunes without vegetation, ensuring stability, greater energy dissipation, and resistance to erosion. Dunes planted with native plants can provide significant wildlife habitat, such as nesting sites for turtles and wedged-tail shearwaters, a seabird of cultural significance. The height, length, and width of a dune relative to the size of the predicted storm waves and storm surge determines the level of protection the dune can provide.

Dunes typically erode during storm events. Plants should be replaced if they are removed by a storm or die. In areas with no beach at high tide, dune projects will be short lived as sediment is rapidly eroded and redistributed to the nearshore. The added sediment from dune projects supports the protective capacity of the entire beach system (i.e., dune, beach, and nearshore area). Any sand eroded from the dune during a storm, supplies a reservoir of sand to the fronting beach and nearshore area. To maintain an effective dune, sediment may need to be added regularly to keep the dune's height, width, and volume at appropriate levels.

Dunes dissipate wave energy rather than reflect it like a seawall does. A sand dune serves as a barrier to storm surge and prevents flooding of buildings and structures located inland by reducing over wash events. Sand dunes are one type of living shoreline and are important to preserve.

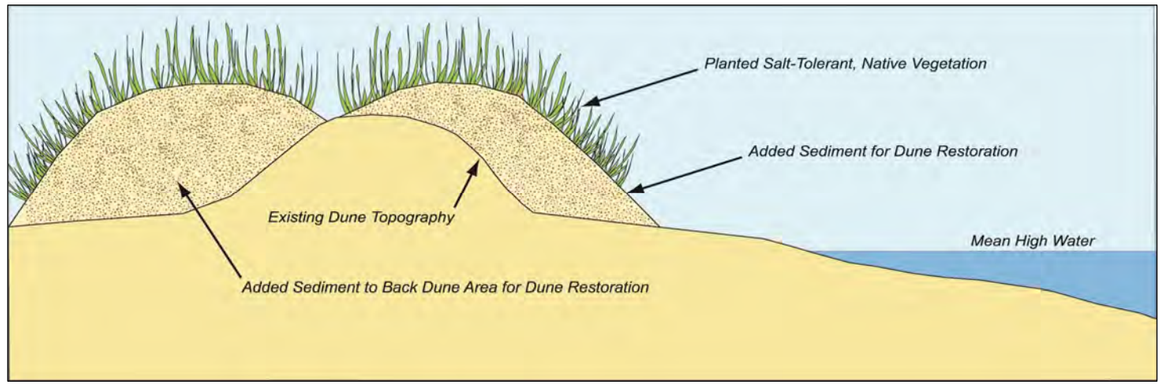


Figure 5.3: *Conceptual diagram of a restored sand dune (TNC, 2017).*

5.9 Beach Restoration

Beach restoration and beach maintenance are the only management tools that serve the dual purpose of protecting coastal lands and preserving beach resources (Beach Management Plan, 2008). Beach restoration can provide erosion protection as well as enhance recreational resources. The sand helps to buffer erosive waves by absorbing and dissipating wave energy while enlarging the amount of dry beach area available for users of the shoreline. Beach restoration can address erosion on a regional littoral cell basis rather than a property-by-property basis. Regional littoral cell approaches to beach restoration tend to be more proactive and effective at protecting beach assets than property-by-property approaches. Beach restoration involves the placement of sand as fill, with or without supporting structures, along the shoreline to widen the beach.

In Hawai'i, these efforts amount to either beach restoration or beach maintenance (HSBPA, 2015), as listed below.

1. Beach Restoration

- Using land-based sand resources (e.g., offsite grading).
- Using sand dredged from offshore deposits.
- Beneficial reuse of sediment, such as from a harbor or stream mouth clearing project.

- Sand imported from outside Hawai‘i (although imported sand is no longer permitted to be used on State submerged lands or beaches).

2. Beach Maintenance

- Sand back-passing (recycling) from an area of seasonal beach accretion to an area of seasonal beach erosion.
- Sand pushing or beach scraping to rebuild back-beach volume or dunes using seasonally accreted sand from lower on the beach profile.
- Dune restoration using borrowed sediment (including sand) and other measures such as revegetation with native species and dune fencing to capture windblown sand.

While beach restoration is a favorable method of shore protection, it may not be appropriate at all locations. The chance of beach restoration success is much higher for embayed shorelines (coves, pocket beaches) than for straight or convex (curved outward) shorelines, unless structures such as groins are used to simulate the effect of headlands to retain the sand. Beach restoration may not be appropriate for areas with sensitive marine ecosystems such as coral reefs or locations where the sand may fill holes in the reef and damage habitat for tako (octopus) and other marine life. Additionally, water quality and marine life surveys are important before, during, and after sand placement to determine whether any negative impacts arise from the addition of sand.



Photo: *Vegetated dunes provide a reservoir of sand at Kama‘ole Beach Park I in Kīhei, Maui.*

Hawai‘i’s white sandy beaches are made of carbonate sand, which is derived from skeletal components of marine organisms such as coral, algae, crabs, shells, and mollusks. A considerable amount of sand is also produced by herbivorous fish as they graze upon algae within corals. A mature parrotfish or tang can contribute several pounds of sand a year and thus efforts to increase their abundance and longevity should be encouraged to help restore sandy shores and beaches.

Sand used for beach restoration should be compatible with the existing sand on the beach. Due to the sensitive nature of marine life, it is important that sand for beach restoration be as close as possible in size and composition to the existing sand on the beach, and that it be as clean, and free from silt and clay as possible.

Silt and clay can cause brown sediment plumes to form when they enter the water and can be harmful to corals and marine life. To prevent this, a sieve analysis of the existing native sand and the proposed sand fill is required, and the two must be comparable, before sand can be placed along the coastline. The State of Hawai‘i DLNR OCCL strictly regulates the size, color, quantity, and quality of sand used for restoration purposes and Maui County’s Department of Public Works regulates the coarseness and quality of sand placed as fill in the shoreline area.

The sand chosen to be placed on a shoreline must have sand grains that are equal or greater in size than the existing sand on the beach to prevent it from washing away. The sand must be clean and coarse because silt and fines within placed sand or fill can pollute nearshore waters and damage coral reefs. The volume of sand fill or the amount of sand placed along the shore should be calculated to represent an optimal beach width, noting that sand dunes are typically 20 to 30 degrees in angle. Care should be taken to emulate previous beach widths and profiles. Historic beach widths and profiles can sometimes be estimated by comparing the current vegetation line or wet/dry line to previous beach widths as determined through an analysis of data gathered through traditional ecological knowledge, empirical observations, archived maps, and old site or aerial photographs. The information gathered through these sources is compared to immovable shoreline reference features such as headlands, rock formations, and large mature trees to identify the location of the existing shoreline relative to historic shorelines. Adding plants can help retain placed sand and sediments. However, the use of soil may be restricted and any sediment used should be carefully monitored so that it does not wash off or pollute the ocean, nearshore waters, and nearby coral reefs.

5.10 Sills & Edge Reinforcement

A sill is a mound of rocks, stones, or boulders placed in linear fashion along the edge, or in the shallows, of the shoreline. The rocky sill is backed by an expanse of reeds, tall grasses, or marsh vegetation that can thrive when regularly inundated or submerged by high or king tides. Structures and back yard areas that are actively used must be located inland or mauka of the vegetative buffer.

The rocky edge (i.e., sill) prevents erosion by interrupting swell energy and protects the vegetation from scour, whereas the vegetation absorbs wave energy. For instance, a 25-feet wide reed bed can diminish nearly half of the incoming wave energy in a salt marsh, due to the flexibility of the stocks of the plant, the proximity of the stocks to one another, and the diffusion of energy that occurs when waves flow around the stocks of the plant. Capitalizing on this feature, sills create a sort of energy sponge or shock absorber along the coastline. They can act like a curb stop or speed bump to incoming waves.

Sills are useful in low to moderate wave energy environments. Gaps or offsets in the rocky edge can increase tidal exchange, seawater inundation, and habitat connectivity much like a gate in a fishpond. The size and placement of the stones should be such that they form an immovable mound, or trapezoid, but not a wall as this would tend to reflect wave energy. The top of the mound should not be so high as to limit inundation of the vegetation during high tides. The location of the rock sill should be between low and high tide lines such that the toe of the sill is exposed during low tide, but the mound is not high enough to be exposed at high tide.

A rocky sill can also slow or displace stormwater drainage or interrupt the discharge of sediments that are carried from upland areas to be discharged offshore or through tongue and spur reef formations. Sills may not be appropriate in locations where upland storm water flow is excessive, heavy, or carries a high sediment load, as the sediment can quickly build up within the vegetation bed behind or mauka of the sill preventing its plants from being submerged.



Photo: *An example of a vegetated sill. Source: North Carolina Coastal Federation. https://www.publicradioeast.org/post/living-shorelines.*

Sediment can also accumulate just inland of the sill reducing its effectiveness, if not maintained or properly designed for the shore's morphology. A rocky sill should not be placed so low on the shoreline as to become buried in accumulated sediment as this would reduce its efficiency and effectiveness. Ideally, the plants behind the sill biodegrade and stabilize accumulated sediments to keep the system in balance. Stones, rocks, coral, and/or large coral fragments can be used as the base material for the sill.

Gaps within the line of rocks forming the sill may be necessary to allow for access between the dry land and the ocean. Any gaps for foot trails or small boat access should be offset from one another so that waves and water cannot enter the backshore area directly, as this would allow for scouring and contribute to flanking erosion behind the sill. Access points should be consolidated to reduce degradation of the vegetation behind the sill and the sill itself. Typically, the access point should be oriented at an obtuse angle to the prevailing wave and wind direction to reduce the risk of damage by strong wind or waves.

Installing a sill may require more land area than hardened approaches to shore armoring. Sills also may not provide protection during large storm events. However, they do provide a more naturalized response to shoreline erosion, and they are more resilient than seawalls and bulkheads. Establishing vegetation successfully can be a challenge, especially if invasive species compete or are prevalent at the site. Ongoing monitoring and management of the sill is recommended. Coastal storms can displace the sill and knock over stands of plants. However, dislodged clumps of plants can resurrect themselves and turn upright after a few weeks with minimal help or intervention.

5.11 Gabions & Mattresses

Gabions are metal baskets filled with coble sized rocks or stones. Gabions are often shaped like a cube and can be stacked upon each other along the front edge of an embankment to help protect it from erosion. Stones, rocks, coral, and/or large coral fragments can be used as the fill material for the gabion basket. A typical stainless-steel gabion basket is three cubic feet (3 x 3 x 3 ft.). However, metal baskets degrade in salt spray coastal environments and can leave sharp rusted wire in its wake should the container deteriorate. Stainless wire can cause injury after the basket degrades and saltwater causes it to rust. As an alternative, plastic or synthetic mattresses offer a more flexible, durable container when filled with rocks or stones. However broken or loose plastic strips can be confused by seabirds, turtles, and wildlife as being edible. Both the stainless steel and plastic types of containers come in a range of sizes, and each has its advantages and disadvantages. The rocks used can be angular rather than rounded to facilitate the entrainment and capture of sand in the voids that form between the rocks. However, if the mattress breaks open and the sharp rocks are released into the beach or nearshore environment, they can have adverse impacts on foot traffic.

Mattresses can conform to an embankment and be quickly mobilized and filled. They should be underlain with geofabric to prevent dissolution of the soil on the embankment and to reduce hydrostatic pressure from subsurface or groundwater flow. They often have sufficient weight to maintain their position, however cable anchors are often used to ensure their stability. Foot traffic on top of mattresses should be avoided. Rear yard irrigation and/or storm water discharge pipes should be redirected away from the mattresses to reduce subsurface flow and hydrostatic pressure behind the mattress fill material.



Photo: *Tensar brand rock filled mattress underlain by geotextile fabric.*



Photo: *Tensar geotextile mattress filled with hard, angular rocks to capture sand particles.*



Photo: *A geotextile erosion skirt covering an eroded embankment at the Kā'anapali Beach Club, West Maui, 2018.*

5.12 GEOTEXTILE BAGS, TUBES AND APRONS

A common, flexible, and potentially temporary option to combatting shoreline erosion is to use geotextile fabrics. The fabric is flexible, durable, easy to ship, and allows water to pass through the fabric but not sediment. The fabric is vastly stronger than coir and does not degrade when exposed to direct sunlight or seawater. This key feature makes the use of geotextiles along the coastline an attractive, low cost, impermanent alternative when compared to constructing more permanent shoreline hardening or less permanent soft measures that rely on coir mat.

Skirts or Aprons

Long sheets of geotextile fabric can be configured to overlay an embankment to stop it from being eroded by wave action. Often the embankment is 'dressed' to remove rocks, tree roots, or sharp items and to smooth the face of the embankment. The geotextile skirt or apron that is overlaid on the embankment's face must be held tightly at its top and anchored at its bottom to prevent it from being dislodged by wave action. The top can be held with cables and platypus anchors embedded in the rear yard, but care must be taken that the cables do not become tripping hazards.

The bottom of the skirt can be held down by placing heavy sandbags in the hem of the skirt or a chain or heavy pipe can be sewn into the hem of the skirt and buried under the surface of the beach. However, if the hem or its anchoring is exposed to waves and surge action, the geotextile fabric or its seams can tear and fail. Subsurface groundwater can also build up behind the fabric and displace or dislodge it if it is not porous enough to accommodate the hydrostatic pressure emanating from the embankment that it is covering.

Sand-filled Burrito's

Some lightweight geotextiles, such as Mirafi 150 - a black felt-like fabric, can be laid out flat, have dry sand placed in its midst, and have the ends wrapped overtop of the placed sand and sewn together to form an elongated sand-filled bag - a 'burrito' of sorts. The burrito can be shaped to fit the contour desired, but it has no structural strength. This method is particularly useful in situations where sinkholes have formed within a yard, or behind a seawall, that need to be filled quickly to stabilize the situation and bring the yard up to the natural grade.

Burritos are a good temporary measure to stabilize cavities that often form inland of shore armoring. The fabric and fill don't necessarily stop the surrounding soils from eroding but can move in response to wave surge and be pulled into cavities or gaps in shore armoring.

Geo-tubes

Long, flexible tubes can be purchased and filled with sand to form a barrier along the shoreline that prevents erosion of the backshore area. The tubes are usually placed parallel to the shoreline along the bottom of a scarp or an embankment. Over time they often become embedded into the landscape and its contour due to sloughing of the upper embankment. The tubes can also be placed perpendicular to the shoreline to form groins that trap sediment and sand moving along the shoreline. Sediment will accumulate on the up-gradient side of the geo-tube groin as the prevailing current will build material up against one side of the groin but deprive sediment accumulation on the down drift side leading to greater erosion depending on the seaward extent of the geo-tube.



Photo: *A stack of sand-filled burritos made of black Mirafi filter fabric, West Maui, 2018.*

Geo-tubes are normally filled using a slurry of sand and water and the water drains out of the tube. This 'de-watering' can trigger additional permitting and mitigation measures to prevent pollution of the ocean.

Industrial Sandbags. Geotextile bags come in a range of sizes, shapes, and material durability. One of the most durable and commonly used in Hawai'i is the Elco Rock brand of sand filled geotextile bag. They are made in Australia and shipped by plane to Hawai'i. Typically, Elco bags are filled with dry sand, sewn together at their crest, and then moved and positioned in place by an excavator with a specialized claw designed to squeeze, but not rip or break, the bag's fabric. The bags are filled upright, lifted, and turned sideways by the excavator to be stacked in horizontal rows. Typical sizes are 0.75 and 1.5 cubic yard in size and weigh 3,000 to 10,000 pounds each. The bags are designed to not be easily displaced by large surf, strong currents, or wave action. However, they do move and can shift over time, and algae can grow on the geotextile fabric where it is frequently submerged making it a slipping hazard.

The large industrial bags are usually placed along the edge of a scarp or embankment to prevent further erosion of oceanfront property. The bags are laid on their side and placed snugly against each other to form a long row along the shoreline. The first row of bags should be placed low enough to prevent under scour of the sand or media upon which the bags rest and which forms its base. Additional rows of bags are stacked upon the underlying row of bags and are usually offset to form an angled revetment. The geotextile bag revetment is designed to mimic the contour of the land it is protecting and may be back filled to closely conform with the inland area to be protected. The top row of bags and the crest of the bag revetment should be higher than the prevailing upper reach of the waves to prevent the area behind the bag revetment from becoming saturated with wave over wash or seawater.



Photo: *A sand-filled Elco brand geotextile bag revetment atop Tensar mattresses, West Maui.*



Photos: *Geotextile bags may shift due to storm surge and typically require maintenance over time as these before and after photos illustrate, West Maui.*

The leading deterrent to government authorization of the use of Elco Bags is that once they are in place, they are often not removed by the property owner and become *de-facto* permanent shore protection. Over time, the bags can become slippery with algae and hinder access to and along the shoreline. Moreover, individual bags can become dislodged from the revetment, or break open and become entrained on nearby reef or rocks. While very durable, the bags can tear if repeatedly bashed about on rocks or reef substrate by wave action, or impaled by wave tossed rocks, leading to their premature deterioration or failure.

Shifting of the bags from hydrostatic pressure behind the bags is also common, especially if seawater or groundwater builds up behind the embankment that the bags are protecting. Wave over wash and subsurface water can cause dissolution of the soils in the embankment behind the bags. Thus, the embankment should be covered in geotextile fabric and the bags underlain with the same fabric to prevent soil saturation and sediment transport into nearshore waters.

Other bag types

There are other types and brands of sandbags. For instance, top-filled polypropylene trap bags that can be 4-feet tall and 4-feet in diameter and can be stacked with an excavator. The 300 pound plus bags (when filled) have handles so they can be lifted and moved by heavy equipment. They can also be tied together to reflect incoming wave energy. However, polypropylene trap bags do not prevent water from reaching the backshore which can result soil dissolution due to soil saturation by incoming wave surge action.

Smaller plastic, hand-filled sacks weighing 35 to 60 pounds can also serve in an emergency. However, these are usually not large or heavy enough to remediate coastal erosion over the long term. The contents of the bags can become water-logged and behave like pods of jelly, rolling about due to wave surge, injuring people, and damaging nearby buildings or structures. They are easily displaced by Hawai'i's substantial wave energy and surge and are too small and light to prevent wave inundation.

These types of bags also have many drawbacks, for instance the plastic bags can tear, releasing their contents, and become floating trash in marine waters that turtles and marine life mistake as food. Unfortunately, the bags are often filled with sand from the nearby beach which reduces the shoreline's ability to absorb and dissipate wave energy.



Photo: *An example of polyurethane plastic sandbags.*

Sand Fill

The DLNR OCCL has strict guidelines for the types of aggregate and fill that can be placed inside or used in conjunction with the above methods. Sand is the preferred fill or aggregate to underlay skirts or aprons and to fill burrito's, geo-tubes, sandbags, and Elco bags. The fill must be consistent with the native materials found along the shoreline being protected. For instance, if gray gravel for a parking lot is used to fill the bags on a coralline beach, but the bagsbreak open during a storm, the bags could release the sharp-edged gravel into the much softer coral white sand beach degrading the beach's color, texture, and potentially making it painful for foot traffic along the shore. The fill material must be of similar color, density, and coarseness to the original native beach material so that it sticks to the shore and is not easily washed away by normal tides, currents, and waves.

Consistent with State Department of Health regulations to protect near shore water quality, the fill used for sandbags and tubes must be clean and not have an excess of silty organic material. Clay, dirt, and fine sediment can dissolve into the water column or be easily washed into marine waters creating red or brown plumes. This water pollution makes the nearshore water murky, blocks life-giving sunlight from reaching corals and their symbiotic algae, increases water temperatures, and it can harbor pathogens and nutrients within colloids of the sediment grains matrix. For the reasons above, among others, only clean sand fill with less than 6% fines and no more than 10% cobble can be placed along the shoreline or used as fill in sandbags or sand containment devices. Both the Maui County Department of Public Works and the State DLNR OCCL regulate the quality of sand used as fill within the shoreline environment, with the State having more stringent requirements. A sieve analysis conducted by a geotechnical laboratory can determine if the sand proposed to be used as fill meets regulatory guidelines.

One of the main benefits of using geotextile containment is that once in place, the fill material can be removed by cutting the fabric to allow its contents to be released to the environment. If the fill is clean sand, then it can be released, and no harm would come to marine life or water quality. The geotextile fabric can be gathered, removed, and appropriately disposed of relatively quickly so it does not harm or pollute the marine environment.



Photo: *Polypropylene "Trap Bags". (Kaanapali, West Maui, 2018).*

5.13 HARD STRUCTURAL TECHNIQUES

Armoring the shoreline with walls, bulkheads, and other impenetrable structures can help protect the land, but usually at the cost of losing the beach or sandy shore. Because walls merely reflect wave energy and do not absorb or dissipate the wave's energy, they are generally a less favored response to shoreline change. Walls and armoring almost always require continued, ongoing maintenance. They often have unplanned, undesired consequences especially on neighboring properties and nearshore coastal resources. Furthermore, walls and armoring may fail to protect inland development during hurricanes or severe coastal storm events. When they fail during such episodes, it is often difficult if not impossible to stage and implement repairs. For this reason, most regulatory agencies prohibit the construction or expansion of shore armoring except in limited, unique circumstances, and then only with strict provisions relating to land use, maintenance, best management practices, and shoreline access. The best coastal hazard strategy is avoidance. However, there are steps that can be taken to make walls, revetments, bulkheads, and other forms of armoring more effective and less likely to fail as discussed below.

5.13.1 Bulkheads

A bulkhead is typically a vertical wall that extends parallel and along the shoreline. Bulkheads are primarily used in low wave energy environments. They are intended to hold soil in place, fixing the location of the rear yard or back yard and ensuring that it is preserved. Bulkheads are often made of corrugated steel or vinyl sheets that are linked together. The sheets can be cantilevered to hang upon pile driven poles, or they can be driven into the substrate. Stability can be gained if the sheets are also anchored by cables buried in the rear yard. Wood poles are driven into the substrate on the seaward side to provide added stability and are bolted to each sheet. Once in place, the bulkhead can be backfilled, and the grade brought to its top to have a level rear yard.

Access to the ocean is usually limited to stairways built over the bulkhead, as an interruption in the wall's face would weaken the structure's integrity. Walkways atop the bulkhead can be integrated into its cap for access along or above the shoreline. Bulkheads do not solve the cause of an erosion problem and are primarily used where there are small or no waves such as along a stream, inlet, harbor, or bay. Bulkheads require ongoing maintenance.





Photos: *A typical vinyl and wood pile bulkhead.*

5.13.2 Sheet Pile

Sheet pile is made from steel or vinyl. It is designed to be pounded through the substrate until it meets bedrock or hardpan. The sheets link together and can be held on either side by a singular steel pile which extends into the bedrock or hardpan. Sheet pile can be used in coastal environments exposed to wave energy. However, given their small footprint, they are best used in combination with other methods such as a small rock revetment fronting the sheet pile. Exposed faces of sheet pile should be treated or covered in concrete, as should its cap to prevent saltwater intrusion and rusting of the sheet material. Sheet pile installations generally have much shorter lifespans than a poured concrete seawall or rock revetment. They also are highly reflective of wave energy despite their irregular face creating choppy water nearshore with turbulent cross currents. Sheet pile can contribute to down drift scour or erosion.





Photos: *Sheet pile shore protection.*

5.13.3 Seawalls

A seawall is a vertical wall that faces, or is parallel to, the ocean and its prevailing wave direction. Seawalls are intended to prevent the loss of soils, sediment, or property from being eroded by waves or consumed by the sea. They may be constructed of a variety of materials, but stronger seawalls are usually made of poured high-strength concrete, concrete masonry unit (CMU) blocks, or large cut lava stone that is stacked upon each other and held with mortar. Steel rebar is added to the seawall to give it strength. The metal rods create a more rigid grid or form within the poured concrete or are inserted into the hollow part of CMU blocs before they are filled with concrete. Metal rebar should be coated with epoxy to extend its life and prevent it from rusting. Within poured concrete, rusting rebar will spall and expand causing the concrete to chip or weaken from the inside out if not properly prepared. Spalling of concrete is a common problem in Hawai'i. Seawalls can be pile or gravity supported, with the latter most common in Hawai'i. Seawalls normally require ongoing maintenance and can be expensive to repair once damaged.

Seawalls retain soil on one side of the wall and thus need to have weep holes in the wall that allow rainwater and wave splash over to drain back into the ocean. Weep holes are normally placed just below the grade of the rear yard and just above the high tide line. The weep hole drains are wrapped with geotextile fabric so that they do not clog. Additional weep holes may be needed depending on the depth of the soil column, its drainage properties, and the area's hydrology.

Seawalls should be high enough so that waves do not overtop the wall and should be higher than high tide combined with storm run up levels. A seawall should have an over-wash lip to prevent incoming waves and swells from splashing up in the air and having a portion of the water falling landward behind the wall. This area can become saturated with water and cause the soil behind it to behave as a slushy liquid (dissolution) that can be pulled underneath the wall or through cracks in the wall causing the wall to collapse. For this reason, a seawall must be properly designed with weep holes, geofabric filters for drainage, and have a foundation that cannot be scoured by waves.

The footing for a seawall is a critical component to its strength and longevity. Seawalls need to be anchored to unmovable substrate such as bedrock or thick reef hard pan. The footing for a seawall must be wide enough on each side of the wall to

allow it to rest securely without being toppled over by hydrostatic forces that can build up behind the wall. The toe, or bottom of the seaward face of a seawall, should have a sill or ledge that protects the wall's footing from being under scoured by wave action or that can succumb to the loss of the sandy substrate fronting and the seawall.

A seawall must have a properly designed tieback at either end of the wall to prevent flanking erosion, where wave energy wraps inland and scours out softer materials at the end of the wall. The impact of building a seawall can cause the erosion problem to move down drift to an adjacent property, causing new erosion and creating the need for further armoring. This domino effect is a common cumulative problem that results in a community's loss of its sandy beach and dry access for subsistence gathering, fishing, and recreational activities.



Photo: *A poured concrete seawall.*

Access along the face of a seawall can be lost due to erosion and shoreline retreat. A seawall's toe can become slippery with algae if regularly submerged or exposed to tidal action. Access to the ocean is limited to breaks in the wall such as stairways, but these are weak points in the wall's integrity. Seawalls do not address the cause of an erosion problem, and they can mask it until sinkholes and fissure cracks form in the rear yard due to under scouring and unseen breaches in the wall.

5.13.4 Revetments

Revetments form a slope that is made of stones that fit together and lay over the slope of the shoreline or embankment to protect it from erosion and wave impact. Waves run up the face of the revetment and cause them to lose energy. As the water is pulled back down the face of the revetment by gravity, the swash breaks the trough of the next incoming wave, reducing its energy.

Each stone should rest upon the stone below it with the bottom toe stone being the largest, most immovable portion of the structure. The revetment should be built no steeper than a 2 to 1 ratio, and ideally at a 33-degree angle.

Filter cloth should be used underneath the placed stones in a revetment since water may penetrate through cracks and crevices and the sediment upon which the stones rest upon. This sediment may become saturated or liquified but should be held behind the filter cloth to prevent its dissolution and loss which could cause the stones in the revetment to lift, shift, or move leading to the structure's failure. As such, stones on a revetment are frequently underlain with multiple layers of known-sized well-drained aggregate, rocks, and geotextile fabric.





Photos: *A properly designed revetment has interlocking stones underlain with geofabric.*

A revetment needs to be tall enough to prevent overtopping by high tides plus storm run-up levels. It must have a foundation that cannot be scoured or eroded such that the base stones could shift. Rocks on a revetment rest at an angle atop lower lying stones, much like the scales of armor on an Armadillo. If a lower rock is displaced, the upper stones can slide, slip, or shift leaving gaps in the armament.

The toe stone must be sufficiently large, and heavy enough to not be dislodged by storm waves. It should be placed well below the low tide line and below submerged areas to prevent scouring of the sediment or base upon which it is resting. Revetments can cause negative impacts such as the loss of sand in front of the armoring, flanking erosion at the ends of the revetment, slippery faces that are susceptible to algal growth, and new erosion to neighboring or down drift properties. Since they are less reflective of waves, sand in the water column may fall out of suspension and buildup intermittently at the toe of a revetment.

Wave over wash or improper handling of drainage can cause hydrostatic pressure to build up behind the revetment. Without proper weep holes, filter fabrics, and aggregate design, water can accumulate behind the revetment and cause displacement of armor stones leading to the structure's collapse and failure.

5.13.5 Groins

Groins are jetties that extend out into the ocean, seaward and perpendicular to the coastline. They are typically comprised of large rock armaments set upon geotextile fabric with a length, width, height, and seaward end (head) tuned to the coastal forces and prevailing waves at the site. The landward end of a groin is usually buried to allow access along the shore and is not visible. Groins must rise high enough from the submerged land or seafloor to trap sand and sediment to form a protective buffer along the shore. Accumulated sand should eventually cover the landward portions of the groin so that the groin does not interrupt or hinder lateral access along the shoreline.

The spacing between groins should be 2 to 3 times the length of the groin. Sand and sediment will accumulate on the updrift side of a groin but deprive the down drift side of the groin of sand and sediment which results in erosion on the groin's down drift side. The length of the groin should be sufficient to capture sand and sediment that is moving alongshore, but not too long as to cause excessive or accelerated erosion on the down-drift side or ponding and lack of circulation on the up-drift side. Groins should also be oriented so they can deflect incoming wave and storm energy rather than channel it to the down-drift side where it would accelerate erosion and shoreline retreat.



Photo: *A series of short rock groins have retained the beach at Stables Road, Maui.*

Groins are typically constructed in a series comprising a groin field with multiple groins that extend perpendicular or at an angle to the shoreline, rather than just one or two groins. Groins can provide a platform for fishing and recreation making it easier to access areas further offshore. But like revetments, a groin's surface can harbor algae that may be quite slippery to walk upon. Groins can channel or redirect the current to flow along the side of the groin to its offshore end. Consequently, they can introduce a danger for swimmers or recreationalists if they become entrained in this flow. Similarly, once in the water, individuals may find it difficult to exit because the groin's slope and surface can be too slippery or steep to climb out of the water and the structures usually lack handholds, railings, cracks, crevices, or roughness to facilitate egress.

Visually, groins can interrupt natural view planes to the ocean and can have a negative impact on the perception of the environment. Similarly, views along the shoreline can be degraded by the interruption that a groin creates along the coastline. Depending on their size and configuration, a large groin can serve as a fishing platform or means to enjoy mauka views of the coastline and mountains.



Photo: *A concrete block groin illustrates updrift accretion and down drift erosion at Kūhiō Beach, Waikiki, Oahu, Hawai'i.*

Engineered groins can form a navigational hazard to vessels especially for smaller watercraft, motorboats, and sail boats that come close to shore. Under certain high wave or high tide events, the crest of a groin may not be clearly visible and could cause damage to a propeller or keel. Installing large groins usually needs federal approval from the U.S. Army Corp of Engineers, adding another layer of permitting to the complicated coastal zone management process.

Groins are best suited to shorelines where an alongshore drift direction dominates. Like other forms of armoring, groins need to incorporate geotextile filter fabric to allow liquid and water to move without dissolution or loss of fine sediment, sand, or soils. Groins are typically made of rocks and armor stones. However, groins can be made of a variety of materials, such as wood, stones, concrete block, or sand held in bags, but they are susceptible to displacement and failure if not stout and strong enough to withstand storm force waves and powerful along shore currents. Groins require maintenance due to the displacement of rocks and other materials by storms or wave action. Groins do not prevent inundation of property by waves or flooding of rear yards, but they can reduce this risk by capturing and building up a reservoir of sediment or sand that may help buffer or diminish coastal hazards.

<u>Stub, T and L-shaped groins.</u>

Stub groins extend seaward like a stem and do not diminish or hinder incoming waves. T-Head groins have rock platforms that extend from both sides of the head or end of a stub groin, whereas L-Head groins extend from only one side of the seaward end of the groin. The extensions are designed or angled to interrupt, diminish, or break up incoming wave energy. The "T" or "L" can reduce wave energy on either side of the groin and create an eddy to reduce erosion or transport of sand and sediment within the groin's area of influence. The back shore and shoreline area down drift of the last groin should not be comprised of erodible material to prevent acceleration of shoreline erosion. An L-Head Groin may be used for the last, down-drift groin with the base of the L facing updrift and seaward to capture sediment and prevent it from being lost or transported around the seaward end of the groin and out of the littoral cell system by the prevailing current.



Photos: *Iroquois Point Pearl Harbor, Honolulu, Oahu, Hawaii, 2013.* **Source:** *Healy Tibits Construction.* https://www.healytibbitts.com/projects/project-details/iroquois-point-beach-nourishment

5.13.6 Breakwaters

Breakwaters are offshore structures that are intended to break waves before they reach the softer shoreline or the slope of the backshore area. The rocks break the waves, reducing their force, and help prevent wave action from cutting into the sediment and carrying it away. The rocks must be heavy and large enough to not be easily displaced by wave energy. A design with interlocking rocks can strengthen the structure, but it must be secure enough to withstand submergence and the force of waves and strong storm currents. Stone or rubble breakwaters should be underlain with geotextile filter fabric if placed on sandy bottom to prevent displacement or dislodgement of the breakwater.

The breakwater should not be continuous; but should generally run parallel to the coastline and have sufficient gaps to allow water to ebb and flow behind the structure and between it and the vegetated shore. It is important that the breakwater not block or hinder circulation so as to prevent stagnation along the shore, stop eddies from forming behind the breakwater, and allow sufficient flushing of seawater as to support marine life.

A breakwater should be located sufficiently offshore to allow a bulge to form inland of the breakwater. It should be high enough to break waves, but not so low or short that it creates a navigational hazard to boats or watercraft. Gaps between offshore breakwaters should be wide enough to cause minimal change in nearshore currents and to prevent stagnation or undesired sedimentation. Breakwaters and rubble mounds can change the configuration of the shoreline, alter alongshore transport of sediment, and have unintended consequences if not properly designed, located, and constructed. Breakwaters should also be located sufficiently offshore to have the effect intended. For instance, sand can accumulate immediately behind the structure because along shore transport mechanisms from the swash of the waves, has been interrupted. Breakwaters can also have a significant effect on the makai view, and surfing waves, particularly for leisure activities on the beach.



Photo: *A rubble mound breakwater has accumulated sand in the eddy behind the structure.*
Photo by K. Duhring. **Source:** *Center for Coastal Resources Management, Virginia Institute of Marine Science.*

5.13.7 Breakwaters with Vegetated Backshore

Vegetation and slope stabilization can be used in conjunction with a breakwater to emulate a reef shelf. The design is similar to a sill backed by vegetation. The roots of grass and native, salt-tolerant plants can help hold soils, sediment, and sand in place in the backshore area, whereas the breakwater reduces the force of incoming waves. The types of plants used should have roots that spread horizontally rather than roots that grow vertically. The spreading roots hold more sand and sediment over a larger area, but their roots are shallow and fragile so walking on them must be avoided so the roots are not trampled and die. Designated paths with rope and post boundary fencing can be used to direct pedestrians away from fragile plantings. Commonly used plants include naupaka, ʻaki ʻaki grass, bulrush, and pōhuehue (beach morning glory).



Photo: *Breakwater sill and marsh vegetation at Morris Landing, Holly Ridge, NC.*
Photo: *Carter Smith.*
Source: *https://ncseagrant.ncsu.edu/currents/2018/11/living-shorelines-can-enhance-saltmarsh-resilience-to-hurricanes/*

5.13.8 Dry Stacked Walls

The walls around a fishpond exemplify a well-constructed dry stacked stone wall. Dry stack walls can be used to retain earth on one side and prevent ocean inundation on the other side to help protect oceanfront property. Pōhaku “rocks” can be female, male, or even hermaphrodite depending on their physical qualities. Male or boy stones are called Kū stones. Female or girl stones are called Hina stones. Strong dry stack walls are made of Kū and Hina stones that fit together and become tighter and more solidified as time passes, and when the ground shakes, such as during tremors from earthquakes or volcanic activity.

Fishpond kuapā (walls) were constructed from many materials including lava rock; coralline blocks; and rubble of rocks, coral, and soil. Small rocks and coral fragments filled interior cracks and could help cement the wall together. A fishpond wall was designed to be permeable to water, allowing aeration and water circulation while deflecting incoming wave energy. Similarly, dry stack seawalls must allow groundwater to seep through the wall either by adding weep holes to drain subsurface water, or by using geotextile fabric liners behind the wall to prevent dirt, soil, sand, or fill from being lost and forming sinkholes behind the wall.

A fishpond seawall was made with two rows of rocks and a filled center. The outer ocean-facing and the inner retaining face of the walls differ. The outer wall had a greater angulation to allow some of the deflected current to “clean” or scour the outer rim of the fishpond. The outer wall was often 5 feet wide and 3–5 feet tall (Keala, Hollyer and Castro, 2007). The largest stones make up the bottom (bottom stones are foundation stones called niho stones), ocean-facing side of the wall. The rocks should be positioned with the flat side facing outward because that side will be exposed to wave impact and needs to deflect the energy of the waves. When placing one rock on top of another, they should be placed 1 to 2 inches inside of the front edge of

the lower rock (ibid.). Each rock should slant or lean toward the center of the wall. In this way, gravity pulls the rocks inward toward the middle of the wall rather than outward or to the side(ibid.).

As the outer facing seawall and the inner retaining face of the wall begin to rise above the ground, the space between them (i.e., the middle of the wall) should be filled with smaller rocks, which do not have to be placed in any particular way. As the wall is built up from the bottom layer of rocks, the "seams" between adjacent rocks should be staggered so that the next rock should be placed over the seam between the two lower rocks (Keala, Hollyer and Castro, 2007).

"A Kuapā has various types of stones. Niho stones are foundation stones. Alo Stones is the face of the wall. Unu stones are wedging stones to help support the Alo stones. Pani Hakahaka stones are the filler stones that help fill in gaps of the wall. Pāpale stones are at the top of the wall known as cap stones.

These stones are either male or female stones. When the wall is being built the stones are moved into categories. 1) Niho 2) Alo 3) Pani Hakahaka 4) Unu 5) Pāpale. These are the five basic categories for organizing rocks for a kuapā."

Kiaʻi Collier, Waiheʻe Steward and Educator, Hawaiʻi Island Land Trust

Long, narrow rocks should be placed pointing toward the center of the wall which will add strength to the wall. The rock's surfaces need to be examined to choose the best surface to fit on the rocks already in the wall. Face stones are known to Hawaiians as "Alo" stones. These are the stones that make the Alo "face" of the wall. The "face" is the side that will face the outside of the wall, while the "sit" is the side of the rock that will sit on the lower two rocks on the wall. It is important to plan where the rocks are going to be stored, sorted, piled and where they will fall or sit when placed on the wall, because it is inefficient and inconvenient to move large rocks more than once (ibid.). The use of grout or concrete should be avoided in favor of a well-selected set of rocks for the wall. Concrete can hide erosion and under scouring by waves. It also prevents the rocks from naturally settling into one another to create a tighter, more durable seawall.



Photo: *The intricate structure of a wall constructed using uhau humu pōhaku (Hawaiian dry-stacked masonry).* Source: *National Park Service Photo. https://www.nps.gov/puho/learn/historyculture/preservation.htm*



Photos (Top to Bottom): *Restoration of Keawa Nui Fishpond of South Molokaʻi (Honua Consulting, March 11, 2011, Flicker.com); Keawanui Fishpond in South Molokaʻi* (*Honua Consulting, September 1, 2010,* Flicker.com).

CHAPTER 6: IMPLEMENTATION STRATEGY

6.1 Choosing Appropriate Responses to Shoreline Change

Chapters 1 through 4 capture and summarize the past and present conditions confronting DHHL homestead lots along Molokai's south shore. Chapter 5 explores erosion management strategies and describes approaches ranging from soft, nature-based remedies to hard, man-made structures to mitigate the impact of shoreline erosion. Chapter 5 also explores methods to better adapt structures to shoreline change and to avoid shoreline change by realigning or relocating structures to reduce their exposure to coastal hazards.

This chapter synthesizes the data collected through the first five chapters to create a set of five "core strategies" that are germane to the SM-SEMP planning area. The SM-SEMP's "core strategies" succinctly describe the broad strategic action that DHHL and its beneficiaries, as well as the broader community, could take to make the SM-SEMP's shoreline more resilient to the effects of sea level rise and coastal erosion. Actions provide more detailed procedures, programs, or physical improvements to carry out the SM-SEMP's core strategies. For instance, DHHL has a variety of tools at its disposal to manage risks from coastal hazards and shoreline erosion. DHHL can manage the use of its land and the location of future infrastructure investment to encourage the relocation of existing development to areas less susceptible to the effects of sea level rise and coastal erosion. There are also established zoning codes and practices in Maui County to help address flooding, shoreline armoring, retaining walls, grading, and coastal erosion. DHHL could utilize some of these. For instance, in Maui County plans for shore armoring must be stamped by a licensed structural engineer to ensure the structural integrity of the proposed shoreline armoring.

Chapter six organizes the SM-SEMP's recommendations geographically. Core strategies that address issues systemic to the entire SM-SEMP Area are presented in Table 6.1, followed by detailed recommendations for four identified littoral cells that encompass the shoreline between Kānoa Fishpond and Kalama'ula.

CORE STRATEGIES	Actions
1.0 <u>Restore</u> natural shoreline function.	1.1 Remove and replace invasive plants and trees with climate adapted, drought tolerant native grasses, shrubs, and trees such as 'aki'aki grass, pōhuehue, naupaka, and milo. 1.1.1 Develop a detailed vegetation management plan to guide shoreline and dune restoration within the SM-SEMP Area. 1.1.2 Contract with a community-based non-profit or business, with expertise in habitat restoration, to implement the vegetation management plan and provide ongoing maintenance of the improvements. 1.1.3 Support non-profit efforts to provide homesteaders with native, drought-tolerant, climate adapted seedlings and saplings to encourage shoreline restoration. 1.1.4 Prune or remove vegetation and trees that hinder access along the shoreline during high tide. The area between low and high tide should be free of obstructions such as kiawe trunks and branches, ironwoods, milo thickets, and naupaka bushes. 1.2 Remove man-made debris between the high and low water line including tires, appliances, vehicle parts, concrete and asphalt rubble, CMU blocks, pallets, steel and plastic drums, and other non-indigenous materials and dispose of it properly. 1.2.1 Contract with a community-based non-profit or business to remove and haul debris to a government-approved disposal site. 1.2.2 Support community-wide clean-ups where litter and rubbish are removed from the shoreline. 1.3 Remove accumulated sediment and debris from stormwater drainageways to keep them clear and functional. If the drainage has clay, soil, silt, or other dark colored sediment, remove and dispose of it in the landfill because it pollutes the ocean and degrades coral reefs. If the drainage is primarily clean, uncontaminated sand, place it along the ocean frontage or atop sand dunes or naturally vegetated berms at the edge of rear yards in the neighborhood, noting that State law provides for this type of activity. 1.3.1 Contract with a community-based non-profit or business for regular drainageway maintenance. 1.4 Initiate a groundwater inundation program by regularly testing and monitoring the following: a. the pH, salinity, and water level relative to the tide at the pocket wetland adjacent to the new pavilion at Kiowea Park; and b. the seeps and springs in the Kapuāiwa Coconut Grove to help characterize the area's hydrology, particularly as it relates to Coconut tree health. 1.5 Support actions that restore native upland habitat and reduce sediment laden stormwater from reaching the shoreline. 1.6 Support feral ungulate control, including fencing to exclude axis deer from watersheds rich in native habitat, and fencing to enclose axis deer within designated hunting areas.
2.0 <u>Educate</u> beneficiaries on the causes and consequences of sea level rise and coastal erosion, including appropriate mitigation measures.	2.1 Provide beneficiaries living in flood prone areas with the following information: • "*Answers to Questions about Substantially Improved / Substantially Damaged Buildings*", FEMA publication 213, August 2018. • "*Homeowners Handbook to Prepare for Natural Hazards*" 4th Edition, by Dennis Hwang and Darren Okimoto, Sea Grant, University of Hawai'i. • Flood zone and sea level rise exposure maps. 2.2 Ensure beneficiaries review coastal hazard information such as flood zone maps, SLR inundation areas, and coastal hazard exposure rankings when being granted a homestead lot. A disclosure notice should be signed by the beneficiary acknowledging review of the information. 2.3 Invite Dennis Hwang, and other Sea Grant Extension Agents, to speak to beneficiaries. 2.4 Ensure beneficiaries living along the shoreline understand and acknowledge that:

CORE STRATEGIES	Actions
	• A lessee's lot is subject to natural variability and coastal dynamics and its size may change over time. • A homestead lease does not include submerged land and DHHL is not obligated to prevent submergence. • Armoring the shoreline can be detrimental to coastal processes, marine flora and fauna, and neighboring properties and should only be done after consultation with DHHL planning staff.
3.0 Strengthen the regulation and management of shoreline resources.	3.1 Recommend consistency with the following State of Hawai'i and Maui County regulations governing buildings and construction, the shoreline, and flood hazard areas: • Hawaii Revised Statutes (HRS) Chapter 205A, Coastal Zone Management. • Maui County Code (MCC) Title 16, Building and Construction Codes. • MCC Chapter 20.08.035, minimal best management practices when disturbing the ground (grading, excavating, fill). • MCC Chapter 19.62 Flood Hazards Areas. • Hawai'i Revised Statutes (HRS) Chapter 205A-43 (a), setbacks along shorelines are established of not less than forty feet inland from the shoreline. 3.2 Recommend consistency with Federal and State DLNR regulations regarding shoreline surveys, armoring, and coastal construction on submerged lands.
4.0 Adapt structures and systems to better withstand coastal hazards.	4.1 Require new dwellings to be elevated above flood hazard zones (base flood elevation, SLR inundation) by more than one foot in elevation (freeboard). 4.2 Require new buildings to use anchored post and pier construction so as to be movable instead of slab on grade construction which is immobile. 4.3 Require buildings, and especially existing dwellings, to install hurricane clips and have a continuous load path to reduce damages to the structure during a coastal storm. 4.4 Encourage lessees to reconfigure dwellings by moving the kitchen mauka and elevating food preparation areas so that stove, refrigerator, freezer, and appliances are elevated or located at the highest, driest part of the property. 4.5 Encourage lessees to relocate the water heater, air conditioner, chillers, and/or pumps to higher waterproofed areas within the property. 4.6 DHHL should host and facilitate Community Work Days to install hurricane clips, add continuous load path straps, create flood resistant anchors, and take other house strengthening and storm resilient measures as described in Dennis Hwang's *Homeowner's Handbook to Prepare for Natural Hazards* found at: http://seagrant.soest.hawaii.edu/homeowners-handbook-to-prepare-for-natural-hazards/ 4.7 Convert cesspools to septic systems wherever feasible to reduce the risk of contaminated water and protect beneficiary health. 4.8 Encourage cesspool conversions with financial incentives from DHHL but with conditions to reduce exposure to natural hazards by realignment or relocation to areas not exposed to sea level rise. 4.9 Remove outhouses, or connect them to a septic system, to prevent contamination of the "ice box" and protect beneficiary health. 4.10 Encourage building designs and layouts that are perpendicular to the shoreline to reduce the building's surface area that is exposed to coastal storms, wind, waves, and hazards. 4.11 DHHL should consider purchasing Simpson Strong-Ties and other commonly used hurricane mitigation materials in bulk and providing them to beneficiaries along with training on their installation and use.
5.0 Prepare for the relocation, or retirement, of structures out of areas threatened by sea level rise and coastal erosion.	5.1 Prepare a community-based plan for the relocation of vulnerable buildings, infrastructure, and public facilities away from area's threatened by sea level rise and/or coastal erosion. The plan should include specific strategies and actions for the: a. relocation of entire communities, if necessary; b. relocation of structures on a lot that are situated in flood and erosion prone areas to areas on the same lot that are free of such hazards; and c. construction of new, more reliable infrastructure, and the provision of services to areas that are not at risk of SLR and coastal hazards to incentivize new development and neighborhoods in locations that are not in harm's way. 5.2 Prepare and implement a planned obsolescence strategy for infrastructure at risk of damage from SLR, coastal erosion, and flooding including roads, drainages, wastewater treatment, and centralized utility systems and services. 5.3 Develop incentives for the retirement, relocation, and reconfiguration of structures upland and mauka, particularly on oceanfront lots. 5.4 Allow pavilions and accessory structures in the setback area, but not plumbing, and require structures to be portable and moveable. 5.5 Require additions to existing dwellings on oceanfront lots to be located on the mauka side of existing structures and elevated above base flood elevations. 5.6 Require a coastal hazard exposure assessment in any new leases or renewals and facilitate relocation if and when structures are damaged by 50% or more. 5.7 Incentivize relocation away from flood and erosion prone areas by providing infrastructure and leasable lots upland.

Table 6.1: *SM-SEMP Core Strategies and Actions.*

Chapter 4 describes how sediment flow within the SM-SEMP Area is divided into four littoral cells which are mapped to illustrate the main sources and sinks of sediment and the probable transport mechanisms within each littoral cell that are driving shoreline change. Shoreline managers can use the maps to analyze each cell's sediment budget, and design appropriate management strategies to make the shoreline more resilient to sea level rise and coastal erosion.

The SM-SEMP planning team shared the maps and research with key stakeholders and DHHL management in an interactive workshop. Stakeholders had the opportunity to provide written comments, diagrams, and suggestions on the maps to improve the accuracy of the information reported, infuse place-based and traditional ecological knowledge, and to put the information gathered in historic context. Stakeholders also reviewed erosion issues and potential responses. The purpose of the workshop was to ground truth the team's findings and to have a stakeholder driven evaluation of intervention techniques and remedies.

Stakeholders evaluated different approaches and remedies to shoreline change. These response options ranged from soft and green natural approaches to hard and gray constructed structures that are designed to remedy erosion, such as those illustrated in Figure 6.1. Included in the response options was realignment of the built environment to adapt to changes in the coastal environment, such as elevating, reconfiguring, retiring, or relocating structures.

A brief description of each of the ten response options along with photos exemplified how each approach functions. The relative cost of each approach, its longevity, permit requirements, footprint or size, and typical impacts were also listed.

Stakeholders discussed their likes and dislikes for each of ten different approaches to shoreline change. The stakeholders evaluated the approach and response option in overall terms and not in relation to any specific location, area, built asset, or erosion threat. For instance, there was general agreement that erosion responses that relied on plastic materials, such as Tensar mattresses or plastic gabions, were inappropriate for Molokai's south shore given the sensitive nature of the marine and nearshore environment. In contrast, dry stack walls that emulated fishpond walls were more welcomed and viewed more favorably.

The stakeholders then reviewed eight types of assets or resources identified as being commonly at-risk or under threat from erosion along the project area's coastline. These included: carports, pavilions, houses subject to episodic erosion (i.e., singular storms) or chronic (long-term) erosion, historic resources such as Kalaniana'ole Hall and Kapuāiwa Coconut Grove, and public resources such as roadways (Kamehameha V Highway) and park infrastructure (pavilions, restrooms). For each of the eight assets, the stakeholders evaluated the ten responses and indicated which ones they liked, thought were okay, or disliked and the rationale for their feeling. They also noted any specific costs, benefits, or concerns associated with a possible remedy for a particular resource or area.

6.2 Specific improvements from Green to Gray

Using the information from the stakeholder workshop, the SM-SEMP team identified specific remedies for areas threatened by erosion within littoral cells A through D as depicted by Figure 6.2 and Figures 6.4 - 6.6.

Three of the four beach cells exhibit erosion while one cell exhibits accretion. For instance, Cell B is sediment deficient in front of the Kamiloloa subdivision lots just east of the Hotel Moloka'i leading to mild to moderate erosion. In contrast, Cell C is sediment starved in front of the Kapa'akea subdivision leading to significant land loss due to erosion.

The shoreline's natural function to absorb wave energy has been mostly lost at Kapa'akea but is only compromised at Kamiloloa. Accordingly, a soft "living shoreline" approach is recommended for many of the oceanfront properties in cells A through D. This soft strategy is intended to restore the natural buffering capacity of the coastline over the short term by creating a sand reservoir comprised of a sand berm with an engineered coir mat center that is covered in native vegetation. While other soft approaches have merit and may be effective, creating a vegetated sand berm is likely one of the most practical options that could readily be implemented at these locations.

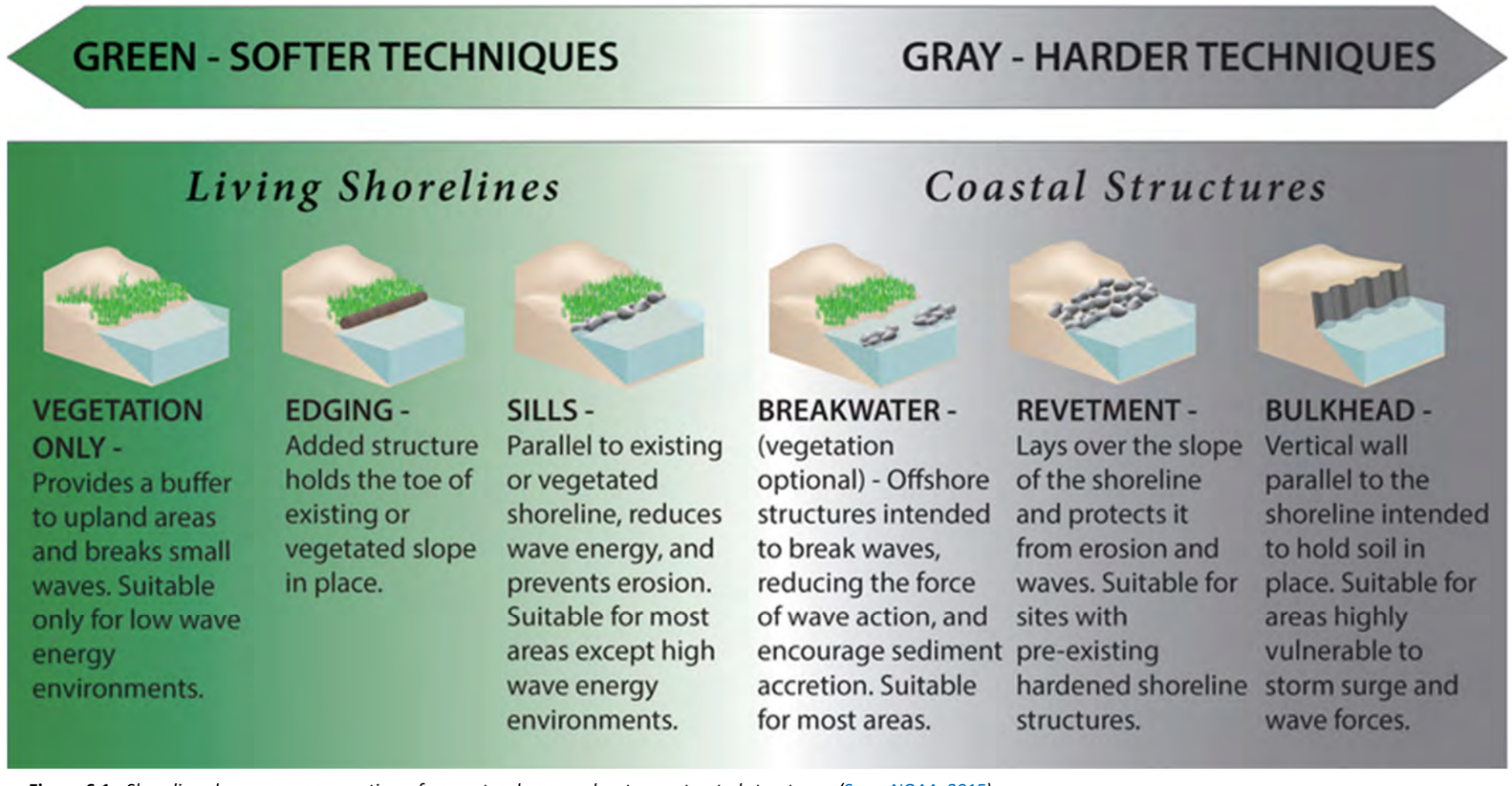


Figure 6.1: *Shoreline change response options, from natural approaches to constructed structures. (Sage, NOAA, 2015).*

6.3 Littoral Cell A (Kānoa Fishpond to Ali'i Fishpond)

Several sites within littoral Cell A (Figure 6.2) could benefit from a soft, green approach to mitigate coastal erosion. Three specific improvements are recommended, and Figure 6.2 identifies their locations within Littoral Cell A. This subsection describes each of these recommendations in more detail.

1 Coastal habitat restoration could help rejuvenate natural shoreline processes to make the shoreline more resilient to shoreline erosion. This could be accomplished by creating a vegetated sand berm that rises 1½ - 3 feet above the grade to enhance the interface between the land and sea and create a buffer between them. Shoreline managers can augment the height and width of the berm fronting the One Ali'i Park pavilion and restroom with clean sand covered by native coastal plants. Managers can also direct foot traffic between the park and the shoreline with posts, ropes, and signage to prevent the native plants from being trampled.



Photo: *A sand berm anchored by native vegetation make this beach more resilient to sea level rise and erosion.*

Shoreline managers can plant climate adapted, drought tolerant native grasses, shrubs, and trees such as 'aki'aki grass, pōhuehue, naupaka, and milo to improve soil retention along the edge of the shoreline and reduce the loss of soil and sand to waves, king tides, and erosion. By removing kiawe trees that absorb a disproportionate amount of fresh water and dry out the soil, managers can improve growing conditions for native plants, reduce the formation of embankments along the back shore, and eliminate the supply of sharp thorns and branches that hinder access along the coastline. Please see Recommendation 3, of Littoral Cell B, for a more thorough discussion of the use of coir mat enhanced sand berms to support habitat restoration and coastal resilience.

2 Remove the sand plug in the drainage channel for the beneficial use of sand. The swale running mauka to makai along the western edge of One Ali'i Park cannot adequately drain stormwater just inland of the shoreline. The mouth of the swale is plugged with sand that has accumulated over time. This prevents the water mauka of the plug from discharging into the ocean and instead causes it to pond, harbor mosquitos, and enable algal growth. The sand appears to be clean, low-silt, and coarse-grained which would make it suitable for beneficial reuse in Cell A or elsewhere along Molokai's south shore. Shoreline managers could remove the sand plug and use it to enhance the height and width of the vegetated berm recommended in front of the One Ali'i Park's pavilion and/or restroom. The beneficial reuse of the sand is also consistent with State law, HRS 205A-44(a)(3)/(4) provided that its placement does not create significant turbidity. Silt fences can be erected during clearing of the drainage swale to prevent polluting nearshore marine waters.



Photo: *The sand that plugs this drainage channel could be repurposed for berm enhancement.*

Shoreline managers could also use the sand as clean fill at other DHHL locations and projects. The sand that is plugging the drainage swale should be tested using a sieve analysis to determine if it meets DLNR OCCL criteria for 'beach quality sand'. If suitably clean and free of silt, the sand could be placed in natural fiber coir mat bags or burritos to create or enhance a vegetated sand berm or to protect an eroded embankment (See Figure 6.4 - Cell B recommendations). Alternatively, shoreline managers could use the clean fill for temporary groins made of geo-textile sand-filled tubes or bags at other DHHL locations (See Figure 6.5 - Cell C recommendations).

3 Support the restoration of Ali'i Fishpond including the removal of invasive mangrove. The Ali'i Fishpond, like many other fishponds, has been invaded by non-native mangrove. Mangrove breaks the wind, slows the current, and can turn clear coastal waters into anoxic, murky swamp land and mudflats. Generally, mangroves are favored for fisheries and wading seabirds, but the introduction of mangrove into the nearshore marine environment over a century ago has greatly reduced nearshore productivity and the vitality of the shoreline environment because it is not native to this shore. Supporting community-based and non-profit efforts to remove invasive mangrove and restore fishponds and benthic habitat would be of great benefit to the ecosystem and to Molokai's southern shoreline.

Other recommendations for Cell A, on privately owned land, include relocating the restroom at Del Monte Park further inland and upland as it is located very close to the water's edge. Adaptive realignment of the building would avoid inundation by waves or flooding of the floor or fixtures. The realignment to predicted coastal hazards would avoid damage to the building or under scouring of its foundation from coastal erosion. A new elevated structure may necessitate a few steps up into the building but could avoid seawater inundation, even if only elevated a few feet above the grade. The restroom's wastewater disposal system should also be converted to a septic system if it presently relies on a cesspool, as is suspected given its age.



Photo: *Looking east fronting Del Monte Park*



Figure 6.2
LITTORAL CELL A:
Conceptual Recommendations
South Moloka'i Shoreline Erosion Management Plan

6.4 Littoral Cell B (Ali‘i Fishpond to Kaloko‘eli Fishpond)

Similar to Cell A, a number of sites within Littoral Cell B (Figure 6.4) could benefit from soft measures that emulate nature’s ability to absorb or diffuse wave energy and reduce shoreline erosion. Figure 6.4 illustrates the geographic location of five of these measures. Each of these measures is described below.

1 In consultation with the State Department of Transportation (SDOT), consider nature-based solutions to mitigate shoreline erosion along the highway. DHHL owns a 1.56-acre long, thin parcel of land, TMK (2) 5-4-006:026 west of Ali‘i Fishpond. The land extends makai of the Kamehameha V Highway for about 1,000 feet before it jogs seaward in front of a series of private lots with developed homes along its western end. DHHL should work in consultation with the HDOT Highways Division to address the highway’s exposure to coastal hazards such as flooding, wave over wash, and sea water inundation of the road’s substrate. DHHL is already an active member in the HDOT Road & Nature Based Solutions discussion group and the DHHL’s involvement should continue. DHHL should collaborate with HDOT in evaluating a sill and sedge approach to reducing saltwater intrusion and absorbing wave energy along this narrow, at-risk location.



Photo: *A portion of DHHL property harbors kiawe trees makai of the highway.*

2 Support the removal of invasive vegetation and replace with native species. Kiawe trees along the shoreline should be removed given they absorb a great deal of fresh water and dry out the soil. This would improve native plant growing conditions, reduce the formation of embankments along the back shore, and eliminate the supply of sharp thorns and branches that hinder access along the coastline. DHHL should lead by example by removing the kiawe trees on their parcel mentioned above. The site lends itself to an enjoyable, usable, open space next to the ocean with sufficient space for head-in public parking from the road. The area would need to be replanted with native grasses, shrubs, and trees such as milo and beach heliotrope, but once established the area could offer a pleasant, shaded respite with fine coastal views and sounds.

3 Coastal habitat restoration. Other portions of the shoreline in Cell B are impassible due to kiawe and invasive shrubbery that should be removed and replanted with a mixture of native species that would restore ecological function and improve the resilience of the coastline to high wave events. Planting climate adapted, drought tolerant native grasses, shrubs, and trees such as ‘aki‘aki grass, pōhuehue, naupaka, and milo would improve soil retention along the edge of the shoreline and reduce the loss of soil and sand to waves, king tides, and erosion. The removal of invasive and replacement with native plant species is an effective means to restore the function of the coastline and improve nearshore water quality and marine, benthic, and wildlife habitat.

The Kamiloloa shore between Hotel Moloka‘i and the drainage swales and stream outlets to its east could benefit from a coir mat enhanced sand berm along the makai edge of the rear yards. Constructed berms are a form of green infrastructure that can effectively and naturally respond to shoreline retreat, particularly where wave energy is moderate. Berms mimic sand dunes, but they are not as large, nor do they take as much space (See subection 5.7.2).

As a first step, non-native plants, and invasive trees such as kiawe should be removed along a 20-40-foot-wide corridor along the coastline. This allows for the reestablishment of native species given appropriate care and management by the landowner and community. Appropriate drought tolerant coastal species (in order of mature height) include: ‘aki‘aki grass, pōhuehue, naupaka, naio, beach heliotrope, and milo trees.

Once the corridor is cleared, a sandy berm should be created just inland of the crest of the existing shoreline. The berm should be located above the water line and inland of the wet beach, but near the makai edge of a property’s rear yard. This berm would create a rise or bump in the landscape that is higher in elevation than the shoreline. The intention is to provide a buffer that can absorb incoming wave energy, disperse waves, and reduce erosion by creating a reservoir of sacrificial sand that can be eroded by large waves. A vegetated sand berm is also effective at capturing and slowing upland stormwater runoff, allowing excess rainwater to pond and deposit sediment on the mauka side of the berm, instead of in the marine environment.

The enhanced sand berm should be located just mauka of the debris and vegetation line. When properly vegetated, the sand berm will be stable and unchanged at this location for most of the year, except during the few times when wind, waves, tides, and seawater combine to overtop the berm and inundate rear yards.

A good reference feature is the seaward edge of the vegetation line and the landward extent of the debris line. This shoreline reference feature is formed by small bits of wood, leaves, fragments of white coral, and plastic pollution that tend to collect along the shore at the highest inland extent that waves pushed it over the past year, thereby forming the debris line.

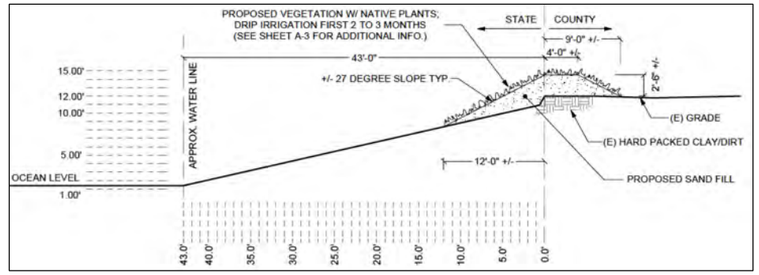


Figure 6.3: *Conceptual diagram of a sand berm’s restoration.*

The core of the berm should be comprised of sand-filled coir mat formed into envelopes or tubes. A long coir blanket can be laid out like a rug paralleling the shoreline. In some cases, it may be helpful to place the coir blanket within a shallow, hand dug depression that has wooden stakes to hold the sand-filled core tube. Sand is placed in a long row and piled 2 to 3 feet high in the middle of the coir blanket. The edges of the coir blanket are then brought together at the top, wrapping around, and containing the sand within it. The edges of the coir mat are then sown together to form a ‘burrito’ with coir material on the outside and sand on the inside of a long, linear, roll or tube. Sand should cover the burrito to protect the coir mat from deteriorating in the sun and water. Special attention should be taken to prevent the added sand from blowing away or being washed away by planting it with native, drought-tolerant plants. Sand placement should be done at low tide and during the calmest seasons of the year.

For access to the shoreline, the end of one linear burrito can extend inland and behind the beginning of the next linear burrito. This offset between the parallel berms would allow foot traffic to pass through the “Z” gap formed by the two engineered berms, but not allow water to directly pass between them. Openings or gaps in the berm that face the ocean may suffer ‘blow out’ by wave and wind action entering, eroding, and thereby expanding the gap in the berm.

To prevent blow out, access paths to the shore should always be at an acute opposite angle to the prevailing or predominant wind, water, wave, and current direction. Where feasible, wooden crossovers, stairs, or marked footpaths are recommended to prevent foot traffic from crushing the fragile roots of the native plants that hold the sand in place, including those on the sand berm. Additional sand should be added on either the seaward, landward, or on both sides of the berm to form one continuous, shore-parallel vegetated sand mound.

The top of the berm should be at least three feet above the high-water mark, or 2 ½ feet above the neighboring topography, whichever is higher. The seaward slope of the berm should be less steep than 3 to 1 width/height ratio. Do not use sand from the beach, as this merely transfers, and does not expand, the sand reservoir available for storm events. The berm forms a reservoir of sand that can be eroded or sacrificed during a storm to replenish and augment the sand fronting the beach. This helps dissipate wave energy rather than reflect it into the nearshore and/or alongshore areas.

The height, length, and width of the berm determines the level of protection that it can provide. To maintain an effective barrier, sand may need to be added, particularly after big storms, to keep the berm's dimensions consistent with its original intent. A sandy berm won't necessarily stop wave over-topping, but it can reduce the force, depth, and frequency of inundation events into rear yards and buildings.

Placed sand should be covered with an additional coir blanket and planted with native vegetation. The plants are needed to retain the placed sand and although the plant's roots are shallow and easily trampled, they will spread across the sand to hold it in place. Native, salt-tolerant, erosion-control vegetation with extensive spreading rhizomatic root systems are highly recommended and will help hold the sand in place.



Photo: Vegetated sand berm restoration using native plants.

Ongoing monitoring of the berm is necessary so plants can be replaced if they die or are removed by waves. Berms with vegetation, as opposed to without, will perform more effectively and offer greater energy dissipation, resistance to erosion, and stability. The restored sand berm is not likely to withstand a major storm or hurricane, but it would enhance the resiliency of the coastline, building its capacity to absorb shock and high water and wave events such as "King Tides".

Drip irrigation is necessary at the time of planting for the plants to survive, but once established they adapt to the harsh, hot, dry, salty environment of the coastline. Drip irrigation can be provided by connecting portable jugs to small plastic tubes that are placed along or slightly beneath the surface of the sand. The water level in the jugs should be monitored on a regular basis and refilled as needed until the plants are firmly established. The drip lines can be left in place in case the plants need watering during a drought or dry season.

The sand source or borrow site must be identified and evaluated beforehand to ensure it does not contain cultural artifacts or sensitive resources such as *iwi kupuna*. Before its beneficial reuse is implemented, the source of the sand must be evaluated to be culturally appropriate. Sand that plugs drainages and lined drainage swales can often serve this purpose, since it should be periodically removed to allow the swales to drain properly to the ocean. Sand that has accumulated in front of man-made impediments to its lateral movement along the shoreline may also be less likely to harbor cultural resources given the sand's unnatural accumulation. For instance, a substantial amount of sand and sediment has accumulated updrift of the Kaloko'eli Fishpond wall. The three parcels between the Hotel Moloka'i and the Kaloko'eli Fishpond accreted from 70 feet to 180 feet over a 33-year period according to County plat map (5-4-002), and they have likely gained more material since then.

A sieve analysis is recommended to ensure the sand used for restoration is of the right grain size, coarseness, density, color, and is free of fines and silt so it is compatible with the surrounding environment. It is important to use the right coarseness of sand, so the sand grains stick to the beach and are not easily washed away by normal currents and wind. The sand must be cleaned and lack fine silt or red/brown clay that could pollute nearshore waters and choke the coral reef. The color of the sand should also be compatible with the area in which the sand berm is being constructed. It is important to use sand that is comparable to the native sand in the vicinity of berm restoration, both from an ecological and aesthetic perspective, in case the berm breaks, and its contents are released. In addition to reducing risk, sand berms form habitat for marine life, wildlife, and birds like wedge-tailed shearwaters that help fishermen locate schools of fish. Sand berms are important culturally, ecologically, and aesthetically.

A coordinated community effort involving adjoining oceanfront property owners and lessees in the Kamiloloa subdivision could help rebuild the assimilative capacity of the coastline to buffer coastal hazards along this portion of the shoreline.



Photo: What one meter of sea level rise could look like in Moloka'i.

4 The Kaloko'eli Fishpond has been invaded by non-native mangrove on its upwind side. Mangrove breaks the wind, slows the current, and can turn clear coastal waters into anoxic, murky swamp land. Generally, such areas are favored for fisheries and wading seabirds, but the introduction of non-native mangrove into the nearshore marine environment over a century ago has greatly reduced nearshore productivity and the vitality of the shoreline environment.

Supporting community-based and non-profit efforts to remove invasive mangrove and restore fishpond and benthic habitat would benefit the ecosystem and could potentially reduce the impact of sea level rise on the Kamiloloa shoreline. Any use of sand to mitigate shoreline erosion must be done with the utmost sensitivity and with the participation of cultural practitioners due to the possible presence of iwi kupuna (ancestral remains).

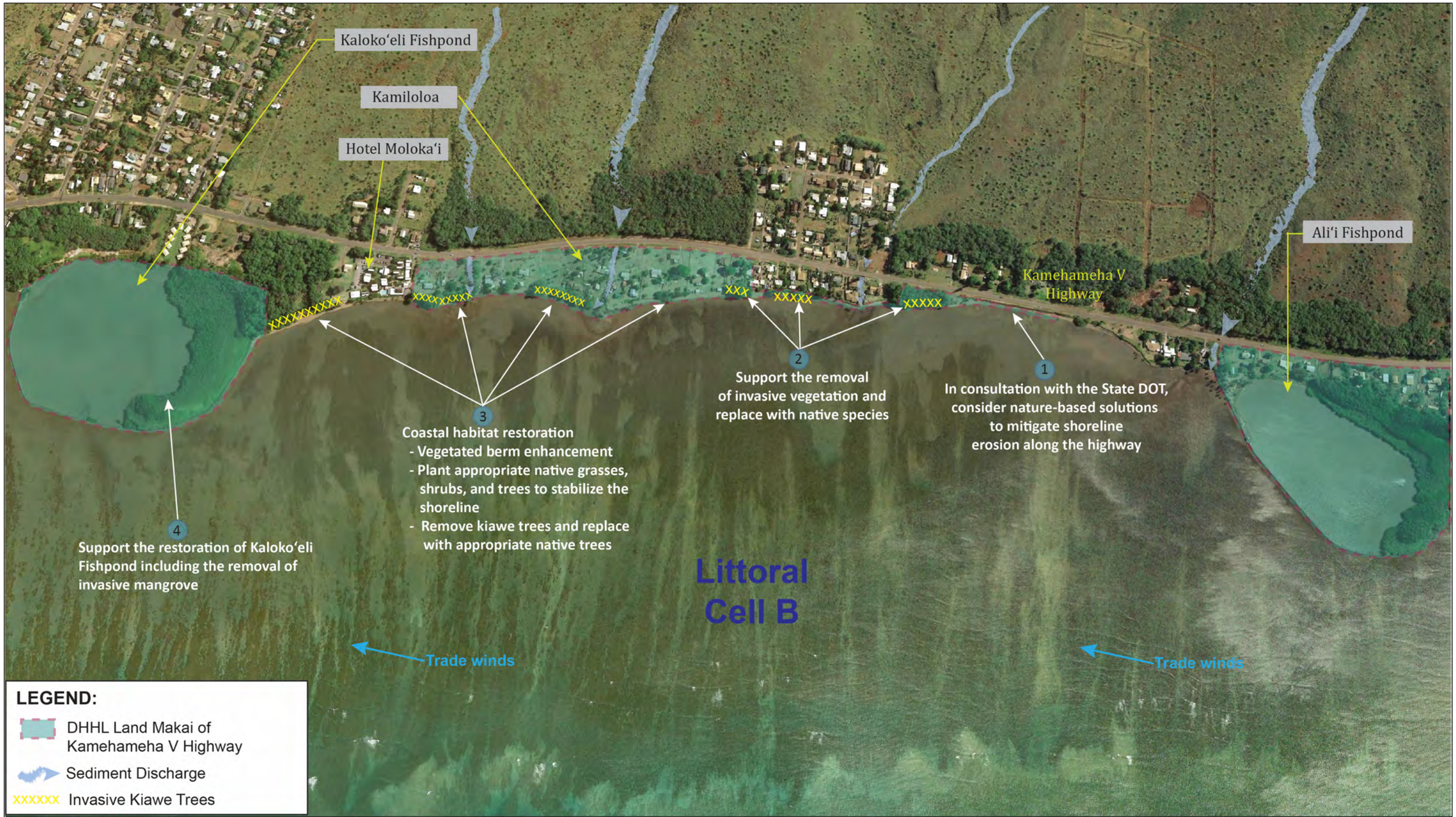


Figure 6.4
LITTORAL CELL B:
Conceptual Recommendations
South Moloka'i Shoreline Erosion Management Plan

6.5 Littoral Cell C (Kaloko'eli Fishpond to Kaunakakai Wharf)

The natural movement of sediment within and through Littoral Cell C has been drastically altered by human intervention. Littoral Cell C extends from the Kaloko'eli Fishpond to the Kaunakakai Wharf (Figure 6.5). The coastline fronting the Kapa'akea homestead subdivision is the most armored and unnatural of the DHHL properties within the project area. Nine recommendations are identified on Figure 6.5 and are discussed below.

1 Support the removal of invasive vegetation and replace with native species. Like other cells, DHHL should strive to remove invasive vegetation and incentivize its replacement with native species adapted for the shoreline environment.

2 Restore coastal habitat. Some segments of the shoreline in Cell C are impassible due to kiawe, invasive shrubbery, and man-made armoring. In contrast, the shoreline fronting the Moloka'i Shores condominiums exhibits a mixture of native species that are adapted to the coastal environment. They have restored the ecological function and resiliency of the shore area to prevent high waves and coastal erosion events from cutting steep embankments into the shoreline. By planting drought tolerant native grasses and shrubs such as 'aki'aki grass, pōhuehue, and naupaka, and creating a reservoir of erodible sand, they have reduced the condominium's exposure to waves, king tides, and flood inundation while maintaining an accessible and attractive shoreline. The removal of invasive plants and replacement with native species is a cost-effective means to restore the function of the coastline and improve the nearshore marine habitat and water quality.

3 6 Potential sill and fishpond restoration pilot site. The DHHL should explore increasing the assimilative capacity of the environment along the shore using fishpond restoration and a rock sill and sedge as a pilot study at a few specific locations. To exemplify, adjacent to the eastern side of the Kapa'akea subdivision is a submerged remnant fishpond wall (#3, Figure 6.5) that behaves as a sill that is similar to what was discussed in Chapter 5. A crescent-shaped beach has formed just mauka of the ancient fishpond wall because of sediment and sand accumulation.

It appears the submerged wall breaks wave energy that would otherwise erode the shoreline and cause an embankment to form, as has occurred in other portions of the littoral cell. The vegetation inland demarks the tidal inundation line. The naturally stable sandy shore that has formed at this location is wide enough for unconstrained lateral transit. This contrasts with the armored shoreline to the west in the Kapa'akea subdivision that has a narrow, steep interface between the land and the water hindering alongshore and mauka-to-makai access.

Shoreline managers should strive to restore the fishpond wall to emulate a sill formation at this and other shoreline locations within DHHL jurisdiction. This form of remediation could help reduce the amount of shoreline erosion, and it may counteract the loss of shoreline access due to impairment of natural sediment transport. While a nearshore sill does not usually prevent erosion, it can help reduce the rate and severity of erosion and sediment loss. A sill can also contribute to the formation of a gentler grade between the ocean and a property's rear yard on the coastal plain. A sill with native sedges immediately inland can absorb a considerable amount of wave energy and surge, up to 50% in 50 feet, but it may succumb to breaking waves and scour during a large storm event. Nonetheless, post storm clean-up is usually considerably easier than repairs to massive shoreline armoring.



Photo: *A remnant fishpond wall east of Kapa'akea acts as a sill to break wave energy thereby facilitating a beach corridor to form.*

A sill comprised of small hand-carried rocks and boulders has also been created at the western end of the Kapa'akea homestead subdivision (#6, Figure 6.5). The sill is not backed by vegetation, such as sedge, that could absorb and assimilate wave energy. However, the low-rise nature of the rock sill has probably contributed to the formation of a gentle grade and sandy backshore. Other candidate locations for sill and sedge could include the shore fronting Kamehameha V Highway in Cell B where the highway is threatened. In Cell C, the shoreline fronting developed DHHL properties west of Moloka'i Shores condominium could test this approach if it was associated with removal of invasive kiawe trees. Some oceanfront locations within the Kapa'akea subdivision may find this approach more suitable and palatable than using foreign debris such as tires and rubble to slow coastal change.

The sill at the western end of Kapa'akea contrasts with neighbors to the east who have taller, vertical armoring that may hold the line against erosion and prevent retreat of the shoreline, but at a loss of the beach corridor between the yard and ocean and the attendant loss of direct access to the ocean and nearshore marine environment.



Photo: *A low rocky mound at the western end of Kapa'akea forms a sill that breaks waves and captures sediment which helps to build a sandy shoreline.*

4 7 Restore wetland function. Kapa'akea has wetlands on either side of the subdivision that should be fully restored. Functional wetlands can store substantial amounts of storm water runoff and can prevent flooding.

Wetlands are an excellent sink to capture and stabilize silt and sediment that runs off barren hillsides and into the ocean where it harms marine life, smothers corals, and degrades the nearshore environment. DHHL should collaborate with partners and non-profits to maximize each wetland's assimilative capacity by restoring their ecological function. Drainages and swales should be cleared and maintained. Upland grazing, especially by ungulates, should be managed. Hydrologic connections to the wetlands within the ahupua'a should be maintained, improved, and restored where feasible.

5 Use best management practices (BMP's) for shoreline hardening; dry-stack walls; and restore drainageways. Oceanfront residents in Kapa'akea should incorporate BMP's when responding to shoreline change. A considerable amount of armoring has already been placed along this portion of the South Moloka'i coastline (Figure 6.5). Informal rubble mounds and foreign materials such as tires, wooden pallets, plastic jugs, barrels, concrete curbs, asphalt slabs, carpet, motor engines, and auto parts should be removed. If replacement is necessary, only native lava or volcanic rock or *pōhaku* should be used. The following types of foreign material can be dangerous to human health and the natural environment:

1. Pallets rot and leave rusty nails that injure feet;
2. Plastic jugs and tires hold water where mosquitos breed;
3. Asphalt and engines have oils that pollute the ocean; and
4. plastics decay and make fish and birds sick when eaten.

Foreign materials and debris leach harmful chemicals into the water and sediment that can be toxic to marine life, corals, crabs, limu, and fish. Over time these toxins can bioaccumulate in edible marine species to the detriment of human health if ingested. Rubble and debris are not as effective as volcanic rock, *pōhaku*, and coarse sand grains at absorbing and dissipating wave energy, king tides, and storm surge.

Along the shoreline, it is imperative to have weep holes or a means for ground water to seep through a wall when a wall retains an embankment. If a wall is constructed along the shoreline where one side is exposed to the ocean, but the other side is covered by the rear yard, ground water will be pulled under the wall's footing causing the wall's base to erode and the wall to collapse. Without a means for water to seep out of the wall, hydrostatic pressure will build up behind the wall and push the stones or concrete blocks seaward which may topple the wall during a storm. Coarse, clean, well-drained sand and aggregate behind a wall allows ground water to seep through the wall and not build up pressure mauka of it. Smaller, less angular stones and *ʻiliʻili* (pebbles) can be used as fill mauka of a retaining wall.

Before constructing either a retaining wall, or seawall, along the shoreline ensure that all required governmental permits have been obtained to ensure the wall will be safe and effective. Furthermore, inspect the nearshore benthic environment for freshwater seeps and springs. If bivalves, shells, or marine life that thrives on brackish water are plentiful, it could indicate that freshwater springs or upwellings are prevalent. A dry stack wall may not be suitable for such a location because of potential groundwater flows and the potential for hydrostatic pressure behind the wall. Speak with *kūpuna* who know the area to determine if the location was good for gleaning or gathering shellfish in the past, or if it has chilly spots in nearshore waters, or was a favored place for swimming. Traditional ecological knowledge like this can help inform the proper site-specific remedy or response to shoreline change.

Drainages, lined culverts, and swales should be cleared and maintained and their outlets to the ocean should not be covered or blocked by armoring or debris. Impediments to the flow of water can cause backups, ponding and/or flooding of adjacent property and will cause the drainageways to fail.

Natural access to ocean resources is preferable and can be lost or hindered when shoreline armoring is relied upon to protect land. A sandy beach provides a gradual slope to walk down or to move and stage kayaks, outrigger canoes, and small fishing boats, whereas a rock-strewn shoreline creates a vertical impediment to gaining easy access to marine waters and nearshore life.



Photo: *This wall's effectiveness could be improved with more weep holes distributed behind the wall and more porous aggregate as fill.*

In places where building relocation, reconfiguration, retirement, or realignment cannot be implemented, a dry stack wall or boulder mound should be considered instead of using debris or rubble. Shoreline armoring that incorporates the best practices mentioned will help improve the nearshore environment, keep the 'ice box' clean and free of pollutants, and improve the effectiveness of shore protection efforts.

Traditional designs for fishpond perimeter walls (*loko kuapā*) function like a seawall (please see "Dry Stack Walls", Chapter 5, Subsection 5.13.8). They have some porosity so that water can flow into and seep through the wall, thereby helping to absorb some of the wave energy while also alleviating hydrostatic pressure. To achieve this, the wall's face must be properly oriented to the prevailing wave pattern. Ideally, fringing reefs are offshore of the wall, and can break up the incoming waves.

The wall should be located just before the waves would reform and break a second time, thereby depriving the wave of its power before it can crest again. The wall should stand at least one foot higher than the highest tide of the year.

Since no mortar or cement is involved, the stones used must be carefully selected and placed in an interlocking fashion (*hoʻo niho*). The base rocks or toe of the wall should comprise the largest and heaviest rocks and rest on immobile substrate. The toe rock must be below the scour depth of the waves to prevent it from moving, tilting, or its resting position from being compromised. The seaward face of the rocks should be greater than its inland facing portion of the wall and the face of the wall should slope upward rather than be vertical to reduce wave energy. A second interwall can be made of stones placed to interlock with the face stones. This configuration of 'male' stones interlocking with 'female' stones in crisscrossed layers starting at the bottom and rising upward helps to create a strong, durable wall, whether it be a freestanding fishpond perimeter, or retaining an embankment or rear yard.



Photo: *Without armoring, land is lost but beach and access are preserved.*

Coral "koʻa" is made of calcium carbonate (i.e., limestone) and can fill in gaps and voids between the outer and inner wall. Coral is preferred becuase it grips the stones better, which prevents the stones from sliding and shifting. Coral is also lighter than black or blue volcanic rock, but tends to hold stones together to help seal gaps and voids.

A dry stack wall tends to collapse inward upon itself thus becoming tighter and tighter with age thereby increasing its strength over time. Consult with a Hawaiian practitioner who is a fishpond wall builder or contact a fishpond restoration organization for input and guidance.

8 Coastal habitat restoration between the Koheo Wetland and the Kaunakakai Wharf would rejuvenate natural processes making the shoreline more resilient to changing shoreline conditions. Planting climate adapted, drought tolerant native grasses, shrubs, and trees such as ʻakiʻaki grass, pōhuehue, naupaka, milo, and beach heliotrope would improve soil retention along the edge of the shoreline and reduce the loss of soil and sand from waves, king tides, and erosion. Removing kiawe trees would improve native plant growing conditions, reduce the formation of embankments along the shore, and eliminate the supply of sharp thorns that hinder access. DHHL should partner with its neighbors to help coordinate and incentivize restoration of habitat, and lateral access given its importance to the culture and lifestyle of Molokai's residents.

9 Beneficial reuse of sand. Sand has accumulated updrift of the Kaunakakai Wharf. These areas may harbor good quality sand that is less likely to contain culturally significant resources given its unnatural accumulation. The shoreline area east of Malama Cultural Park and along the eastern side of the wharf could provide sand for restoring the shoreline and for beneficial reuse. DHHL should work with the HDOT Harbors Division and the DLNR DOBOR to explore the beneficial reuse of the accumulated sand. A sieve analysis is recommended to ensure the sand used is clean and not silty and is compatible with the environment where it would be placed. It is important to use sand that is comparable to the sand in the vicinity of the restoration area for ecological, marine life, water quality, cultural and aesthetic reasons.

Stub groins. An additional option that warrants further examination for the area fronting the Kapa'akea Subdivision is the strategic placement stub groins to capture and retain sand and sediment.

Prior to installing permanent rock groins, it would be prudent to test temporary sand groins to evaluate their utility in addressing shoreline change. Placing short (25-feet or less) stub groins updrift of a few of the drainage outlets on the western side of the Kapa'akea subdivision may be a practical means of capturing sediment and rebuilding the coastline. Since upland sediment discharge usually travels in an east-to-west direction it would be more effective to have each groin located on the eastern side of the outlet for open drainage swales and lined culverts. These locations would also tend to not block the discharge of storm water runoff, which is needed to prevent inland flooding. Several suitable locations could be selected to test the effect of placing short stub groins along the shore temporarily. If the results were favorable, and there were not negative down drift effects, then permanent groins could be evaluated. However, permitting permanent structures may be challenging and could trigger a public decision-making process that can take a considerable amount of time, effort, and study.

This option can be tested by using geotextile tubes, or bags, arranged perpendicular to the coastline and filled with sand. Sand is mixed with water in a containment device and then pumped as a slurry into the geotextile tube or bag. The sand remains in the tube, or bag, but the water is squeezed out through the geotextile fabric. This is a fast and cost-effective way of building groins that prevent along shore loss of sediment.

The geotextile sand groins are temporary in nature and can be easily removed by cutting them open and releasing their sand contents. Precautions must be taken to protect water quality during pumping and depositing of the slurry. The tubes work best when resting on stable, non-abrasive substrate. For example, if the tubes are placed on sharp stones, or jagged reef, they can be torn open if large waves push the fabric across the substrate or if rocks scour the fabric during heavy wave action. Turbidity in nearshore waters can be controlled during bag filing by using booms and silt curtains, and only doing work during calm sea conditions. For Molokai's south shore, the work may have to occur in the morning when the prevailing winds are usually light.

If the geotextile stub groins prove to be a suitable shoreline erosion management option, they can be replaced with permanent rock groins as illustrated in the photo below.



Photo: *Aerial imagery of rock stub groins along Maui's north shore.*

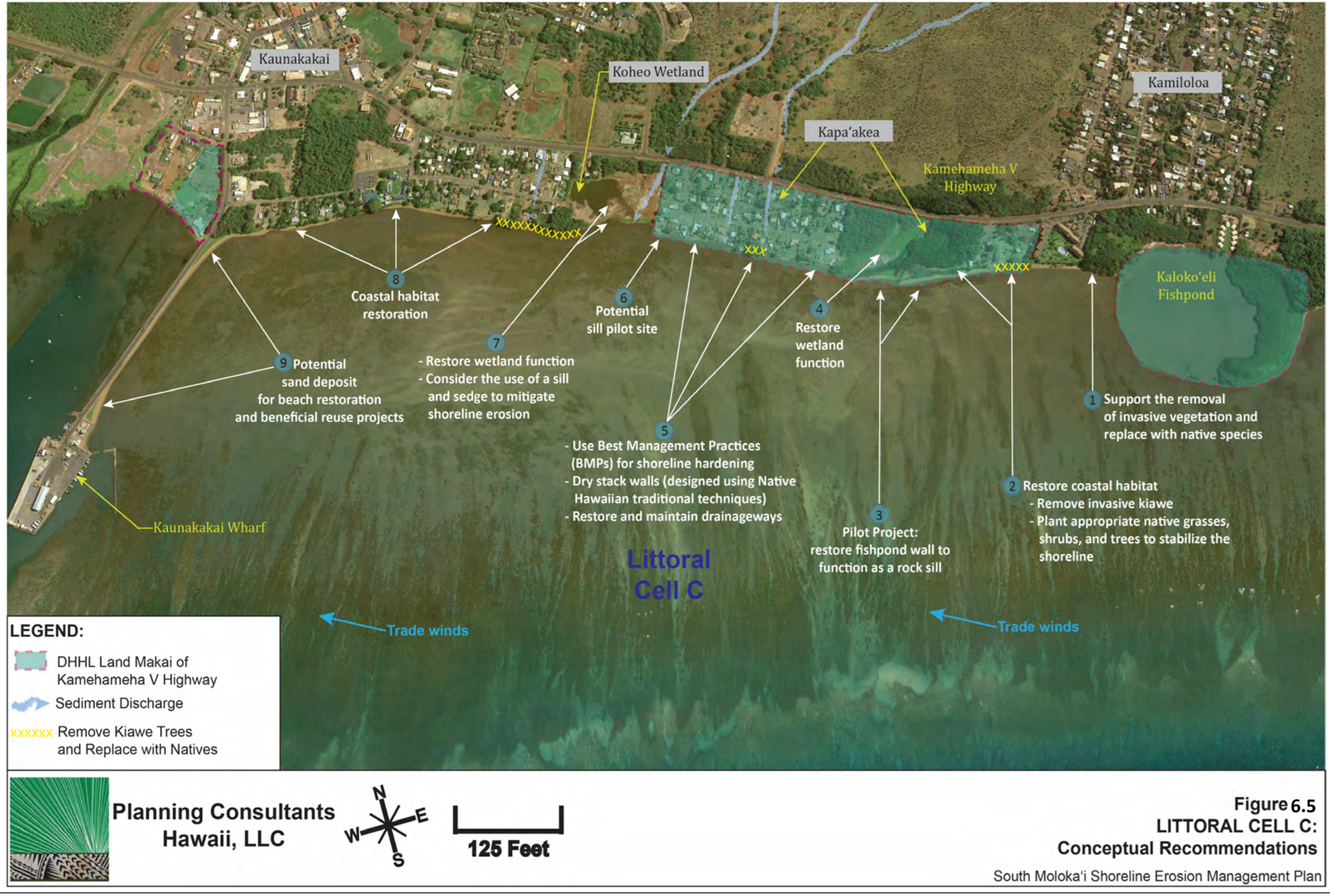


Figure 6.5
LITTORAL CELL C:
Conceptual Recommendations
South Moloka'i Shoreline Erosion Management Plan

6.6 Littoral Cell D (Kaunakakai Wharf to Kahanu Avenue)

Littoral Cell D extends from the Kaunakakai Wharf to just east of the Kalaniana‘ole Colony (Figure 6.6). The natural movement of sediment within and through littoral Cell D has been drastically altered by the introduction of mangrove and the construction of the Kaunakakai Wharf. Cell D’s hydrology, water quality, and aquatic ecosystem has also been influenced by flood control efforts such as stream channelization and centralized wastewater treatment that discharges in the cell.

In the geologic past, currents flowed over the reef and sediment was carried offshore by the deep channel carved into the ocean floor by the Kaunakakai Stream. Nowadays, most of the littoral cell is accreting, primarily through mangrove infestation that slows nearshore currents. The mangrove slows the water as it reaches the shallows where it becomes still and converts the once coarse sandy shoreline to inaccessible swamp land with minimal utility. In contrast, Kiowea Park and the shoreline fronting Kalaniana‘ole Hall in the center of the littoral cell are eroding and exhibiting shoreline retreat. Figure 6.6 includes five recommendations that are discussed below.

1 Beneficial reuse of sand. A considerable amount of sand has accumulated on the eastern side of the Kaunakakai Wharf. This man-made structure impedes lateral movement of sediment along the shoreline between littoral Cells C and D causing it to accumulate on the Wharf’s updrift side. A substantial amount of sand and sediment has accumulated updrift and across the wharf from the canoe hale at Malama Cultural Park. In addition, sand and sediment has been deposited by altered current patterns along the eastern side of the wharf where it meets the revetment that protects the small boat harbor. Both areas could provide sand for restoring the shoreline, once determined to be free of iwi kūpuna.

DHHL should work in collaboration with the HDOT Harbors Division and the DLNR DOBOR to explore the beneficial reuse of the accumulated sand. A sieve analysis is recommended to ensure the sand used for restoration is of the right grain size, coarseness, density, color, and is free of fines and silt so it is compatible with the environment where it would be placed. It is important to use the right coarseness of sand, so the sand grains stick to the beach and are not easily washed away by normal currents and wind. The sand must lack fine silt or clay that could cause turbidity and pollute marine waters. The color of the sand should also be compatible with the area in which the sand is being used or placed. It is important to use sand that is comparable to the native sand in the vicinity of the restoration, both from an ecological and aesthetic perspective. However, the sand that has accumulated in this area was originally from updrift and east of the wharf, implying that it is from a native source, is not likely to contain iwi kupuna, and is therefore appropriate for restoration activities.

2 Coastal habitat restoration (Malama Cultural Park). The lands of the Malama Cultural Park are steeped in Hawaiian history as it was the home of Malama, the royal residence of King Kamehameha V. Today, the shoreline area is a hub for recreational activity including canoe hale, outrigger canoe paddling, storage to support water sports, organized contests, and sporting events. Wetlands mauka of the shore and adjacent to access roads in the park should be maintained and improved through careful, well-planned restoration activities. Invasive mangrove is creeping into the shoreline area along the Park’s western extent. Given its invasive nature, the water sports community should actively remove and replace the mangrove with native vegetation such as bulrush or other climate-adapted native plants. If restoration activities became a regular part of sports club activities and team curriculum, shoreline maintenance and care could dramatically change and improve the Park’s coastal environment, near shore water quality, and aesthetic appeal.

Malama Cultural Park could benefit from an enhanced vegetated sand berm along the edge of the shoreline. However, pedestrian and recreational use would have to be directed to marked pathways so that fragile, shallow dune plants and their roots would not die from being trampled by foot traffic or crushed by canoes. The remnant carpet used to control erosion of the short clay embankment at the top of the shore should also be replaced with more environmentally benign materials, such as sand from the opposite side of the wharf. Carpet tends to leach chemicals into nearshore waters that fish, crabs, limu, and other aquatic life can bioaccumulate, and that people may unknowingly harvest and eat. Please see Subsection 6.4 (Littoral Cell B), Recommendation 3, for a more thorough discussion of the use of coir mat enhanced sand berms to support habitat restoration and coastal resilience.

3 5 Remove and replace the mangrove with appropriate native vegetation. Long-term residents of Kalama‘ula provide firsthand reports that invasive mangrove has spread so extensively seaward that former open coastal foot paths to Malama Cultural Park to the east are now impassible. This segment of shoreline is replete with thickets of mangrove-induced accretion.



Photo: *Invasive mangrove between Kalama‘ula and Kaunakakai Wharf.*

The mangrove thickets on both the eastern and western side of the Kalama‘ula subdivision have inhibited the use of the land and hindered access to the ocean and along the shoreline. Excessive mangrove infestation can cause anoxic conditions in the still water leading to fish kills at low tide. To counter this, a community-based effort to remove and replace mangrove with appropriate native vegetation is recommended. Such efforts will help residents and DHHL reclaim the use and utility of land lost to this invasive plant.

4 Coastal habitat restoration (Kapuāiwa Coconut Grove to Kalaniana‘ole Hall). The retreating coastline between the Kapuāiwa Coconut Grove and Kalaniana‘ole Hall may benefit from a vegetated sand berm and native habitat restoration. Several coconut trees have succumbed to erosion along this portion of the coastline. The historic Hall is not jeopardized by erosion but could be inundated by rising waters and flooding from wave overtopping of the embankment along the shore.

To reduce this risk, a maintained vegetated sand berm could help raise the height of the embankment to reduce the risk of flood damage to the building. Other south shore areas use vegetated berms to reduce a building’s exposure to moderately sized wave over wash and flooding. Please see Subsection 6.4 (Littoral Cell B), Recommendation 3, for a more thorough discussion of the use of coir mat enhanced sand berms to support habitat restoration and coastal resilience.



Photo: *A vegetated sand berm protects a house from waves and flooding.*

As part of a comprehensive strategy of adaptive realignment, a new pavilion and restroom were built substantially inland of the existing shore-fronting pavilion at Kiowea Park. As portions of the original pavilion deteriorate, they should be removed before they are threatened by inundation and/or become debris along the shore.

For example, the concrete slab that has slipped seaward should be removed before it breaks into smaller, sharper pieces that become tripping hazards entrained in the sand. The concrete sink and its drain to the ocean fronting the pavilion should be removed and not replaced. Electrical wiring, outlets, and fuse boxes should be water-proofed or removed to prevent accidental electrocution should they become inundated with seawater.

The concrete block restrooms adjacent to the pavilion and its wastewater system should be decommissioned and retired over time. With predicted sea level rise, these built assets will require more maintenance and repair costs, while safer replacements are available at the new pavilion.



Photos (above/below): *Damaged components of the pavilion should be removed and retired*.



While a vegetated sand berm could help prevent inundation, foot traffic would have to be controlled so the roots of the berm's native plants are not crushed or trampled. When the roots die, the plant dies, and the sand in the berm can easily be washed or blown away. Fortunately, the original pavilion is designed to allow water or waves to flow through the structure with minimal hindrance or harm.

These built assets should be decommissioned over time rather than continually repaired as the need and expense will rise with sea levels.

To the west and nearly adjacent to the new pavilion is an isolated spring or pocket wetland. The spring is located substantially inland but makai of the highway. The spring could serve as an indicator of ground water and hydrologic patterns in the vicinity of Kapuāiwa Coconut Grove. Many of the coconut trees in this area exhibit poor health and are dying.

As DHHL has offices across the highway, it should consider monitoring the salinity and water level of the spring and open springs within the grove to help determine the brackishness of the coconut grove's subsurface flows and the inland extent of tidal influence. A professional hydrologist in partnership with student interns could develop an educational opportunity for collecting data and testing the pond and springs characteristics.

Other (the boat launch). The boat launch at the end of Kapuāiwa Road next to Pond Place is frequently used to access nearshore waters and the reef west of the wharf. The safety and utility of the area could be enhanced with minor improvements that could indirectly reduce human-induced coastal erosion.

Down-shielded, seabird friendly, lighting could help deter illicit and unwelcome activity that occurs at night in the dark parking area. Such lighting could help drivers better align their trailers to the boat launch to avoid becoming stuck in soft sediment, impaling trees, crushing their roots, or driving into the embankment nearby.

An eroded concrete cap encases the end of a water line on the western side of the boat ramp. If the line breaks, valuable potable water would be lost, the embankment could erode, and emergency repairs may be required. As a remnant, the eroded cap could damage a boat, trailer, vehicle, or puncture a tire. The cap and water line should be removed and terminated within or adjacent to the paved roadbed serving the nearby residences. Terminating the water line at this inland location would make it accessible, but not create a driving or tripping hazard or risk damage, leakage, or breakage of the water line. It may also be prudent to relocate the electric line utility pole and its guide wires from the eastern side of the roadbed, where they represent a vehicle hazard when turning or backing, to the western side of the road where it would not impede vehicle and trailer turning movements.



Photo: *Plants can absorb and dissipate wave energy and create wildlife habitat.*



Photo: *Access to clean productive nearshore waters is important to Molokai's lifestyle.*

Kapuāiwa Coconut Grove

Kiowea Beach Park

Kalama'ula

Kalama'ula

Kamehameha V Highway

Kaunakakai

Malama Cultural Park

5 Remove and replace the mangrove with appropriate native vegetation

4 Coastal habitat restoration
- Vegetated berm enhancement
- Plant appropriate native grasses, shrubs, and trees to stabilize the shoreline
- Monitor the salinity of the pools and the brackishness of the coconut grove

3 Remove and replace the mangrove with appropriate native vegetation

Coastal habitat restoration 2
- Vegetated berm enhancement
- Plant appropriate native grasses, shrubs, and trees to stabilize the shoreline

1 Potential sand deposit for beach restoration and beneficial reuse projects

Trade winds

Littoral Cell D

Trade winds

Kaunakakai Wharf

LEGEND:

- SM-SEMP Project Area
- DHHL Land Makai of Kamehameha V Highway
- Sediment Discharge

Planning Consultants Hawaii, LLC

N E S W

135 Feet

Figure 6.6
LITTORAL CELL D:
Conceptual Recommendations
South Moloka'i Shoreline Erosion Management Plan

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APPENDICES

APPENDIX A: STAKEHOLDER OUTREACH

SOUTH MOLOKAʻI SHORELINE EROSION MANAGEMENT PLAN List of Stakeholders Interviewed		
Name	**Affiliation**	**Date**
Kenneth “Boom” Gaspar Doreen “Pinky” Gaspar Georgette “Jody” Kaneakua	Gaspars: Kapaʻakea shoreline lessee, Lot 5 Georgette: Successor, Kapaʻakea Lot 16	01/30/2019
Uncle Herbert Hoe	Ka Honua Momona Intnl. third house at 3MM, Kamiloloa Molokaʻi Applicant	01/30/2019
Noelani Lee Yamashita	Ka Honua Momona Intnl. licensing Aliʻi fishpond	01/30/2019
Gayla Mowat	Generational Lessee (East Kapaʻakea)	01/30/2019
Noe Rawlins	Kapaʻakea Lessee, Lot 11	02/01/2019
Aunty Leilani Wallace	Kapaʻakea/Kamiloloa-One Aliʻi Lessee Moved to Kapaʻakea in 1962	02/01/2019
Georgette “Jody” Kaneakua	Georgette: Successor, Kapaʻakea Lot 16	01/30/2019
Anthony Fukuoka	Maui County Building Inspector, Molokaʻi	02/01/2019
Gene Ross Davis	DHHL (Acting District Supervisor) Kalamaʻula lessee (multi-generational) former Molokaʻi Hawaiian Homes Commissioner	11/20/2019
Zachary Helm	Kalamaʻula lessee (first-generation) Current Molokaʻi Hawaiian Homes Commissioner	11/21/2019
Henry Paleka	Kalamaʻula shoreline lessee Rose’s husband (multi-generation)	11/21/2019
Penny Martin	Kalamaʻula shoreline lessee (multi-generational)	11/21/2019
Heli Silva Ducaroy	Kalamaʻula shoreline lessee (multi-generational)	11/22/2019
Aunty Kanani Negrillo	Kalamaʻula lessee (multi-generational) limu gatherer (Peʻelua ʻOhana)	02/10/2020
Liette Corpus	Peʻelua ʻOhana grandparents lived in Kapuāiwa Grove in caretaker’s house	02/10/2020

APPENDIX B: FIVE MOLOKAI LAND DIVISIONS

FIVE MOLOKAI LAND DIVISIONS

A Report for Planning Consultants, Hawai‘i LLC

Prepared and Submitted by

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22 January 2021

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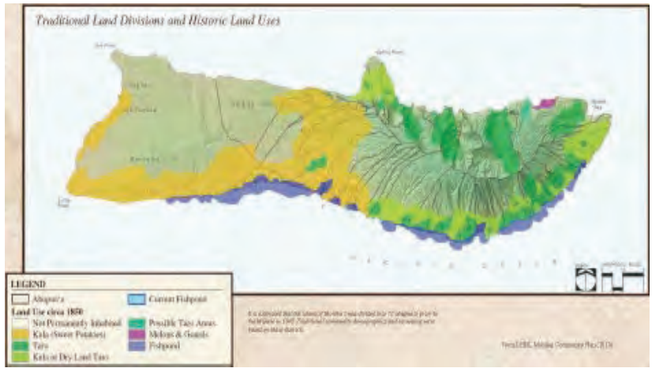
FIVE MOLOKAI LAND DIVISIONS



Map: DHHL Molokai Community Plan 2010

There are many ahupuaʻa incorporating watersheds or sub-basins within Molokai.[1] Of these, five have a direct influence on the DHHL properties within the SEMP study area including Kalamaʻula, Kaunakakai, Kapaʻakea, Kamiloloa, and Makakupaʻia. The relationship of these ahupuaʻa to the Kona District and the rest of the island is briefly explored through cultural lenses including ka inoa (name), nā wahi pana (celebrated places), nā ʻaumākua (ancestral deities), nā makani (winds), nā ua (rains), nā wai (waters), nā mele (songs), and nā moʻolelo (stories/histories) and is not intended to provide comprehensive insights. In addition, traditional ecological knowledge in the management and stewardship of the coastal resources of these specific ahupuaʻa in South Molokai is shared.

Molokai Nui a Hina

Origin accounts for the mokupuni of Molokai include Pakuʻi, a historian during the time of Kamehameha I, who reveals Molokai to be the child of the Goddess Hina and the Sky Father Wākea:

Loaa Hina he wahine moe na Wakea	Hina was found as a wife for Wakea
Hapai Hina ia Molokai, he moku	Hina conceived Molokai, an island;
O Molokai a Hina he keiki moku	Hina's Molokai is an island child.[2]

Historian Kahakoʻikamoana recounts a different parentage for Molokai:

Na Kuluwaiea o Haumea he kane,	Kuluwaiea of Haumea as the husband,
Na Hinanuialana he wahine	Of Hinanuiakalana as the wife
Loaa Molokai, ke akua, he kahuna,	Was born Molokai, a god, a priest,
He pualena no Nuumea.	The first morning light from Nuumea.[3]

A third account involves the forming of the Hawaiian islands through the deification of coral pieces by the priest Lauliala'amakua after coral was caught by the fisherman Kapuheʻeuanui.[4]

Traditional poetic names of the island include *Molokai ʻāina momona* (fat, fertile lands of Molokai), which refers to verdant lands that produce an abundance of food from loʻi kalo (taro patches), loko iʻa (fishponds), kai (near-shore) and moana (deep-sea) fishing grounds. Another name, *Molokai nō ka heke* (Molokai is greatest, foremost), refers to the celebrated athletes of the

Makahiki competitions held at Naʻiwa and Kainalu. One of the most famous is *Molokai pule oʻo* (Molokai of powerful prayer), a reference to the powerful kahuna trained at Puʻu Anoano and ʻIliʻiliʻopae Heiau, in particular the ones who practiced ʻanāʻanā (black magic, evil sorcery). The other well-known name is *Molokai nui a Hina* (Great Molokai, Child of Hina).[5]

Historically, Molokai was subdivided into subareas to enhance the stewardship of the island's resources. The initial land divisions were the Koʻolau (windward) and Kona (leeward) *moku,* or districts:

> Prior to 1859, the island was divided into two districts, called Koʻolau and Kona. The Koʻolau district was composed of the *ahupuaʻa* located on the northern side of the island: Halawa, Wailau, Pelekunu, Waikolu, Kalawao, Makanalua and Kalaupapa. The rest of the island was the Kona district. In 1859 the Kona and Koʻolau districts were dropped, and the island was made into just one district, called Molokai district. In 1909, the present division into Molokai district and Kalawao district was made.[6]

The poetic name Molokai Nui a Hina and its legendary origin establishes kuleana (duty, responsibility, privilege) to care for the island's resources:

> … the island of Molokaʻi, like a child, is small and fragile – unlike a large continent. The resources of an island are finite, and these finite resources need to be nurtured by the island's "family" if the people are to grow strong, healthy and prosper. Many of the families of Molokaʻi trace their roots on the island back to antiquity, making the island an integral part of their ancestral family. Molokaʻi's modern-day stewards have a special responsibility to care for the island as they would care for a member of their own family – a responsibility bequeathed to them by Hina, birth mother of this island.[7]

Kalamaʻula

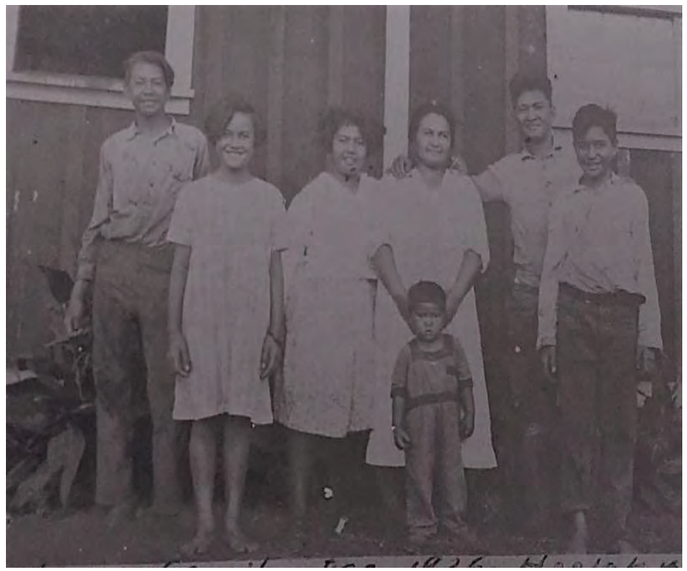


Aerial View of Kalamaʻula Hawaiian Homestead Area. Photo: Courtesy of Ted Kanemitsu.

Ka Inoa (The Name). Kalamaʻula translates to mean, "the red torch or red lama tree."[8] *Hawaii Place Names* references the Hawaiian Home Commission Act of 1920 and provides:

> Provisions were made for a commission to administer the lands and in 1925 Kalamaʻula became the first Hawaiian homestead subdivision in the islands. Among the first residents there were Marcelus and Emma Kala Dudoit. Fronting their home was a large stone that had a natural etching of a sun and five rays, ***and it was from this stone called Kalamaʻula that the area took its name***. Mrs. Dudoit wrote a song entitled "Kalamaʻula" in honor of her home.[9] (emphasis added)

Cultural Historian Harriet Ahiona Ayau Ne (pictured below, second from the left), was raised as a child in Kalamaʻula when her father Rev. Edward Haleaniani Ayau (second from the right) moved their family to lot 38, one of the original Hawaiian homestead leases at the Kalanianaʻole Settlement. As an adult she moved back to Kalamaʻula when she married Jacob Iopa Ne. She translated the name to mean, "the scarlet rays of the sun."[10]


ʻOhana of Edward Ayau and Olivia Townsend. Photo: Courtesy of Edward Halealoha Ayau.

Nā Wahi Pana (The Celebrated Places). Catherine Summers identifies the special places in Kalamaʻula including ponds, a fishpond, heiau, a pool, kahua maika (stone rolling fields), petroglyphs, a spring, and house sites. The area was also known for its food cultivation on land and the abundance of fish and other ocean foods gathered in the near shoreline area. The ponds and fishpond include:

- Kahokai or Kakokahi Pond… Kahokai, "mess up the work," was 20 acres in area in 1901 (Cobb, 102: 429) Monsarrat in1886 gave the name Kakokahi to the pond, and it appears this was on the Kualapuu map (U.S.G.S., 1922b) where it is shown as filled with mud. The pond is now filled.[11]
- ʻOhaipilo or ʻOhiʻapilo Pond… ʻOhaipilo, "smelly *ʻohai* tree," was 39 acres in area in 1901 (Cobb: 1902:429). On the Kualapuu map (U.S.G.S., 1922b) it is called ʻOhiʻapilo, and is shown as filled with mud. The pond is now filled. Stokes gave the name of the pond as ʻOhaipilo. When he saw it in 1909, two thirds of the 10-ft-wide wall was still intact…[12]
- ʻUmipaʻa Pond… Monsarrat reported ʻUmipaʻa as being a "dry fishpond mauka of Ohaipilo [Site 118]"…[13]

- Fishpond… Cobb listed a pond in Kalamaula with an area of 2 acres (1902:429). This is probably the pond that Stokes called Kamaloko; he reported the wall as being 5.5 ft high..[14]
- Kamaloko Pond… This pond was listed by Cobb as "nameless small pond, inland," and described as having an area of 0.9 acre in 1901 (1902:429). According to the account of a native informant, prior to the mid-1930's, there was practically no mangrove in the vicinity of the pond and the sea could be seen from the pond. Formerly there were all kinds of fish here. The was *awa, aholehole, 'ama'ama* and small crabs, the *'alamihi*… The water was deep and bubbled up from the earth…The *o'opu* of this place were large. My mother old me that, formerly, when the tide became low and the water in the pond lessened, the fish then, began to leap up and fall back. They leapt up and when coming down into the silt, the head would go down into the silt and remain fast. The fish would leap and become embedded in the silt. The fish was kapu as it belonged to the *konohiki*. That is the tale of this little pond. The name of this pond is Kamaloko…[15]



Moloka'i women on an excursion
Mō'ili'ili, 1924
Photographer: Ray J Baker
Bishop Museum

Photo: Ray J Baker, Bishop Museum.

The entire shoreline was called Hīlīa, "an off-shore area extending eastward from Pakanaka Pond through Kalama'ula, it is now covered with mud, but formerly the shores had sandy beaches. Fish were very numerous here especially small mullet which often came in great schools near the shore. At times they were so numerous that 'This little fish darkened all of the beaches".[16]

The 'ōlelo no'eau for this shoreline area is

Ka i'a kā wawae o Hīlīa
The fish of Hīlīa, kicked by the feet.[17]

Subsistence use of inland cultivation areas and marine resources into the 19th century is documented by historical information for Kalama'ula, including rental receipts from 1858 to 1861 for taro patches, coconut trees, a fishpond and a squid fishery.[18] The Ah Lee Pond was still in operation in the 1920's, and subsistence use of the nearshore fishery by homesteaders continues to this day.[19]

In addition, there was extensive cultivation of 'uala (sweet potato) in the kula (upland) areas:

> It is safe to assume that potatoes were grown all along this coastal plain fringed with fishponds from Waialua to Punakou. On the slopes of Kakalahale and Luahine hills, between Kaunakakai and Kalamaula, there were potato plantations.[20]
>
> …In these land divisions *(kalana)* of Kalama'ula and Pala'au in early days there were sweet potatoes on all the rocky *('a'a)* high lands and from these places came the sweet potato eaters who knew potato cultivation… These are some of the potatoes planted by our ancestors at Kalama'ula and Pala'au, the hualani, hokeo, kala, hekili, lahaina, kalaponi, poni, huamoa, hepu, and 'olapa… Among the sweet potatoes mentioned above there are two favorites of the sweet potato consumers of Kalama'ula

> and Pala'au, the kala and kalaponi. It is said that these taste best a day after they are cooked…[21]

The heiau (temples) in Kalama'ula include:

- Opae'ula Heiau… Located at the foot of the hills, this site is about 700 ft from the sea. From Kakalahale Δ it bears 61˚49' 20"; 16,820 ft. The heiau was destroyed in 1899 to build the pier at Kaunakakai. It its original condition, it was "…probably a combination of platform and enclosure in line…Indications are that its length was at least 115 feet and width 44 feet. The platform on the western half was 65 feet long"….[22]
- Pu'upapai Heiau… Located near the crest of the plateau, this heiau is about 1500 ft from the sea. From Kakalahale Δ it bears 51˚ 28'; 12,775 ft. Originally, it was probably three enclosures. It is said, "…to have been dedicated to Kane and Kanaloa, that it was a platform, for human sacrifice, and that the drums were not heard at night" (Stokes, n.d.a:1). In another account, Stokes wrote further about this heiau. Puupapai was a very important heiau of the sacrificial class. It was torn down about 15 years ago [1899] and the stones used to build a pier about 300 yards long, 20 feet wide and 19 feet high. The natives say that only the stones of this heiau were used, and that the subsequent failure of the company [American Sugar Co.] carrying out the operations was due to the sacrilege of tearing down the sacred structure…[23]
- Heiau… Cartwright… located a heiau on the northern bluff of a gulch, about 1.3 miles NE of Pu'u Luahine.[24]
- Ka'anaopea Heiau… This heiau was "Reported by natives but not seen"… Ka'anaopea was the name of "the big gulch on the *kula* of Kalae."[25]

The pool is named 'Olo'olo:

> This pool is located inland of the coconut grove. An article in a Hawaiian newspaper stated: In the days prior to annexation, this pool was well cared for and used for bathing by the natives who lived on the beach. It was famous as a favorite bathing pool of the chiefs down to Kamehameha V… In the year 1888 there was a heavy downpour of rain which made a flood lasting for days and the water from the pool covered the whole land of Kaunakakai. This great pool of half an acre was fed by five springs. When the water subsided the pool was filled with mud. As it rained each time, the pool was filled up some more until in 1898, ten years later, there wasn't a trace of it left. From that time to this, kiawe trees grew up erasing all traces of the pool (*Ka Nupepa Ku'oko'a, 1922b*)."
>
> When water was needed for the homesteaders at Kalama'ula, the oldtimers looked for and found 'Olo'olo; it was covered with 4 ft of silt. For a while, until the salt content became too high, the water from this spring was used by the homesteaders (see p.25).
>
> A legend told about 'Olo'olo is recounted in the same Hawaiian newspaper. It is said that since that long ago time when the gods communed with men, a beautiful woman was often seen beside the pool combing her tresses. Perhaps no one had ever conversed with her but she was often seen on a mound of earth just mauka of the pool. Her breasts hung down and that may have been why the pool was named 'Olo'olo, (hanging down) (*Ka Nupepa Ku'oko'a, 1922b*).[26]

The kahua maika include:

- Kahua Maika…This site is a flat area between Kauluwai and Mauna Hui (Mauna Hui is also known as Kawaeku). According to Cooke: "The trail going mauka from Kauluwai through Kaheka gulch to Mauna Hui, ascends a small gulch to a plateau. At the right of this flat, about a mile from Kaheka in a small gulch, is a hua maika course (bowling alley). Makai (towards the sea) of this hua maika there is a spring named Waiauni [Waianui?]" (1949:102).[27]
- Kahua Maika Near Puʻu Luahine…The course is located approximately 2000 ft due N of the bench mark on Puʻu Luahine, and just N of the road (in 1963). Northwood studied the area quite extensively in 1933 and wrote in detail of it. As the road reaches the top of a slight rise, the course can be seen as a shallow trench, 35 ft. wide, starting at the right side of the road and slightly diverging from it, in an E.S.E direction and quite straight. There are three large half-buried boulders at the beginning of the course. For 350 yards the course is well marked, with a very slight down grade, beyond the grade increases more rapidly, with only traces of a slight depression, curving slightly to left [N], for another 150 yards. It is built across a slight slope, with considerable excavation for the first 200 yards and less after that. As there is no perceptible pile of earth near the course it was probably carried out in baskets and scattered evenly in the neighborhood. For the first 200 yards traces of a shoulder on each side, 7 feet from the bottom, can be seen. This is so regular that it can hardly be due to erosion, it may have been a later excavation in order to reduce the grade slightly. The depth of the course below the surrounding country (3 feet at the bottom) may have been devised in order to escape the effect of the wind in such an open country, the cup-like sides would also tend to direct an ulu which had been thrown a little off the line back to the bottom of the trench. I found three broken ulus, none fitting, within a distance of 5 yds. from the course at 350 yds., and a whole one 5 yds. to the right of the course at 100 yards. A short distance away towards Puu Luahine can be seen two lines of raised earth, meeting at right angles, possibly a house site (Northwood, n.d.). This is believed to be the only remaining *kahua maika* in the islands.[28]

The petroglyphs are located at Waihi Gulch:

> Cooke found these petroglyphs in 1916: "…after the big Kona storm, Sophie and I walked on foot up the Waihi Gulch at Kalamaula, mauka of the forest fence. On the way up on the left side of the gulch, the high water had cleared away the foliage and uncovered a pali. We discovered four or five petroglyphs about 6 feet above this stream bed" (1949:101).[29]

A spring, whose name is unknown,

> … is located near the boundary of Kalamaʻula and Kaunakakai. The Hawaiian Homes Commission developed this spring for irrigation purposes. Cooke, who visited the spring, wrote the following about it, "…This spring originally flowed into the ocean, but when it was relocated it was covered over with six feet of silt. The spring bubbled up through an eight inch vent. On clearing the silt away, one could see opae (fresh water shrimp) in the spring. John Puaa, who located the spring for me, told me that sugar cane, bananas and

> taro were grown on its banks as it flowed towards the ocean. He related also a tale of women catching opae with nets in the mountains. One of the women left her net to dry while she went to gather plants. A fishnet washed down the valley and on her return the net was gone. This net found later in the spring at Kalamaula, which was at least six miles away from the mountains (Cooke: 1949:110).[30]

There are also house sites in the area:

> Mauka of Puʻu Luahine are the remains of house sites on the ridges and in the small valleys. On one of these house sites, the framework of a grass house was still standing in 1908. As Cooke described the area: "In this district several stone walls are still standing which enclosed fairly large paddocks. Charles Buchanan told me that oxen were kept within these stone walls near the dwelling of the owner, Aa, between his trips from forest to shore" (1949:123).[31]

Ka ʻAumakua (Ancestral Deity). Harriet Ne reports the ʻaumakua of this ahupuaʻa is kukunaokalā (rays of the sun) based on her recollection of the image on a banner used during the last traditional makahiki ceremony at Naʻiwa in 1918, in which she was in attendance.[32]

Nā Makani (The Winds). Two known wind names for Kalamaʻula are Alahou and ʻUkiukiu.[33]

Nā Ua (The Rains). No rain names were identified. Mikiʻala Pescaia, a cultural historian in her own right, aptly notes, "Our kūpuna knew all the kamaʻāina by name. But none of them chose rain as a kinolau and hung out in Kalamaʻula…the ua …visited once in a while… Wai preferred to travel and noho in Kalamaʻula in other forms – the springs…"[34]

Nā Wai (The Waters). Kalamaʻula is one of three watershed areas in the Pālāʻau region comprising 5,838 acres with no perennial streams.[35] Known water names include ʻOloʻolo (pool/spring), Waianui (spring) and Makehe Stream.[36]



Kapuāiwa Grove as of 2018. Photo: Courtesy of DHHL Molokai District Office by Mickey Pauʻole.

At Kiowea Park and Kapuāiwa Grove (pictured above and named for Lot Kapuāiwa, Kamehameha V, who is said to have ordered the planting of the coconut trees in the 1860s; his name means, 'mysterious taboo'), the following springs are identified by their contemporary use, while their traditional names are unknown:

- "Spring for menstruating women"

- “Spring for kanaka mahiai (Farmers)”
- “Community bath spring”
- “Drinking water spring”
- “Kitchen sink spring”.[37]

Nā Mele (The Songs and Chants)

Mele for this area includes *Kalamaʻula*, written and the music created by Emma Kala Dudoit. It was made famous by many singers including George Helm, himself a Kalamaʻula homesteader. This mele speaks of the original Hawaiian homestead of Marcelus and Emma Dudoit:

A he sure maoli no e a	Surely, it is so, the genuine
Me ke onaona, auwē he	Attractiveness and
Me ka nani, o Kalamaʻula	Splendor of Kalamaʻula
E kapaia nei ea	There in the bower
He uʻi mai hoi kau, auwē he	We arrive and behold the beauty and
Me ka nani, o Kalamaʻula	Splendor of Kalamaʻula
ʻĀina ua kaulana	This land is famous
I ka hoʻopulapula, auwē he	A homestead land
Me ka nani, o Kalamaʻula	The splendor of Kalamaʻula
E hoʻi kāua ea	Let us return
E noho i ka ʻāina, auwē he	And reside in
Me ka nani, o Kalamaʻula	The splendor of Kalamaʻula
Haʻina ka puana ea	Tell the refrain
Hoʻi mai kāua, auwē he	Let us return to the
Me ka nani, o Kalamaʻula	Splendor of Kalamaʻula.[38]

In addition, the mele *ʻUla Kalaʻeloa I Ka Lepo a Ka Makani* provides a glimpse into places on Molokai including the red dust that concentrates at Kalamaʻula:

ʻUla Kalaʻeloa i ka lepo a ka makani	Red is Kalaeloa with dust by the wind,
Kai hoʻonuʻanuʻa ʻia ʻāpua Kalamaʻula	The dust concentrates at Kalamaʻula as though it were a basket
ʻIke a kuʻu manaʻo iaʻu kula	At the sight of it I thought of my plain.
Hea mai Kaiolohia	Kaiolohia calls to me
ʻEu hoʻi māua i Kāʻana ē.	To return to Kāʻana.
Aloha iaʻu ke kula o Niniwai	In love am I with the plain of Niniwai,
Oʻu hoa i Kalaʻiakamanu ē	With my companions at Kalaʻiakamanu (haunt of birds)
Manu a hoa laukona i ke keʻe lau	Bird companions that shy among the leaves.
Auʻa ʻia e ka moe i na ke loha lā he ʻai lili kā,	Love that is dreamt of is held back by jealousy,
Aia ua ʻike au.	This is known.[39]

Nā Moʻolelo (The Stories, Histories). The famed historian Samuel Mānaiakalani Kamakau recounts historic events that took place at Kalamaʻula during the rise to power of Kamehameha I:

Oʻahu Chief Kapiʻiohoʻokalani was encamped at Kalamaʻula:

> While he was at Kihei, Alapaʻi heard that the ruling chief of Oahu was making war upon Molokai... Alapaʻi's sympathy was aroused, for these were his own brothers and children [relatives], and he made ready to go to their help on Molokai. He sailed from Maui and landed at Pukoʻo… The fighting was in progress at Kamaloʻo with Ka-pu-lei as the battlefield. There the forces of Hawaii, joined with those of Molokai, made a formidable array. The chief of Oahu, Ka-piʻi-oho-o-ka-lani, was encamped at Kalamaʻula…[40]

Kalola meets Kamehameha at Kalamaʻula and offers him Keōpūolani:

> While Kamehameha was at Wailuku with his followers he heard of Ka-lola’s being on Molokai with her daughters and granddaughter and he sent word by Kikane for her not to proceed to Oahu as he was coming to escort her to Hawaii. He sailed with a great company, among them Keʻe-au-moku, Keawe-a-heulu, Ka-meʻe-ia-moku, and Ka-manawa, the brothers of Ka-lola, and landed at Kaunakakai. They met Ka-lola at Kalamaʻula and, when Kamehameha saw how ill she was and of an incurable disease according to the kahuna's diagnosis, he asked, “Since you are so ill and perhaps about to die, will you permit me to take my royal daughter and my sisters to Hawaii to rule as chiefs?” (He referred to Ke-opu-o-lani and her mother and aunt, Ke-kuʻi-apo-iwa and Ka-lani-kau-io-kikilo). Ka-lola answered, “If I die, the girl and the sisters are yours.”[41]

Kamehameha’s war canoes cover the whole coast from Kawela to Kalamaʻula:

> In February, 1795, Kamehameha’s fleet of war canoes landed at Lahaina, covering the sands along the coast from Launiupoko to Mala. All that part of Lahaina given over to food patches and cane fields was at that time overrun by the men from Hawaii. At Molokai, again, the whole coast from Kawela to Kalamaʻula was covered by canoes.[42]

Kalola dies at Kalamaʻula and Keōpūolani is taken by Kamehameha to Hawaiʻi island:

> Ke-opu-o-lani was nine or ten years old when the great battle was fought at ʻIao in which Ka-lani-ku-pule and the Maui chiefs were routed by Kamehameha’s forces. The fugitives fled … until they were able to escape to Molokai, where they remained on account of the illness of Ka-lola [grandmother of Ke-opu-o-lani] instead of going on to join Ke-kuʻi-apo-iwa’s brother on Oahu. They were at Kalamaʻula when the chief's [Kamehameha’s] messenger came with the request that they remain on Molokai instead of sailing to Oahu. After the death of Ka-lola, Kamehameha took Ke-opu-o-lani to Hawaii…[43]

Kaʻiana stayed at Kalamaʻula, before leaving Kamehameha to join Kalanikūpule:

> …while Kamehameha and his chiefs were quartered at Kaunakakai on Molokai, in 1795, on their way to make war upon Ka-lani-ku-pule, Ka-lani-moku one night approached Kamehameha’s sleeping house and found Ka-ʻahu-manu still awake … “It is because I was afraid and could not sleep, so I came to see you.” Ka-ʻahu-manu inquired the reason, he told her of Kaʻiana’s visit on his return from Kalamaʻula and of his fear lest the chiefs think he had betrayed the secret council…”[44]

In addition, this ʻōlelo noʻeau (proverb) references Kalamaʻula in the provocative game of kilu,

> Unu mai a hoʻonuʻanuʻa ke kilu o Kalamaʻula, hoʻoleʻaleʻa i ke kaha o Kaunalewa.
> Bring all the kilu for amusement at Kalamaʻula to make merry on the field of Kaunalewa.

To come together for a gay time and bring whatever you have to add to the fun. There is a play on lewa, which refers to the swinging of the hips in hula.[45]

A kilu (quoit) is used in a game where the player chanted as he tossed the kilu towards an object placed in front of one of the opposite sex and if he hit the goal he claimed a kiss…[46]

Traditional Ecological Knowledge. With regard to the management and stewardship of coastal resources in Kalamaʻula, homesteaders were interviewed and shared their ʻike (knowledge) and manaʻo (thoughts) as follows.

Penny Martin, Kalamaʻula Shoreline Lessee (Multi-Generational):

How the shoreline has changed over the years: Her mother could walk from this lot to the wharf [unimpeded]. All mangrove now. Native mullet – need freshwater seeps. Used to be way more fresh water. She has come to understand that kiawe trees and mangrove both use up lots of fresh water. She thinks there are less ʻōpae (shrimp) because there is less fresh water. She thinks there are less ʻāholehole (Hawaiian flagtail) for the same reason. She recommends removing the mangrove (Rhizophora mangle, a shrub/small tree that grows in coastal saline or brackish water) and kiawe (Prosopsis pallida) to counteract less fresh water reaching the shoreline. Cattle up mauka – deer – eating the vegetation. [Soil is] running off. She said we must consider how to control erosion before removing the mangrove, which was planted to control erosion. Mangrove helps control silt run-off but it takes/uses so much fresh water. She said the key to erosion control is managing mauka rain runoff and therefore proper management of the watershed… Momona, where I grew up. Farmers of land, sea or both. Live off of your ahupuaʻa. Shoreline is who we are. South Shore Molokai is momona (fertile). What it would be like without mangrove? Need to revegetate with shoreline natives… New pukas [in the Grove] – sinkholes. Some springs have disappeared. Springs weren't all kapu… There was plenty limu ʻeleʻele – it's being overharvested. Also, mangrove and kiawe could be taking up the fresh water. Test the water – [someone should measure] the amount of fresh water [coming through the area]. Would be a good project for the homesteaders. Need an assessment of the marine life – used to be nice walking along [the shoreline]. Nature of the shoreline – it goes up and down… Mangrove would catch the stuff from the land. Need to fix the mauka area [to stem erosion] before removing the mangrove… Revegetate with shoreline natives: ʻAkiʻaki [shoreline/dune grass] and naupaka. Better than mangrove… [Look to the wisdom in the] Kumulipo – can't just fix down here, gotta also fix up there – makai to mauka. *Threats:* Mangrove, gorilla ogo, deer – erosion up mauka. She would like to start a kipuka of native plants up mauka.

Henry Paleka, Kalamaʻula Shoreline Lessee (Multi-Generational):

A volunteer caretaker for Kalanianaʻole Hall next door. Noticed when there's high tide with no wind, ocean doesn't come up onto the land. The [Kaunakakai] Harbor – the pier – blocks the waves, but also blocks the sand… ʻOloʻolo Spring is connected to the spring by the pavilion, and the springs in the grove. The springs have never stopped running all these years. The [makai] spring was always open to the ocean… In the old days, was lots of crab – kūhonu crab, Alaheke [Alamihi?] crab. They still get, but not like before. People are taking too much. Now you have to go a mile out [to sea] to get fish. People

use the shoreline for parties, family gatherings. Not as much limu ʻeleʻele – grows in the sand. He thinks the gorilla ogo is smothering the limu ʻeleʻele. Also, people are using the bullpen net – takes everything – a lay net. When the river runs yellow, the water turns yellow, the tako run away. Sand channels, black limu – ogo stays near shore. Shoreline used to be muddy, now it's hard. Used to sink in up to your knees.

Kanani Negrillo, Kalamaʻula Lessee (Multi-Generational):



Grandfather Heli Peʻelua – lived on the beach lot – where we grew up, with her grandparents. Went crabbing, lay net before for the small fish – pua – small mullet. Her ʻohana only took what they could eat. Mother gathered limu... She knew where the freshwater was coming out – all the way from Kimball's place (now Penny's) one… Our kupuna would tell us stories about all the sweet potato, vegetables being grown to feed the people of Kalamaʻula. Brought the water all the way down. When there was rationing, we had to fill barrels with water, had to conserve – bathed with only a little water. Had droughts. Land was so full of food, up behind – all farms, where the flume was, because had water. Gathered big rocks for the flume. Had a hard life but appreciated that life – had to work for our food, had to work for everything. That's why all the kupuna are so smart. Kids are now so lazy – don't want to work, even to rake the yard. There were lots of fruit trees in Kalamaʻula – we fed ourselves. People used the ocean, but didn't take plenty, also would share with the neighbors. If a family didn't fish, those who did would give them crab, fish. Something is wiping out all the limu – not sure why it's happening. Maybe it's the pollution coming from other places. Where we used to pick up all the limu, in front of the spring, used to be plenty. Now – hardly any. Mrs. Ocampo is still going down there, maybe she's getting ʻopae… I'm really upset about the trespassing problems in Kapuāiwa Grove [pictured above in the early 1900s, Photo: Courtesy of Bishop Museum] – the way we were brought up, we never went in the Grove at all. Had two sets of grandparents that lived on either end of the Grove, but never did walk through the Grove. Knew we weren't supposed to – when we asked why, the kupuna just said "kulikuli!" [be quiet!] – we never did know the reason why, but knew we had to respect the Grove. Knew caretakers of the grove [Liette Corpus' grandparents] – they lived in the Grove, there was a house in the Grove by the spring – to the left of the spring. Peʻelua's are related to them.

Kaunakakai

Ka Inoa (The Name). "The old name for Kaunakakai was Kaunakahakai, "Resting-(on)-the beach." It was the place for the canoes to come, for here there were plenty of fish (Pukui, personal communication)."[47] Pukui and Elbert, citing Fornander, translate the name Kaunakahakai to literally mean, "beach landing."[48]



Aerial View of Kaunakakai Harbor and Shoreline. Photo: Kaunakakaiharbor.com.

Nā Wahi Pana (The Celebrated Places). Summers, et al identify the following special places in Kaunakakai:

- West of the approach to the Kaunakakai wharf is a platform that was part of Kamehameha V's home, Malama… The beach in front of this site was used exclusively by the *ali'i* for sun bathing. There formerly was a spit of sand in front of here called *Ka Lae o Ka Manu*, so named because the plover used to settle here. At the site of the County Park was a canoe shed (Cooke, 1949: 110, 151)."[49]
- Pukui, Elbert and Mookini indicate that Malama means "month or moon"[50] and Harriet Ne further provides that, "It was called Malama because its open doors faced the rising and setting sun. To avoid breaking the kapu against that, the steps leading up to the doors were built on the makai side.[51]
- Saltworks… Located at the site of the Kaunakakai dump in 1961, the salt pans were made "something like a taro patch." Sea water was run into the pans at high tide, and when the tide ebbed, some of the water remained. The water was allowed to stand from one to three weeks, after which the salt was gathered and dried. The salt formed here was not as salty as the salt formed by waves from the deep sea-- "Our salt here is not too sour…"[52]
- Kamalae Heiau…Located behind Kaunakakai village, the site of the heiau is at the foot of the median ridge. From Kakalahale it bears 35˚29'30"; 12,890 ft. Stokes wrote of it, "Heiau entirely destroyed. It is said to have been for human sacrifice, and that the drums were heard at night"...[53]
- Mahinahina Heiau… This heiau is located 500 ft NE of the pier at Kaunakakai. According to Stokes, "The site pointed out was a low platform lined with ala, on which a church stood…Said to have been for human sacrifice, and that the drums were heard at night"…[54]
- Kahua Maika…N. B. Emerson said that he saw a curved kahua maika "… on the plains back of Kaunakakai" (Malo, 1951:221, note 2).[55]



Harriet Ne Dancing Hula. Photo: Courtesy of Edward Halealoha Ayau

Ka 'Aumakua (The Ancestral Deity). Harriet Ne indicates the 'aumakua of Kaunakakai is pa'akai (salt) based on her recollection of the image on a banner used during the last traditional makahiki ceremony at Nā'iwa in 1918, in which she was in attendance.[56]

Nā Makani (The Winds). Three wind names for Kaunakakai are identified as Hauālialia,[57] Mālua, and Pelu.[58]

Nā Ua (The Rains). The rain name associated with Kaunakakai is Mālua, which is the same as Mālualua. It is also the name of a wind for this area.[59]

Nā Wai (The Waters). In 1950, the Kaunakakai Flood Control Project was constructed under the River and Harbors Act of 1935 to enlarge Kaunakakai Stream. It is unclear whether this is a traditional or contemporary name for this stream. No other water names are known at this time.

Nā Mele (The Songs, Chants). A traditional chant that recalls the rain and wind of Kaunakahakai provides as follows:

Hā'ule iho, he Mālua ka ua	It falls, Mālua is the rain
He Pelu ka makani	Pelu is the wind
Hauālialia Kaunakahakai	The Hauālialia wind is at Kaunakahakai[60]

A contemporary song made popular is *Cockeyed Mayor of Kaunakakai*, words and music by R. Alex Anderson.[61] Although some say the song disparages Kaunakakai because of its reference to drunkenness, it is nonetheless part of its historic identity.

Nā Mo'olelo (The Stories, Histories). Historian Kamakau further recounts historic events that took place at Kaunakakai prior to the time of Kamehameha I and during his stay on Molokai preparing to invade O'ahu and the army of Kalanikūpule:

Ka'eokūlani's war party lands at Kaunakakai:

> When Ka-'eo-ku-lani, ruling chief of Kauai, heard how narrowly Ka-lani-ku-pule and the other chiefs of Maui had escaped death in the war on Maui, and how the waters of 'Iao had been choked with the bodies of the slain in this war, he was so perturbed that he set sail to war against Kamehameha… The war party landed at Kaunakakai on Molokai, and when the Kauai chief saw for the first time, by the ovens they had left, the size of the camp which Kamehameha had occupied he said, "Where a big squid digs itself a hole, there crab shells are heaped at the opening.[62]

Kaʻiana betrayed by the Hawaiʻi island chiefs at Kaunakakai:

> While Kamehameha remained on Molokai with his forces, awaiting a proper time to set sail for Oahu, he consulted with many of his counselors and orators and his secret advisers; but he never summoned Kaʻi-ana-Ka-ʻahu-ʻula to such councils, and this made Kaʻi-ana suspect that the counselors were plotting his death. These councils took place at Kaunakakai. Kaʻi-ana stayed at Kamiloloa . . . Kaʻi-ana told his younger brother, "I fear that the chiefs are conspiring to kill us."[63]

In addition, the following two ʻōlelo noʻeau (proverbs) reference Kaunakakai,

> Hele i Kaunakakai i Hikauhi.
> Go to Kaunakakai to seek Hikauhi.
>
> Go to seek that which is lost. One day, when a man of Molokaʻi was fishing, his wife felt the beginning of labor pains and went to the upland to seek help from her mother. When the husband returned, he searched everywhere in Kaunakakai for his wife. After a time she returned with their daughter, whom they named Hikauhi.[64]
>
> Wā ʻōlelo i Kaunakakai.
> Loud talking at Kaunakakai.
>
> Said of much boisterous talking. The chiefs liked to play games such as kōnane at Kaunakakai, and their shouts and laughter could be heard for some distance.[65]

Traditional Ecological Knowledge. With regards to the management of and stewardship of the coastal resources in Kaunakakai, the ʻike (knowledge) and manaʻo (thoughts) shared by homesteaders Penny Martin, Henry Paleka and Kanani Negrillo with regards to Kalamaʻula specifically involving resource conservation and proactive watershed management, apply to Kaunakakai due to the immediate proximity and similar landscapes of both ahupuaʻa.

Kapaʻakea



Aerial View of Kapaʻakea Hawaiian Homestead Lots and Kōheo Wetlands to the west. Photo: © 2017 Google Earth

Ka Inoa (The Name). The literal meaning is "the coral or limestone surface."[66] A description of the land use in 1895 indicated:

> Kapaakea was originally part of the unassigned lands from the Mahele, turned over to Crown Lands in the 1890 Act. This land forms the eastern boundary of Kaunakakai with the government land of Kamiloloa to the south-east. It is very long and narrow, being only a little more than one-half miles wide at the sea where the government road crosses the land. Mostly grazing land. There is a large fishpond at the coast. Area of 2078 acres.[67]

Nā Wahi Pana (The Celebrated Places). In Kapaʻakea, such special places include:

- Ka Laʻi o Kioea…*Ka laʻi o kioea*, "The tranquil spot of the kioea (curlew, *Numenius tahitiensis*)," was the name of a place where the homesteads are now located in Kapaʻakea. "Here there were numerous plover and curlews. The curlews are said to have called to the canoes to go out to sea to fish. Hence the saying, 'Molokai i ke kioea hoʻolale ka waʻa (Molokai where the kioea urge on the canoes).'"[68]
- This location is also home to the Kōheo Wetlands, Ka Laʻi o Ke Kioea Bird Sanctuary, which is a 10-acre coastal salt marsh.[69]
- Kapaʻakea Pond… "A *puʻuone* having an area of 5.45 acres, this pond extended from the seashore to the Government road. The pond is now filled. According to Stokes there was one *makaha*... After examining it nearly 50 years later, Dunn described its condition: The pond has been neglected for a long period of time and can hardly be called such any more. It has been almost totally filled by silt washed down from the highlands mauka of the road and is covered with a dense growth of mangrove with some kiawe. The undergrowth is a thick mat of akulikuli. The old springs which fed this pond are either clogged or dried up and no longer available…"[70]
- Kapaʻakea Cemetery, which is a public cemetery established in the late 1800s on lands now owned by the County of Maui.
- Puʻumaninikolo, which literally means, "hill [for] seining *manini* fish or creeping *manini* fish hill."[71] It is one of three prominent hills in Kapaʻakea and is located mauka of the Kapaʻakea Homesteads. The other two hills are Puʻu Hele and Puʻu Makokiloiʻa.[72]

Ka ʻAumakua (The Ancestral Deity). Harriet Ne reports the ʻaumakua of Kapaʻakea is lole malo (loin cloth worn by men) based on her recollection of the image on a banner used during the last traditional makahiki ceremony at Nāʻiwa in 1918, in which she was in attendance.

Nā Makani (The Winds). No wind names were identified for Kapaʻakea.

Nā Ua (The Rains). No rain names were identified for Kapaʻakea.

Nā Wai (The Waters). There are no perennial streams in the ahupuaʻa. Two intermittent streams run during heavy rains and were diverted around the west and east boundaries of the Kapaʻakea Cemetery and "pass under Kamehameha Highway through a 24-inch reinforced concrete pipe and an 8-foot by 3-foot box culvert, respectively, and then through two shallow open swale ditches in the Kapaakea Homestead before entering the ocean."[73] In addition, when the flooding would overwhelm the pipe and culvert, the water sheets across Kamehameha Highway into Kōheo Wetlands and the Kapaʻakea Homestead area causing flooding. The first stream is named Kamiloloa and the second stream name is unknown. In addition, the name(s) of the spring(s) once associated with the Kapaʻakea Fishpond is/are also unknown.

Nā Mele (The Songs, Chants). There were no songs or chants found that referenced this ahupuaʻa or any of its natural features.

Nā Moʻolelo (The Stories, Histories). There were no stories or historical references regarding Kapaʻakea or any of its natural features.



Traditional Ecological Knowledge. With regards to the management of and stewardship of the coastal resources in Kapaʻakea, the ʻike (knowledge)

Aerial View of the Eastern boundary of Kapaʻakea homestead lots. Photo: © 2017 Google Earth

and manaʻo (thoughts) shared by homesteaders Penny Martin, Henry Paleka and Kanani Negrillo with regards to Kalamaʻula specifically involving resource conservation and proactive watershed management, apply to Kaunakakai and Kapaʻakea due to the proximity and similar landscapes of the three ahupuaʻa.

Kamiloloa



Aerial View of the Western boundary of Kamiloloa Hawaiian Homesteads. Photo: Courtesy of Ted Kanemitsu 2021.

Ka Inoa (The Name). The literal translation is "the tall milo tree."[74]

Nā Wahi Pana (The Celebrated Places). Summers identifies the special places in Kamiloloa to include:

- Two adjoining land sections are called Kamiloloa; the one to the W is referred to as Government, the other was known as Konohiki. The two land sections formerly made the

ahupuaʻa of Kamiloloa. The section known as Konohiki had a *lele*, Kukaenui, containing 2.34 acres, situated near the Waikolu Stream in Waikolu…[75]

- In the water off Kamiloloa was a sea fishery known for the *heʻe* (Monsarrat, n.d.e:183) "Formerly the *heʻe* found here were the *iʻa kapu* of Bernice P. Bishop. The time for catching them was from November to March 1"…[76]
- Kalokoʻeli Pond… Kalokoʻeli, "The dug up pond," was a *loko kuapa* having an area of 27.6 acres in 1901 (Cobb, 19902:429). In 1922 the walls of the pond were broken. More than 30 years later, Dunn reported the area of the pond as being 32 acres and wrote: …About 600 feet of the pond wall has been washed away by the action of wave and tide. Some of this rock is scattered about the ocean floor in shallow water…Along the east wall of the pond and along the inshore line there is a growth of mangrove and akulikuli…Within the pond itself are a few small mangrove plants…[77]
- Ka Lua Na Moku ʻIliahi…*Ka lua na moku ʻiliahi*, "The pit (of) the sandalwood ships," is located approximately 1580 ft SW of Puʻu Kaʻeo, just N of the road. The site is a trench about 110 ft long, 40 ft wide, and 7 ft deep. Its sides are sloping, resembling the hull of a ship. Cooke told the following story about its use: After the discovery of the Hawaiian Islands [by Capt. Cook], the first commercial venture developed was the obtaining of sandalwood from the forests, which were owned by the Chiefs…Under the feudal system, … the common people were sent to the mountains to cut, stack and haul sandalwood. In order to measure the product, trenches were dug to simulate the size and depth of a ship's hold. When these had been filled with sandalwood logs, the Chiefs then could bargain with the captains of trading vessels. After a value was agreed upon, the commoners carried the sandalwood to the shore on their backs...[78]

Ka ʻAumakua (Ancestral Deity). Harriet Ne reports the ʻaumākua of this ahupuaʻa to be large milo trees. This information is based on her recollection of the image on a banner used during the last traditional makahiki ceremony at Nāʻiwa in 1918, in which she was in attendance.

Nā Makani (The Winds). The one wind name for this area is Pai.[79]

Nā Ua (The Rains). There were no rain names identified at this time.

Nā Wai (The Waters). There are no perennial streams in Kamiloloa. The two intermittent streams that run during heavy rains and were diverted around the west and east boundaries of the Kapaʻakea Cemetery also pass through this ahupuaʻa. Again, the first stream is named Kamiloloa and the second stream name is unknown. No spring names were identified at this time.

Nā Mele (The Songs, Chants). Although no chants or songs have been identified for Kamiloloa, two famous haku mele (song and music composers) hail from this ahupuaʻa. In 1865, Esther Kawahineaukaiokamoana Keliana Kekula Bishaw was born in Kamiloloa. She wrote the famous mele, a waltz, entitled *Only You*,

Nāu a me aʻu i kui a lawa	You and I will weave a lei
Nāu a me aʻu i haku i lei	You and I will sew till completed
Nāu a me aʻu i kui i lei nani	You and I have expectations of your lovely lei
Kāhiko malia i luna you and I	To adorn you and I
Only you, only you	Only you, only you

Ka i awaiāulu me a‘u	He has recuring thoughts of me
Only you, only you	Only you, only you
Ka ‘ike i ka hana wela a ke aloha	See the hot passion of love
You and I	You and I.[80]

Keliana’s daughter Mary Kanealae Bishaw was born on April 20, 1885 in Kamiloloa. She composed *Kuhi‘ō Bay*, a famous song about the Bay in Hilo in 1928. Mary died in Ho‘olehua on August 23, 1944.[81]

Nā Mo‘olelo (The Stories, Histories). Resharing the account from Kamakau relating to the betrayal of Ka‘iana while he stayed in Kamiloloa:

> These councils took place at Kaunakakai. Ka‘i-ana stayed at Kamiloloa . . . Ka‘i-ana told his younger brother, “I fear that the chiefs are conspiring to kill us.”[82]

There are no additional known stories or historical references regarding Kamiloloa or any of its natural features at this time.



Aerial View of the Kamiloloa Hawaiian Homestead Area. Photo: Courtesy of Ted Kanemitsu 2021.

Traditional Ecological Knowledge. With regards to the management and stewardship of the coastal resources in Kamiloloa, the following ‘ike (knowledge) and mana‘o (thoughts) are shared.

Gayla Mowat, Kamiloloa Shoreline Lessee (Multi-Generational):

> In response to the question ‘*how do you use the shoreline?*’ she replied, “I enjoy sitting on the shoreline in my yard, watching the sea, the sunset. It’s very relaxing. Grow limu – good ogo -- had good rocks with limu, but someone took the rocks. People are pulling limu off the rocks, by the roots, can’t grow back that way. ‘Opae. In 1980’s clams were clean. Now, started getting muddy.” In response to the question, ‘*are there any specific actions (improvements and/or management activities) that you would like to see to prevent or mitigate shoreline erosion?*’, she replied that she’s been planting naupaka and it’s slowing the erosion. Others (Kamiloloa, Molokai Shores) have planted naupaka too.

In addition, the ‘ike shared by homesteaders Penny Martin, Henry Paleka and Kanani Negrillo with regards to Kalama‘ula specifically involving resource conservation and proactive watershed management, apply to Kaunakakai, Kapa‘akea and Kamiloloa due to the proximity of the first three and similar landscapes of all four ahupua‘a.

Makakupa‘ia



Aerial View of the Makakupa‘ia Hawaiian Homestead Area, Ali‘i Fishpond. Photo: Courtesy of Ted Kanemitsu 2021.

Ka Inoa (The Name). *Place Names of Hawaii* does not offer a translation of the name except to state, “two land division and road. Kaunakakai qd., south Moloka**ʻ**i; a game management area.”[83] Harriet Ne is also silent on the translation of the name.

Nā Wahi Pana (The Celebrated Places). Summers identifies the special places of Makakupa‘ia to include:

- Two adjoining land sections are called Makakupaia; the one to the W is referred to as Government, the other was known as Konohiki. Formerly the two land sections made the ahupua‘a of Makakupaia.[84]
- Ali‘i Pond… Cobb (1902:429) listed a “nameless pond in Makakupaia 1” as being 46 acres in area. Now called Ali‘i Pond, it has an area of 25.80 acres. The wall of this *loko kuapa* is 2710 ft long, about 4 ft wide, and 4.5 ft high..., There was one *makaha*. In 1957 the pond was filling with mud and about 4 acres along the E wall and inshore line were covered with mangrove. The *makaha* was broken…[85]
- Kaoaini or Kaonini Pond…This site was a *loko kuapa* having an area of 9.3 acres in 1901 (Cobb, 1902:429). The wall, which was approximately 1770 ft long, is now destroyed, although the foundations can still be seen…Cobb gave the name Kaoaini for this pond; Stokes called it Kaonini... Kaonini is listed as a fishing ground “…known by the people to have shoals of fish remaining upon [it]…” This fishing ground was placed under protective taboo for the King in 1839…[86]

- Burials…When the bulldozing was done for the construction of Del Monte Park, numerous burials were uncovered (Henry Meyer, personal communication, 1965).[87]

Ka ʻAumakua. Harriet Ne reports the ʻaumākua of Makakupaʻia to be one (sand). This information is based on her recollection of the image on a banner used during the last traditional makahiki ceremony at Nāʻiwa in 1918, in which she was in attendance.

Nā Makani (The Winds). Wind names for this area were not identified at this time.

Nā Ua (The Rains). There are no known rain names at this time.

Nā Wai (The Waters). There are no perennial streams. There is one intermittent stream that appears to be named Onini and a second stream that does not have a name. No spring names were found to be associated with Aliʻi Pond or Kaoaini/Kaonini Pond.

Nā Mele (The Songs, Chants). No chants or songs have been identified for Makakupaʻia at this time, nor were any famous haku mele from this place.

Nā Moʻolelo (The Stories, Histories). There are no known stories or historical references regarding Makakupaʻia or any of its natural features.



Aerial View of the Makakupaʻia Hawaiian Homestead Area. Photo: Courtesy of Ted Kanemitsu 2021.

Traditional Ecological Knowledge. With regards to the management and stewardship of the coastal resources in Makakupaʻia, the following ʻike (knowledge) and manaʻo (thoughts) are shared.

Noelani Lee, Executive Director, Ka Honua Momona International Licensee Aliʻi Fishpond:

> In response to the question ʻ*how do you use the shoreline?*ʼ she replied that Aunty Vani (Ainoa) lives just east of Hotel Molokai. Limu ʻeleʻele at her place. In 2005, we used to have 25 different species of limu. Limu kala disappeared 8 years ago. In response to the question, ʻ*are there any specific actions (improvements and/or management activities) that you would like to see to prevent or mitigate shoreline erosion?*ʼ she replied, We celebrated the year of the mullet. Native plant specialists. Need to reforest, need to do sediment mitigation between the forest and here. Native plants that could replace invasives. Dr. Keana Frank, Ph.D., Harvard researched beach nourishment and beach restoration including Pāʻūohiʻiaka and Pōhuehue, crawler plants.

With regards to the management of and stewardship of the coastal resources in Makakupaʻia, the ʻike (knowledge) shared by homesteaders Penny Martin, Henry Paleka and Kanani Negrillo with regards to Kalamaʻula specifically involving resource conservation and proactive watershed management, apply to Kaunakakai, Kapaʻakea, Kamiloloa and Makakupaʻia due to the proximity of the first three and similarity in landscapes of all five ahupuaʻa.



Aerial View of Kaunakakai and Kalamaʻula Looking West. Photo: Courtesy of Ted Kanemitsu.

Conclusion

It was clear that more information was readily available for the cultural lens categories for Kalamaʻula and Kaunakakai, with less available for Kapaʻakea and very little for Kamiloloa and Makakupaʻia. These revelations hint at the importance of these ahupuaʻa to the Kona moku and mokupuni of Molokai in terms of where the island's population and activities became centered. Historically, these areas served a role in the rise to power of Kamehameha, and the place where the first Hawaiian Homelands settlement was established.

The poetic name *Molokai Nui a Hina* establishes the kuleana (duty, responsibility, privilege) to care for the island's finite resources including its watersheds and shoreline resources. The ʻike (knowledge) shared by homesteaders Penny Martin, Henry Paleka and Kanani Negrillo with regards to resource conservation and proactive watershed management speak to this kuleana. The nickname Molokai ʻāina momona aptly describes these specific ahupuaʻa known for their ability to provide land and ocean food (although most of the fishponds, springs and pools are filled in). And the ecological knowledge shared will help support the development of strategies to care for and protect these shoreline and mauka resources. These cultural insights raise understanding and awareness of the identity of these ahupuaʻa and strengthen and continue the legacy by the homesteaders who reside there currently and whose pulapula (offspring) will do so in to the future.

[1] The author's family on his paternal side is from Pelekunu, Molokai. His tūtū wahine (grandmother) Harriet Ahiona Ayau Ne taught him the island's name is to be pronounced without an 'okina. She based this on her life experiences growing up in Pelekunu, Kamalo, Kalama'ula and Ho'olehua and a conversation with 'Mother Pukui' who told her the name means to interweave and interlace, to tie securely (molo) of the rough ocean (kai) of the north with the calm ocean (kai) of the south. The author follows the teaching of his tūtū who also stated that use of an 'okina is fine if that is how one was taught by their kūpuna.

[2] Fornander, Abraham, *Hawaiian Antiquities and Folk-Lore*. Bernice Pauahi Bishop Museum Memoirs, Vol. 4, Honolulu, 1916-1917: 12, 13.

[3] *Ibid* at 2, 3.

[4] *Ibid* at 22.

[5] Teaching of Harriet Ahiona Ayau Ne.

[6] Summers, Catherine C. *Molokai: A Site Survey*. Bernice Pauahi Bishop Museum Pacific Anthropological Records No. 14, Honolulu, 1971:2.

[7] See, https://www.molokai.org/about-molokai/myths-of-molokai/index.html, Molokai Community Service Council, viewed on October 22, 2020.

[8] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. *Place Names of Hawaii Revised and Expanded Edition*. The University of Hawaii Press, (1974:74).

[9] *Ibid*.

[10] Ne, Harriet Aheona. *Teacher's Guide to Molokai Field Trips for Hawaiiana Vol. II*, Office of Library Services, Teacher Assist Center for the Maui District Office, Molokai Educational Complex, Dept. of Education, State of Hawaii, Pub. No. TAC 72-5093; December 5, 1974: 2. Mrs. Ne was formally recognized as a Cultural Historian of Molokai by Governor John Burns in 1974. She was consulted about the island's cultural history by Dr Kenneth Emory and Mary Kawena Pukui.

[11] Summers (1971:84).

[12] *Ibid*.

[13] *Ibid*.

[14] *Ibid*.

[15] Summers (1971:85).

[16] Tomonari-Tuggle, M.J. Archaeological Reconnaissance Survey, Road Corridor, Kalama'ula Mauka (1983:1) and Tomonari-Tuggle, M.J. Archaeological Inventory Survey of a Portion of Kalama'ula, Island of Molokai (1990:8).

[17] Summers (1971:72) citing Pukui.

[18] Hommon, Robert J. and Ahlo, H.M. (June 1983). An Archaeological Survey of Selected Lands, Proposed for Military Training Near Kaunakakai, Island of Molokai, Hawaii (1983:14-15).

[19] Tomonari-Tuggle (1990:9-10).

[20] Handy, E. S. C. and Handy, E. G. *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Bishop Museum Press (1972:517) in Tomonari-Tuggle (1990:7-8).

[21] Summers (1971:38) citing a 1922 *Ka Nupepa Ku'oko'a.*

[22] Summers (1971:84-85).

[23] Summers (1971:85).

[24] Summers (1971:86).

[25] Summers (1971:87).

[26] Summers (1971:85).

[27] Summers (1971:86).

[28] Summers (1971:86-87).

[29] Summers (1971:86).

[30] *Ibid.*

[31] Summers (1971:87).

[32] Ayau, Edward Halealoha. *Na'iwa: Home of the Hawaiian Olympic Games Celebrated as Part of the Molokai Makahiki,* Based on the mana'o of Harriet Ahiona Ayau Ne, Molokai Dispatch, October 1, 1989 at 8. Notably, the author is the grandson of Harriet Ne and spent time learning Molokai's cultural history from her.

[33] Summers (1971:84).

[34] Personal communication with the author. Miki'ala Pescaia is the author's sister who was also taught by tūtū Harriet Ne.

[35] *See*, http://cramp.wcc.hawaii.edu/Watershed_Files/Molokai/WS_Molokai_molokai_Palaau.htm,

Coral Reef Assessment & Monitoring Program Hawaii, viewed on October 13, 2020.

[36] *See*, Interview No. 2_Zach Helm, "Before Aunty Kauila's place – the stream – Makehe Stream – was an old Hawaiian man who built a hale inside the mangrove." (November 2019).

[37] Ne (1974:9-11).

[38] *See*, https://www.huapala.org/KAL/Kalamaula.html, viewed on October 10, 2020: "Source: John Clark, author of "Hawai'i Place Names: Shores, Beaches and Surf Sites"- Excerpted from an interview with Valentine Dudoit, retired HFD Captain, the son of Emma Kala Dudoit, the composer of this song. Emma Kala Dudoit, originally from Kekaha, Kauai, wrote this song when the family moved to Kalama'ula from Kaka'ako in 1922. She died shortly after in 1923. Well-known composer and entertainer Emma Bush recorded the song in 1928 and was inadvertently listed as the composer. Hannah Dudoit, Emma Dudoit's daughter, then copyrighted the song in order to acknowledge her mother as the composer. Hannah Dudoit has since been listed as the composer. This information was substantiated by John Dudoit, retired HFD Captain, brother of Valentine Dudoit. Copyright 1929, renewed EMI Miller Catalog, Inc."

[39] Pukui, Mary Kawena. *Nā Mele Welo Songs of Our Heritage Selections from the Roberts Mele Collection in Bishop Museum Honolulu Translated by Mary Kawena Pukui* (1995:74). "Notes: Contributor Waiwaiole Ka La [Kala Waiwaiole], Kapaa, Kauai. Mele olioli no Moloka'i [Chant from Moloka'i]."

[40] Kamakau, S.M. *Ruling Chiefs of Hawaii Revised Edition*, Kamehameha Schools Press (1961:70).

[41] *Ibid* at 149.

[42] *Ibid* at 171.

[43] *Ibid* at 259-260.

[44] *Ibid* at 312.

[45] Pukui, Mary Kawena. *'Ōlelo No'eau Hawaiian Proverbs & Poetical Sayings*, No. 2879, Bernice P Bishop Museum Special Publication No. 71, Bishop Museum Press (1983:314).

[46] Malo, David. *Hawaiian Antiquities (Moolelo Hawaii),* Bernice P Bishop Museum Special Publication 2, Second Edition, Translated from Hawaiian by Dr Nathaniel B. Emerson 1898 (1951:216-18).

[47] Summers (1971:87).

[48] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:95).

[49] Summers (1971:87).

[50] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:143).

[51] Ne (1974:1).

[52] Summers (1971:87).

[53] *Ibid*.

[54] *Ibid* at 88.

[55] *Ibid*.

[56] Ayau (1989:9).

[57] Summers (1971:87).

[58] Akana, Collette Leimomi; Gonzalez, Kiele. *Hanau Ka Ua Hawaiian Rain Names*, Kamehameha Publishing (2015:175).

[59] *Ibid*.

[60] *Ibid*, "From the legend of Pāka'a and Kūapāka'a. Hawaiian Source: Fornander, Fornander 5: 101. English trans. by Collette Leimomi Akana. Additional sources: Kuapuu, "He wahi moolelo" 5/8/1861; Nakuina, Moolelo 62, Wind 56. Note: "Kaunakahakai" is the same as Kaunakakai."

[61] *See*, https://www.huapala.org/Cockeyed_Mayor_of_Kaunakak.html reports, "Source: - Paul Fagan, owner of Pu'uohoku Ranch, Molokai requested a song for his special guest, movie star, Warner Baxter, in 1934. The mythical mayor became cockeyed because the last two syllables rhymed with Kaunakakai. Although Baxter liked the tune and lyrics, his studio did not, fearing it would create a bad image of drunkeness for Hollywood. © 1935 Edward B. Marks Music Corp."

[62] *Ibid* at 159.

[63] *Ibid* at 172.

[64] Pukui, Mary Kawena. *Ōlelo No'eau Hawaiian Proverbs & Poetical Sayings*, No. 742, (1983:82).

[65] *Ibid,* No. 2919 at page 319.

[66] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:86).

[67] *See*, http://kipukadatabase.com/kipuka/CrownLands.html?ObjectID=6&b=2#view2. See also, Iaukea, Biennial Report, 1894. Viewed on October 13, 2020.

[68] Summers (1971:88).

[69] *See*, www.conservationconnections.org/site/koheo-wetland-ka-lai-o-ke-kioea-bird-sanctuary. Viewed on October 13, 2020.

[70] Summers (1971:88).
[71] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:202).
[72] *See*, Map of Kapa‘akea, Molokai.
[73] *See*, Final Environmental Statement, Kapaakea Homestead Molokai, Hawaii (December 1976: 2-2).
[74] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:82).
[75] Summers (1971:88).
[76] *Ibid*.
[77] *Ibid*. A loko kuapā is a fish pond made by building a wall on a reef.
[78] Summers (1971:88-90).
[79] Summers (1971:88).
[80] Mahoe, Noelani Kanoho. Ho‘āhu ‘Ana O Nā Mele Ho‘okahi Iwakālua a Hapa Kākini ■ One Score and Half a Dozen ■ A Collection of Songs, Stories & Pictures compiled by Noelani Kanoho Mahoe Vol. One (2015:46-48).
[81] *Ibid* at 48. The author’s mother is a Bishaw and ‘ohana to these two famous haku mele (music composers).
[82] Kamakau (1992:172).
[83] Pukui, Mary Kawena; Elbert, Samuel H; Mookini, Esther T. (1974:140).
[84] Summers (1971:90).
[85] *Ibid*. A loko kuapā is a fish pond made by building a wall on a reef.
[86] Summers (1971:90-91).
[87] Summers (1971:91). It is unclear what happened to these burials. They were not removed to the Bishop Museum.

APPENDIX C: FLOOD ZONES, SHORELINE SETBACKS, AND THE STATE CERTIFIED SHORELINE

FLOODING

The Federal Emergency Management Agency (FEMA) has created Federal Insurance Rate Maps (FIRM) delineating flood zones and base flood elevation. A property's topography and elevation above sea level indicate a sites vulnerability to flooding. However, the FIRM maps do not account for a location's substrate or soil composition which can affect the sturdiness or stability of a structure or house subjected to flooding.

The FIRM's for Moloka'i have been updated to incorporate digital elevation models that are more accurate than previous inundation models. Any building proposed to be located in a flood zone should be designed to withstand inundation (breakaway walls, sealed utilities, absence of living areas where inundation risk is high, etc.). Alternatively, the building can be raised (post and pier) to allow floodwaters to pass unimpeded below the building. However, the posts and piers must be sufficiently anchored so as to prevent floatation of the building. They should also be fortified to withstand the forces behind the flood waters so the building doesn't move or become dislodged by debris or waves.

The County of Maui participates in FEMA's voluntary Community Rating System (CRS). As a result, Maui property owners receive a discount on their flood insurance. On properties within and subject to the County of Maui regulations, a Flood Development or Flood Way permit may be required when building in a flood zone. The permit is triggered during the building permit review process and can influence the structure's design, location, configuration and building materials. Without the permit, the property owner may not be able to obtain homeowners insurance or a bank loan for the building such as a mortgage. Without the permit, some DHHL beneficiaries may have difficulty in securing funding from a federally insured bank or commercial lending institution for home construction as a result. Despite whether DHHL and/or its beneficiaries are subject to federal flood prevention programs, the lending banks are and thus may be unwilling to make loans to properties at risk of flood inundation. Considering the cost of construction, it makes sense to invest in flood prevention and building strengthening to avoid or mitigate potential damage.

If a home was built before 1995 in Moloka'i, it probably does not have hurricane clips to tie the roof to the walls and strong connectors from the walls to the foundation to create a continuous load path. The County building code was revised after the devastation caused by Hurricane Iniki in 1992 on Kaua'i and newer buildings are much stronger and resistant to wind and water damage.

Types of Flood Zones

Flood zones are established based on data from actual storms and floods that have occurred in the past. Flood zones X and XS have low to moderate risk of flooding and there is no mandatory flood insurance purchase requirement, but coverage is available in participating communities (CRS). A Flood Development Permit is not required for construction in these low-risk areas.

Flood Zone X represents areas outside the 0.2% annual chance floodplain. Flood Zone X is an area that is outside of the 100-year floodplain and includes areas where the 100-year sheet flow flooding is less than one foot in depth, and areas of 100-year stream flooding where the contributing drainage area is less than one square mile. No base flood elevation (bfe) or depths of flooding are listed within the X zone on FIRM maps.

Flood Zone XS is an area of 0.2% annual chance flood. It includes areas of 1% annual chance flood with average depths of less than one foot or with drainage areas less than one square mile, and areas protected by levees from 1% annual chance flood.

In contrast to low-risk areas, areas exposed to the 1% annual chance flood are within Special Flood Hazard Areas (SFHA). These flood prone areas are exposed to rising waters (A, AE, AEF) or wave action (V, VE flood zones). A Flood Development Permit is required and triggered when a building permit is requested in a SFHA. The base flood elevation (bfe) is the depth of flooding from the 1% annual chance flood. This depth has a 1% chance of being equaled or exceeded in any given year. Mandatory flood insurance purchase requirements apply in these flood prone areas and a Flood Development or Floodway Permit may be required within areas subject to Maui County zoning or land use ordinances (MCC Title 19). The permit helps guide the applicant in designing a building or site that can withstand, minimize, mitigate and/or avoid damage from flooding. The most common SFHA flood prone areas are detailed below.

Zone AE is an area subject to rising water. The depth of the rising water is predicted as the base flood elevation (bfe). A bfe of 10 feet indicates that everything 10 feet in elevation and below will become wet from flood waters. In an AE zone, damage to sheet pile, carports, paneling, electrical outlets and connections, and appliances may occur as a result of becoming saturated with water, whether it be fresh or saltwater in origin. Drywall and wood can quickly become moldy after flood waters subside. Flood waters are frequently laden with sediment which can lead to additional damage and cleanup challenges. Flood proofing is recommended where feasible.

Zone AEF is a floodway area in Zone AE. The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment or obstructions so the 1% annual chance flood can be carried through it without increasing the bfe. Structures that obstruct or could catch debris in the floodway are not allowed because they could form a dam that could cause or amplify flooding on adjacent and/or downstream property.

The V and VE Flood Zones are coastal high hazard areas. They are a Special Flood Hazard Area that is subject to high velocity wave action from storms or seismic sources. They are in the 100-year coastal floodplain and are exposed to waves. Zone V does not have an established bfe, whereas Zone VE has a base flood elevation derived from detailed hydraulic analyses. Mandatory flood insurance purchase requirements apply when building habitable structures. New structures in these zones must meet special standards of design and strength to resist wave action and erosion of the building's footings or foundation. Fill may not be used to create the foundation pad or to elevate the building above bfe, since the fill and any slab-on-grade foundations could be under scoured by wave action. Instead, post and pier construction is often used to elevate the lowest floor joist one foot above bfe such that flood waters and waves can pass under the structure unimpeded.

MCC 19.62 regulates construction of structures, including homes, ohana dwellings, and accessory structures that are proposed to be located in flood prone areas. Within Special Flood Hazard Areas, a Flood Development Permit (FDP) may be required before the structure can be built and is normally obtained at the building permit stage. The FDP application may require a no rise analysis to ensure neighboring properties will not be flooded by water displaced or redirected by the new structure. The FDP may also require an elevation certificate conducted by a licensed surveyor that indicates the elevations and relation to base flood elevation.

Flood Zone Maps

DHHL homestead lands are exposed to flooding with wave action (VE) along the seaward (makai) side of almost all the homestead properties. Other properties are mostly exposed to the risk of potentially rising waters (AE, AEF zones). More mauka properties near the highway are generally in the X or XS zones, which have low risk of flooding. Base flood elevations (bfe) are the predicted depth of flood waters above sea level and may not fully account for a site's topography or height above the ocean.

Kapa'akea flood risk is mapped on Panel Number 150003 0193F (November 4, 2015) and 0195E (September 25, 2009) on the Flood Hazard Assessment Report for the Kamiloloa watershed. The community is subject to VE (bfe 12), AE (bfe 7 to 10) and AEF flood zones around Kamiloloa Gulch.

Kamiloloa flood risk is mapped on Panel Number 150003 0193F (November 4, 2015) and 0195E (September 25, 2009) on the Flood Hazard Assessment Report for the Kamiloloa watershed. The community is subject to VE (bfe 10), AE (bfe 7) and X flood zones along Kamehameha V Highway and exposed to Flood Zone A in some areas primarily above and mauka of the Kamehameha V Highway.

One-Ali'i flood risk is mapped on Parcel Number 150003 0193F & 0194F (November 4, 2015) and 0195E (September 25, 2009) of the Flood Hazard Assessment Report for the Kamiloloa watershed. The community is subject to VE (bfe 10), the fishpond is

in VE (bfe 9), and flood zones AE (bfe 7) up to and including the Kamehameha V Highway. Areas mauka of the highway are in the X flood zone, and are of low (but not zero) risk of flooding.

SHORELINE SETBACKS AND THE STATE CERTIFIED SHORELINE

SHORELINE SETBACKS

Setbacks from the shore and ocean should be large enough to allow for the coastline to shift and move according to season dynamics and storm events. Limiting construction and development in areas bordering the ocean using setbacks is a practical and effective way of preventing damage to structures and buildings and protecting the people who use or reside in them. Setbacks can account for the size of a property, or for past change in the shoreline's position. In contrast to fortifying buildings to withstand coastal hazards, like a Flood Development Permit may encourage, locating inland based on projections of shoreline erosion seeks to avoid coastal hazards and applies a common sense, pragmatic approach to shoreline erosion. Locating out of harm's way is an effective means of avoiding coastal hazards (Hwang, 2005). For example, locating a building inland of a sandy beach, cobble shore, or sand dune allows the setback area to serve as natural buffer dissipating waves and absorbing energy that helps mitigate the potentially damaging effects of coastal hazards on a building (MOE, 1991).

Locating inland may also reduce or eliminate the need to harden the shoreline. Shoreline setbacks are intended to reduce risks to buildings from coastal hazards, protect access along the shoreline, and conserve beach and environmental resources. The Shoreline Rules for the Moloka'i Planning Commission, 12-304, implement a building setback from the ocean that is based on a property's average lot depth (ALD). The ALD setback is 25 feet, 40 feet, or 25% of the ALD up to 150 feet measured inland from the shoreline. But like the FIRM maps, the ALD setback does not account for a location's substrate or soil properties, so a home built on volcanic dike material would be treated the same as a home built on an eroding sandy shore or a marshy wetland.

The shoreline setback line is projected inland and parallel to the shoreline at a horizontal plane. This would be like drawing the setback line on a two-dimensional site map of the parcel. The setback calculation does not account for topography, substrate, unusual configurations such as flag lots, peninsulas, lots separated from the ocean by a sliver of property or a fishpond, or where the ocean borders more than one side of the parcel. The setback extends inland and is measured from the State Certified Shoreline, or more conservatively from the mean high-water mark in some cases. The setback is measured from the current shoreline's position inland and not from the property line. Area seaward of the shoreline that erodes, or becomes submerged, can fall within the public domain.

The shoreline setback area includes all the land between the shoreline setback line and the shoreline or mean high water mark and extends along the property's entire seaward frontage between its side boundaries. However, the Hawaii Coastal Zone Management Act, HRS 205A establishes setbacks of a minimum of forty (40) feet for the shoreline.

State-certified Shoreline

The main purpose of a shoreline certification is to officially delineate the shoreline's position. It is defined as the highest wash of waves during the highest tide of the year, normally evidenced by the vegetation or debris line, whichever is more landward. The process helps distinguish between public trust land from privately-owned land. The certification process ensures that any encroachments onto the public domain are resolved either through removal, permit, or lease and serves as the basis from which the shoreline setback line is measured.

The shoreline is established by the DLNR OCCL and certified by the BLNR during a public meeting. The shoreline delineates the jurisdiction between the county (mauka) and the state DLNR (makai) and defines public lands (makai) and private lands (mauka) land. A survey completed by a licensed surveyor is submitted to the DLNR and verified with a site visit by DLNR staff. A notice of the survey and its purpose is published in the OEQC Environmental Notice and offers the public an opportunity to comment. The DLNR DAGS also posts pictures and copies of the survey on their website for review and comment. Based on public comments and recommendations from DLNR OCCL and DAGS staff, the BLNR may accept or reject the shoreline survey application, with certifications valid for one-full year. In cases where the shoreline is fixed by a man-made structure that has received government approval, or was constructed prior to the need for permits applicable at that time, a new shoreline survey certification may not be needed, provided the shoreline's position is fixed by the structure. In cases where natural features such as rocks or cliffs set the shore's position, a certification may not be necessary for some permitting matters.

In the case of the Kamiloloa and One Ali'i DHHL Homestead lots on Moloka'i, there is a small sliver of land between the individual homestead lots and the ocean that is owned by DHHL. These separate parcels are shown on county plat maps from 1950. These buffer lands connect to mauka-to -makai foot paths that connect to the public highway (Kamehameha V.) and may have been intended to protect access to and along the shoreline for gathering, fishing, and recreational and cultural practices.

APPENDIX D: SHORELINE EROSION ASSESSMENT (SEVERITY AND RISKS)

Severity and Risks:

The following figures are excerpts from the County's plat maps that provide reference features to compare with today and estimate change along the shoreline. Homestead beneficiaries identified shoreline reference features that suggest the shoreline fronting Kapa'akea has retreated twenty to twenty-five feet over the past half-century. The finding was confirmed during site visits in February 2019 by comparing the present length of the public access paths and drainage ditches to those of the County's 1950 plat maps (Figures A.1 and A.2) sourced from Taxation Maps Bureau, 7/21/1950, Dwg # 3978 & 3979, plat maps (2) 5-4-007 & 008)[1]. The observation suggests the shoreline has retreated an average of ~ 0.33 feet per year over the past 70 years. In comparison, the island of Maui's sandy shores have retreated an average of 1.1 feet per year (Fletcher, et. al., 2003 Maui Shoreline Atlas).

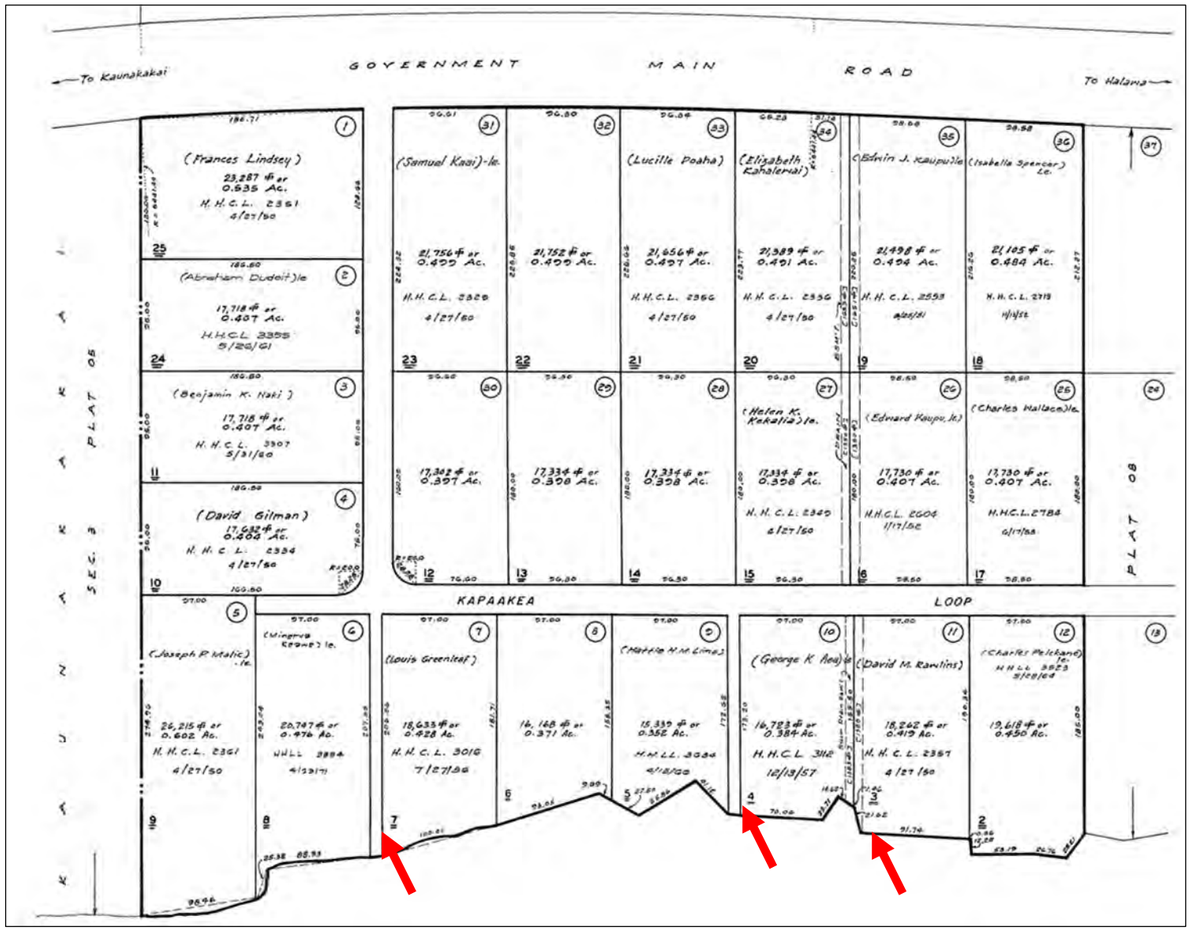


Figure A.1: *Plat map dated 7/21/1950 of Kapa'akea western half of the subdivision (Tax Maps Bureau & Survey Department).*

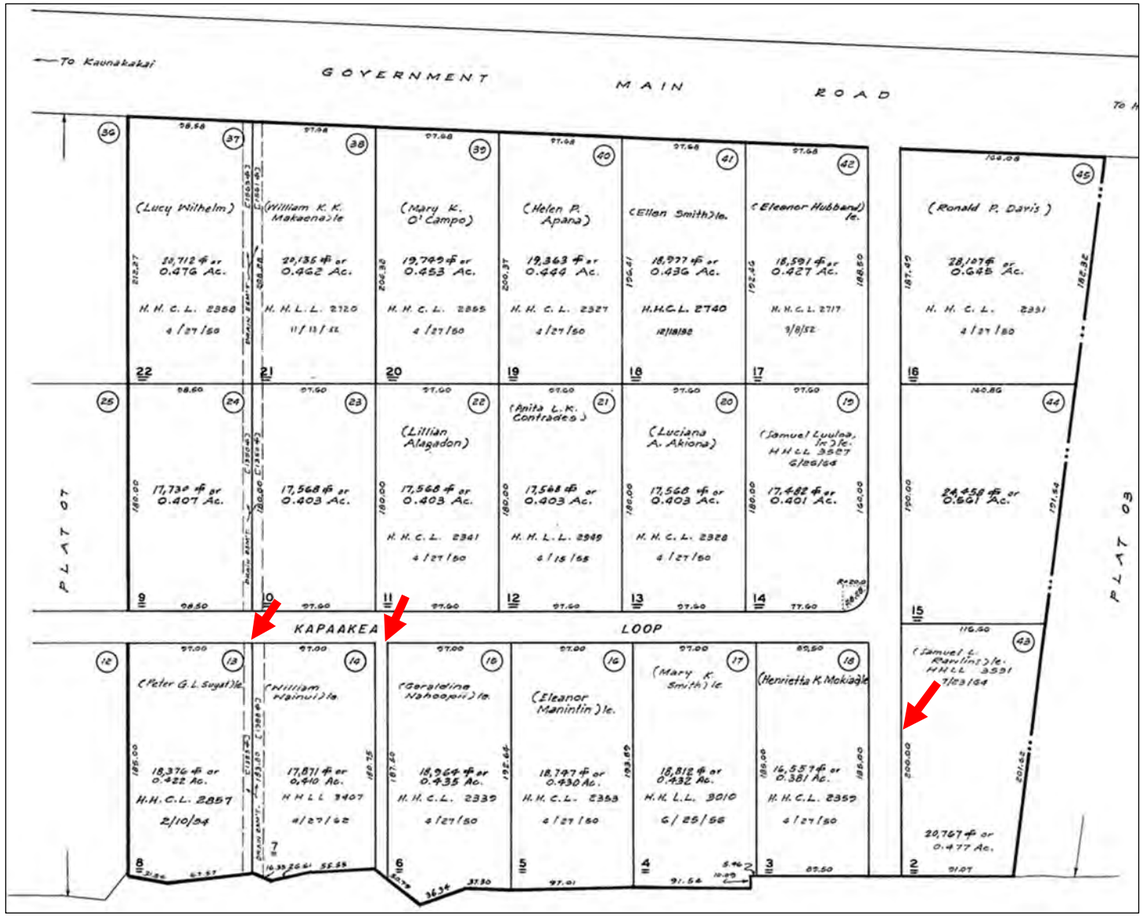
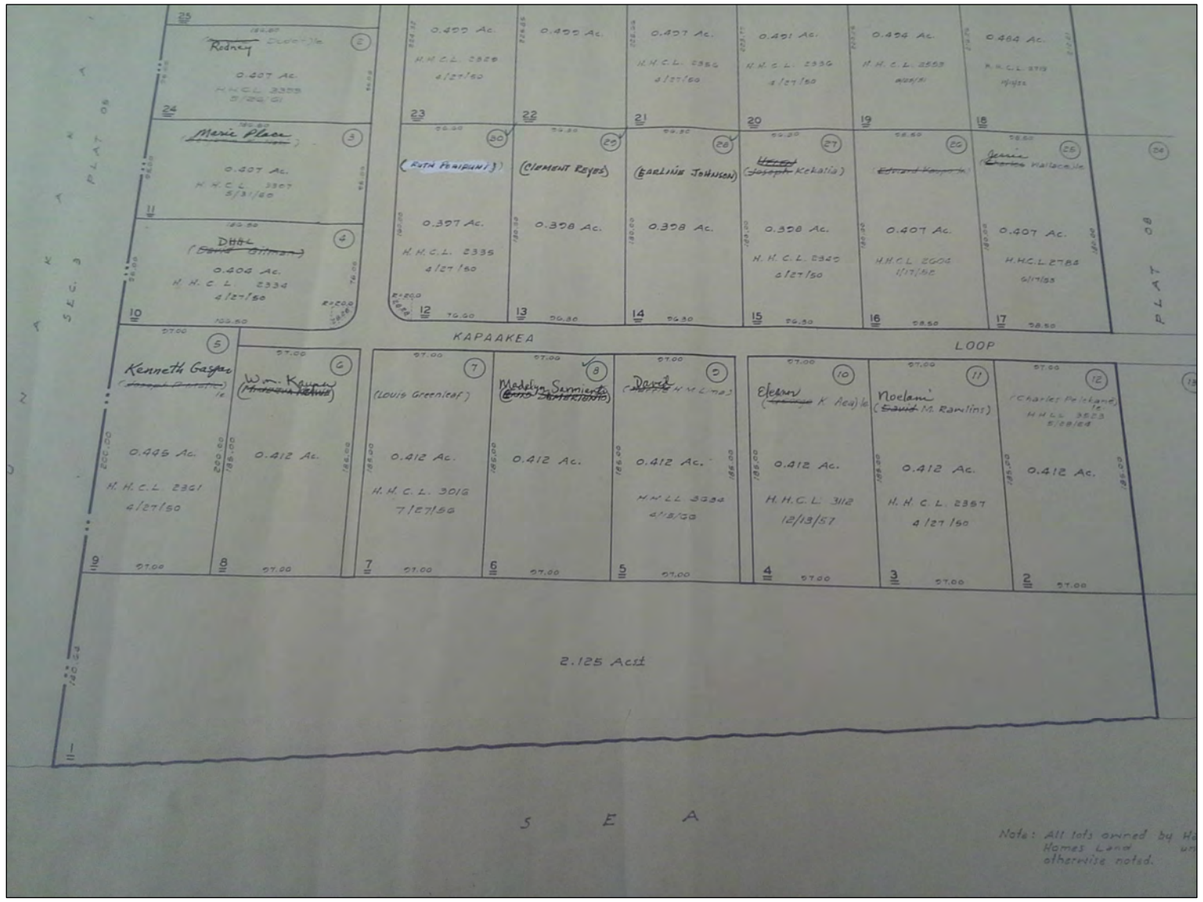


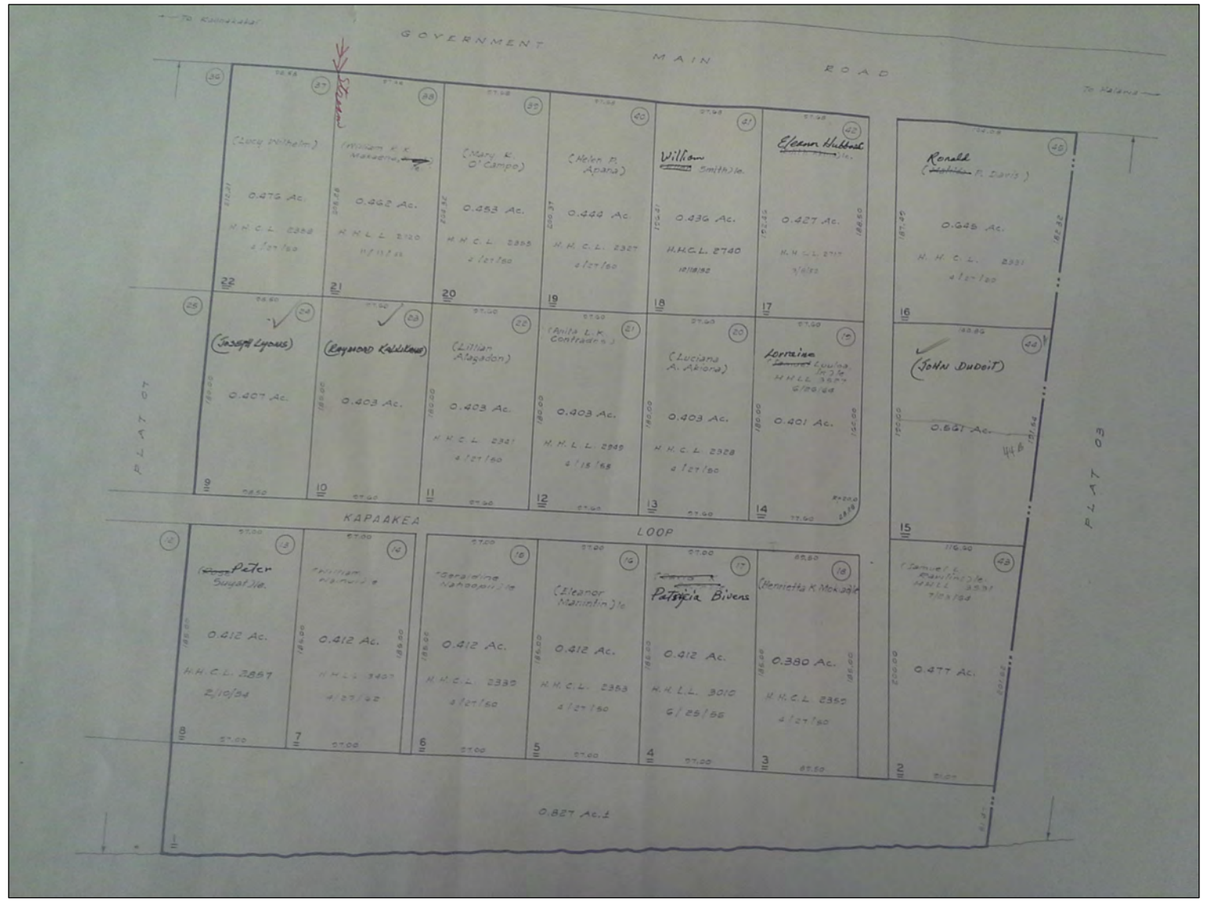
Figure A.2: Plat map dated 7/21/1950 of Kapa'akea eastern half of the subdivision (Tax Maps Bureau & Survey Department).

[1] Each map lists the length of a shoreline access path and a drainage easement between the central roadway (Kapa'akea Loop) and the coastline.

Submerged Land and Buffer Strips:

Another way to visualize shoreline change at Kapa'akea is to compare the aforementioned maps to the two plat maps shown below (Figures A.3 and A.4). The maps below are on file in DHHL offices in Moloka'i. They have the same date as the above (7/21/1950), but are labeled as from the Taxation Maps Bureau, Territory of Hawai'i. As is apparent, parcel 1 fronts the entire Kapa'akea subdivision on the maps below. The western side of parcel 1 is 140.64 feet wide, comprising a 2.125-acre portion of land. The eastern side of parcel 1 is 51.27 feet wide, comprising a 0.827-acre portion of land. If the measurements listed below accurately reflect the shoreline's location at the time they were drawn, it would suggest the shoreline has retreated nearly 66 feet on the parcel's western extent and around 51 feet on its eastern extent equating to a loss of ~3 acres of land fronting the subdivision. If parcel 1 did exist, then some of the beneficiary leases makai of Kapa'akea Loop may not have extended to the ocean. As such, parcel 1 may have served as a buffer strip similar to the DHHL owned buffer strips fronting beneficiary lots in Kamiloloa and One Ali'i subdivisions.





Figures A.3 & A.4: *Plat maps west and east dated 7/21/1950 of a 3.052-acre parcel (#1) fronting the Kapa'akea subdivision with a somewhat "wavy" makai boundary (Tax Maps Bureau & Survey Department).*

To the east of Kapa‘akea is the One Ali‘i–Kamiloloa subdivision. Its plat maps are numbered M54002 and M54006 by Maui County. For plat M54002, Figure A.5 illustrates that over 33 years, between 1934 and 1967, the shoreline accreted between 50 to 182 feet. This accretion occurred in front of three parcels situated between the Hotel Moloka‘i and the Kaloko‘eli fishpond on its eastern, up drift side (Taxation Maps Bureau, 6/26/1934, Dwg # 2090, TMKs (2) 5-4-002).

Parcel 5, adjacent to the fishpond, gained ~ 0.83 acres along ~250 feet of frontage (Figure A.5). Added sediment expanded the lot by 136 feet along its eastern boundary to nearly 183 feet along its western boundary where it abuts the fishpond wall. The accretion registered in front of these lots suggests a considerable amount of sediment transport in the down drift direction over the past 85 years. The sediment probably came from the east noting that there is a stream outlet up drift of the parcels.

At Kamiloloa, DHHL owns a long sliver of land that stretches 0.6 miles or about 3,200 feet from the Hotel Moloka‘i (west) to the edge of the Kamehameha V Highway (east). From west to east, DHHL owns parcel 30 of 0.47 acres, parcel 29 of 0.42 acres, and parcel 26 of 0.40 acres, respectively. The plat map is dated December 17, 1941, or 78 years ago and all but parcel 30’s full extent appears in Figure A.6. The map has two separate parcels (029, 030) that are owned by DHHL that extend in front, and seaward of, each of the individual lots and may have been to protect access along the shoreline (Figures A.6 and A.7). Given its length and acreage, the strip of land is estimated to be ~ 18 feet wide, on average.

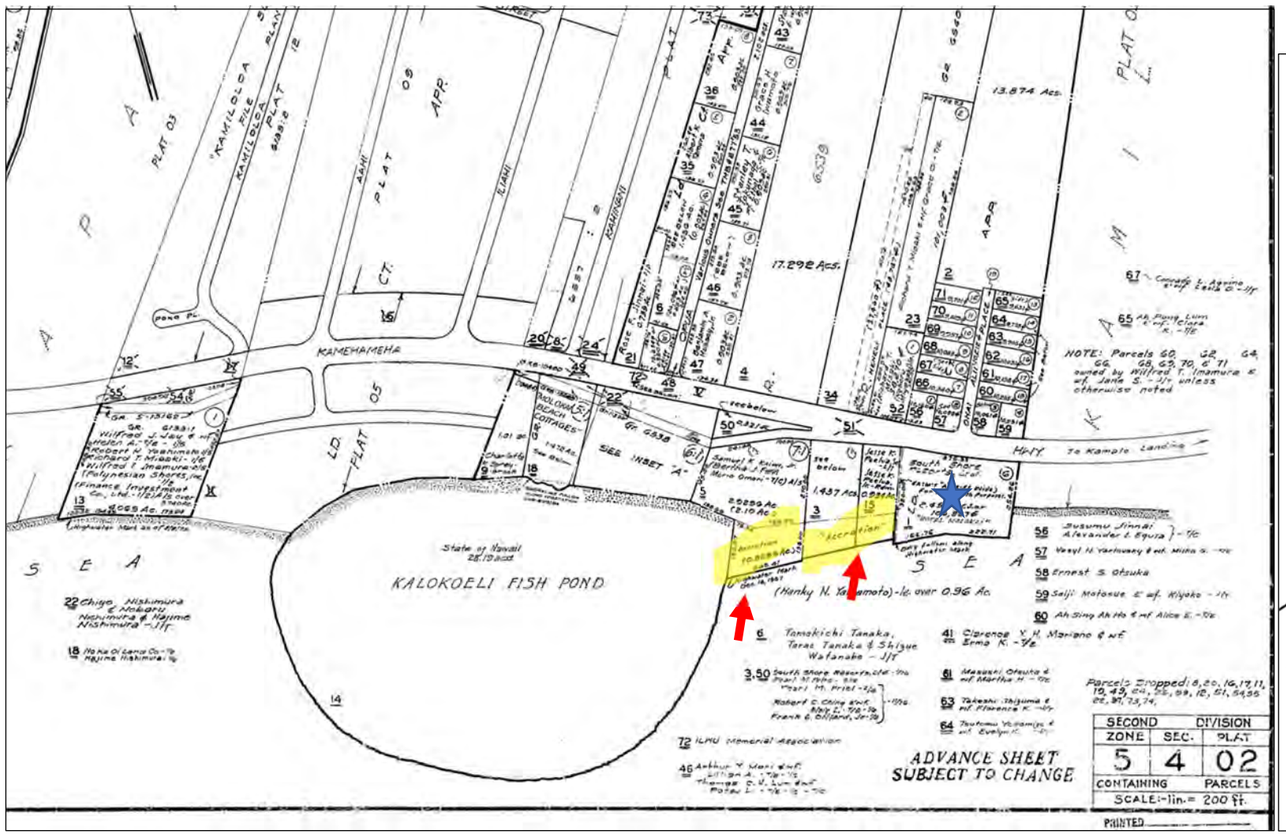


Figure A.5: Plat map dated 6/26/1934 of the Kaloko‘eli Fishpond and areas of accretion down drift of the Hotel Moloka‘i (Tax Maps Bureau & Survey Department).

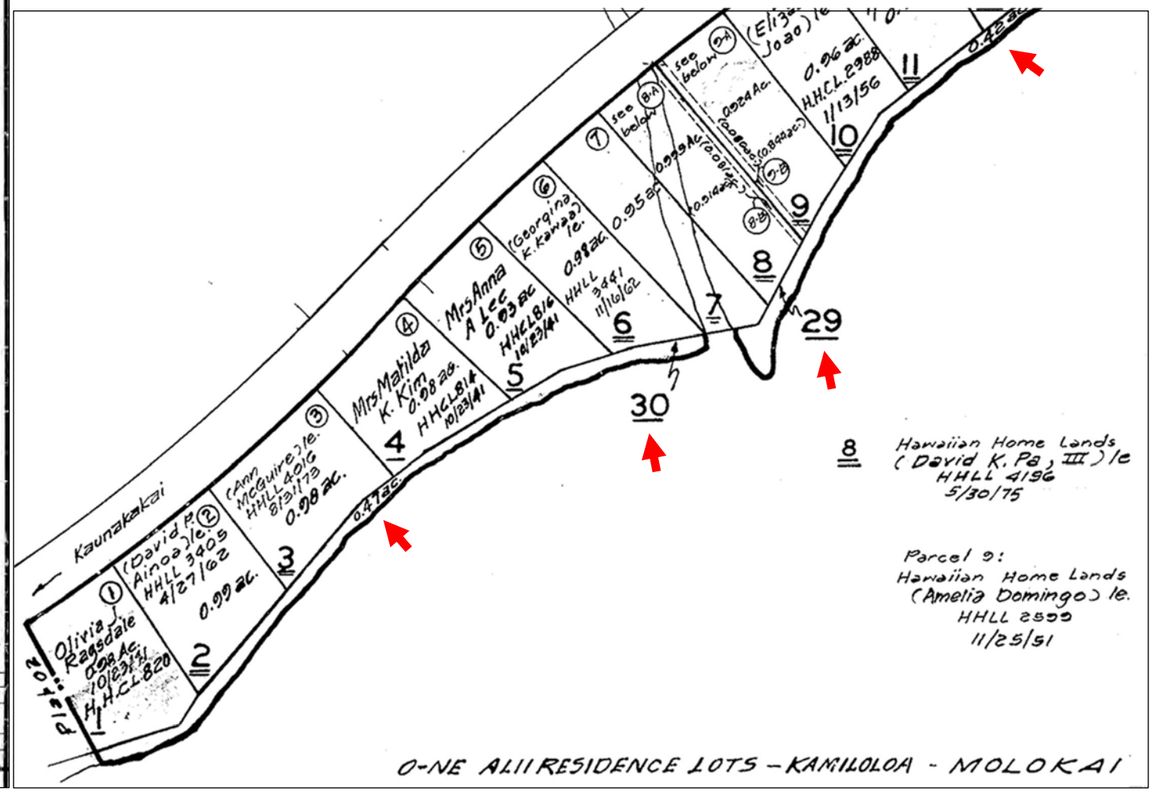


Figure A.6: *Plat map dated 12/17/1941 of the Kamiloloa subdivision (Government Survey Request Map 3057).*

STATE OF HAWAI‘I
DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

To: Chairman and Members, Hawaiian Homes Commission

Thru: Andrew Choy, Planning Program Manager

From: Nancy McPherson, Planner

Subject: Approval of the Anahola Regional Plan Update (2022)

RECOMMENDED ACTION

That the Hawaiian Homes Commission:

1) Approve the Anahola Regional Plan Update (2022) (Exhibit A); and

2) Authorize dissemination of the Anahola Regional Plan Update (2022).

Discussion

Regional plans build a sense of community and capacity, stimulate partnerships for development and improvements, facilitate beneficiary participation in issues and areas of concern, and identify priority projects within existing and planned homestead areas. The plan may focus on a particular homestead community or several homestead communities in the region. At a minimum, the regional plans document current conditions and trends and identify a prioritized list of projects important to the community and the Department of Hawaiian Home Lands (DHHL).

The existing DHHL Anahola (Kamalomalo‘o, Anahola, Moloa‘a) Regional Plan was adopted by the Hawaiian Homes Commission (HHC) in 2010, and the outlook of a regional plan is typically 3-5 years. As more than five years had passed since the adoption of the plan and several priority projects were either completed, in progress or not implemented, there was a need to re-evaluate and update the plan for the Anahola region in East Kaua‘i.

While the COVID-19 pandemic was challenging for beneficiary outreach, community meetings were able to be held in Anahola by employing multiple precautionary measures to ensure compliance with County health and safety rules and guidelines. The planning process began with virtual meetings with Anahola homestead and beneficiary organization leaders in September and October 2021. Subsequent beneficiary consultation meetings were conducted in person. The Anahola Regional Plan Update is attached as Exhibit A.

OUTREACH, PROCESS & METHODOLOGY

The planning process began in September of 2021. Using the virtual platform Zoom, DHHL's staff and consultants met with representatives from Anahola homestead associations and leaders of community organizations to introduce the regional plan update project and ask for their insight and guidance on the planning process, particularly on what might work best to increase community engagement while observing pandemic health and safety rules. Subsequent to that meeting, several site visits and five beneficiary consultation meetings were conducted between December 2021 and October 2022.

A progress report on the Anahola Regional Plan Update was presented to the Hawaiian Homes Commission for information in August 2022 as part of the Planning Office's Status Update on Plan Implementation for the Island of Kaua'i. The beneficiary review draft of the Regional Plan Update was published online in October 2022. The fifth and final Open House-style beneficiary consultation meeting on the draft plan was held on October 22, 2022. Beneficiary comments were collected at that meeting and adjustments to the draft plan were made as a result. Below is a summary of final plan recommendations.

Results of Beneficiary Consultations to Date

Through the beneficiary consultation planning process, participants identified the following values and guiding principles:

- **Support and Care for our Kūpuna**
  We support and care for the kūpuna in our communities. We seek and listen to the mana'o our kūpuna share and provide them with care and resources to live comfortably and safely in Anahola. In this way, we honor and carry the legacy of our kūpuna into our community's future.
- **Uplift and Empower our Youth**
  As we plan, we think of the next generation. Starting today, we commit to putting our vision in action so the next generation may see it happen and carry it forward. We create safe spaces in our communities for youth to come together and provide opportunities that empower the next generation of leaders.
- **Community Education and Capacity Building**
  Education is the foundation that drives us forward. We share knowledge, experience, and skills within our community and look to examples and lessons from other communities to help us implement our priority projects and bring our vision to life.
- **Sustainable and Resilient Aloha 'Āina Economy**
  Our plans connect Hawaiians to the land and create sustainable and resilient economic opportunities so people can support themselves and thrive in Anahola. We mālama the land and water resources of our ahupua'a to provide sustenance for current and future generations.
- **Community Support and Collective Action**
  Anahola has incredible people who know how to help and community champions who encourage people to show up and participate. Our plans build the capacity of people in our community to kāko'o one another, work to uphold community values, and fix things that are not working.
- **Trust and Transparency**
  Programs and projects are successful when there is trust and transparency within the community and with DHHL. We work together to address the needs and desires of the community and ensure transparent communication and accountability throughout project planning and implementation.

The Vision and Values statement below represents the community's hopes for what Anahola's future will look like. It was based on community-identified values and guiding principles and provides a unified direction for homestead, Departmental and Commission action in the Anahola region.

Anahola Vision and Values

> *"Anahola is a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai. We come together to heal our differences and work toward a sustainable future, drawing wisdom from Hawaiian knowledge and traditions while incorporating the tools and technologies of today."*

PRIORITY PROJECT RECOMMENDATIONS

Based on the Vision statement, regional values and guiding principles, Priority Projects were identified for the region through iterative discussions with beneficiaries throughout the beneficiary consultation process. The five priority projects identified by the community are:

1. Surface Water Resources Management (previous Priority Project/DHHL-led project)

   PROJECT DESCRIPTION
   A carryover priority from the 2007 and 2010 Anahola Regional Plans, surface water resources from the Kealia watershed through Anahola are an asset, and the community would like to better understand current conditions for safety and how DHHL will determine potential future uses. This includes water that runs from the Upper Anahola Ditch to the Kaneha Ditch, and to the Kaneha Reservoirs 1, 2, and 3.

   OBJECTIVE
   The objective of this priority project is to manage surface water resources to restore flow of water on DHHL lands. Anahola is rich with surface water resources and is uniquely situated within an almost complete ahupua'a of Hawaiian Home Lands spanning mauka to makai. This project ties in strongly to the community vision of "a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai." As beneficiaries reiterated throughout the Regional Plan Update process over the years, access to water is key to getting people on the land. DHHL will need to implement the recommendations of the Surface Water Study within the framework of State law regarding dam safety.

IMPLEMENTATION ACTION STEPS

1) Seek funding for an "Anahola Surface Water Resources Management Plan."
2) Seek HHC approval of the Surface Water Resources Management Plan.
3) Implement plan recommendations.

2. Hō'ākeolapono Trades Academy and Institute: Home Building Resources Center

PROJECT DESCRIPTION

The community envisions a home building resource center that brings together education, building materials, equipment, and skilled labor resources to provide affordable home building, repair, and maintenance to the Anahola community. With the most recent awards of residential homestead vacant lots in Pi'ilani Mai Ke Kai and the prospect of DHHL Kuleana homestead lots being awarded in the near future, the demand for expertise, skilled labor and materials for home building was identified as an important need in the Anahola community. Furthermore, creating supportive educational opportunities for high school students and young adults in need of alternative learning and career readiness education supports the vision and regional value of empowering and uplifting the youth of Anahola.

OBJECTIVE

The objective of this priority project is to provide space and support to Ho'ākeolapono Trades Academy and Institute in order to offer trade and vocational skills and services to individuals of Anahola and others. The campus and resource center will provide training opportunities to individuals while offering home building services and resources to Native Hawaiian communities and local nonprofits, including offering low-cost alternatives for beneficiary families to build their homes.

IMPLEMENTATION ACTION STEPS

1) Identify project site.
2) Secure initial land disposition.
3) Prepare Site Plan & Environmental Assessment.
4) Obtain required permits and approvals.
5) Secure a Long-term land disposition.
6) Conduct site preparation and construction.
7) Conduct operations and maintenance.
8) Conduct monitoring and reporting.

3. Makai Management Plan

PROJECT DESCRIPTION
Anahola homesteaders would like to develop a plan to manage shoreline resources and access to DHHL's lands makai of Kūhiō Highway. The plan will guide activities and actions led by beneficiary organizations, community partners and DHHL to manage and maintain shoreline resources, facilitate safe use and access to these makai lands, remove trash and abandoned vehicles, and clear out other illegal activities. The project management area is divided into two segments demarcated by Kāhala Point, which is located to the south of Anahola Beach Park.

OBJECTIVE
This project helps convert shoreline areas from a health, safety, and financial liability into a thriving community asset with abundant opportunities to enjoy Anahola's coastal waters and shoreline, support local healthy lifestyles, rejuvenate Native Hawaiian cultural practices, provide opportunities for place-based learning labs, feed Anahola families, and beautify the community.

IMPLEMENTATION ACTION STEPS
1) Define project area.
2) Continue hazard removal and maintenance.
3) Build partnerships.
4) Establish Makai Management Plan and program.

4. Anahola Place-Based Education Network

PROJECT DESCRIPTION
During the Regional Plan Update beneficiary consultation, Anahola beneficiaries expressed a desire for more ʻāina- and place-based learning opportunities for youth and families in Anahola. A number of groups and organizations have established programs and projects on Hawaiian Home Lands in the Anahola and Kamalomaloʻo ahupuaʻa which have been serving the community and providing spaces to learn about Hawaiian culture and the stories and resources of Anahola, as well as connect with ʻāina. To leverage assets and leadership throughout the beneficiary community, this priority project will create a network or community of practice made up of groups and organizations supporting ʻāina- and place-based education in Anahola in order to provide a space for collaboration and sharing of knowledge, resources, and information and to build the capacity and outreach of all partners involved.

OBJECTIVE
The Anahola place-based network will support the continued establishment, growth, and development of place-based educational opportunities in Anahola. The network will provide space for:

- Sharing updates, issues, and opportunities
- Building and strengthening connections
- Partnering and building capacity to bring more resources and funding into Anahola for place-based learning
- Bringing the community together

IMPLEMENTATION ACTION STEPS

1) Establish network membership.
2) Initiate network convening and information sharing.
3) Secure funding.
4) Monitor & evolve.

5. Mauka Farm Lot Plan (DHHL-led project)

PROJECT DESCRIPTION
The Anahola Kuleana Homestead Settlement Plan and Environmental Assessment was accepted by the Hawaiian Homes Commission in 2021. The Anahola Homestead Settlement Plan focuses on the development of a 462-acre Kuleana Homestead on the windward side of Kaua‘i within the traditional ahupua‘a of Anahola and Kamalomalo‘o that will ultimately be awarded as Kuleana Subsistence Agriculture and Pastoral lots to beneficiaries on the Kaua‘i Island Agriculture and Pastoral Waiting Lists. This priority project encourages the implementation of agricultural and pastoral homestead lot development in Anahola. At full buildout, the Anahola Kuleana Homestead will include:

- 101 2-acre Subsistence Agriculture Lots

- 14 10-acre Pastoral Lots

- 28 acres for Community Use

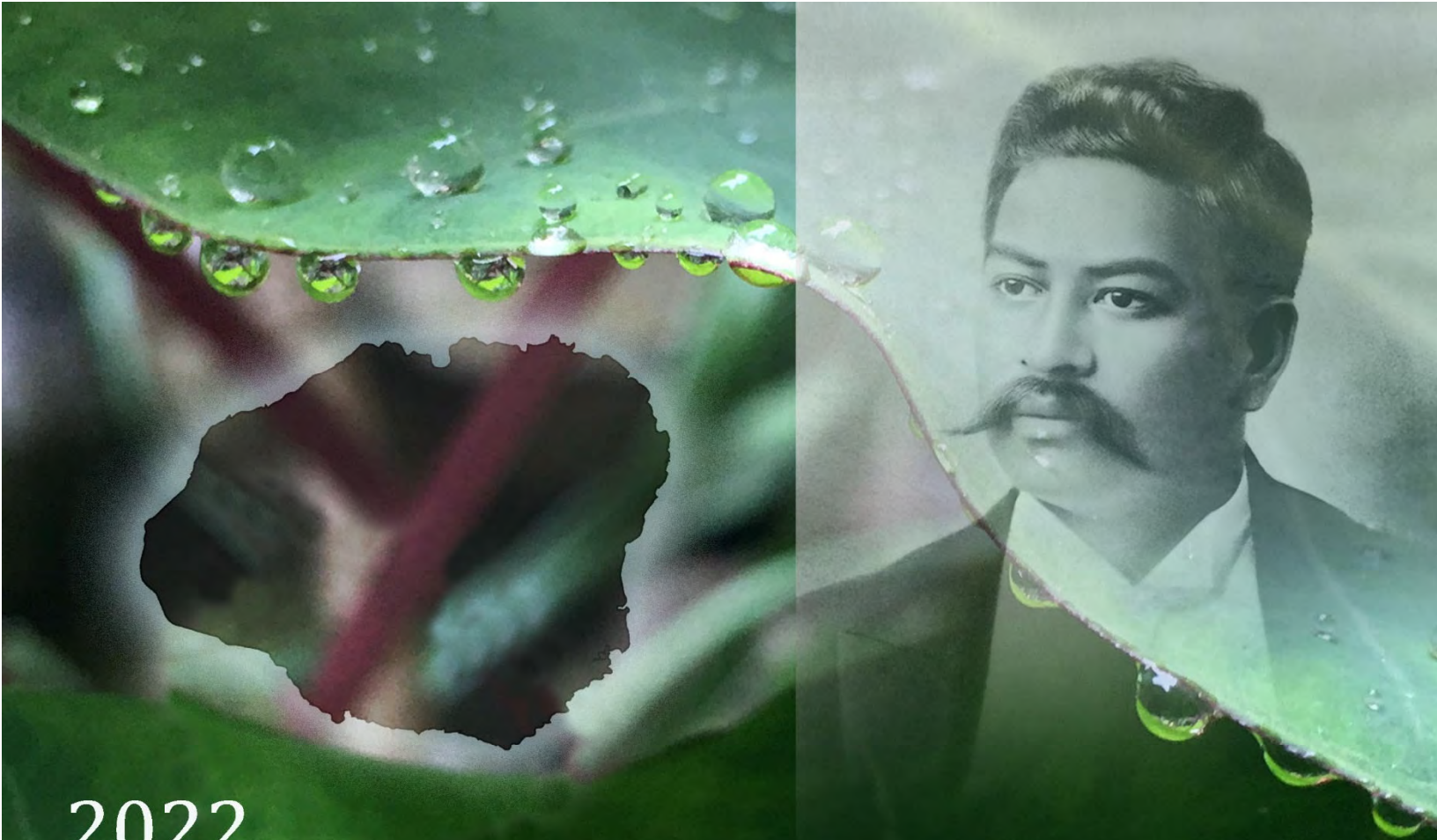
OBJECTIVE
This project will provide more opportunities for beneficiaries to receive homestead leases in Anahola and provide opportunities to be self-sufficient by awarding Kuleana Subsistence and Pastoral lots.

IMPLEMENTATION ACTION STEPS

1) Secure funding.
2) Procure design consultant to design kuleana lots and roadway network.
3) Conduct topographic survey and drainage assessment.
4) Delineate metes and bounds for each lot.
5) Build road network.
6) Issue Kuleana Homestead Leases and enroll lessees in Kuleana Homestead Settlement Program.
7) Establish Anahola Kuleana Homestead Association.

RECOMMENDED ACTION

Staff respectfully requests that the Hawaiian Homes Commission approve the action as requested.



2022

ANAHOLA

REGIONAL PLAN

DRAFT FINAL

December 2022

HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

ITEM G-2
EXHIBIT A

Executive Summary

Regional Plans are part of the Department of Hawaiian Home Lands' (DHHL's or the Department's) tiered Planning System, focusing on the level of individual homestead communities and regions. There are 23 Regional Plans across the state that are prepared through extensive beneficiary engagement and approved by the Hawaiian Homes Commission (HHC or the Commission). Regional Plans build a sense of community and capacity, stimulate partnerships for development and improvements, and give beneficiaries within the region an opportunity to work together and collaborate with DHHL in planning for their future. The 23 Regional Plans provide a platform for beneficiaries to identify key issues facing their community, prioritize solutions, and play an active role in implementation. Within DHHL's planning system, Regional Plans are intended to have a 2- to 4-year horizon.

This Anahola Regional Plan updates the last version which was approved in 2010. Working with DHHL Planning Office staff and consultants, the community identified priority projects to respond to identified issues and areas of concern within existing and planned homestead areas. This Regional Plan documents current conditions and trends in the Anahola region and identifies a prioritized list of projects important to the community and the Department.

Vision. The vision provides a unified direction for homestead, Department, and Commission actions in Anahola, Kamalomaloʻo, and Moloaʻa. The vision statement is as follows:

> *"Anahola is a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai. We come together to heal our differences and work toward a sustainable future, drawing wisdom from Hawaiian knowledge and traditions while incorporating the tools and technologies of today."*

Planning Area. The Anahola planning area encompasses three ahupuaʻa along the northeast coast of the mokupuni of Kauaʻi – Anahola, Kamalomaloʻo, and Moloaʻa. Anahola and Moloaʻa are located within the moku of Koʻolau, while Kamalomaloʻo is located within the moku of Puna. The Anahola Regional Plan planning area is located within a district known today as Kawaihau. The DHHL Kauaʻi Island Plan (2004) land use designations include:

	Anahola-Kamalomaloʻo	*Moloaʻa*
Land Use	**Total Acreage**	**Total Acreage**
Residential	565 acres	-
Subsistence Agriculture	533 acres	200 acres
Pastoral	148 acres	-
General Agriculture	1,018 acres	86 acres
Special District	1,419 acres	30 acres
Community Use	127 acres	-
Conservation	350 acres	-
Commercial	68 acres	-
Total:	**4,228 acres**	**316 acres**

Planning Process. The Anahola Regional Plan Update process took place during the COVID-19 pandemic with serious concerns for public health present from the outset. The project began at the end of 2021 as restrictions on gatherings were being lifted, enabling the majority of the beneficiary consultation process to be conducted in-person.

The process began with virtual meetings with Anahola homestead and beneficiary organization leaders in September and October 2021. The purpose of these meetings was to introduce the project team, share more about the Regional Plan Update purpose and process, and ask for insight and guidance on a planning process that would best fit the needs of the Anahola beneficiary community. In the meetings, leaders offered advice on the best days, times and locations for the beneficiary consultations. and also recommended stakeholders to engage. Several of these stakeholders remained involved throughout the process, encouraging beneficiary participation and helping to publicize beneficiary consultation meetings.

Beneficiary Consultation Meeting #1 was hosted at Anahola Clubhouse and 36 beneficiaries attended. The objectives of the meeting were to introduce the project team, explain the DHHL planning system and the purpose of Regional Plans, describe the Regional Plan Update Process, and share the beneficiary consultation schedule. Additionally, the meeting gathered input from beneficiaries regarding their long-term vision for Anahola, important community values, and key issues and opportunities in the region.

Beneficiary Consultation Meeting #2 was hosted at Anahola Clubhouse and 36 beneficiaries attended. The purpose of the meeting was to present the draft vision statement and values to the community for feedback and build on the list of issues and opportunities identified in the first meeting. An open house display was also set up to provide background information to attendees ahead of the discussion.

Beneficiary Consultation Meeting #3 was hosted at Anahola Clubhouse and 32 beneficiaries attended. The purpose of the meeting was to discuss potential projects to include the Regional Plan Update. Again, an open house with information was set-up for meeting attendees to peruse in addition to the formal meeting.

Beneficiary Consultation Meeting #4 was hosted at Anahola Clubhouse and 35 beneficiaries attended. The purpose of the meeting was to the confirm the priority projects for the Regional Plan Update and discuss implementation steps for each. As with previous meetings, an open house was set up with information covered in previous meetings.

Priority Projects. Five priority projects were identified and vetted by beneficiaries during the update process. The priority projects reflect community priorities for the Anahola region and respond to key issues and opportunities identified through the process. The priority projects with action steps and required resources for implementation are listed in the table on the following page, in no particular order of importance. Through their inclusion as priority projects in the Regional Plan Update, these projects have fulfilled beneficiary consultation requirements and will be prioritized for funding opportunities and other forms of support by the Department.

Other Projects. Other project ideas that were mentioned or proposed by community members but did not rise to the level of priority projects are also documented in the Plan. These projects will require additional DHHL beneficiary consultation if advanced.

Priority Projects for the Anahola Regional Plan Update

Priority Project	Action Steps	Required Resources
Surface Water Resources Management (non-potable)	• Seek funding for an "Anahola Surface Water Resources Management Plan" HHC approval of the Surface Water Management PlanImplement plan recommendations	• Assistance and coordination as needed
Hōʻākeolapono Trades Academy and Institute: Home Building Resources Center	• Identify project site • Secure land disposition • Site Plan & HRS Ch 343 Compliance • Secure long-term land disposition • Permitting & entitlements • Site preparation & construction • Begin operations & ongoing maintenance Monitoring & reporting	• Technical Assistance • Funding (Planning, Design & Construction) • HHC Approval
Makai Management Plan	• Hazard removal & maintenance • Build partnerships • Determine management plan area • Establish Makai Management Program & Plan	• Technical Assistance • Funding (Planning, facilitation, programming) • HHC Approval
Anahola Place-Based Education Network	• Establish network membership • Initiate network convenings & information sharing • Secure funding • Monitor & evolve	• Technical Assistance • Facilitation • Meeting space • Funding (Programming)
Mauka Farm Lot Plan	• Secure funding • Procure design consultant • Topographic survey & drainage assessment • Delineate metes and bounds for each lot • Build road network • Issue leases • Establish Anahola Kuleana Homestead Association	• Funding (Planning, Design & Construction)

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Introduction

Purpose of a Regional Plan

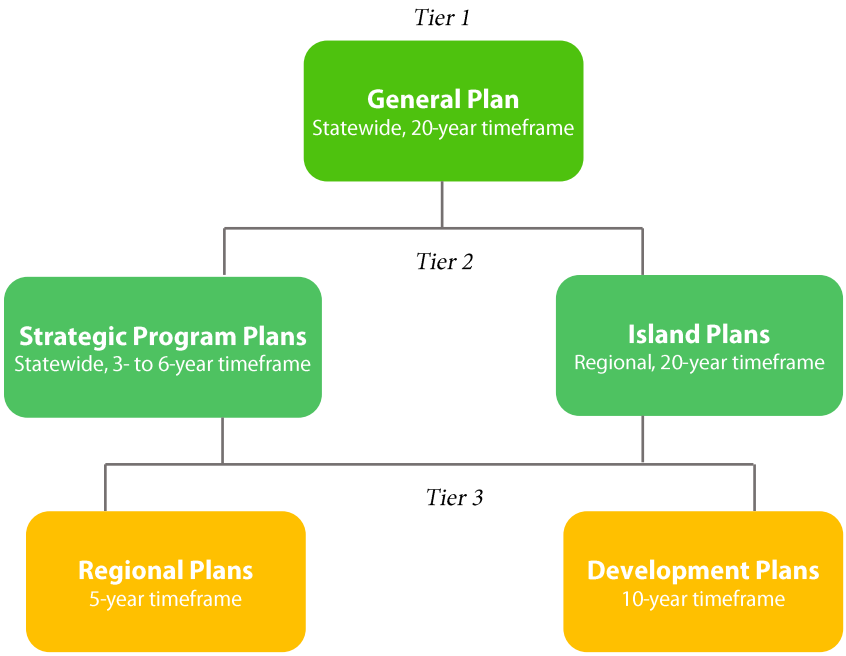
A key part of the mission of the Department of Hawaiian Home Lands (DHHL), as described in its General Plan, is to partner with others toward developing self-sufficient and healthy homestead communities. Regional Plans provide an opportunity for DHHL to work closely with existing lessees and native Hawaiian beneficiaries to clarify a vision for their community and to build partnerships with government agencies, private landowners, non-profit organizations, homestead associations, and other community groups to achieve that vision.

This Regional Plan is one of 23 that DHHL has helped Hawaiian homesteads to formulate statewide. These Regional Plans assess land use development factors, document issues and opportunities, and identify the region's top priority projects to be implemented within the next five years.

Planning System

Regional Plans are part of DHHL's three-tiered Planning System (see Figure 1). Tier 1 is the General Plan, which articulates long-range goals and objectives for the Department. The second tier includes Strategic Program Plans that are statewide in focus, covering specific topic areas such as the Native Hawaiian Housing Plan and a Native Hawaiian Development Program Plan. Also in the second tier are Island Plans that identify the Department's land use goals and apply land use designations for each island. The Regional Plans are located in the third tier of the Department's Planning System and are focused on identifying the priorities of communities and regions, as noted. Development Plans are also in the third tier and are used to implement development projects, including off-site infrastructure systems and improvements, utilities, and homestead subdivisions.

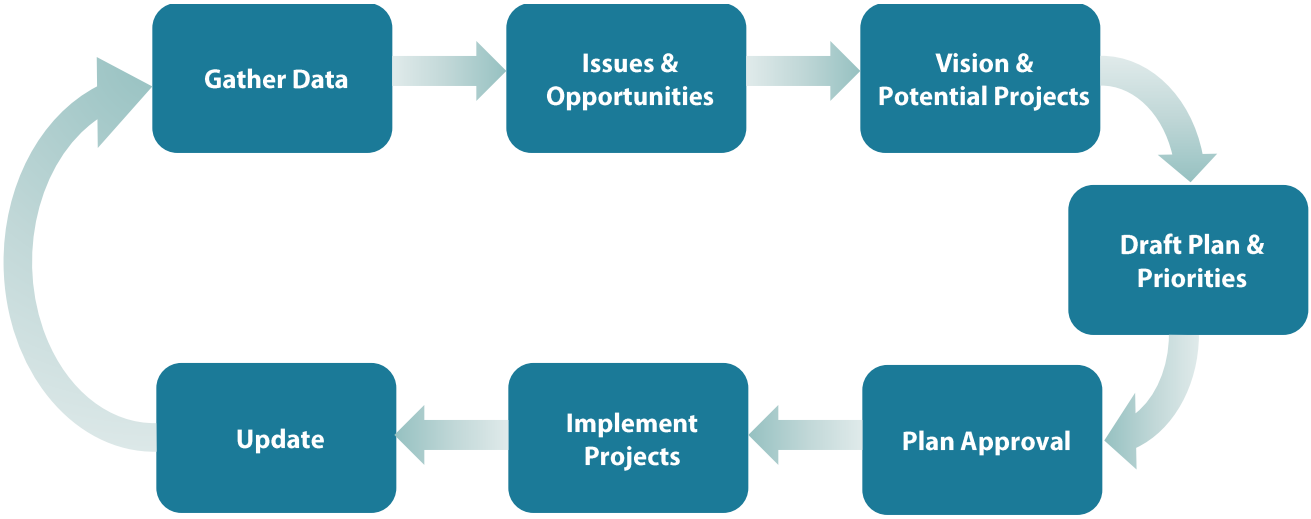
FIGURE 1: DHHL'S PLANNING SYSTEM



The roles of the Regional Plans within the Planning System are to:

- Apply the goals, policies, and land use designations of the General Plan, Program Plans, and applicable Island Plan to specific geographic regions;
- Directly involve the community in planning for their region;
- Compile comprehensive information about the region to provide a factual basis on which to identify needs and opportunities;
- Evaluate changes needed, if any, to the Island Plan as it applies to the region;
- Identify potential resources (e.g., partners, funding sources) to facilitate implementation; and
- Identify priority projects that are important to the community and implementation steps to move these projects forward.

FIGURE 2: DHHL REGIONAL PLAN DEVELOPMENT AND UPDATE PROCESS



Regional Planning Process

The development of Regional Plans involves seven steps, with beneficiary input and involvement throughout the process (see Figure 2):

1. **Gather Data.** Assemble and summarize pertinent data describing existing conditions and trends, including history of the homestead, land use, infrastructure, natural features, historic/cultural features, surrounding uses, and development trends.
2. **Identify Issues and Opportunities.** Gather input from existing homesteaders, native Hawaiian beneficiaries, and other stakeholders on issues and opportunities for the region through a facilitated meeting.
3. **Create a Long-Term Vision and Identify Potential Projects.** Synthesize input from the community on issues and opportunities to craft a draft vision statement that is reviewed and modified, as necessary, to the satisfaction of the community. Identify potential projects consistent with this vision and prioritize projects by community consensus.

4. **Review Draft Plan and Priorities.** Write up project details, budget estimates, and other pertinent project planning information as part of a draft plan for review by the community.
5. **Approve the Plan.** Submit the Draft Regional Plans for approval by the Hawaiian Homes Commission, signifying that the Commission and Department officially support the priorities identified in the Plan.
6. **Implement Priority Projects.** Upon approval, the homestead community, the Department, and other development partners can seek necessary funding and pursue the implementation of Priority Projects.
7. **Update.** Update regional plans periodically to incorporate emerging issues and reflect changing opportunities and priorities.

Stakeholders and Partners

DHHL is working in partnership with other government agencies, the private sector, and community organizations to develop its lands and promote healthy and self-sufficient beneficiary communities. DHHL believes that partnerships are an effective way to leverage resources and capital investments, mitigate undesirable impacts of development, coordinate area growth, reduce risks associated with large scale community projects, and create broad community benefits.

These partnerships allow for better prioritization and coordination of infrastructure improvements and the development of regional and public residential facilities. This coordination also helps individual organizations achieve their goals while bringing long-term benefits to the community and region.

DHHL Master Planning Process and Community Development Goals

Homestead associations are frequently interested in developing capital improvement projects within their communities to provide needed social services and enrichment opportunities. The need for these desired projects is often documented in DHHL Regional Plans. While the characteristics of projects proposed are as diverse and unique as the DHHL communities in each region across the state, the overall planning and development process for these projects is the same in most instances.

Successfully implementing any type of land development project requires several basic foundational elements prior to project initiation. A strong organization that has a membership that works well together and has high levels of participation in regular association business ensures that: (1) projects are selected based upon agreed upon criteria rather than individual preferences, (2) project plans are created, and (3) large amounts of social capital are built within and outside of the community. Figure 3, Community Organization & Development, briefly describes these elements of organizational capacity and project planning in more detail. The top level represents the steps that the homestead association (project proponent) should complete.

Most organizations go through five main stages of an organization's developmental lifecycle:

1. **Stage One: Imagine and Inspire.** The organization is not yet formalized, but individuals are inspired and united by a common vision or idea.
2. **Stage Two: Found and Frame.** The organization becomes formalized. Governing documents have been drafted and adopted by its members. The organization receives its non-profit status.

3. **Stage Three: Ground and Grow.** An organization in this stage focuses on establishing systems of accountability to its members as well as growing its internal capacity to provide more services or a higher quality of service to its members.
4. **Stage Four: Produce and Sustain.** This is the stage in which the organization is at its peak and is primarily concerned with how it can sustain its level of service over time.
5. **Stage Five: Review and Renew.** The organization re-invents itself in order to adapt to evolving conditions. The primary question the organization is concerned with at this stage is: "How can we do it better?" The organization revisits its mission, vision, services, and management structure.

Social capital can be defined as the networks of relationships among people who live and work in a particular society, enabling that society to function effectively. From time to time, a homestead association should assess its social capital both internally among its members as well as among external stakeholders and potential partners in order to determine the level of potential support for and/or opposition to a proposed land development project. Figure 3, Community Organization and Development, illustrates the various social circles that should be engaged to support a land development project. Often, a development idea starts with a core group of individuals on an association board. Gradually that idea is shared with, and incorporates the ideas of, others in larger social circles in order to grow social capital and build support for a development project.

Lastly, Figure 3 illustrates that the association's assessment of its life cycle and existing social capital should be incorporated into a program plan. A program plan clearly articulates a community vision or need, identifies criteria for selecting programs or projects to fulfill that vision or need, and selects appropriate projects and programs based on those criteria. Programs/projects should be selected based on strong community support for the initiatives and the association's organizational capacity.

Once an association has done outreach with its community to identify its vision and goals, established criteria for selecting projects that help it accomplish its vision and goals, and selected project(s) that have strong community support, then the association can begin with the actual physical master planning and development of the project(s). Figure 4, Master Planning and Land Development Process on Hawaiian Home Lands, illustrates the process of master planning and land development on Hawaiian Home Lands.

Project Proponent Tasks:

- The project proponent should focus their time and attention to ensure that the community's vision and needs are integrated into the project.
- The project proponent should conduct a site and infrastructure assessment of the location in which they would like to implement the project in order to ensure that the location is appropriate for what they would like to do.
- A master plan should integrate and synthesize the community's vision and needs with the site and infrastructure assessment. A master plan should also include a financial plan that forecasts initial development costs, long-term operational costs, and how those costs will be financed over time.
- An Environmental Assessment (EA) or Environmental Impact Statement (EIS) needs to be prepared for the Master Plan in accordance with Hawaii Revised Statutes (HRS) Chapter 343. If federal funds are used for the project, then a federal EA or EIS may need to be completed in accordance with the rules and standards of the federal funding agency.

- Once Chapter 343 and federal environmental regulations are complied with, then the project proponent can proceed with obtaining the necessary permits and approvals and proceed with construction.

The next steps after the Project Proponent Tasks in Figure 4 include various DHHL staff reviews and HHC approvals that the Project Proponent will need to obtain.

Requests by Non-Profit Organizations for Long-Term Use of DHHL Lands

DHHL has begun implementing a process for Internal Revenue Code (IRC) § 501(c)(1) or IRC § (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 process implements the Hawaiian Homes Commission Act (HHCA), Sections 204(2) and 207(c), which authorize DHHL to lease or license lands for non-homesteading purposes with the same terms, conditions, restrictions, and uses applicable to the disposition of public lands as provided in HRS Chapter 171. HRS 171-43.1 authorizes DHHL to dispose of lands to eleemosynary organizations[1] by direct negotiation without requiring a competitive solicitation process. The application process is designed to provide an opportunity for non-profit organizations to conduct due diligence on the project site and vet their conceptual plans in consultation with DHHL prior to requesting HHC approval of a long-term disposition. See "Implementation Action Steps" under "Priority Projects" for a more detailed list of steps and requirements for these types of land use requests.

[1] According to Law Insider, Eleemosynary means charitable, including types of activities in which some social objective is served or general welfare is advanced. https://www.lawinsider.com/dictionary/eleemosynary

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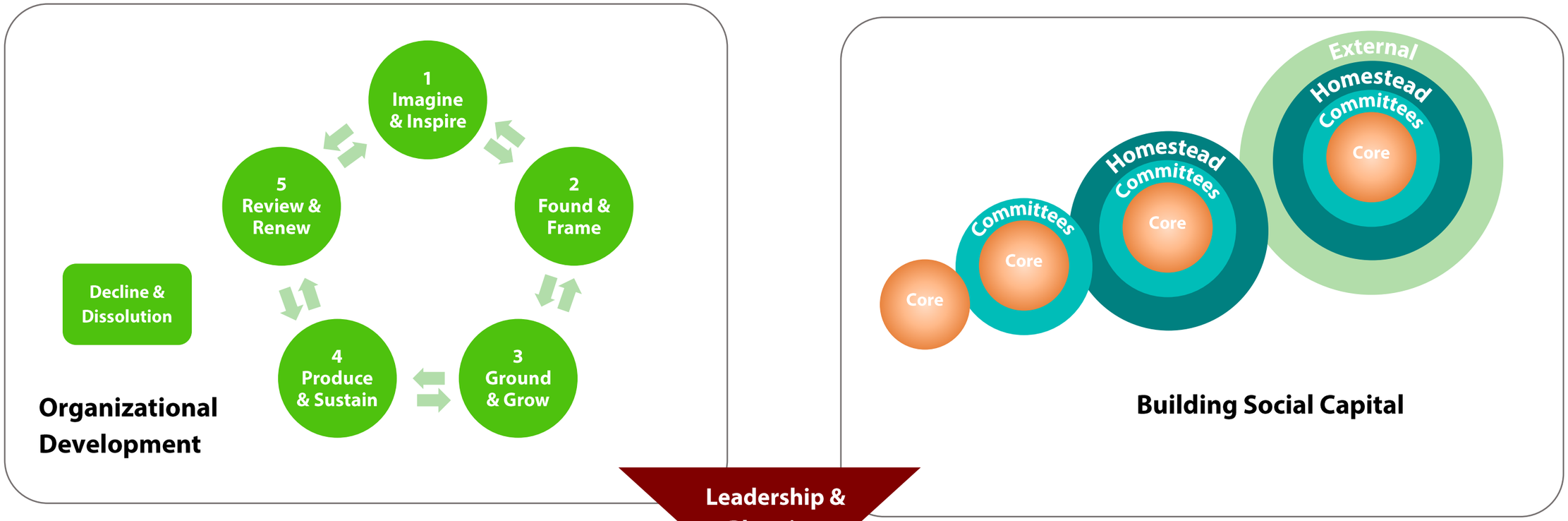
FIGURE 3: COMMUNITY ORGANIZATION & DEVELOPMENT



- ✓ All activities are rooted in community vision
- ✓ Good programs/projects build social capital and develop strong organizations
- ✓ Programs/projects should be selected based on community support and organizational capacity

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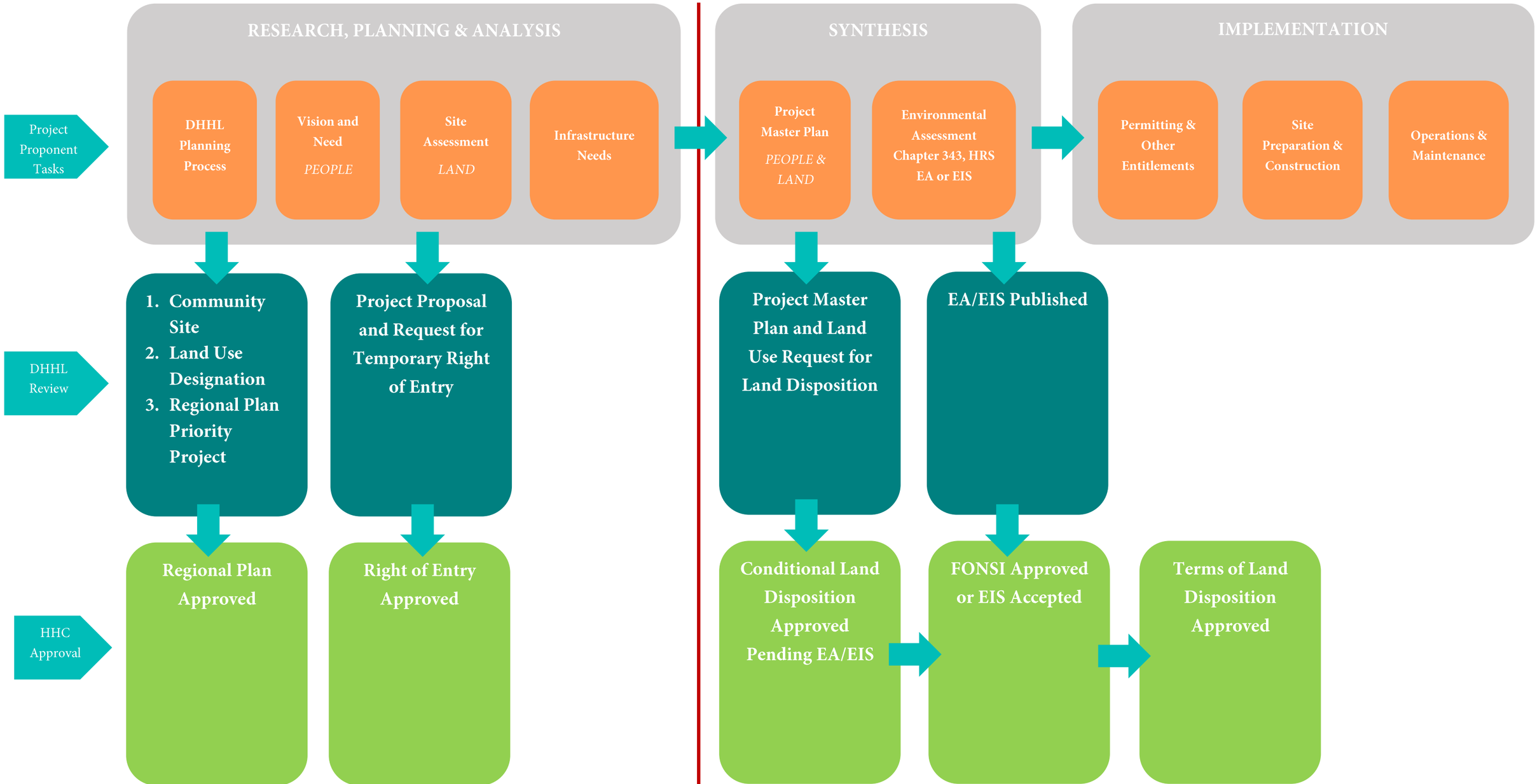
FIGURE 4: MASTER PLANNING AND LAND DEVELOPMENT PROCESS ON HAWAIIAN HOME LANDS



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Methods and Approach

Communications

The project utilized a variety of digital and in-person means of engaging with the Anahola community. Initial outreach to homestead leaders was conducted virtually, while beneficiary consultation meetings were held in person.

The beneficiary consultation meetings were publicized through mail-outs of meeting notices via postal mail to all Anahola lessee addresses on Kauaʻi within the DHHL system and digital meeting invitations and reminders sent to community leaders and stakeholders via email. The email invitations were sent to all who attended previous meetings and provided their email address at sign-in. A web page for the project was established and hosted on the DHHL website and was updated throughout the process with records and materials from all beneficiary consultation meetings.

Beneficiary Consultation

The approach for beneficiary consultation included a variety of activities, including individual outreach (homestead leadership meetings), convening the community (beneficiary consultation meetings) and going out into the community to talk to people, observe current conditions, and visit proposed project sites (site visits). A survey instrument was also deployed as part of the process to broaden participation and awareness and gather input on priority projects for the plan.

Beneficiary consultation meetings included large group discussion and break-out groups to facilitate in-depth sharing on topics related to community values and a long-term vision, issues & opportunities and project ideas. Open house displays were also provided with background information on the project and process for those who were new to the process. Notes were captured at all beneficiary consultation meetings on chart paper and meeting summaries were posted on the project website. Summaries of each beneficiary consultation meeting can be found in the appendices of this document. A timeline and description for each of the key beneficiary consultation activities in the Regional Plan Update is provided below.

September 30, 2021-June 6, 2022: Homestead Leadership Meetings. The Anahola Regional Plan Update began with outreach to homestead leaders to introduce the project team, share more about the Regional Plan Update purpose and process and ask for insight and guidance on a planning process that would best fit the Anahola beneficiary community. Outreach occurred in September through November 2021, and meetings were scheduled per the availability of the homestead leaders. Due to the public health risks and mandates from the State and Kauaʻi County governments related to the COVID-19 pandemic, the homestead leadership meetings were hosted virtually via Zoom. One meeting was held in-person later in the planning process, in June 2022, with leadership of the Anahola Hawaiian Homestead Association. Leaders from the following community/homestead organizations participated:

- Piʻilani Mai Ke Kai Community Association (9/30/2021)
- Kūkulu Kumuhana O Anahola (10/29/21)
- ʻĀina Alliance (11/3/21)

- Mālama Anahola (11/19/21)
- Anahola Hawaiian Homestead Association (6/6/22)

Leaders from each organization were provided space to share community updates and asked for guidance and input on the planning process for the Regional Plan Update. In the meetings, leaders offered advice on the best days, times and locations for the beneficiary consultations and also provided recommended contacts to invite to meetings and help in the distribution and publicity of meeting announcements and invitations for the various beneficiary consultations throughout the planning process. Leaders recommended hosting beneficiary consultation meetings in person when possible. One leader recommended distributing information and surveys online to accommodate and encourage input and participation from beneficiaries who were unable to attend in-person meetings. Notes from homestead leadership meetings were recorded and referenced by the project team in developing the consultation approach.

December 2, 2021: Site Visit #1. The site visit included DHHL staff and project consultants and began with leaders from Kūkulu Kumuhana O Anahola (KKOA). The project team visited the Hawaiian Home Lands parcel currently under Right-of-Entry for KKOA's planned Ulupono Farm youth agricultural project. KKOA also took the project team to a mauka agricultural lot currently being utilized by KKOA for hand-on learning, planting, and agricultural cultivation. The project team also visited the Hawaiian Home Lands parcels mauka of Anahola that had recently been cleared of albizia trees through an agreement with Green Energy Team, including the site of future Kuleana homestead lots identified in the Anahola Kuleana Settlement Plan.

December 2, 2021: Beneficiary Consultation Meeting #1. This meeting introduced the project team, explained the DHHL planning system and the purpose of Regional Plans, presented the Anahola Regional Plan Update Process, and shared the beneficiary consultation schedule. A facilitated discussion gathered input from beneficiaries on their long-term vision for Anahola, important community values, and issues and opportunities in the region. The meeting was hosted at the Anahola Clubhouse and 36 beneficiaries signed in.

After the introductory presentation, the meeting was opened for questions. The initial questions focused on what projects were included in the 2010 Regional Plan and what has been done to implement each. After the questions and concerns were voiced and responded to, the group discussion moved into identifying issues and opportunities.

The major ideas and themes that were voiced around issues and opportunities led to participants sharing their vision for Anahola. The project team documented the vision elements and values shared on a large poster at the front of the room. The discussion and notes were synthesized to develop a list of community values and craft a draft vision statement for the region. See Appendix A for a summary of Meeting #1.

January 27, 2022: Site Visit #2. DHHL staff and project consultants conducted a site visit with ʻĀina Alliance to view lands makai of Anahola that are part of the proposed Makai Management Plan project. ʻĀina Alliance maintains a Right-of-Entry permit for roughly 400 acres for the purposes of clearing out abandoned cars and mitigating other illegal activities in this area, which includes the shoreline from Anahola Beach Park to the southern boundary of the Anahola ahupuaʻa, Lae Līpoa.

January 27, 2022: Beneficiary Consultation Meeting #2. The purpose of this meeting was to present the draft vision statement and values to the community for feedback and build on the issues and opportunities discussed in

the first meeting. An open house was set up to provide additional background information to attendees ahead of the discussion. The posters in the open house included:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status
- Draft Regional Values & Vision Statement
- Draft Issues & Opportunities
- Regional Map showing 2010 Priority Projects and Current Land Use Requests

The opening presentation provided updates on the current status of the 2010 Anahola Regional Plan Priority Projects, and responses to additional information requested during Beneficiary Consultation Meeting #1 related to: Piʻilani Mai Ke Kai Subdivision lot development, the Anahola Kuleana Settlement Plan, other project proposals and land requests on DHHL lands in the region, and a summary of vacant homestead lots in the area. To close the presentation, the draft vision statement and regional values were presented for feedback.

Following the opening presentation, meeting attendees broke out into two discussion groups to provide feedback on the draft vision statement and regional values and discuss issues and opportunities. The project team facilitated the discussions and took notes on chart paper. Meeting participants were also invited to mark-up and write down issues and opportunities on a large regional map placed on a central table in each group. The discussion and mapping of issues and opportunities led to a preliminary list of project ideas. See Appendix B for a summary of Meeting #2.





May 11, 2022: Beneficiary Consultation Meeting #3. The purpose of the third beneficiary consultation meeting was to solidify and refine the list of project ideas for the Regional Plan Update. Again, an open house with information was set up prior to the formal meeting. The posters in the open house included:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status
- Anahola Town Center Plan Bubble Map
- UPDATED Draft Regional Values & Vision Statement
- UPDATED Regional Map showing mark-ups and comments from Consultation Meeting #2

The opening presentation covered the updated beneficiary consultation schedule for the project and addressed the list of information and updates requested by beneficiaries at the previous meeting. The updates included information on the 51 vacant lots awarded in Piʻilani Mai Ke Kai and the $600 million in funding appropriated to DHHL at the close of the 2022 State legislative session.

Following the opening presentation, attendees broke out into two discussion groups. Each group reviewed the 2010 priority projects and provided feedback on whether the project or aspects of the project should be carried forward in the plan update. The remaining discussion focused on refining the list of project ideas for the plan update, including identifying project components, potential locations (if applicable), and timing. Notes were recorded on chart paper for each group. See Appendix C for a summary of Meeting #3.

May 23-June 10, 2022: Kou Manaʻo Questionnaire – Priority Projects. Following Beneficiary Consultation Meeting #3 a questionnaire was distributed to Anahola lessees and beneficiaries who attended prior meetings. The questionnaire was mailed to 499 lessees. Each respondent was able to select up to five projects from the list developed during the previous two Regional Plan Update meetings, each selection holding equal rank. Responses to the questionnaire were accepted through the Friday (June 10th) following Beneficiary Consultation Meeting #4 to allow individuals who had not responded to the questionnaire an opportunity to vote. 45 survey responses were submitted.

June 6, 2022: Site Visit #3. The site visit included DHHL staff and project consultants and was led by Anahola Hawaiian Homestead Association (AHHA) and the Homestead Community Development Corporation (HCDC) at Kumu Camp on Anahola Bay. AHHA/HCDC shared the history of Kumu Camp and also discussed their progress on the 2010 priority projects, providing a memo with updates and new suggestions for the update of the Regional Plan later that evening.

June 6, 2022: Beneficiary Consultation Meeting #4. The purpose of the fourth beneficiary consultation meeting was to confirm the priority projects for the Regional Plan Update and discuss implementation steps for each. As with previous meeting, an open house with information was set up for attendees to peruse. The posters in the open house included:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status
- Draft Final Regional Values & Vision Statement
- Regional Map showing existing land requests and comments from Consultation Meeting #2 & #3

The presentation reviewed the purpose of DHHL Regional Plans, shared the beneficiary consultation schedule, and provided preliminary results of the Kou Manaʻo Questionnaire that was mailed to Anahola lessees and emailed to beneficiaries who attended prior Regional Plan Update meetings. Lastly, additional information on community organization development and master planning and land development on Hawaiian home lands were shared.

After the presentation, the group moved into a facilitated discussion aimed at filling in implementation steps for the projects identified in the previous meetings and included in the Kou Manaʻo Questionnaire. Discussion notes were recorded on chart paper and implementation posters were filled in based on the meeting discussion. At the end of the discussion, those in attendance confirmed the five priority projects to include in the update to the Regional Plan. See Appendix D for a summary of Meeting #4.

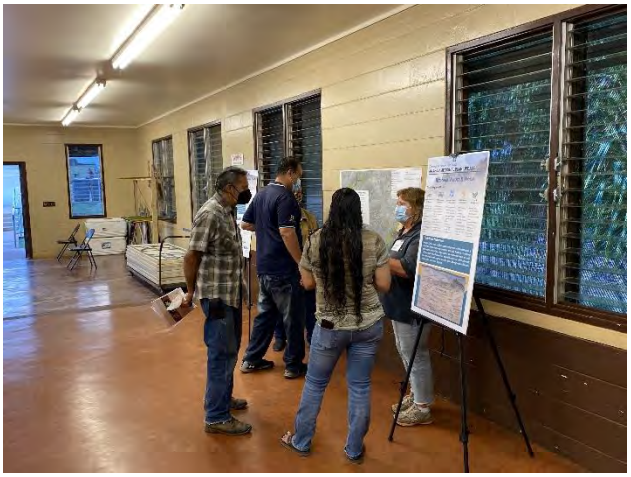
August 15 & 16, 2022: HHC Meeting. Planning Office staff provided an update for information only on the status of the Anahola Regional Plan Update at the August HHC Meeting and Kauaʻi Community Meeting.

October 22, 2022: Beneficiary Consultation Meeting #5, Draft Plan Open House. The purpose of the fifth and final beneficiary consultation meeting was to provide lessees and beneficiaries from the Anahola, Kamalomaloʻo, and Moloaʻa region the opportunity to review and comment on the draft Regional Plan Update, including the draft priority projects. The meeting was organized as a community open house hosted by beneficiary-led organization, Kahu O Ka Pāka Kahakai ʻo Anahola and held on the site the volunteer group manages and takes care of at Anahola Beach Park**.** The event greatly benefited from the generosity, leadership, and participation of beneficiaries who help to organize and set up the open house.

The open house stations mirrored the sections of the Regional Plan Update draft and the information presented was summarized from the draft text. Full copies of the plan were available for open house attendees to peruse, and guests were invited to provide their information to receive a hard copy of the draft plan in the mail, if interested.

Three of the priority projects are community driven: Hōʻākeolapono Trades Academy and Institute: Home Building Resource Center, Makai Management Plan, and Anahola Place-Based Education Network; each of these stations had a community champion or point of contact to answer questions and encourage beneficiaries to sign-up to kōkua with future project implementation. Two priority projects require DHHL to lead implementation efforts: Surface Water Resource Management and Mauka Farm Lot Implementation; DHHL staff were available to answer questions, gather feedback and encourage beneficiaries to sign up to support implementation at these stations. Project team staff were also floating between stations to listen to feedback and answer questions.

See Appendix E for a summary of Meeting #5.















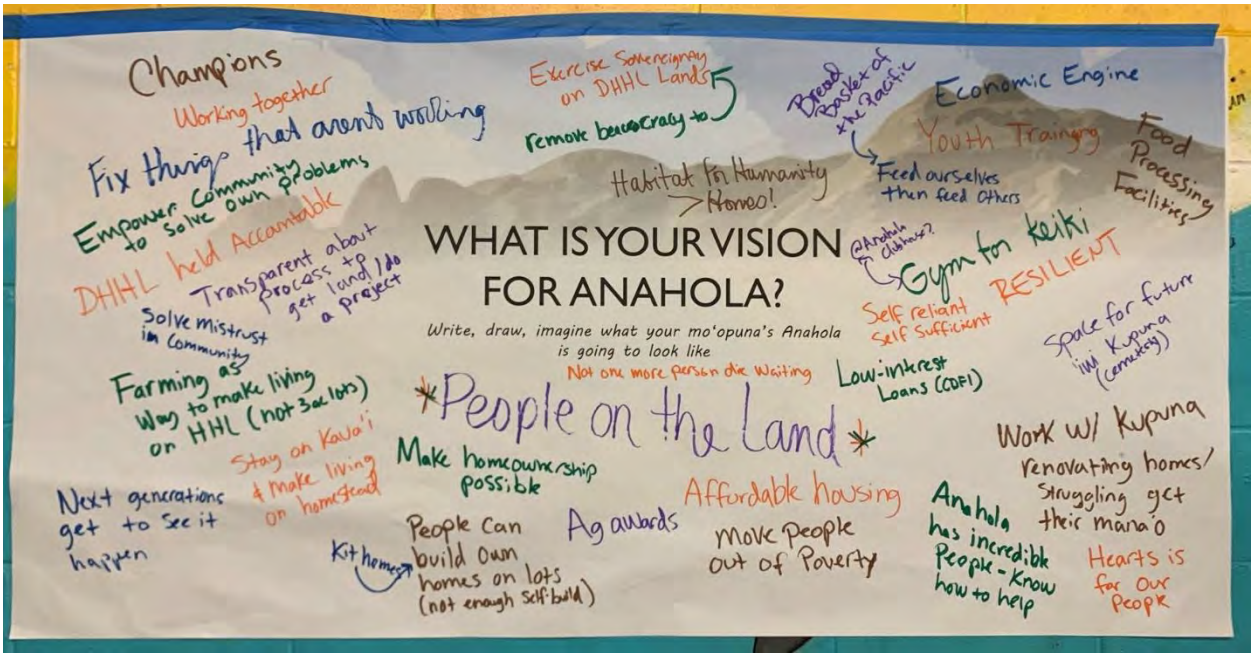


Anahola Vision and Values

> "Anahola is a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai. We come together to heal our differences and work toward a sustainable future, drawing wisdom from Hawaiian knowledge and traditions while incorporating the tools and technologies of today."

This vision statement represents the community's hopes for what Anahola's future could look like. This Regional Plan Update is the first to incorporate a vision statement for Anahola. A vision is an aspirational statement that serves as a guiding star for the community to collectively strive for. All planning, projects, and actions in the community should be consistent with and ultimately advance the vision.

The vision was developed based on the ideas and discussion generated at Beneficiary Consultation Meetings #1 and #2. During the first consultation meeting, attendees spent the last portion sharing elements of their vision for Anahola. The project team documented these vision elements and the community values shared on a large poster at the front of the meeting (see image below). In Beneficiary Consultation Meeting #2, a draft vision statement and list of community values was shared for further input. The final vision was refined and presented at Beneficiary Consultation Meeting #3.



Guiding Principles

Progress toward the vision should be guided by values important to the Anahola community, which are articulated in the guiding principles below:

- Support and Care for our Kūpuna
- Uplift and Empower Our Youth
- Community Education and Capacity Building
- Sustainable and Resilient Aloha ʻĀina Economy
- Community Support and Collective Action
- Trust and Transparency

Support and Care for our Kūpuna

We support and care for the kūpuna in our communities. We seek and listen to the manaʻo our kūpuna share and provide them with care and resources to live comfortably and safely in Anahola. In this way, we honor and carry the legacy of our kūpuna into our community's future.

Uplift and Empower Our Youth

As we plan, we think of the next generation. Starting today, we commit to putting our vision in action so the next generation may see it happen and carry it forward. We create safe spaces in our communities for youth to come together and provide opportunities that empower the next generation of leaders.

Community Education and Capacity Building

Education is the foundation that drives us forward. We share knowledge, experience, and skills within our community and look to examples and lessons from other communities to help us implement our priority projects and bring our vision to life.

Sustainable and Resilient Aloha ʻĀina Economy

Our plans connect Hawaiians to the land and create sustainable and resilient economic opportunities so people can support themselves and thrive in Anahola. We mālama the land and water resources of our ahupuaʻa to provide sustenance for current and future generations.

Community Support and Collective Action

Anahola has incredible people who know how to help and community champions who encourage people to show up and participate. Our plans build the capacity of people in our community to kākoʻo one another, work to uphold community values, and fix things that are not working.

Trust and Transparency

Programs and projects are successful when there is trust and transparency within the community and with DHHL. We work together to address the needs and desires of the community and ensure transparent communication and accountability throughout project planning and implementation.

Planning Area

Location

The Anahola planning area encompasses three ahupuaʻa along the northeast coast of the mokupuni of Kauaʻi – Anahola, Kamalomaloʻo, and Moloaʻa. Anahola and Moloaʻa are located within the moku of Koʻolau, while Kamalomaloʻo is located within the moku of Puna. The Anahola Regional Plan area is located within a district which is known today as Kawaihau. The region includes 4,228 acres in Anahola and Kamalomaloʻo, extending mauka from the shoreline to the Kealia Forest Reserve. There are an additional 316 acres of undeveloped lands located north of Anahola, between Anahola and Kīlauea town, in Moloaʻa.

Anahola is the largest Hawaiian homestead community on Kauaʻi, however most of the land is undeveloped. Currently, the region includes residential homestead lessees in the Anahola residential, Bayview residential, and Piʻilani Mai Ke Kai subdivisions, and agricultural lessees in the Anahola Farm Lots. The Kauaʻi Island Plan (DHHL 2004) designated the following land uses within the planning area:

Anahola-Kamalomaloʻo

- Residential – 565 acres
- Subsistence Agriculture – 533 acres
- Pastoral – 148 acres
- General Agriculture – 1,018 acres
- Special District – 1,419 acres
- Community Use – 127 acres
- Conservation – 350 acres
- Commercial – 68 acres

Moloaʻa

- Subsistence Agriculture – 200 acres
- General Agriculture – 86 acres
- Special District – 30 acres

See Figure 5: Project Area & Figure 6: Ahupuaʻa Map below

FIGURE 5: PROJECT AREA MAP

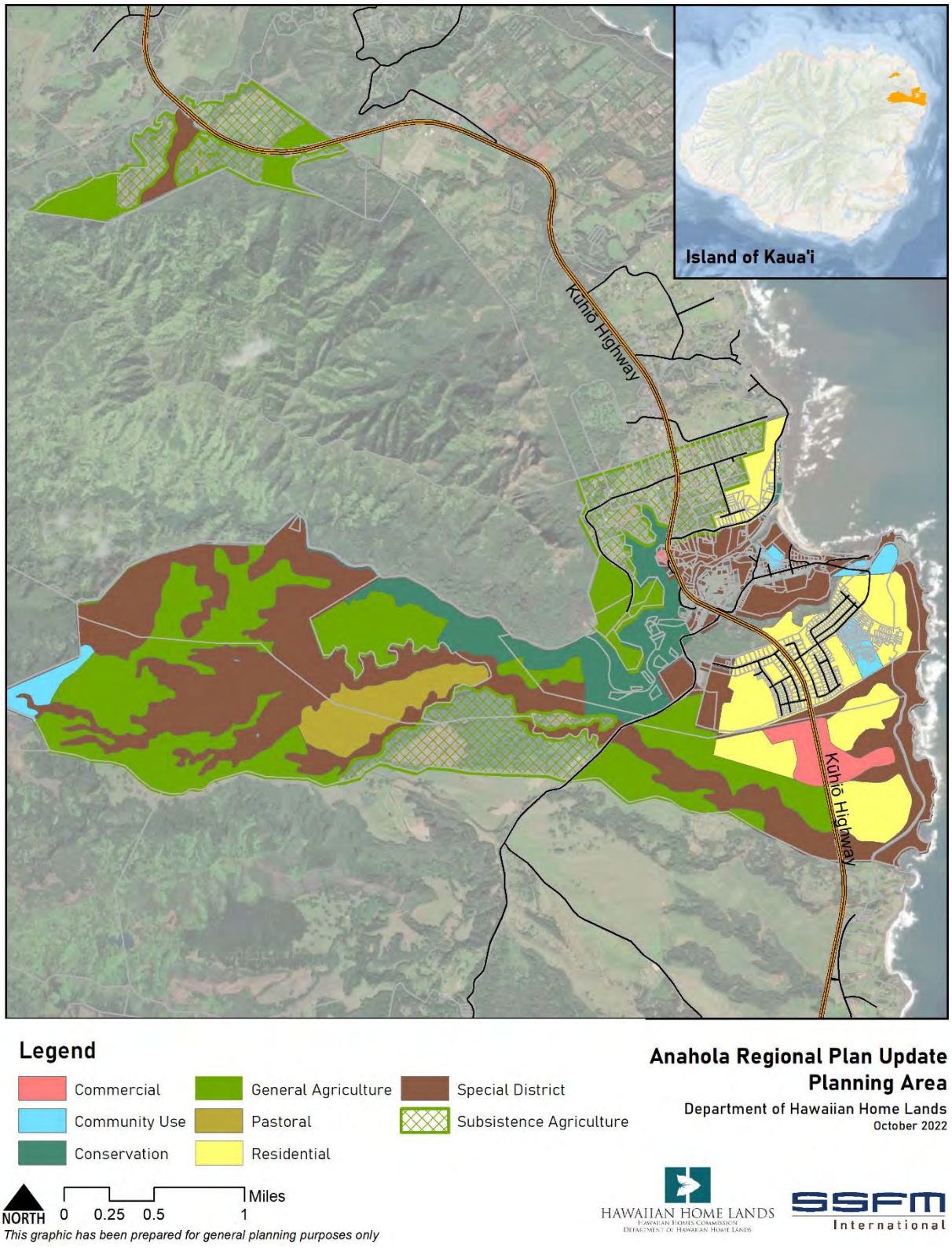
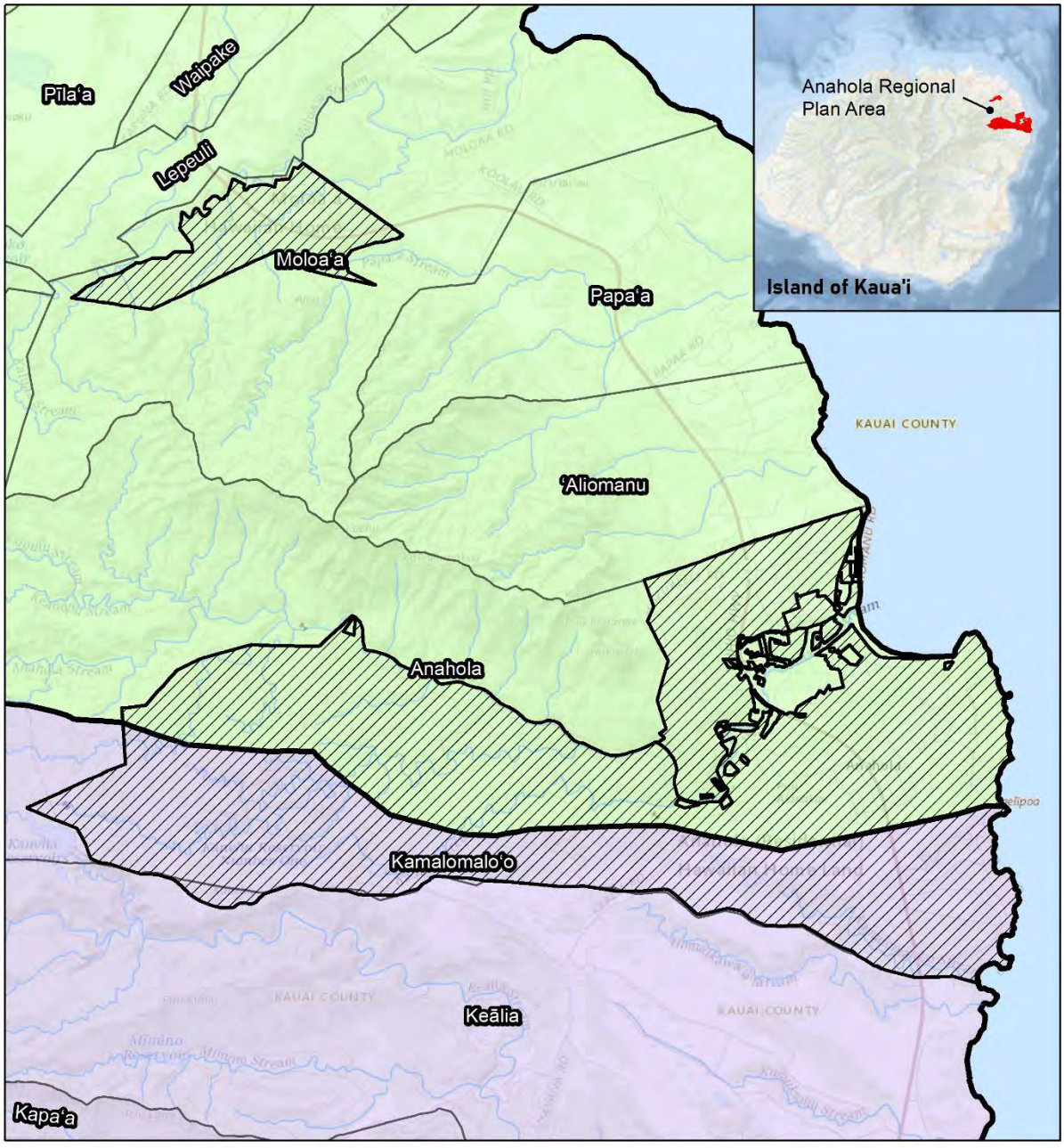


FIGURE 6: AHUPUA'A MAP



Legend

DHHL Parcels
Ahupuaa Boundaries
Moku Puna
Moku Koolau

NORTH 0 0.375 0.75 1.5 Miles

This graphic has been prepared for general planning purposes only

Anahola Regional Plan Update
Ahupua'a

Department of Hawaiian Home Lands
October 2022

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

Regional History

The planning area is within the moku of Koʻolau, located along the northeast coast of the mokupuni of Kauaʻi and moku of Puna. These also encompass Wailua and Līhuʻe, which are historically the seats of government and the religious center of the Kauaʻi Kingdom.

Anahola has a rich natural and cultural history. Some of the earliest recorded articles highlight that Anahola was prosperous and hosted a large native population. Records from around the time of the Great Māhele note abundant water from the Anahola Stream and loʻi kalo. Following the 1848 Māhele, cash-crop agriculture and cattle ranching gradually replaced traditional subsistence pursuits on the land, and labor from outside Hawaiʻi was brought into the sugarcane and pineapple plantations, with many of these individuals eventually marrying into local families. Loʻi and terraces were converted to rice production in the valley floor, and kula land once planted in traditional tree crops became the locus of vegetable farming for markets outside the district.[2]

Prior to DHHL's ownership of the Anahola lands, much of the region was where the former Līhuʻe Plantation operated. The plantation-built irrigation ditches, sluice gates and culverts, a road to haul sugar and a small airstrip used for crop dusting. Since the closing of the plantation, much of the land was overtaken by invasive albizia trees (*Falcateria moluccana*).

Homesteading in Anahola began in the late 1950's with opportunities for native Hawaiian beneficiaries to own homes on residential and agricultural lots. Today, the Anahola region is the largest homestead community on Kauaʻi.

Ahupuaʻa

Anahola is the largest of 10 ahupuaʻa within the moku of Koʻolau. Located between the ahupuaʻa of ʻAliomanu to the north and Kamalomaloʻo (Puna) to the south. Anahola's boundaries along the shoreline stretch from Papaloa on the east to Kuaehu on the west. Anahola is rich with natural and cultural history and resources. The primary water source is the Anahola river which is fed by many tributaries, the four most important being Peʻekōʻapu (hidden medicine made of sugar cane), Kaʻūʻpākū (the veiled breast), Kaʻālula (a special variety of lobelia flower), and Keaoʻōpū (the rising dawn). Anahola is more well-known than Kamalomaloʻo given its higher "carrying capacity," or ability to feed and support more people, its unique geography, surf breaks, large number of historic Māhele claims, and developed modern community.[3]

The Anahola ahupuaʻa is said to be named after a legendary moʻo kupua (lizard demigod) who had lived in Koʻolau moku. Anahola is home to one of the largest rivers in the Koʻolau District with a wide bay, and more extensive lower flat lands with great agriculture potential to feed and support people.

Kamalomaloʻo is the northernmost ahupuaʻa in the moku of Puna. The name for Kamalomaloʻo literally translates to "the dry malo" and is associated with moʻolelo about chiefs arriving on the shoreline from the waʻa (canoe) and

[2] Merrin, L., Cordy, D. and Forrest D.K. March 2020. *Anahola I ke Au Holo: A Cultural Impact Statement for DHHL's Anahola Kuleana Homestead Tract.* Nohopapa Hawaiʻi.
[3] Handy, E.S.C., E.G. Handy, and M.K. Pukui. 1972. *Native planters in Old Hawaii: Their life, Lore and Environment.* B.P. Bishop Museum Bulletin 223, Bishop Museum Press, Honolulu as cited in the Anahola Kuleana Settlement Plan (2021)

being supplied with a dry malo (loincloth). Kamalomaloo ahupuaʻa has a small stream, a rocky reef; and although it stretches far mauka, it is characterized by extensive kula lands.

Moloaʻa is located within the Koʻolau moku to the north of Anahola, separated by the ahupuaʻa of ʻAliomanu and Papaʻa. The name Moloaʻa translates to matted or tangled roots, or alternatively as tied up canoes. Historic accounts recall the low hills of Moloaʻa being covered with the roots of overgrown wauke plants matted and woven together.[4]

Wahi Pana and Places of Importance

There are many wahi pana and places of importance that are found within the Anahola Region. Kalaleʻa is the famous landmark of Anahola. This puʻu can be seen from land and sea and is spoken of in chants and mele and incorporated into modern films. Within Anahola a number of moʻolelo are often told, including the following:

- Alaweo pond at the mouth of Anahola River is said to be the home of a moʻo, Pehuiki, who is the guardian of the pond. Pehuiki is said to have three daughters who were often seen sitting on the banks of Alaweo pond, combing their long hair. The four moʻo are said to sleep in the cave of Hāhālina.
- Lāʻieikawai and her twin sister Lāʻilohelohe were born in Koʻolau, Oʻahu, where their father was a great chief. Lāʻieikawai and her sister were separated at birth and hidden because their father had sworn to kill all of his daughters who were born before he had a son. It is said that there was a prayer tower on the peak of Hōkūʻalele from which the prophet Hulumāniani announced that Lāʻieikawai would eventually settle on Kauaʻi.
- A large rectangular rock on the slopes of Hōkūʻalele is said to have once been a man who was punished by being turned to stone. The punishment was served to the man for spying on Lahemanu, the daughter of a chief, while she took a bath.
- Kawelo was a young chief of Kauaʻi who had many adventures, some of which associate him with Anahola.

Historical and archaeological sites in Anahola include burial dunes near the shore, Aikanaka Heiau, Paeaea Heiau, Kuhua Heiau and Taro Terraces throughout the ahupuaʻa.



View of Kalaleʻa from DHHL's mauka lands with remnants of logged albizia trees in the foreground (Source: SSFM)

[4] Nā Hōkū Welo, LLC; County of Kauaʻi Office of Economic Development. https://kauainuikuapapa.com/. Accessed August 2022.

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Existing Land Uses

DHHL has established land use designations for its lands across all islands. These land use designations are established in the General Plan and Island Plans. The following are descriptions of the land use designations that are found within the Anahola region according to the DHHL Kauaʻi Island Plan (2004). An update to the DHHL General Plan , approved by the Hawaiian Homes Commission in November 2022, provides a uniform system of land use designations for use on DHHL lands statewide. These updated land use designations will be incorporated into future Island Plan updates, in some cases modifying or adding criteria to the land use designations currently in use in Anahola and elsewhere on Kauaʻi. Until then, the Island Plan designations remain in place, as follows:

- **Residential (Homestead):**
  - Residential subdivisions built to County standards in areas close to existing infrastructure
  - Lots awarded to applicants on the residential waiting list
  - Lot size less than or equal to 1 acre
  - Recently enacted administrative rules permit the development of multi-family units and accessory dwelling units
- **Subsistence Agriculture (Homestead):**
  - Small lot agriculture
  - Lifestyle areas intended to allow for home consumption of agricultural products
  - Lots awarded to applicants on the agricultural waiting list
  - Occupancy is optional
  - Lot size less than or equal to 5 acres
  - Minimum infrastructure must include water (catchment, potable, or surface) and road access
- **Pastoral (Homestead):**
  - Large lot agriculture specifically for pastoral uses
  - Lots awarded to applicants on the pastoral waiting list
  - Occupancy is optional
  - Ranch plan & fencing required
  - Lot size less than or equal to 1,000 acres
  - Minimum infrastructure must include road access and livestock drinking water
- **General Agriculture:**
  - Intensive or extensive farming or ranching allowed
  - Uses subject to HRS Chapter 205
  - May serve as an interim use until opportunities for higher and better uses become available
  - No minimum infrastructure requirements
- **Special District:**
  - Areas requiring special attention because of unusual opportunities and/or constraints (e.g., natural hazard areas, open spaces, raw lands far from infrastructure that are difficult to improve, mixed use areas, and greenways
  - No lot size restrictions at present
  - No minimum infrastructure requirements

- **Community Use:**
  - Common areas for community uses
  - Includes space for parks and recreation, cultural activities, community based economic development, utilities and other public amenities
  - No lot size restrictions at present
  - Infrastructure must meet County standards
- **Commercial:**
  - Lands suitable for retail, business, and commercial activities
  - Infrastructure must meet County standards

The Anahola Town Center Plan (2009) created a vision and conceptual plan for a portion of DHHL's Anahola lands on either side of Kūhiō Highway. The plan was developed through a community-based process and adopted by the Hawaiian Homes Commission in 2009. Implementation of the Anahola Town Center Plan was identified as a priority project in the 2010 Anahola Regional Plan; however the land uses proposed in the plan were never adopted as amendments to the Anahola/Kamalomaloʻo Land Use Plan in the 2004 Kauaʻi Island Plan. Elements of the Town Center Plan included:

- A homestead community area encompassing existing community projects makai of Kūhiō Highway adjacent to the existing residential lots.
- Active recreational uses located on the makai side of the highway.
- Preservation of existing gulches as open space while accommodating native plant restoration projects and access for walking.
- Civic uses located at the town center core with hard and soft open spaces for people to gather.
- Safe pedestrian crossing points across Kūhiō Highway.
- Retail uses along the highway to take advantage of street frontage traffic.



Anahola Town Center Plan Conceptual Master Plan Illustration (2009)

- Interconnected cultural use areas and gathering places, flowing from the highway through the town core and wrapping into the gulches.
- Commercial uses within the town core reserved for homestead commercial uses to promote economic sustainability within Anahola. Light industrial uses in the periphery to serve the same purpose.
- Land designated for a cemetery, transfer station, marine science center, health facilities, schools, and kupuna housing.

Total Lots and Acreage

TABLE 1: ANAHOLA-KAMALOMALO'O ACREAGE

Land Use	Total Acreage
Residential	565 acres
Subsistence Agriculture	533 acres
Pastoral	148 acres
General Agriculture	1,018 acres
Special District	1,419 acres
Community Use	127 acres
Conservation	350 acres
Commercial	68 acres
Total:	**4,228 acres**

TABLE 2: MOLOAʻA ACREAGE

Land Use	Total Acreage
Subsistence Agriculture	200 acres
General Agriculture	86 acres
Special District	30 acres
Total:	**316 acres**

Homestead Uses

Anahola is the largest Hawaiian homestead community on Kauaʻi and plans are in place to continue developing new homesteading opportunities. Anahola's first homestead lease was awarded in 1957 and since then over 500 residential and agricultural lots have been awarded. In 1987, a Development Plan was prepared for Anahola/Kamalomaloʻo. The plan analyzed all DHHL lands in Anahola and envisioned the region as a contemporary ahupuaʻa providing a mixture of land uses for cultural, homesteading, agricultural, pastoral, income-generating, and public purposes. In 2004, DHHL produced the Kauaʻi Island Plan, which increased the residential land use areas in the region, reflecting DHHL's emphasis on increasing residential awards at the time. Since the 2004 Island Plan, DHHL has reinvigorated its agricultural homestead program, creating plans for subsistence agriculture and pastoral lots in Anahola.

There are 577 homestead leases in Anahola as of August 2022:

- 531 residential leases
- 46 agricultural leases

There are 66 applicants on the Anahola area waiting list as of August 2022:

- 43 residential applicants
- 3 agricultural applicants
- 20 pastoral applicants

There are 4,313 applicants on the Kauaʻi Islandwide waiting list as of August 2022, breaking down as follows:

- 1,711 residential applicants
- 2,266 agricultural applicants
- 336 pastoral applicants

The oldest residential homestead lots are in Anahola Town on either side of Kūhiō Highway. Additional residential lots are located in Bay View off of Aliomanu Road, makai of Kūhiō Highway, and interspersed amongst fee simple lots in Anahola Village along Anahola Road. The existing Agricultural homestead lots are mostly located along Hokualele Road. As of February 2022, there were nine (9) vacant homestead lots without a lessee – two residential and seven agricultural lots.

Piʻilani Mai Ke Kai is one of the newest residential homestead communities on Kauaʻi, breaking ground in 2006. It is located makai of Anahola with access via Kukuihale Road. A total of 171 undivided interest awards were issued for the subdivision. Phase I includes 80 lots and turnkey homes with the final lots currently under construction. An additional 51 vacant lots were awarded in 2022 as Phase II. At the time of this Regional Plan Update, DHHL is procuring a design engineer to provide plans and specifications for the 40 lots planned for Phase III.

DHHL lands mauka of Keālia Road are currently planned for DHHL Kuleana lots for applicants on the agriculture and pastoral waiting lists. The Hawaiian Homes Commission approved the Anahola Kuleana Settlement Plan and Environmental Assessment-Finding of No Significant Impacts in 2021. The Settlement Plan includes 101 2-acre Subsistence Agriculture lots, 14 10-acre Pastoral lots, and 28 acres designated for Community Use. The Kuleana Settlement Program provides a homesteading alternative with quicker access to raw land (without utilities) and an opportunity to create a new self-sufficient community. The program is designed for beneficiaries that can handle the rigors of an "off-grid," subsistence lifestyle. Lessees who accept DHHL Kuleana homestead lease awards must agree to participate in the Kuleana Homestead Association and collectively participate in the maintenance of rights-of-way to the Kuleana Homestead tract and lots.

Community Uses

There are 127 acres of land designated for Community Use dispersed between four areas in Anahola. One area is being used by Kanuikapono Public Charter School and is located within Piʻilani Mai Ke Kai. Anahola Beach Park is another area designated for Community Use, a portion of which is maintained by a community group of volunteers. A third area known as Camp Faith near the mouth of the Anahola River by Anahola Bay is currently vacant. At the end of the valley is approximately 44 acres of Community Use area that was originally set aside for a mauka camp.

General Agriculture

The 2004 Kauaʻi Island Plan greatly increased the amount of land designated General Agriculture. The Island Plan explains that the impetus behind the increase in General Agriculture areas was to make land available for cooperatives and huis to develop, farm, and ranch as a more effective way to get beneficiaries on the land in the near term. These areas provide opportunities for people to engage in various agricultural practices that could be viable commercially. As of August 2022, there are 17 right of entry permits for short-term agricultural and land management activities in General Agricultural areas.

Commercial Uses

The Commercial use area is approximately 68 acres spanning either side of Kūhiō Highway. The area is mostly undeveloped, however in 2009, prior to the last Anahola Regional Plan Update, a Town Center Plan was developed that centered around this commercial core. The Anahola Town Center Plan was included as a priority project in the 2010 Anahola Regional Plan, but the continued implementation of the plan was not identified in this update as a priority project moving forward.

Special District

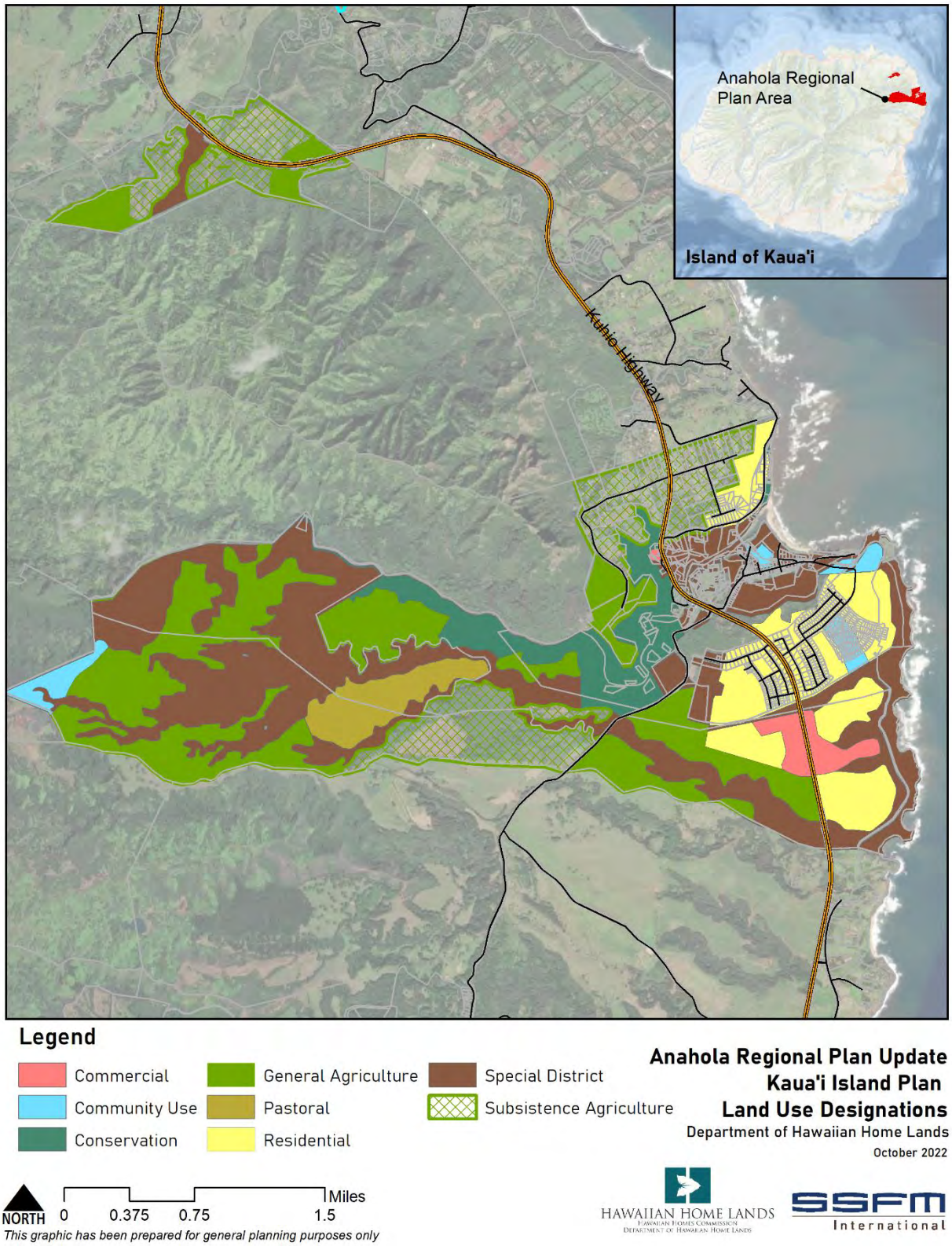
Special District areas in Anahola signify lands that need to be protected for cultural and environmental reasons or pose other challenges to development. Portions of the special district areas could be used for low intensity activities such as farming, ranching, or other outdoor recreation. Many of these lands are in steeper drainage areas or hazard zones. Some special district lands are designated as such for specific economic or community purposes.

Most of the 1,419 acres of land designated Special District is located mauka of Kūhiō Highway. This land consists mostly of deep gullies and steep slopes. The Special District areas makai of the highway are designated around the Anahola Stream and flood zones as well as vacant shoreline areas. Over the years, the makai area has lacked maintenance and accumulated trash, abandoned vehicles, and attracted illegal activities and squatting.

Conservation

Conservation areas protect the resources of the ahupuaʻa, including water resources. There are 350 acres of lands designated Conservation within the planning area. The Conservation area along the Anahola Stream corridor is also designated Conservation by the State Land Use District Commission and no development is proposed in these areas.

FIGURE 7: DHHL LAND USE DESIGNATION MAP



State and County Land Use Designations

In general, the DHHL land use designations are consistent with State Land Use Districts and County Zoning. In cases where they are inconsistent, DHHL may declare itself not subject to the State Land Use Law and County land use regulations pursuant to the HHCA, Section 204.

State Land Use Districts

In Anahola, the majority of the existing residential homestead lots, as well as some areas within Anahola Village designated Special District in the Kauaʻi Island Plan, are within the State Land Use Urban district. The State Land Use Urban District is generally for lands characterized by "city-like" concentrations of people, structures, or services and includes vacant lands for future development.

The majority of DHHL lands in Anahola and all of the lands in Moloaʻa are within the State Land Use Agriculture District. Homestead areas that fall within this district include portions of Anahola and Bay View residential lots and all of the Piʻilani Mai Ke Kai. The State Agriculture District includes lands for crop cultivation; aquaculture; raising livestock; wind energy facilities; timber cultivation; agriculture-support activities such as mills, employee quarters, etc.; and land with significant potential for agricultural uses. The Commercial areas on either side of Kūhiō Highway as well as the KIUC solar farm are also within the State Agriculture district.

As noted in the previous section, the area along the Anahola Stream corridor is within State Land Use Conservation district. Additionally, a buffer along the shoreline stretching from the southern end of Anahola Bay to the southern edge of DHHL's Anahola landholdings is within the State Conservation district.

Please refer to Figure 8 for a map of State Land Use Districts in the project area.

County Zoning

Most of the existing homestead residential lots are within R-4 or R-2 zoned districts. However, there are numerous inconsistencies between the County of Kauaʻi zoning districts and DHHL land uses, particularly in the areas where homestead uses lie outside of the State Land Use Urban district. In these cases DHHL may preempt the County zoning to allow the uses proposed in the Kauaʻi Island Plan. Development of additional residential lots in Piʻilani Mai Ke Kai, and expansion of Commercial and Community Use areas in Anahola will necessitate a declaration of the desired County zoning. The implementation of Subsistence Agriculture homesteads and other agricultural uses as designated in the Island Plan will be substantially consistent with County zoning.

The County of Kauaʻi does not have publicly available GIS zoning layers to overlay on a map.

Surrounding Land Ownership and Uses

The major landowners in the region in addition to the Department of Hawaiian Home Lands are the State of Hawaiʻi and County of Kauaʻi along with private land owners Kealia Land Company LLC, Cornerstone Hawaiʻi Holdings LLC, and Mahi Ai Awawa LLC.

The largest areas of State-owned lands are mauka areas above and north of Anahola in lands zoned for agriculture and conservation. The State of Hawaiʻi also owns some residential and agriculture zoned lots interspersed with fee simple and DHHL-owned parcels in the Anahola Village area.

The County of Kauaʻi owns an approximately 59-acre parcel along the shoreline, bordering the southern end of DHHL's lands in the region. Additionally, the County manages and maintains the 4.95-acre Anahola Hawaiian Homes Park and Clubhouse, the approximately 7-acre Anahola Village Park, and approximately 1.5 acres of Anahola Beach Park, adjacent to DHHL lands.

The adjacent lands to the south of Anahola planning area were previously owned by Cornerstone Holdings, an entity of the McCloskey family who developed Kealia Kai on land makai of Kūhiō Highway. The more than 1,000-acre property is now owned by Kealia Land Company LLC. In 2017, an entity owned by the McClosky's, Kealia Properties, filed a petition with the State Land Use Commission requesting a boundary amendment to shift a portion of one parcel (TMK 4-7-004:001) from the State Land Use Agricultural District into the State Urban District. The proposed project, Kealia Mauka Homesites, would develop approximately 235 residential lots. An EIS was accepted by the State Land Use Commission in August 2019, however the project has not moved forward. The current TMK maps show the condo property regime lot subdivisions still owned by Cornerstone Hawaiʻi Holdings LLC.

To the south of the Kealia Land Company parcel, an approximately 928-acre parcel is owned by Mahi Ai Awawa LLC.

Please refer to Figure 9 for a map of large landowners in the project area.



Left: Anahola Clubhouse at Anahola Hawaiian Homes Park is managed by the County of Kauaʻi; Right: The southern end of Anahola Beach Park is managed by the County of Kauaʻi (Source: SSFM)

FIGURE 8: STATE LAND USE DISTRICTS MAP

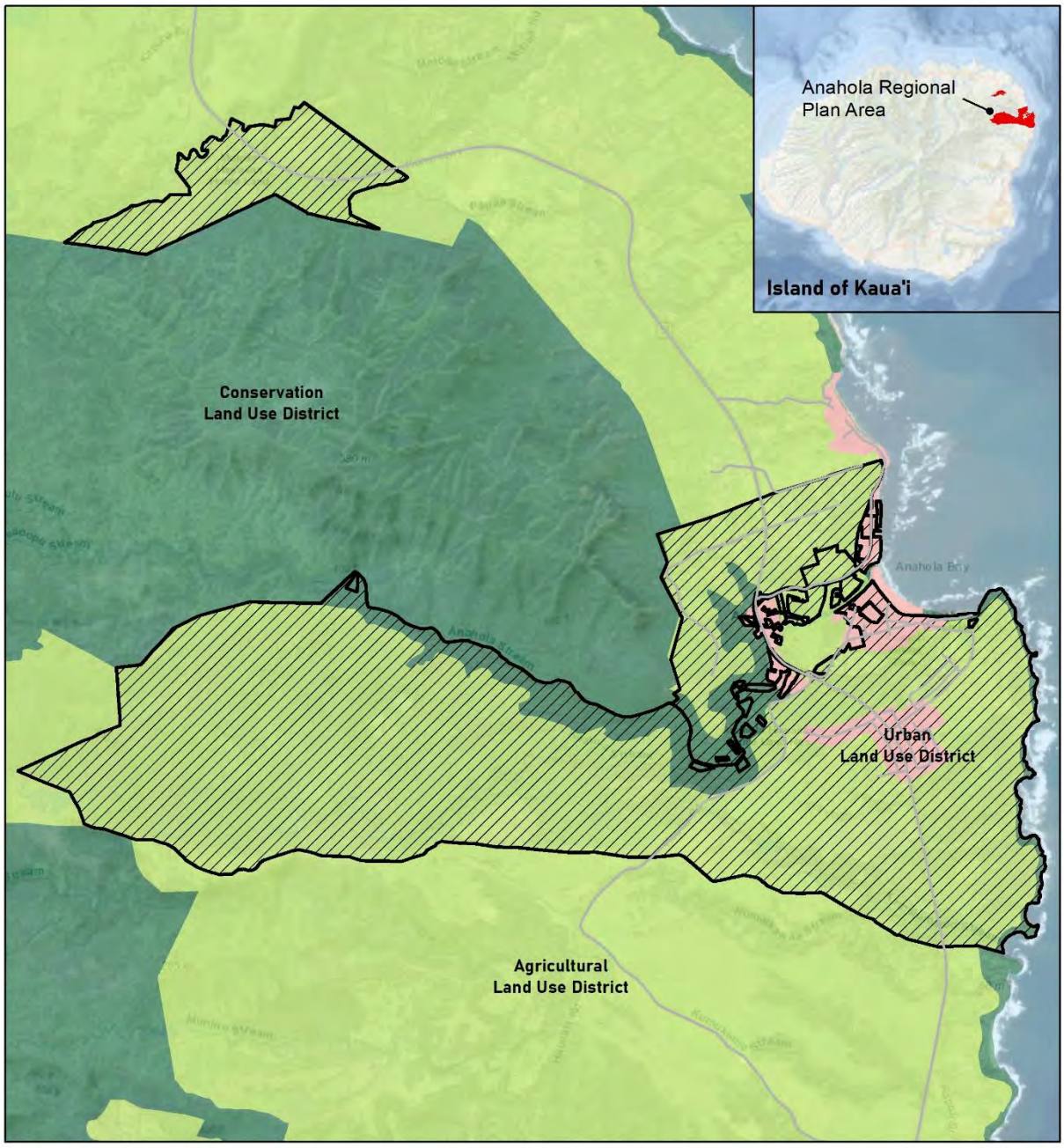
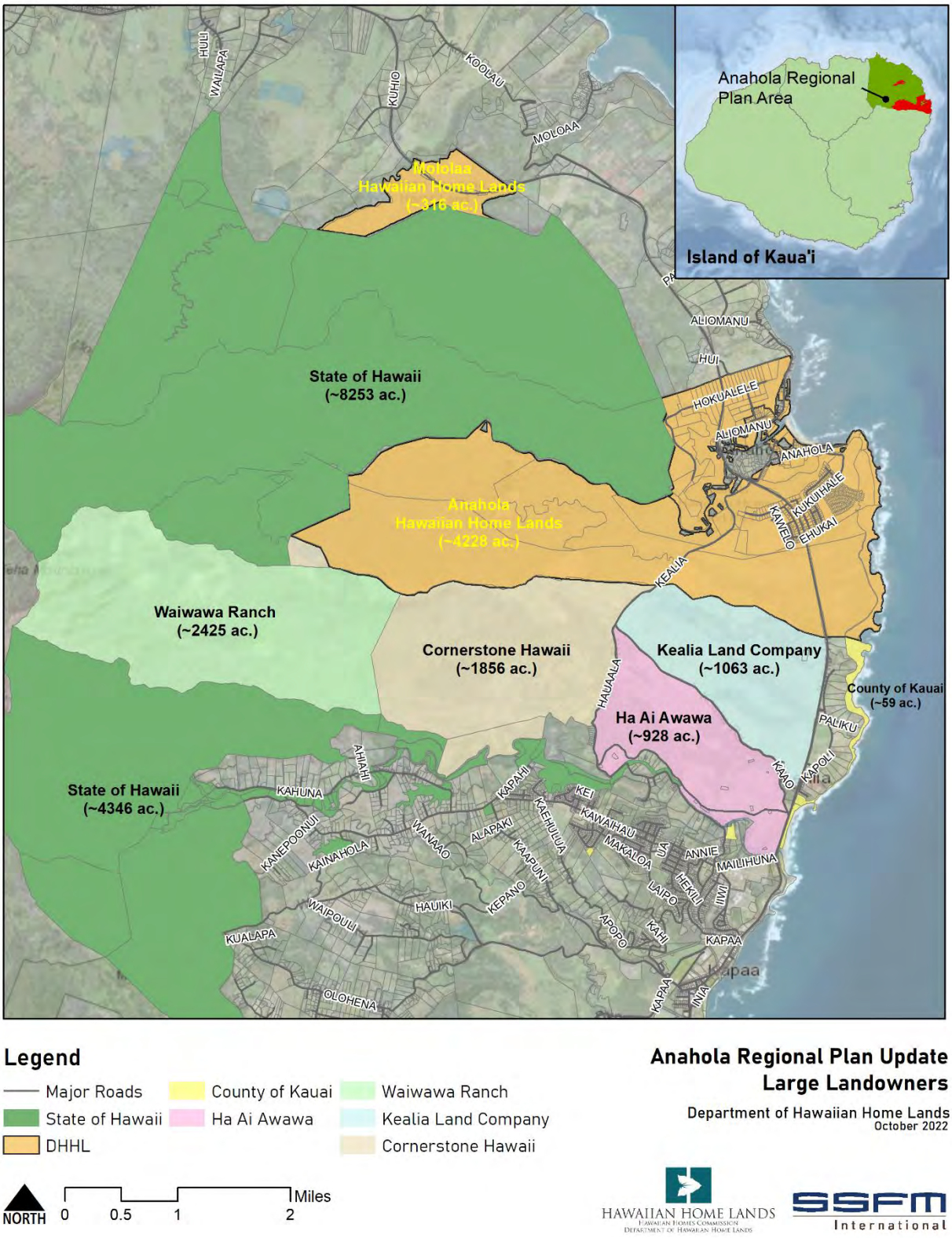


FIGURE 9: LARGE LANDOWNERS MAP



Infrastructure

Water Sources and Systems

Hydrology

The principal sources of ground water of the island of Kauaʻi are from rocks of the Waimea Canyon volcanic series. These rocks are typically highly permeable and yield water readily to wells. The Kōloa Volcanic series, in contrast, tend to be poorly to moderately permeable and offer limited yield. In the Anahola area, which is within the Kōloa Volcanic series, water is obtained primarily from wells which tap basal aquifers.

Potable Water System

The Planning area receives potable water through the Anahola Water System, which is fed by ground water sources originating from rain that falls in the mountains and filters through the ground into formations called aquifers. Wells are drilled into these formations and water is pumped out. The quality of groundwater is considered to be very good and requires no treatment except for disinfection, as opposed to surface water sources that require filtration and stronger disinfection.

Potable Water is provided through 2 different water systems at Anahola:

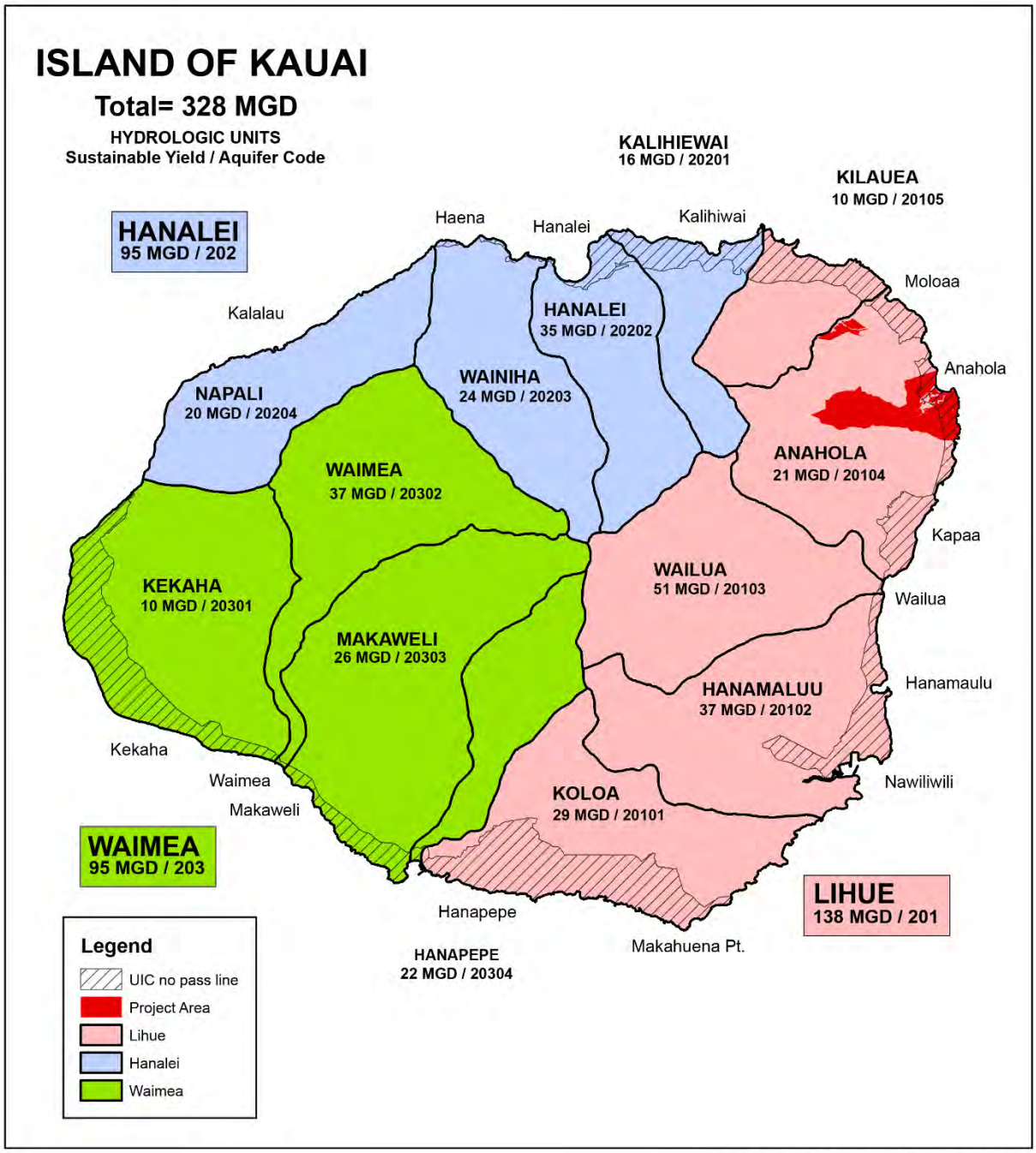
1. DHHL's Anahola Farm Lots Water System (Public Water System #432). The Anahola Farm Lots Water System serves approximately 45 farm lots and 30 residential lots with potable water. The system also acts as a backup for the County of Kauai's area water system. Likewise, if DHHL's well is inoperable, Anahola Farm and residential lessees are backed up through this same interconnection. In 2022, DHHL completed $12.9 million in improvements to the water system, installing new waterlines, pressure regulator stations, smart meters, lateral connections, and a new 440,000-gallon concrete water tank.
2. Kauaʻi County Water System. All other residential lessees are on the County water system, including the new Piʻilani Mai Ke Kai Subdivision.

The Anahola Water System service area includes DHHL residential and agricultural homestead lots as well as privately owned residential and agricultural lots in Anahola Valley. The system is operated in partnership with the County of Kauaʻi Department of Water (DOW), a semi-autonomous agency responsible for the management, control, and operation of the island's municipal water system. Portions of the water system are owned by DHHL.

The Anahola Water System is fed by two DHHL-owned wells (A & B) that are operated by the DOW under prior agreements. All of the water is chlorinated and pumped into the distribution system or stored in two tanks: the newly improved Anahola – 440,000-gallon tank and Anahola – 150,000-gallon tank.

The 2010 Anahola Regional Plan noted issues with low water pressure in locations with elevation close to the water tank. The 2022 water system improvements increased pressure in the mauka lots and balanced out pressure on the makai side of the system. The improvements also provided a new upper-level distribution line and booster pump to increase pressure near the tank.

FIGURE 10: KAUA'I ISLAND AQUIFER MAP

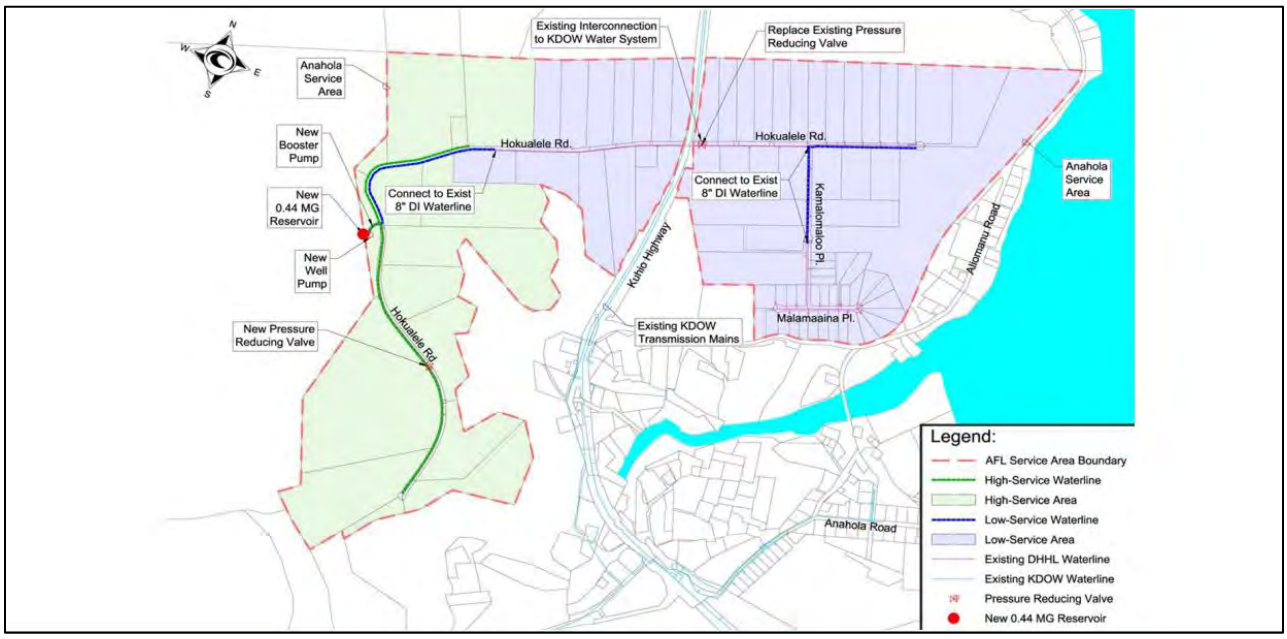


Anahola Regional Plan Update
Aquifers
Department of Hawaiian Home Lands
October 2022

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

FIGURE 11: ANAHOLA FARM LOTS POTABLE WATER SYSTEM IMPROVEMENTS



Surface Water

In the past, Lihu'e Plantation developed an extensive network of stream diversions, reservoirs, dams, ditches, and pump stations to utilize surface water. Surface water was captured in the mauka areas and discharged into the Kaneha Reservoir. The Anahola Stream fed the Upper Anahola Intake, delivering water to Kaneha Reservoir. A portion of the diverted water collected in the Kaneha reservoir was transported via the Kaneha ditch to a series of smaller reservoirs and ultimately to the sugarcane fields.

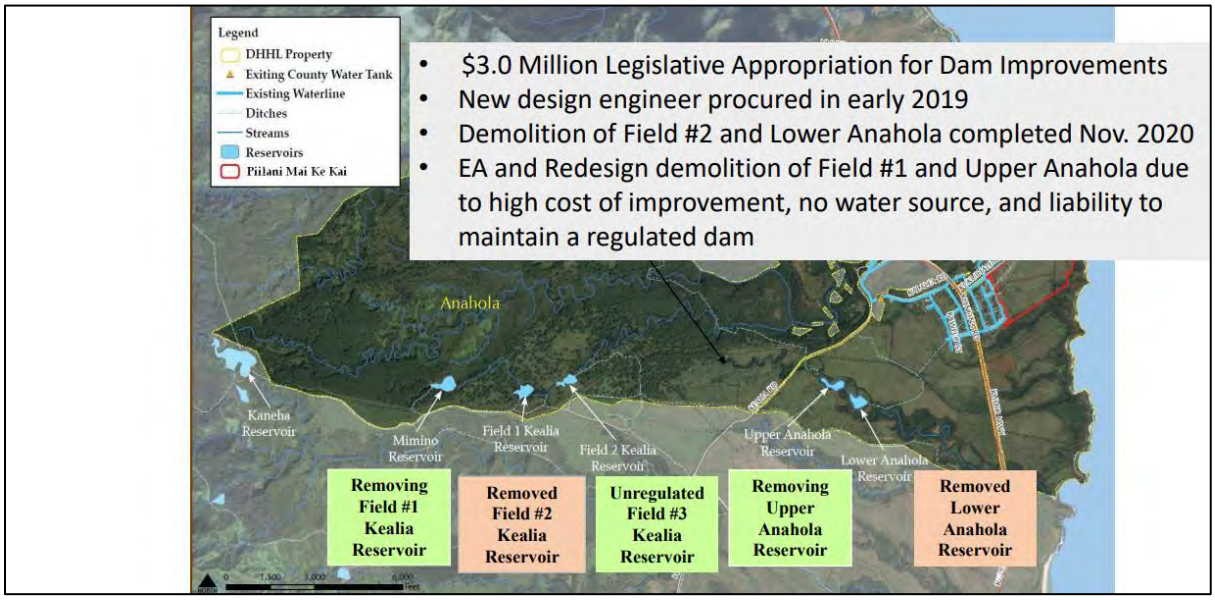
The old reservoir system remained intact but fell into disrepair following the closure of Līhu'e Plantation in 1997, at which time ownership of the property returned to DHHL. The Upper Intake at Anahola Stream was demolished, cutting off flow from Anahola Stream to the Kaneha Reservoir. Additionally, the Kaneha reservoir no longer feeds water to the reservoirs below. The Kaneha reservoir is located on land now owned by Cornerstone Hawai'i Holdings LLC, and the Kaneha ditch has been rerouted for delivering water onto their properties. The DHHL owned reservoirs are now essentially dry and only fill during periods of heavy rainfall.

Although the 2010 Anahola Regional Plan identified securing and managing surface water resources as a priority project, a master plan for surface water resources has not yet been developed. The Department continues to work on improvements to the Anahola Dam and Reservoir system in the interest of public safety and reduction of maintenance costs. In 2017, the Hawai'i State Legislature provided funding to demolish the Lower Anahola Reservoir and Field #2 Kealia Reservoir, which was completed in 2020.

An unnamed reservoir is directly connected by the Ka'alūlā Stream and forms a naturally occurring basin close to the Subsistence Agricultural homestead lots in the Anahola Kuleana Settlement Plan. The Anahola Kuleana Settlement Plan suggests that the unnamed reservoir could be improved to feed the homesteads directly with untreated non-potable water. However, at the time of this update DHHL is in exploring the possibility of removing

the reservoir by taking down the dam to allow water to flow unimpeded due to high cost of improvement, no water source, and liability to maintain and regulate the dam. Demolition of the dam does not eliminate the possibility of later improvements to restore the dam and reservoir. See Figure 12 for a summary of dam and reservoir improvements completed and under consideration.

FIGURE 12: ANAHOLA SURFACE WATER DAM & RESERVOIR IMPROVEMENTS



Wastewater Systems

The Anahola region is not currently serviced by a municipal wastewater treatment system. Individual wastewater systems (IWS) are used in the existing DHHL Anahola homesteads with variances granted by the State Department of Health (DOH).

For developments of 50 or more residential lots, the State DOH requires a wastewater treatment facility. This number of lots also triggers environmental review under HRS Chapter 343. The State has an agreement with DHHL which allows for the Piʻilani Mai Ke Kai homestead lots to utilize individual septic tank systems.

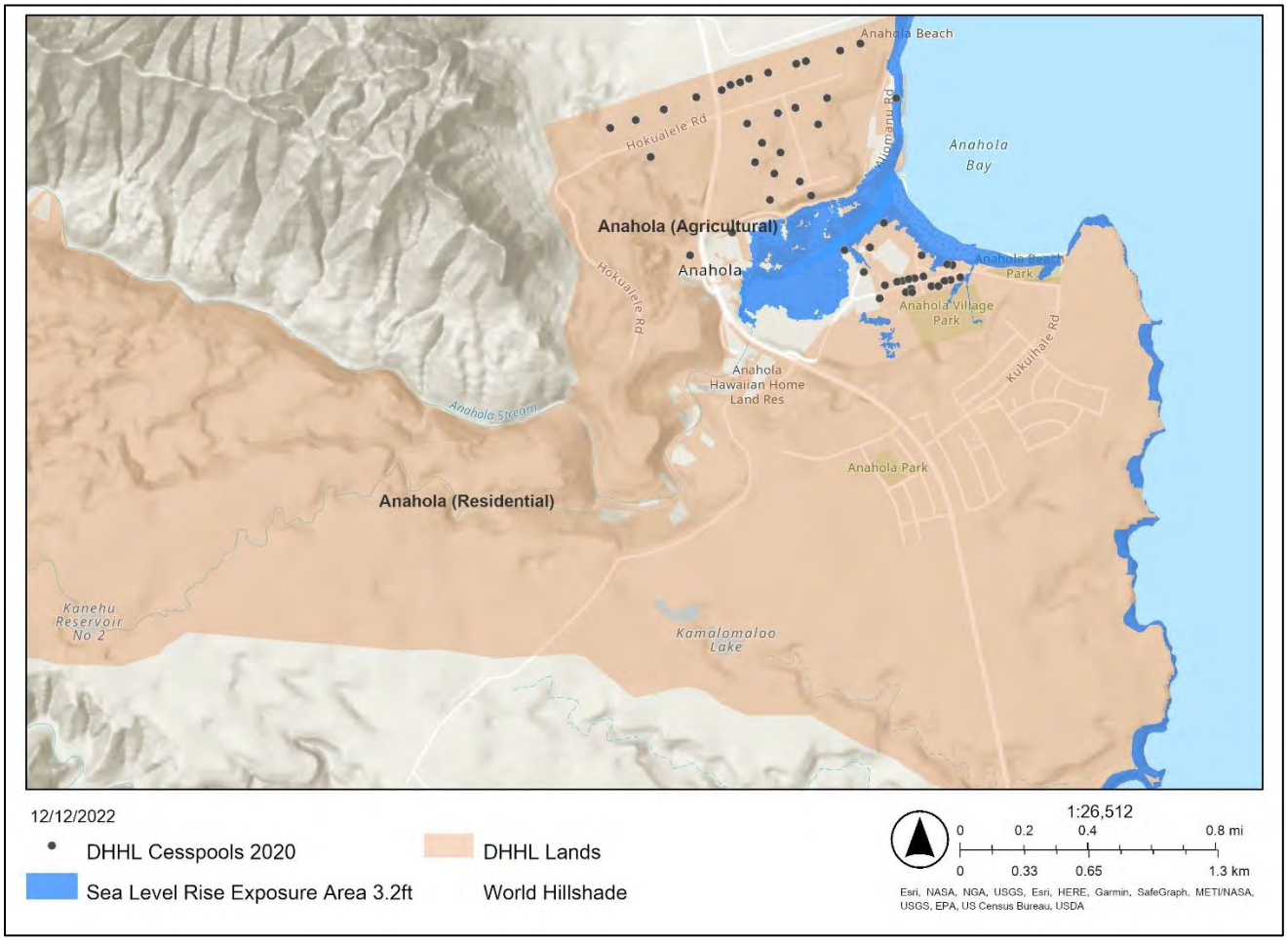
In 2004, the DHHL Kauaʻi Island Plan recommended a traditional wastewater treatment plant or an innovative package plant rather than the continuation of reliance on individual wastewater systems. While the desire for a wastewater treatment facility to serve the region has been voiced, there are no active plans to develop a facility in Anahola or to extend the Wailua system into Anahola.

In 2017, the State Legislature passed Act 125, mandating the conversion of all cesspool wastewater systems to septic systems, aerobic treatment unit systems, or connected sewerage systems by 2050. The 2021 Hawaiʻi Cesspool Hazard Assessment & Prioritization Tool Report to State DOH and the Cesspool Conversion Working Group identified Anahola as a level 2 priority area for cesspool conversions, with over 300 existing cesspools identified on Hawaiian Home Lands. With sea level rise projected to exacerbate coastal hazards such as erosion and impact

ground water depth, the risks of contamination due to wastewater pollution of ground water and nearshore water are of special concern because of the proximity of homes to Anahola Bay and the use of nearshore areas for fishing, swimming, canoeing, subsistence gathering, and other activities where water quality is an important consideration. Currently DHHL is conducting an assessment of cesspools on Hawaiian Home Lands throughout the State.

See Figure 13: Draft Assessment of Cesspools on DHHL Anahola Lands below.

FIGURE 13: DRAFT ASSESSMENT OF CESSPOOLS ON DHHL ANAHOLA LANDS SHOWING 3.2 FT SEA LEVEL RISE EXPOSURE AREA



Electrical Infrastructure

The Hawaiian Homes Commission finalized a solar agreement with the Kauaʻi Island Utilities Cooperative (KIUC) for a general lease of 60 acres of DHHL land. The land was designated for Commercial and Community Use in the Kauaʻi Island Plan and for homestead community, homestead commercial, and other commercial use in the Anahola Town Center Plan.

The project includes: (1) A 53-acre Solar Farm providing up to 12 megawatts of electrical energy to KIUC's electrical grid; (2) An adjacent 2-acre substation; and (3) a 5-acre service center with an access driveway, public and employee parking, and storage yard for poles and truck parking.

The solar farm became operational in 2015 and generates about 20% of the energy on Kauaʻi. The KIUC Anahola Service Center was completed in 2022.

Road System – Existing and Planned

Kūhiō Highway is the primary vehicular transportation corridor through Anahola and around Kauaʻi's north and east shores. This two-lane arterial highway is owned and managed by the State Department of Transportation. In the 2007 and 2010 Anahola Regional Plans, vehicular access from Kūhiō Highway was identified as a community concern. Improvements to Kūhiō Hwy were completed in 2021 in connection to the KIUC Anahola Service Center. Improvements included repaving as well as a left-turn storage lane and acceleration and deceleration lanes.

In 2010, improving road and traffic circulation to Kūhiō Highway was included as a priority project tied to the Anahola Town Center Plan and in anticipation of future developments in Anahola. Road system concerns were voiced again in this update, but not elevated to the level of a priority project because beneficiaries view funding and implementation of road improvements as outside of DHHL and beneficiary kuleana.

In addition to concerns about vehicular traffic circulation, child and pedestrian safety on interior roads, especially near Kanuikapono Public Charter School, were identified as issues but not selected as a priority project.

In the 2010 Regional Plan, the Nāwiliwili to Anahola Bike/Pedestrian Path project was discussed and noted as a 2007 Anahola Regional Plan priority project. The bike/pedestrian path was also incorporated in the Anahola Town Center Plan. Planning and conceptual design for the path was initiated but the project was stalled in the environmental review process and the project was canceled by the Federal Highway Administration. No bike/pedestrian path in Anahola will be completed in the near term.

See Figure 14: Roadways Map.

Climate Change Considerations

With better science and projections becoming available, the anticipated impacts of climate change in low-lying coastal areas include chronic high tide flooding, wave over wash, and erosion due to sea level rise. Based on the Hawaiʻi Sea Level Rise Viewer, the Anahola homesteads most vulnerable to these impacts in are Anahola Village and along Aliomanu Road. Increased frequency and intensity of storms and rainfall may also impact DHHL properties, particularly near streams and in or around existing flood zones. Other climate impacts related to increasing heat and drought, wildfire frequency, and extreme weather events are anticipated and should be considered in future Island Plan updates.

See Figure 15: Sea Level Rise Exposure Area at 3.2 feet.

FIGURE 14: ROADWAYS MAP

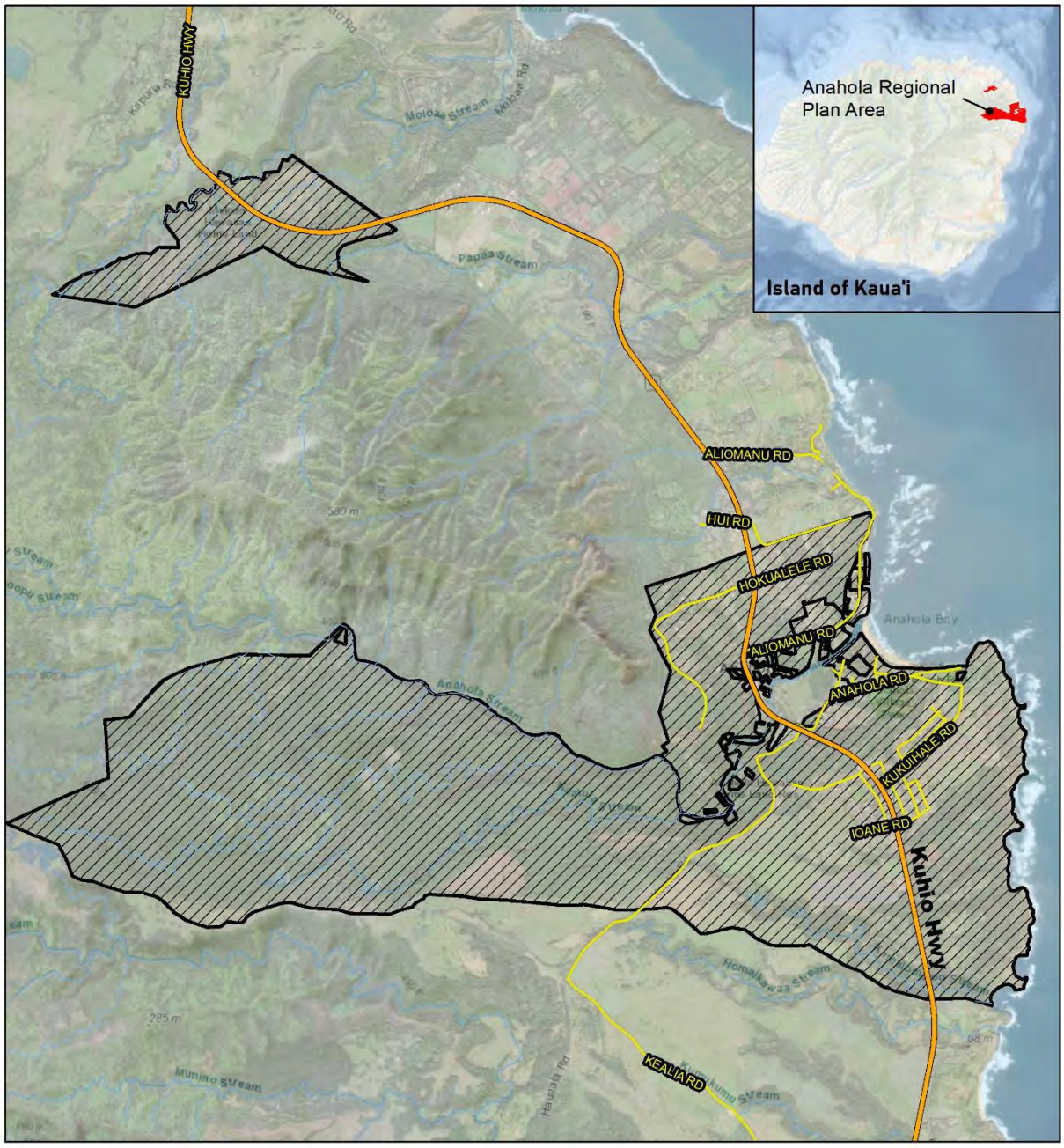


FIGURE 15 : SEA LEVEL RISE EXPOSURE AREA AT 3.2 FEET



Project List

Projects identified by the community are meant to address the issues and needs that were expressed by the community during Beneficiary Consultation Meetings #1 and #2. Priority projects identified in the 2010 Anahola Regional Plan were discussed by participants in Beneficiary Consultation Meeting #2 in order to determine whether they should be carried forward in the plan update. In addition to the previously identified priority projects, the community discussed additional projects that might address community issues and needs in Meetings #2 and #3. All project ideas considered by the community are described in the following two sections.

Previous Priority Projects

The last Regional Plan Update for Anahola was completed in 2010. The five priority projects identified in that plan and their current status are described below.

TABLE 3: PREVIOUS PRIORITY PROJECTS

Anahola Regional Plan Priority Project	Project Champion	Status
Ke Aloha O Ko Kakou ʻĀina - Anahola Town Center Plan (ATCP)	Ke Aloha O Ko Kākou ʻĀina Anahola Town Center Plan management organization	Commercial kitchen constructed. Cemetery/secure resting place for iwi kupuna not yet implemented but community still sees a need. Kauaʻi Island Plan Land Use Designations were never amended to align with ATCP. A portion of the land envisioned for commercial and community use is now occupied by the KIUC solar farm. During beneficiary consultation, the community made it clear that implementation of the ATCP is no longer a priority moving forward, however some components including the cemetery and a commercial kitchen available to the community are still needed and supported.

Anahola Regional Plan Priority Project	Project Champion	Status
Anahola Clubhouse & Park Improvements	County of Kauaʻi/ Ke Aloha O Ko Kākou ʻĀina	In 2018-19, the County of Kauaʻi completed various projects that included: - Basketball court renovation. - Parking lot paving & striping. - Playground renovation. - Construction of ADA walkways that connect the Clubhouse with baseball & basketball amenities. - Baseball field improvements: new fencing, new ADA walkways, new dugouts, concrete pads for bleachers, concrete pad for announcers' booth, and reworking of infield dirt & outfield grass. Additional projects are on hold due to budget constraints.
Secure & Manage Surface Water Resources (non-potable)	DHHL	This item remains a priority. A USGS study conducted on Anahola Stream looked at availability of surface water resources. The study also assessed reservoirs and made recommendations for remediation, removal, & deregulation. Funding was obtained from the Legislature to support this and construction on removal of reservoirs has been initiated. In response to beneficiary feedback during the Anahola Kuleana Homestead Settlement Plan process, surface water resources were re-evaluated for their potential to provide irrigation to the planned DHHL Kuleana lots. However, after further study, DHHL is recommending deregulating two additional reservoirs until such time that the recommendations of the Surface Water Study can be safely implemented. The deregulation of reservoirs will not significantly impact DHHL's ability to implement the recommendations in the surface water study.

Anahola Regional Plan Priority Project	Project Champion	Status
Support Kanuikapono 21st Century Ahupuaʻa Place-Based Labs	Kanuikapono Public Charter School	Funding is still needed for construction of the Learning Resource Center. However, Kanuikapono has continued to offer place-based learning through partnerships with existing organizations in the Anahola region. Given the growing opportunities and spaces for place-based and ʻāina-based learning, a new priority project was formed based on this project.
Improve Road & Traffic Circulation to Kūhiō Highway	DHHL/HDOT	Discussions with State Department of Transportation-Highways and County of Kauaʻi are ongoing. This is not being carried forward as a priority project in the Plan update.

Final Project Ideas List

The following project ideas list came from the discussions in Beneficiary Consultation Meetings #1, #2, and #3. These project ideas are meant to address the needs and concerns of the community. A draft project list was refined by participants at Beneficiary Consultation Meeting #3. This project list was shared in a mailed and online Kou Manaʻo Questionnaire, and beneficiaries were asked to select their top five priority projects for the Anahola Regional Plan Update from this list of 12 items.

Anahola Clubhouse & Park Improvements - Continue implementing improvements to the Clubhouse and park to ensure safety and continued community use of the resources and space.

Anahola Emergency Services & Resilience Center - Develop an emergency services and resilience center to provide emergency shelter and serve as a distribution hub for public safety and emergency services in the region.

Home Building Cooperative & Resource Center - Develop a home building cooperative and resource center in conjunction with Hoʻakeolapono Trades Academy and Institute that brings together education, building materials, equipment, and skilled labor resources to provide affordable home building, repair and maintenance to Anahola.

Implement Anahola Town Center Plan (ATCP) Cemetery - Pursue lease agreements with DHHL and other authorities to establish a cemetery as identified in the Ke Aloha O Ko Kākou ʻĀina - Anahola Town Center Plan.

Implement Mauka Farm Lot Plan - Subdivide and issue subsistence agriculture and pastoral awards and work with DHHL to ensure housing and infrastructure alternatives are available to lessees.

Improve Lease Enforcement - Work with DHHL to address vacant lots and improve production on agriculture lots.

Improve Pedestrian Safety & Safe Routes - Develop a plan for pedestrian routes and safety measures, particularly around schools and parks.

Multi-Waste Management Facility - Develop a consolidated transfer station for recycling, trash, and green waste.

Regional Wastewater Treatment Facility - With cesspool conversions needed by 2050, seek federal funding to develop a wastewater treatment plant to accommodate homes and businesses in Anahola.

Secure & Manage Surface Water Resources - Investigate water resources mauka and explore watershed development and stream flow restoration projects to secure homestead water rights.

Shoreline Management Plan - Develop a plan to manage shoreline resources and access to DHHL's lands makai of Kūhiō Highway currently managed by ʻĀina Alliance.

Support 21st Century Ahupuaʻa Place-Based Labs - Support the development of learning spaces for Hawaiian cultural, place-based learning in partnership with Kanuikapono PCS, Kūkulu Kumuhana O Anahola, and other community-based programs serving Anahola youth.

Additional Projects

Additional projects have also been proposed to DHHL outside of the Regional Plan Update process through DHHL's Non-Profit Organization Application for Long-Term Use of DHHL Lands and other means. These projects are listed below for transparency and consideration in future planning efforts. Any project not selected as a priority project in the Regional Plan will be required to go through beneficiary consultation to be advanced.

Keakai Kauaʻi CrossFit Exercise Program – Keakai Kauaʻi's mission is to provide protection, preservation, and management for Kauaʻi's significant cultural sites. In 2018, the youth of Anahola were included in the organization's mission as they were deemed needing protection. Keaki Kauaʻi's CrossFit program serves hundreds of adults and youth and applied for a Right of Entry permit for use of DHHL land in April 2022.

Anahola Sports Center - Establishes a "recreation economy" that honors the rural nature, culture and values of Anahola as a viable approach to the economic development planning articulated in the 2010 Anahola Regional Plan, as well as numerous homestead visioning sessions led by Anahola Hawaiian Homestead Association and Hawaiian Community Development Corporation from 2017 to 2021. The project vision includes: covered basketball courts or a gymnasium, baseball fields, a rodeo and ranch, sand volleyball courts, and a skatepark.

Priority Projects

The community was asked to select five priority projects from the list of project ideas discussed during beneficiary consultation for the Regional Plan Update. Priority projects selected for the Regional Plan are meant to address the issues and concerns expressed by the community while building on the assets and opportunities within the community. Selecting specific priority projects helps DHHL to prioritize its limited resources and also helps beneficiaries decide where and how to focus their individual and collective time and energy. Being selected as a priority project in the Regional Plan gives projects an advantage when applying for certain DHHL grants and submitting requests for use of DHHL lands without needing to conduct additional beneficiary consultation.

The priority project selection process included a Kou Manaʻo Questionnaire that was mailed to all lessees in the Anahola Region, emailed to those who attended previous meetings, and made available on the project website. The questionnaire asked beneficiaries to choose the five projects that they felt should be the top priorities for the region moving forward. The survey was open for beneficiary participation between Monday, May 23, 2022 and Friday June 10, 2021 following Beneficiary Consultation Meeting #4. A total of 45 responses were collected. During Beneficiary Consultation #4 on June 6, 2022, the early voting results were shared and discussed, along with implementation action steps for the projects receiving the most votes. Meeting attendees confirmed the five projects below as priorities and the additional votes submitted after the meeting further confirmed this sentiment. Some were carried forward and/or adapted from the last Regional Plan while others are new projects for this Regional Plan.

1. Surface Water Resources Management (non-potable)

PROJECT DESCRIPTION

A carry-over priority from the 2007 and 2010 Anahola Regional Plans, surface water resources from the Kealia watershed through Anahola are an asset, and the community would like to better understand current conditions for safety and determining potential future uses. This includes water that runs from the Upper Anahola Ditch to the Kaneha Ditch, and to the Kaneha Reservoirs 1, 2, and 3.

The 2010 priority project description called for efforts to reuse the irrigation ditch system developed by the plantations, identifying two opportunities to manage and use the surface water resources for agriculture and economic development. Additionally, the 2010 priority project promoted the development of a legal fund that could be used to support homestead water rights issues.

The first opportunity identified in the 2010 priority project was a Master Plan for Surface Water Resources. The master plan would map and inventory the mauka surface water resources, measuring capacity and infrastructural integrity as well as identifying proposed watershed management and stream restoration projects. The priority project also called for a strategic plan for the use and closure of reservoirs. The plan would be based on data collection from flow meters installed to measure the intake of Anahola Stream.

Though not implemented as a master plan, various components related to data collection, studies, and reservoir use and closure have been completed since 2010. USGS completed a stream study in 2010 and a Dam Assessment was completed for DHHL in 2012, which recommended remediation, removal and deregulation of the plantation-era reservoirs. In 2020, DHHL completed the demolition of two reservoirs - #2 Kealia Reservoir and Lower Anahola Reservoir.

Beneficiaries' desire to use the existing surface water resources for non-potable use was revisited during the Anahola Kuleana Settlement Plan and EA in 2021. It included recommendations to improve Kealia Field #1 Reservoir to provide surface water to the planned Kuleana Homestead lots, however DHHL's studies recommend removing the reservoir.

The potential to utilize surface water and dam capacity to generate electricity was of interest to the Anahola community during the 2010 Regional Plan. This component of the past priority project was not voiced as a priority during the current plan update process. Furthermore, with the state of the existing reservoirs and DHHL's plans to deregulate them, the feasibility of developing a hydroelectric project in the near future is greatly diminished.

PAST ACTIONS

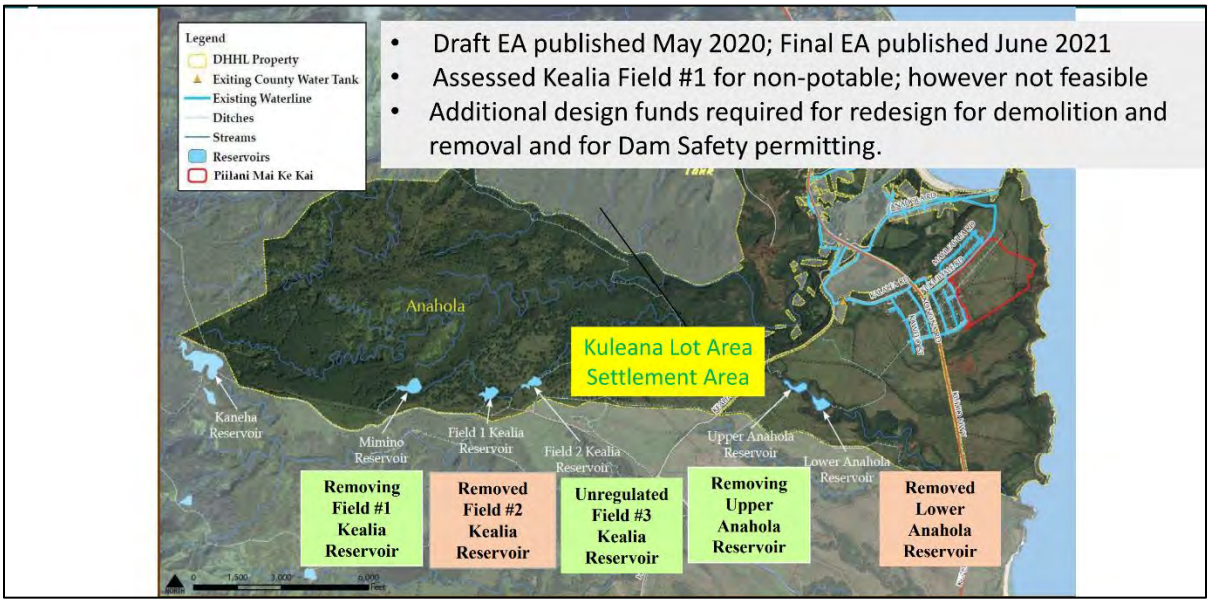
Although the specific opportunities identified in the 2010 Regional Plan were not advanced as described in the plan, some work investigating and addressing the availability of surface water resources and safety of existing reservoirs was completed by DHHL.

- **2010:** USGS Anahola Stream study completed.
- **2012:** Kaua'i Dam Assessment completed; recommended remediation, removal, and deregulation of reservoirs.
- **2013 –** $3.0 million legislative appropriation for dam improvements.
- **2020 –** demolition of Field #2 Kealia Reservoir and Lower Anahola Reservoir completed.
- **2021 –** Final Anahola Kuleana Settlement Plan and EA FONSI adopted by Hawaiian Homes Commission, which included assessment of Kealia Field #1 for non-potable water storage; however not feasible.
- **Underway** – EA and redesign demolition of Field #1 Kealia Reservoir and Upper Anahola Reservoir due to high cost of improvements, no water source, and liability of maintaining a regulated dam.

The work on the existing reservoirs does not involve removing and filling the entire reservoir but does remove the lower portion of the dams to allow water to flow unimpeded and reduce risk of flooding due to dam failure. By breeching the lower portion of the dams, water can flow unimpeded and makes Field #2 Kealia Reservoir and Lower Anahola Reservoir deregulated, meaning they do not need to comply with DLNR Dam Safety rules, and liability is reduced. Dams less than six feet in height (regardless of capacity) or that have a storage capacity of less than 5 million gallons are not subject to State regulation; hence dams and reservoirs can be reduced in size to become "deregulated."

The dam improvements completed to date allow for the possibility of the reservoirs being restored in the future if funding becomes available and there is still a desire to restore flow into the reservoirs from Anahola Stream. Figure 15 below summarizes the improvements completed as of August 2021.

FIGURE 16: ASSESSMENT OF DAMS FOR ANAHOLA KULEANA SETTLEMENT PLAN



COMMUNITY INPUT

At Beneficiary Consultation Meeting #1, attendees voiced that water and issues with getting water remains a top priority. Beneficiaries see water and access to water as the number one barrier to getting people on the land in Anahola, and as especially important for agricultural lots. Beneficiaries voiced that they do not want the reservoirs closed but would like them to be cleared and restored. One beneficiary suggested that the ditch system be restored and water redirected to deliver water to homestead lots.

During Beneficiary Consultation Meeting #2 water was again brought up a primary issue in the community, with some beneficiaries noting that water management to allow the water to flow again from mauka to DHHL's makai lands will help with restoration efforts in the makai area as well.

During Beneficiary Consultation Meeting #3, beneficiaries noted the diminishing ʻōpae populations, remembering that streams that are now dry had were abundant with ʻōpae. One beneficiary suggested working kūpuna in the community to map where water used to flow and identify areas to prioritize restoring.

OBJECTIVE

The objective of this priority project is to manage surface water resources to restore flow of water on DHHL lands. Anahola is rich with surface water resources and uniquely situated with Hawaiian home lands spanning mauka to makai. This project ties strongly to the community vision of "a thriving Hawaiian community that cares for our land,

ocean, and natural resources from mauka to makai." As beneficiaries reiterated throughout the Regional Plan Update process and over the years, access to water is key to getting people on the land.

IMPLEMENTATION ACTION STEPS

1) **Seek funding for an "Anahola Surface Water Resources Management Plan."** DHHL should seek funding to complete a more detailed and thorough study of historic and current surface water resources in Anahola to accomplish the objective of better managing surface water resources and to restore flow of water on DHHL Anahola lands.

   The scope of the plan could include:

   a) Organize a project team. Organize a group of interested Anahola beneficiaries in partnership with DHHL, DLNR staff, and other pertinent stakeholders including but not limited to past plantation workers knowledgeable about the plantation ditch system.
   b) Review, analyze, and summarize all previous water studies conducted in Anahola including but not limited to the USGS Anahola Stream Study and Anahola Kuleana Homestead Settlement Plan study of surface water options to supply the future kuleana homestead community.
   c) Document oral histories of water resources in Anahola.
   d) Based on the above, identify potential water source options, watershed management activities to protect water sources for future generations, and climate change considerations.
   e) Conduct project team meetings and meetings with the larger Anahola beneficiary community to share findings and receive feedback on potential ideas. These meetings should have discussions that are centered on the following basic questions:
      i. For what purposes should water be managed (e.g., irrigation use, natural resource protection for native species, traditional and customary practices etc.)?
      ii. At what times should water be used for the different purposes identified from surface water sources, i.e. year-round or seasonal during dry season only?
      iii. What would it take to realize these uses of water, i.e. infrastructure improvement costs, Commission on Water Resource Management approvals or permits etc.?

2) **HHC approval of the Surface Water Management Plan.** Seek HHC approval of plan recommendations.

3) **Implement plan recommendations.** Plan recommendations could include capital improvements and / or CWRM approvals. For capital improvements, funding will be sought for those improvements. For CWRM approvals, DHHL will work with community to seek approvals as needed.

2. Hōʻākeolapono Trades Academy and Institute: Home Building Resources Center

PROJECT DESCRIPTION

The community envisions a home building resource center that brings together education, building materials, equipment, and skilled labor resources to provide affordable home building, repair, and maintenance to the Anahola community. With the most recent awards of residential homestead vacant lots in Piʻilani Mai Ke Kai and the prospect of DHHL Kuleana homestead lots being awarded in the future, the demand for expertise, skilled labor and materials for home building was identified as an important need in the Anahola community. Furthermore, creating supportive educational opportunities for high students and young adults in need of alternative learning and career-readiness education supports the vision and regional value of empowering and uplifting the youth of Anahola.

Founded by an Anahola beneficiary, Hoʻakeolapono Trades Academy & Institute (HTAI) creates a Building and Construction program that integrates on-the-job training, utilizing innovative strategies that foster 21st-century skill development. HTAI's objective is to offer trade and vocational skills and services to individuals of Hawaiʻi. HTAI will teach these skills through the construction of multiple building projects including low-cost homes for native Hawaiians.

In addition to the Trades Academy, a Materials HUB is planned to serve two purposes: offer low-cost alternatives for beneficiary and Native Hawaiian families to build their homes and HTAI intern training. Having the materials depot in Anahola will help home builders save money on materials and provide students with real world building experiences. A partnership with Pacific Building Materials Inc. enables HTAI to transfer savings to beneficiary homebuilders. Along with materials, homebuilding resources will be available such as home design plans and licensed contractors

Today, HTAI has 50 students enrolled statewide, including 35 from beneficiary families and 10 Native Hawaiian interns who will seek employment following HTAI. HTAI students have done work in Anahola assisting beneficiaries with home repairs and renovations and building classrooms and learning areas for Kanuikapono Public Charter School.

A potential site for these types of uses, as discussed by participants in beneficiary consultations, includes the land makai of Kūhiō Highway and across from the KIUC service center, which is designated Commercial under the Kauaʻi Island Plan. The overall vision includes a mechanic shop, woodshop, lumber mill, lumber yard, processing kitchen, classrooms, dormitories, and farming areas.

PAST ACTIONS

No actions.

Although no actions have been completed related to locating HTAI and the Materials HUB on DHHL lands, Hōʻākeolapono Trades Academy and Institute has made significant strides since it was organized in 2021:

- Received 2022 County of Kauaʻi OED grant for its Na Wahine HVAC program
- 1st Place Chaminade Hogan Entrepreneurial Program 2022 Nonprofit Business Plan Competition

- IRS Exemption Letter received
- Secured over $500,000 of funding in 10 months of operation
- Program is successfully running on Kauaʻi and Hawaiʻi islands

COMMUNITY INPUT

In Beneficiary Consultation Meeting #1 the need to make housing more affordable was identified as a pressing issue. One beneficiary noted that some applicants cannot afford turnkey homes but would be able to build their own homes because there are many in the community and in beneficiary families with the skills and expertise to build homes.

During Beneficiary Consultation Meetings #2 and #3, opportunities such as allowing alternative housing forms like tiny homes, providing opportunities and educational resources for beneficiaries interested in living off-grid, and building a trades academy to teach skills to youth in the community were mentioned. These opportunities led to the home building resource center and cooperative concept with the suggestion that it be led by Hōʻākeolapono Trades Academy. Beneficiaries emphasized that the project should include resources for the whole community like wholesale building materials and shared tools, equipment and skilled equipment operators. The timing of the project was noted as important due to the vacant lots awarded in the Piʻilani Mai Ke Kai subdivision and future Kuleana Settlement Plan awards.

OBJECTIVE

The objective of this priority project is to provide space and support to Hoʻākeolapono Trades Academy and Institute to offer trade and vocational skills and services to individuals of Anahola and others. The campus and resource center will provide training opportunities to individuals while offering home building services and resources to Native Hawaiian communities and local nonprofits, including offer low-cost alternatives for beneficiary families to build their homes.

IMPLEMENTATION ACTION STEPS

1) **Identify project site.** Identify a final project site within the homestead region ensuring that the location does not interfere with future homestead development.

2) **Secure initial land disposition.** Work with DHHL Land Management Division and other applicable parties to develop an agreed-upon land use disposition for initial due diligence studies of the site, including preliminary site assessment research such environmental survey, archaeological review, etc.

3) **Site Plan & Environmental Assessment.** Prepare due diligence studies for the project site including a site plan and an environmental assessment in compliance with HRS Chapters 343 and 6E.

4) **Secure a Long-term Land Disposition.** The Hawaiian Homes Commission will review the Final EA, issue a Finding of No Significant Impact, and approve the license or lease.

5) **Permitting and Entitlements.** Secure all necessary permits and approvals as determined by DHHL in consultation with the appropriate agencies.

6) **Site Preparation and Construction**. Clear brush and implement Best Management Practices (BMP's) and mitigation measures as outlined in the Final EA during site preparation and construction. Construction phases include:
    a) Build HTAI Training HUB
    b) Build Materials HUB
    c) Build Native Hawaiian Kauhale Dormitories (males and female)
    d) Build Mahi'ai HUB
    e) Set up Lumber Mill and Materials Yard

7) **Operations and Maintenance.** Following the completion of the HTAI Training HUB, thew project will be a fully functioning trades learning facility and campus, offering both high school and college credits.

8) **Monitoring and Reporting.** To be negotiated with the DHHL Land Management Division and Hawaiian Homes Commission.

Estimated cost of site development: $9,000,000



Conceptual rendering of the HTAI Training HUB (Source: HTAI)

3. Makai Management Plan

PROJECT DESCRIPTION

Anahola homesteaders would like to develop a plan to manage shoreline resources and access to DHHL's lands makai of Kūhiō Highway. The plan will guide activities and actions led by beneficiary organizations, community partners and DHHL to manage and maintain the shoreline resources, facilitate safe use and access to the makai lands, remove trash and abandoned vehicles, and clear out other illegal activities. The project management area is divided into two segments delineated by Kāhala Point, which is located to the south of Anahola Beach Park.

The first area covers more than 400 acres of DHHL lands that stretch from Kukuihale Road south, makai of Kūhiō Highway to the edge of DHHL lands. These lands are currently licensed to the beneficiary nonprofit ʻĀina Alliance, which is in its second year of site management. In collaboration with the Kauaʻi Fire Department and with vital help from homestead community volunteers, ʻĀina Alliance has established 10 miles of firebreak roads, removed abandoned vehicles from beaches, removed illegal campers and litter, and removed tons of trash, metals, appliances and auto parts throughout the area. Since cleaning the area, ʻĀina Alliance has opened up opportunities for student field trip events for cultural, educational, and service based activities in the community.

The second area covers approximately 100 acres northwest of Piʻilani Mai Ke Kai, including a 10-acre portion of Anahola Beach Park which for the last two years has been beautified and maintained by beneficiary nonprofit Kahu O Ka Paka Kahakai O Anahola. The organization brings together volunteers from the local Anahola community who frequent the beach park daily to clean up the park. The volunteers have cleared out trash, derelict vehicles, and many illegal campers and brought new life to the landscape by weeding, caring for the grass, removing koa haole, and planting fruit trees and native plants.

The Makai Management Plan will strengthen existing community stewardship activities by creating a process through which to coordinate activities, involve the wider community and County of Kauaʻi Parks Department, and develop a shared vision for DHHL's makai lands.



Abandoned cars removed from the makai lands by volunteers stacked for pick-up and disposal (Source: SSFM)

PAST ACTIONS

- **2020 –** Kauaʻi Fire Department, DLNR, DOFAW, and County of Hawaiʻi Public Works cut over 5 miles of firebreaks in DHHL makai lands to prevent brushfires from spreading and getting close to homes.
- **2021 –** Large scale community clean ups organized along Anahola coastline. Hundreds of volunteers removed tons of trash, debris, tires, abandoned cars, appliances, and green waste from the shoreline.
- **2021 –** Daily volunteer work clearing and maintain Anahola Beach Park led by Uncle "Bully" Aki and the Aki ʻOhana who recruit local community members to volunteer.
- **August 2021 –** Kahu O Ka Paka Kahakai O Anahola nonprofit formed with mission to protect, maintain, and preserve Anahola Beach Park for generations to come by educating, advocating, volunteering, and activating park supporters and encouraging community involvement. The aim is to strengthen and renew community pride and ownership of Anahola.
- **September 2021 –** ʻĀina Alliance formed by Anahola beneficiaries with mission to convert land liabilities into community assets.
- **February 2022 –** ʻĀina Alliance Right-of-Entry permit approved by Hawaiian Homes Commission.
- **August 2022** - Kahu O Ka Paka Kahakai O Anahola Right-of-Entry permit approved by Hawaiian Homes Commission.

COMMUNITY INPUT

At Beneficiary Consultation Meetings #1 and #2, the work that has been done to clean up and maintain the shoreline areas was mentioned and highlighted as a positive for the entire community. Some beneficiary feedback offered direction on why a management plan may be helpful for beneficiaries, DHHL, and the groups managing the makai areas, saying that access to the shoreline is vital for many residents of Anahola who rely on the resources gathered in these areas. From past experiences, beneficiaries would like to ensure that information about how the makai area can be accessed is shared transparently and that the activities and uses taking place there benefit the community. A Makai Management Plan has the potential to unite beneficiaries, build trust, and promote transparency with the community and DHHL.

Beneficiary Consultation Meetings #3 and #4 brought forth more specific ideas, such as developing a permitting system to allow short-term camping for local families and fishermen.

OBJECTIVE

This project helps convert shoreline areas from a health, safety, and financial liability into a thriving community asset with abundant opportunities to enjoy our coastal waters and shoreline, support local healthy lifestyles, rejuvenate Native Hawaiian cultural practices, provide opportunities for place-based learning labs, feed our families, and beautify the community.

IMPLEMENTATION ACTION STEPS

1) **Define project area.** The makai lands under license to ʻĀina Alliance are under three separate land use designations in the Kauaʻi Island Plan – Residential, Special District, and Commercial. Based on the land use designations, define the project area of the makai management plan so as to not interfere with future uses of the Residential Homestead and Commercially designated areas.

2) **Continue hazard removal and maintenance.** Continue the work currently being done by nonprofit organizations and community volunteers to remove hazards and maintain and beautify the makai area. Secure areas to protect against illegal activities and hazards and implement protocols that allow for regular community access while limiting liability risks for all who enter the management areas.

3) **Build partnerships.** Develop relationships among community organizations, DHHL, other agencies, and community stakeholders who will be important to the makai management planning process.

4) **Establish Makai Management Plan and program.** Work with DHHL, other agencies and community stakeholders to develop and establish a Makai Management Plan that identifies shoreline resources, establishes programs for access and activities, and supports the long-term vision of beneficiaries for the management and maintenance of the makai lands.

Estimated cost: $1,000,000 for the first four years of implementation; $100,000 per year for on-going management and maintenance





Above: photos of shoreline area before and after removal of abandoned vehicles and trash. Left: Volunteers removing abandoned vehicles using heavy equipment (Source: ʻĀina Alliance).

4. Anahola Place-Based Education Network

PROJECT DESCRIPTION

During the Regional Plan Update beneficiary consultation, Anahola beneficiaries expressed a desire for more ʻāina- and place-based learning opportunities for youth and families in Anahola. A number of groups and organizations have established programs and projects on Hawaiian home lands in the Anahola and Kamalomaloʻo ahupuaʻa intended to serve the community and provide spaces to learn about Hawaiian culture, the stories and resources of Anahola, and connect with ʻāina. To leverage the assets and leadership throughout the beneficiary community, this priority project creates a network or community of practice made up of groups and organizations supporting ʻāina- and place-based education in Anahola to provide a space for collaboration and sharing of knowledge, resources, and information to build the capacity and outreach of all partners involved.

Establishing a network with regular interaction and communication among members will support both the individual organizations and the overall vision for Anahola. Members may include community organizations and schools working to provide opportunities for place-based learning, homestead associations and beneficiary groups looking for ways to engage and connect individuals and families on Hawaiian home lands, as well as local government and other funding sources looking for opportunities to invest in or provide grants to the Anahola community.

PAST ACTIONS

None.

COMMUNITY INPUT

In Beneficiary Consultation Meeting #1 beneficiaries shared that the hearts of the people of Anahola are one the community's strongest assets. One beneficiary shared their experience finding that Anahola has incredible people who are willing to share manaʻo and encourage each other, even through frustration and difficult times dealing with DHHL processes and challenging requirements. It was pointed out that many in the community have been involved with DHHL and various projects over the years and are willing to help if asked.

As past priority projects were reviewed in Beneficiary Consultation Meetings #2 and #3, the 21st Century Ahupuaʻa Place-based Labs priority project from 2010 still resonated with many, but the feedback received is that the concept should be expanded to include all of Anahola so that place-based learning is available to and inclusive of all Anahola beneficiaries.

OBJECTIVE

The Anahola place-based network will support the continued establishment, growth, and development of place-based educational opportunities in Anahola. The network will provide space for:

- Sharing updates, issues, and opportunities
- Building and strengthening connections

- Partnering and building capacity to bring more resources and funding into Anahola for place-based learning
- Bringing the community together

IMPLEMENTATION ACTION STEPS

1) **Establish network membership.** Identify a convening organization to champion the Anahola Place-Based Learning network, establish a members list of Anahola organizations and other regional stakeholders doing relevant work.

2) **Initiate network convening and information sharing.** Develop a regular schedule for convening or other means for communicating with and updating the network. Establish shared goals and purpose for the network (i.e., to build capacity of each organization through information and knowledge sharing, or to leverage funding opportunities for ʻāina-based projects in Anahola).

3) **Secure funding.** Explore funding opportunities to support network-building and capacity-building for nonprofits. Designate a grant-writing team from network organizations to coordinate grant submittals. Potential funding sources include:
    a) Legislative Grants-in-Aid
    b) DHHL grants
    c) OHA grants
    d) Federal grants
    e) Hawaiʻi Community Foundation, Trusts, and other private funders

4) **Monitor & evolve.** Monitor the network to ensure it is adding value to the member organizations and community. Ask for regular feedback and adapt and refine the way the network convenes, communicates and collaborates to meet the needs of its members.





Left: Niu (coconut) planted by students near Anapalau Point (Source: SSFM); Right: Planting kalo at Kūkulu Kumuhana O Anahola's Ulupono site (Source: The Garden Isle)

5. Mauka Farm Lot Plan

PROJECT DESCRIPTION

The Anahola Kuleana Homestead Settlement Plan and Environmental Assessment was accepted by the Hawaiian Homes Commission in 2021. The Anahola Homestead Settlement Plan focuses on the development of a 462-acre Kuleana Homestead on the windward side of Kauaʻi within the traditional ahupuaʻa of Anahola and Kamalomaloʻo that will ultimately be awarded as Kuleana Subsistence Agriculture and Pastoral lots to beneficiaries on the Kauaʻi Island Agriculture and Pastoral Waiting Lists. This priority project encourages the implementation of agricultural homestead lot development in Anahola. At full buildout, the Anahola Kuleana Homestead will include:

- 101 2-acre Subsistence Agriculture Lots
- 14 10-acre Pastoral Lots
- 28 acres for Community Use

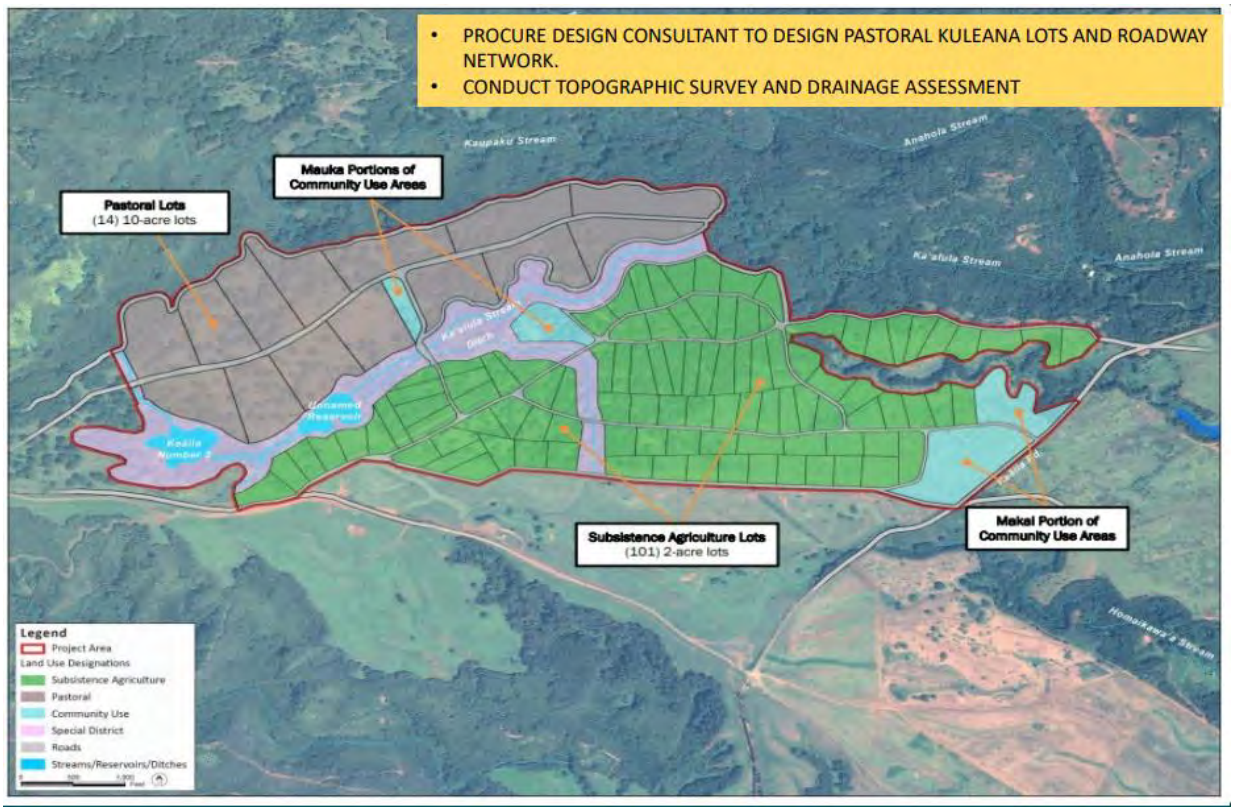
The Kuleana Homestead Program is intended to rehabilitate native Hawaiians by providing opportunities for self-sufficiency and self-determination. The program will offer raw land to beneficiaries to live on, grow food to sustain their family, and utilize for economic purposes.

Beneficiaries receiving an offer for Kuleana Homestead lots will agree to accept unimproved land in "as-is" condition. The project area is essentially undeveloped. DHHL will survey and stake lots to determine the metes and bounds description of each Kuleana Homestead lot and prepare a graded, unpaved right-of-way to the awarded lots. Lessees will be responsible for providing their utility and infrastructure needs, such as electricity, water, solid waste and wastewater disposal, and communications. It is also beneficiaries' responsibility to maintain the homestead tract's rights-of-way, manage wildfire risks, and preserve significant historical and biological resources.

PAST ACTIONS

- Albizia clearing and road improvements completed by Green Energy Team, facilitating implementation and access to the Settlement Plan area.
- 2019 – Beneficiary consultation meetings held, as well as a meeting with former plantation workers familiar with the plantation water systems in Anahola.
- 2021 – Anahola Kuleana Homestead Settlement Plan and Environmental Assessment / FONSI approved by Hawaiian Homes Commission.

FIGURE 17: ANAHOLA KULEANA HOMESTEAD SETTLEMENT PLAN



COMMUNITY INPUT

The number one issue expressed by Anahola beneficiaries during consultation was the need to get Hawaiians on the land. During Beneficiary Consultation #1, one beneficiary noted that if given two acres of land, with the help of others in the community, there are beneficiaries who can "make it happen" without DHHL-constructed infrastructure. Other beneficiaries felt larger lots would be necessary in order to feed and support larger families. Also in the first meeting, feasibility and implementation of this priority project was discussed, with beneficiaries voicing a preference for projects that could realistically be implemented and if not, be held accountable to the community.

In later beneficiary consultation meetings, the implementation of the Kuleana Settlement Plan was confirmed as a priority, although the ultimate responsibility for implementation lies with DHHL rather than with a community organization or champion. Beneficiaries shared the urgency and need for the lots to be awarded, pointing to the work that was done to remove the albizia trees and improve roads in the Settlement Plan area and noting that the invasive trees and guinea grass were already regrowing.

Once awarded, Anahola beneficiaries understand that the new lessees will require education and resources to establish themselves on the Kuleana lots. The other priority projects selected may provide some of the necessary support and resources for successful implementation.

OBJECTIVE

This project will provide more opportunities for beneficiaries to receive homestead leases in Anahola and provide opportunities to be self-sufficient by awarding Kuleana Subsistence and Pastoral lots.

IMPLEMENTATION ACTION STEPS

1) **Secure funding.** Allocate legislative funds for DHHL's implementation of the Anahola Kuleana Settlement Plan.

2) **Procure design consultant to design kuleana lots and roadway network.** DHHL's Land Development Division will initiate the process to survey and stake lots and design the roadway network.

3) **Conduct topographic survey and drainage assessment.** Accurate determination of topography and drainage will inform the final design and layout of kuleana lots and access roadways.

4) **Delineate metes and bounds for each lot.** Survey and stake the project area to determine the metes and bounds descriptions of each Kuleana Homestead Lot.

5) **Build road network.** DHHL will prepare an unpaved right-of-way to the awarded lots, consisting of compacted gravel roads with adequate drainage. These roads will be built to ensure access by homesteaders and emergency vehicles including fire, ambulance, and police services.

6) **Issue Kuleana Homestead Leases and enroll lessees in Kuleana Homestead Settlement Program.** Once the required improvements are completed, the Awards division can begin the offering process of the Kuleana Agriculture and Pastoral Lots and initiate the Kuleana Homestead Settlement Program process. The guiding principle of the program is empowering Hawaiian Home Lands beneficiaries with the opportunity to determine, as a group and as individuals, how they wish to develop their Kuleana Homestead awards.

7) **Establish Anahola Kuleana Homestead Association.** Kuleana Homestead lessees must agree to participate as active members of the Kuleana Homestead Association and comply with rules developed and agreements entered into by the Kuleana Homestead Association. Required health and safety standards, applicable state and county codes, design and building standards, and lease agreement provisions will be jointly determined by the Department and each homesteader involved in the Kuleana Homestead Program. Lessees must also participate in right-of-way maintenance.

Appendix A - Beneficiary Consultation Meeting #1 Summary

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

DHHL Anahola Regional Plan Update
Community Meeting #1 Summary
December 2, 2021
Anahola Clubhouse

Attendance

Beneficiaries: 36 signed in

Beneficiary Status	Name
Both	N. Lagmay
Lessee	Lawai‘a Naihe
Other	W. Rendan
Other	Kulamanu Thaxton
Both	Shirley Ann L. Kanahi
Other	Daniel Oliveira
Lessee	Keoni Mahelona
Lessee	Kimo Rosa
	Aggie Marti-Kini
	Valerie G. Medina
Both	Lorrie Kaneakua
Both	Leana Sa McDermott
Other	Lorainne Rapozo
Other	Delta-Dawn Taniguchi
Other	Stephen Lyaime
Both	Gerald Gonsalves
Applicant	Makana Bacon
Both	Henry Kupilee
Both	Sandra and Frank Cummings
Other	Thomas Makanani
Both	Dennis Neves
Both	Elaine Fernandez
Applicant	Edward Taniguchi
Applicant	Rachelle Nam
Lessee	Crissy Marti
Lessee	Patrick Locey
Other	Josephine Bonaparte
Both	Lizann Oga
Applicant	Kamoealii Kolo
Applicant	Kahealani Kolo
Both	Debra Lihores
Both	Kuulei Punua
Both	Daniel Manaku, Jr.
Both	Benny Lagmay
Both	Jade Danner Jones
	Hāli‘a Danner Jones

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

Project Team:

- **SSFM:** Melissa May, Jared Chang, Malachi Krishok
- **DHHL:** Nancy McPherson, Andrew Choy, Erna Kamibayashi, Rhonda Gadingan, Kaipo Duncan

Other Guests:

- **Hawaiian Homes Commission:** Commissioner Dennis Neves
- **Kaua'i Police Department:** Lt. Daniel Oliveira

Handouts (attached to summary):

- Project fact sheet
- Handout packet (slideshow)
- Vision worksheet

Agenda

1. Welcome & Introductions
2. Regional Plan Process
3. What We Heard in Homestead Leaders Meetings
4. Issue & Opportunities Discussion
5. Vision & Values Discussion
6. Visioning Exercise
7. Closing & Next Steps

Summary Notes

1. **Opening Presentation**

   Erna Kamibayashi opened the meeting with a pule and Jared Chang began by bringing up the Kaua'i Police Department (KPD) representative, Daniel Oliveira, who introduced himself as the new Manager for the area and said that he lives in the area as well. Mr. Oliveira noted that KPD wants to set up a community meeting in Anahola in the future. Next, Jared introduced the project team. Each member of the consultant team, Jared, Melissa May, and Malachi Krishok introduced themselves and Jared went over the meeting objectives and discussion kuleana. Nancy McPherson walked through the first part of the handout explaining the DHHL Planning system, the purpose of Regional Plans, and the Regional Plan Process. Malachi summarized what content will be included in the Regional Plan Update as well as the tentative schedule for the project.

   After the schedule was explained, the floor was opened for questions. The initial questions focused on what projects were included in the 2010 Regional Plan and what has been done. Attendees asked if there was a copy of the 2010 plan that they could read at the meeting and the Project team apologized for not having a hard copy. Jared read through the 2010 Priority Projects and each was written on chart paper and posted at the front of the meeting (see list below). The discussion then moved into identifying issues and opportunities.

Priority Projects (2010)

- Anahola Town Center Plan (including a community kitchen)
- Anahola Clubhouse and Park Improvements
- Secure and Manage Surface Water Resources
- Kanuikapono PCS Place-Based Learning
- Kūhiō Highway Improvements

LINK: Anahola Regional Plan, Kamalomalo'o, Anahola, Moloa'a (June 2010)

2. Discussion Notes

Notes denote Comments (C), Questions (Q), and Answers (A)

2010 Regional Plan (progress/lessons learned)

- Q: If the vision from the last plan wasn't addressed, why are you asking community again?
  - People are dying on the waitlist.
  - Need to get people on the land.
  - There are vacant lots on the land.
  - 10 years of not addressing the vision is a hard lesson.
  - **A: A vision was not articulated in the 2010 plan. Having a vision can help with identifying and implementing priority projects.**
- Q: What is the scope of this plan?
  - Focus should be on the implementation part of this plan.
  - Don't just write down what we say without telling us if it is possible.
  - **A: The Regional Plan is a community-level plan for Anahola and is intended to support beneficiaries in Anahola to reach their vision for their community. DHHL and other partners will be identified in the implementation steps as resources to stimulate capacity building and support community projects that are led by community members and organizations.**
- Q: What is SSFM's role?
  - **A: Role is to listen to the community and translate the community's ideas into action steps are for implementing priority projects.**
  - SSFM should tell community if a project is not realistic.
- C: Document lessons learned from the last plan – what worked and what did not?
  - Still no commercial kitchen, just a community kitchen.
  - Kanuikapono School has improved – just need to assess if it's enough.
  - Kūhiō Highway has not been improved, but that is a DOT project not DHHL.
  - We worked hard to get 10 acres with Robin Danner & DHHL for Anahola Marketplace but the implementation has broken my heart and now HCDC has the lease.

- C: Write down what people say.
- C: Last plan process did not discuss implementation.
    - It included a three-hour charrette to identify priorities, that was all.

Community Issues

- C: Some people should not have their leases – not using the land.
- C: Green energy cleared out the albizia ma uka, but who can live there with no infrastructure?
- Q: Land use map – yellow residential area is small and much of it has not been developed for residential. How many Hawaiians can live there?
    - Right now DHHL is paying people to mow the land instead of putting people on it to live.
    - **A: Next meeting, the project team will provide a map of potential vacant lots.**
- C: Hokualele Road has more haoles than Hawaiians when we are waiting for our land.
- C: There is empty farm land that has been awarded but nothing is happening on it.
- C: Get Kumu Camp out of there – it's illegal.
- C: Ma kai area has cars burning all the time DHHL needs to get it together and put homesteads on the land.
- C: There are a lot of rules like the blood quantum requirements.
    - Some serve to disenfranchise people.
    - It is a form of institutional racism.
    - Fighting bureaucracy.
    - Example is quiet title – only exists to remove people form their land.

Current Needs/Priorities

- C: #1 priority should be to put people on the land – we all waiting for too long
    - Other projects don't matter
- Q: With the power plant on DHHL land, who gets the money?
    - **A: The solar farm in Anahola was constructed under a General Lease between DHHL and KIUC, and KIUC pays DHHL lease rent as a condition of that General Lease. A Community Benefits Agreement was negotiated between HCDC and KIUC, separately from DHHL's General Lease. DHHL was not involved in those negotiations.**
- C: Need to fix-up the beach park and bathrooms
- C: Having water is the second priority – needed infrastructure for potable water access
- If we can get a 2-acre lot and we all get together, we can make it happen. We don't need to wait for DHHL to provide infrastructure.
- C: Surface water – reservoirs are right there, if we clean the trees out the water is right there from the Anahola river
    - We can redirect it to homesteads instead of allowing it to go back into the river
- C: 10 years ago, the #1 problem was getting water
- Q: What is holding up DHHL from putting people on the land?

  - What steps do we need to take?
  - **A: Need infrastructure and water/utilities to develop land for people/homesteads**
- C: The Plan should be the waitlist
- C: Succession – the blood quantum should be lowered, children/grand children won't qualify
- C: One farm lot is not awarded – 22 people are qualified for new lots but people are still dying on the waitlist
- C: We are proud people here – we have to hold the Department accountable
- C: People and the community are coming together to remove waste from Hawaiian Home lands
- C: Need to set aside space for a cemetery
- C: Need to make housing affordable – people on waitlist cannot afford lots. DHHL should help them by offering low interest loans to make a $250,000 home affordable
  - Create a CDFI (Community Development Financial Institution) – potential local funding source
- C: Issue agriculture awards – people want to farm to feed their family and make a living
  - 3 acres is not enough to make a living on – should be revisited
  - Agriculture awards should be for 40 acres
  - Pastoral awards should be 140 acres
- C: People want to stay on Kaua'i and make a living on their homesteads
- C: People shouldn't have unnecessary hurdles to get on the land
- C: Some applicants cannot build their own homes but have family members who can
  - Honsador kit homes were offered by DHHL years back for $45k but that was shut down
  - DHHL had agreed to buy in bulk – should revisit this idea with local companies like HPM and Honsador
- C: Need an economic engine for the community – training, food processing, packaging facility
- C: We can be the breadbasket of the pacific – food of all kinds, value our 'āina
  - Feed ourselves first, then feed others
- C: Kūpuna need support – cannot afford to renovate their homes; should get their mana'o in this process
  - In Alaska there are programs to prove free home repairs to kūpuna
- C: There are DHHL rules that can change – look if can relax the health and safety rules of the County for ag lots and explain the process clearly
- C: DHHL can address trust issues by being transparent about how to get access to land
- C: 2010 Plan – AHHA won award with town center because they were skilled grant writers.
  - How many of us can write grants though?

- C: Kūkulu Kumuhana O Anahola has experienced that Anahola has incredible people who are willing to share mana'o. It gets frustrating with DHHL but we have to stay committed and work together because it's worth it. We help each other get through these frustrations.
- C: No more dying on the waitlist
- Q: Can Anahola clubhouse be improved to be a gym for keiki?
    - Can County improve it?
- C: This building (Anahola Clubhouse) was planned and built by homestead families – shows what we can achieve.
- C: We need to get the back building at Anahola clubhouse back from CNHA – it has not been used for 14 years.

Criteria for Priority Projects

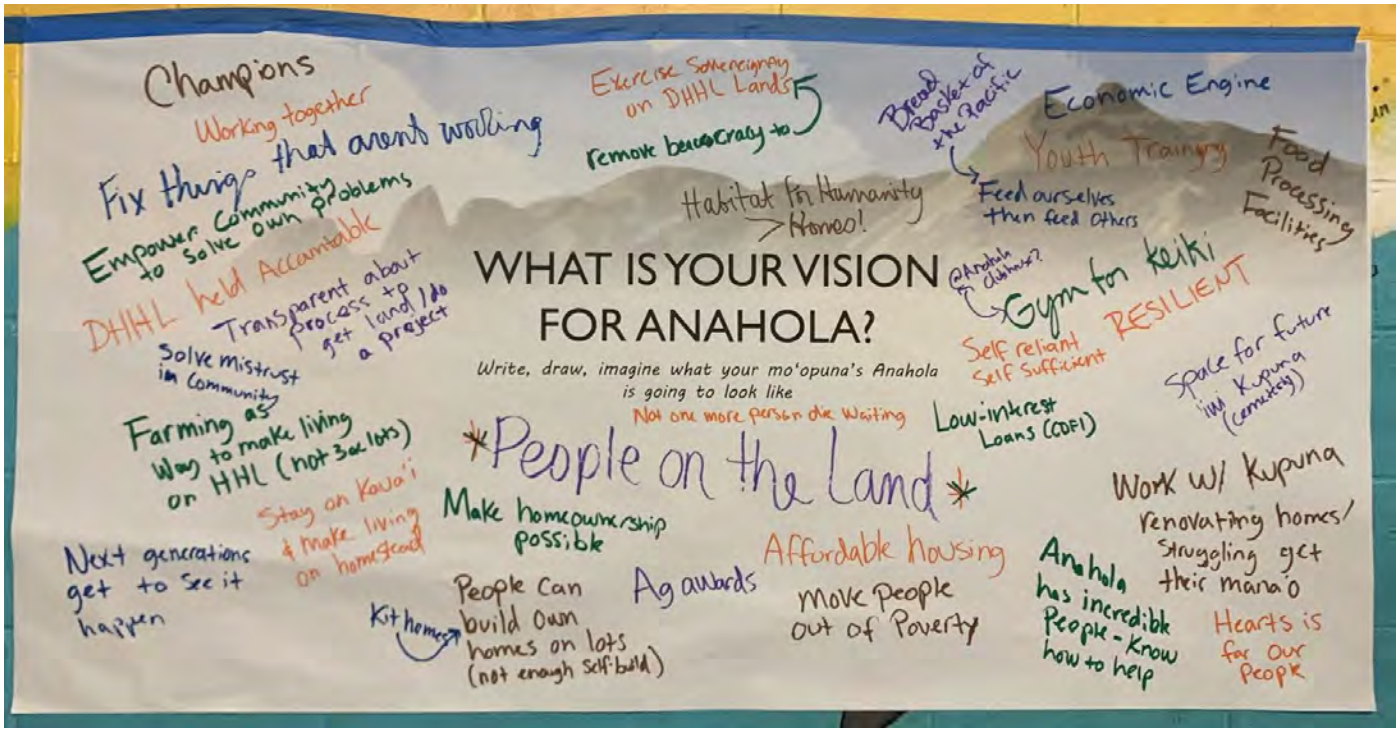
- C: What are the projects that DHHL can actually implement? Most of the projects from the 2010 plan are not things that are in DHHL's control.
    - Focus on projects that are realistic
- C: Be transparent about the process for getting access to land when we have ideas
- C: We need to limit priority projects to what we can realistically achieve within 3-6 years
    - But can also document and start things that may take 20 years
- C: Some people need to step up and take charge – we did it with COVID, made kāhea and people showed up to give out food, etc. Need same mentality to achieve what we want.
- Q: Want to see something happen in the next 5 years – don't want to be here again in 10 years. Who is accountable to that?
    - **A: This round of Regional Plan Updates focuses more on implementation, which was absent in the 2010 Regional Plan. During the update process, project feasibility will be assessed and project champions, action steps and required resources for implementation will be identified, including any technical assistance to be provided by DHHL.**

Regional Plan Update Process

- C: For these meetings, can we get in touch with more people on the waitlist? Let them know about the meetings
    - Post on bulletin board, email, send postcards
    - Nancy M. clarified that postcards for the regional plan are typically only sent to lessees and that the island planning process is sent out to everyone on the waitlist since that process is more focused on siting land use
- C: We keep coming to these meetings, but people stop coming because plans don't deliver. Things have not changed. We need to know the results of our participation.
    - Updating the regional plan that has not been implemented is not a priority.
- C: We are expecting something different in this process – what are the steps to getting off the list onto the land?

3. Vision

During the meeting, the issues and opportunities discussion led to some sharing of visions for Anahola. The project team documented the vision elements and values shared on a large poster at the front of the meeting. See the poster below:



4. Next Steps & Follow-ups

- Project team will bring hard copies of the last plan
- Consider smaller groups part of the time
- Use collected contact info to send out invite and materials ahead of time
- Report on progress since the last plan/status of priority projects
- Identify what land is vacant and the status of vacant lots

Meeting Adjourned at 8:15 p.m.

WORKSHEET 1

DHHL Regional Plans allow homestead lessees to identify and solve their own issues and concerns. The existing Anahola Regional Plan was completed in 2010 and is being updated to reflect the region today. As a lessee and/or homestead resident, your voice holds an important role in developing the vision, creating the plan and selecting priority projects. Please share your thoughts below.

ISSUES & OPPORTUNITIES

How are things going? It has been over 10 years since the last DHHL Regional Plan was completed by the Anahola community. Please share your thoughts on issues and opportunities that are important today.

1. What are key community issues you would like the Regional Plan to address?

2. What are opportunities you would like the Regional Plan to support?

NAME (optional): _____

☐ A = Applicant ☐ L = Lessee ☐ B = Both Applicant & Lessee ☐ O = Other

PLEASE RETURN TO PROJECT TEAM AFTER MEETING

WORKSHEET 2

VISION & VALUES

Where are we headed? Regional Plans are vision-based documents meaning a shared vision that supports common community values is the foundation for the overall plan and priority projects. Please share your thoughts about what makes Anahola special and what you envision for our future generations of Hawaiians in Anahola.

1. What special things about this place do you want to preserve for future generations?

2. What would you like to improve?

3. What new things do you want to create in this community, in this place?

NAME (optional): _____

☐ A = Applicant ☐ L = Lessee ☐ B = Both Applicant & Lessee ☐ O = Other

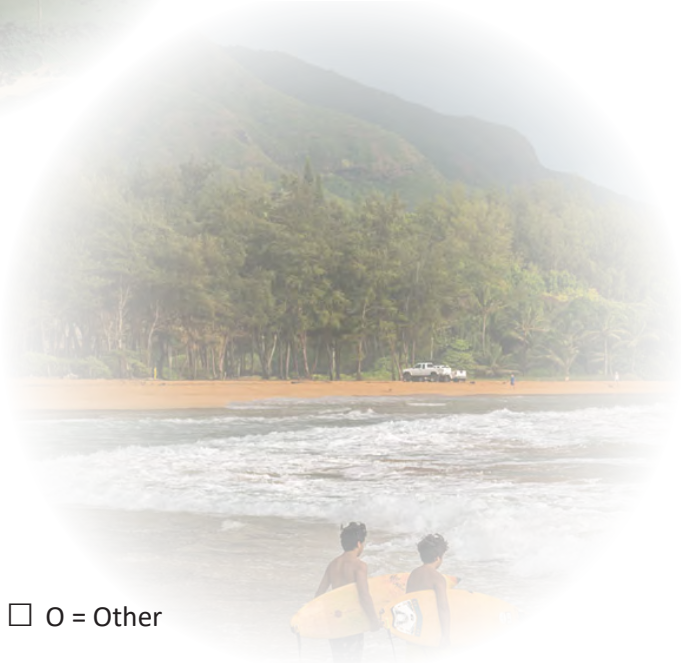
PLEASE RETURN TO PROJECT TEAM AFTER MEETING

WORKSHEET 3

WHAT IS YOUR VISION FOR ANAHOLA FOR THE NEXT 5 YEARS, 10 YEARS, AND/OR 20 YEARS?







NAME (optional): _____

☐ A = Applicant ☐ L = Lessee ☐ B = Both Applicant & Lessee ☐ O = Other

PLEASE RETURN TO PROJECT TEAM AFTER MEETING

Anahola Regional Plan Update

Community Meeting #1

December 2, 2021

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

1

Tonight's Agenda

1. Welcome & Introductions
2. Regional Plan Process
3. What We Heard in Homestead Leaders Meetings
4. Issues & Opportunities Discussion
5. Vision & Values Discussion
6. Visioning Exercise
7. Next Steps

2

2

Team Introductions

DHHL Planning Office Team:

- Andrew Choy (Acting Planning Program Manager)
- Nancy McPherson (Project Manager, Kaua'i Liaison)

DHHL Homestead Kaua'i District Office:

- Erna Kamibayashi
- Rhonda Gadingan

DHHL Land Management Division:

- Kaipo Duncan (Kaua'i Land Agent)

Consultant Team (SSFM International):

- Melissa May (Principal-in-charge)
- Malachi Krishok (Project Manager, Planner)
- Jared Chang (Planner, Facilitator)

SSFM Experience/Related Projects:

- DHHL General Plan Update (ongoing)
- DHHL Hanapēpē Master Plan & EA (completed 2020)
- County of Kaua'i General Plan (completed 2018)

3

3

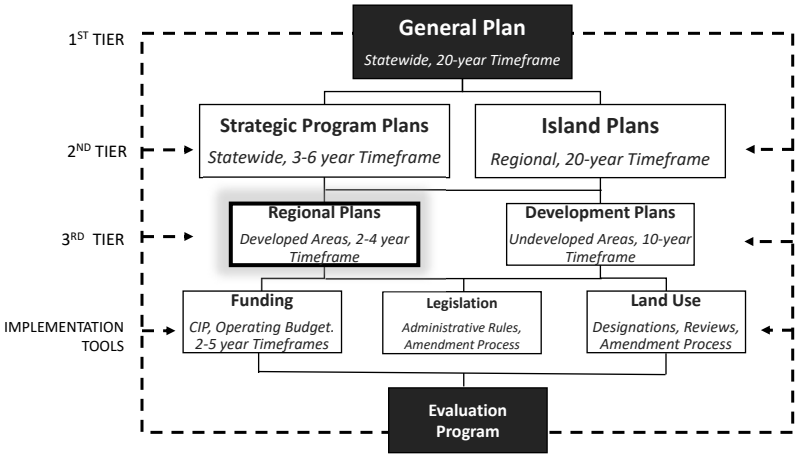
Tonight's Meeting Objectives

- Build a common understanding of the DHHL Planning System and the purpose and content of the DHHL Regional Plan
- Build a common understanding of the overall process and timeline of the Anahola Regional Plan Update
- List existing issues and opportunities in the Anahola Community
- List important values shared by lessees and beneficiaries in Anahola to inform the vision

4

4

DHHL Planning System



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Purpose of Regional Plans

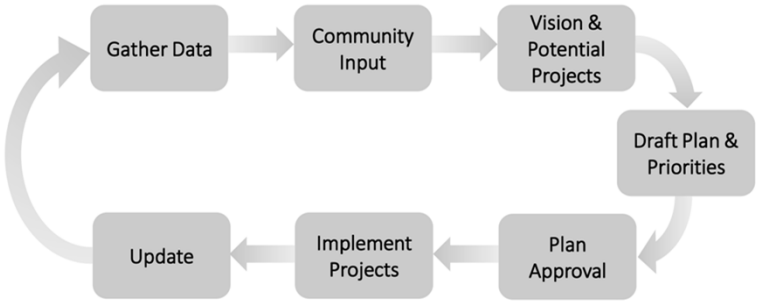


- For the community to be involved in planning for their region.
- For the community to identify and prioritize projects within the region.
- For the plan to include detailed action steps needed to implement the priority projects.

6

6

Regional Plan Process



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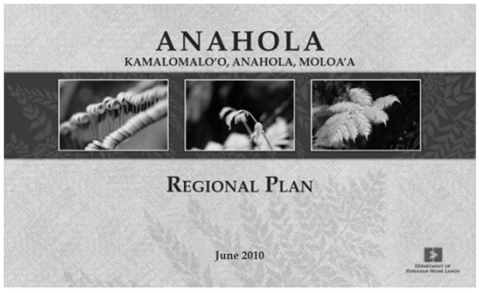
What Will the Update Include?



- Homestead Regional Profile
- Regional Lands & Development
- Infrastructure
- Homestead Issues, Opportunities & Priorities
- Vision Statement & Community Values for Region
- Implementation Action Steps for each Priority Project

8

8

Anahola Regional Plan Update Beneficiary Consultation Schedule



Tentative Schedule, Subject to Change

9

9

Please feel free to contact us:

Nancy McPherson, Planner
nancy.m.mcpherson@hawaii.gov
(808) 620-9519

Malachi Krishok, Planner
mkrishok@ssfm.com
(808) 356-1272

IF YOU OR SOMEONE IN YOUR HOUSEHOLD HAS TESTED POSITIVE FOR COVID-19 OR HAVE SYMPTOMS OF COVID-19 WITHIN 2 DAYS OF THIS MEETING PLEASE CONTACT US.

THIS WILL HELP WITH CONTRACT TRACING AND HELP SLOW THE SPREAD OF COVID-19 IN THE COMMUNITY.

10

Appendix B - Beneficiary Consultation Meeting #2 Summary

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

DHHL Anahola Regional Plan Update
Community Meeting #2 Summary
February 24, 2022
Anahola Clubhouse

Attendance

Beneficiaries: 36 signed in

Beneficiary	Name
Both	N. Lagmay
Lessee	Lawai'a Naihe
Both	Dennis Neves
Both	Kuulei Punua
Applicant	Rachelle Nam
No Response	Aggie Marti-Kini
No Response	Josephine Bonaparte
Both	Benny Lagmay
Applicant	Edward Taniguchi
No Response	Faith Burgess
Both	Keoni Mahelona
Both	Henry Kupihea
Other	Delta-Dawn Taniguchi
Lessee	Jeremie Makepa
Other	Marie Makepa
Both	Kawika Cutcher
Applicant	Luella Lemn
Applicant	Amber Rivera
Applicant	Dale Lono
Other	Lana Lono
Both	John Kaohelaulii
No Response	Mahi'ai Naihe
No Response	Gloria Rafael
Other	Sam Makepa
Both	Jason Kaleiohi
Both	Kimberly Achuara
Both	Charles Naihe
No Response	Abe Makanui
Lessee	Melissa Moody
Other	Derek Green
Lessee	Kai Lovell
Other	Bronson Lovell

Project Team:

- **SSFM:** Melissa May, Jared Chang, Malachi Krishok
- **DHHL:** Nancy McPherson, Andrew Choy, Erna Kamibayashi, Rhonda Gadingan, Kaipo Duncan

Other Guests:

- **Hawaiian Homes Commission:** Commissioner Dennis Neves (lessee in Bayview)

Handouts:

- Project Fact Sheet
- 2010 Regional Plan

Agenda

1. Sign-in & Open House
2. Welcome & Introductions
3. Group Presentation
    a. Community Meeting #1 Recap
    b. 2010 Priority Project Updates
    c. Updates on Other Projects in the Region
    d. Draft Regional Values & Vision Statement
4. Breakout Group Discussions
    a. Regional Values & Vision Statement
    b. Issues & Opportunities
    c. Project Ideas

Summary Notes

7. Open House

An open house area was set-up in the indoor clubhouse space for meeting attendees to peruse prior to the start of the group meeting. The open house included posters that covered the following information:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status
- Draft Regional Values & Vision Statement
- Draft Issues & Opportunities
- Regional Map showing 2010 Priority Projects and Current Land Use Requests

The posters are attached to this summary in Appendix A.

8. Opening Presentation

Kaua'i District Supervisor, Erna Kamibayashi, opened the group meeting with a pule and DHHL Planning Office Manager, Andrew Choy, gave welcoming remarks. Jared Chang began the PowerPoint presentation reviewing the purpose of DHHL Regional Plans, what the Anahola Regional Plan update will include, and sharing the beneficiary consultation schedule moving ahead. He then summarized the list of information beneficiaries requested during the first community meeting which was held in December 2021.

Following Jared, Nancy McPherson presented slides covering the five 2010 Regional Plan Priority Projects and updates on their current status. She also presented additional information in response to requests made during the first meeting related to: Pi'ilani Mai Ke Kai Subdivision lot development, the Anahola Kuleana Settlement Plan, other project proposals and land requests on DHHL lands in the region and a summary of vacant homestead lots in the area.

To finish the PowerPoint presentation, Malachi Krishok presented the first draft list of regional values and vision statement, which led into the first topic of the breakout group discussions.

9. Breakout Group Discussion Notes

Group 1

Regional Values & Vision Statement

- Kūpuna Council
- Would like education included in the values
    - Education is needed in order make our vision and these projects happen
    - Education is the foundation
    - Computer education is needed – used to the have a community center in Anahola, which provided access to and training
- Term "self" in "self-sufficiency" should not be in reference to individuals but the whole community – the vision should be for the whole community
    - Change "self-sufficiency" to "sustainability"
- Water needs to be part of the vision – without water, none of this is possible
    - If the main water tank goes down, there is no back-up system to get water to the homesteads that rely on that water
    - Water = sustainability
    - The water doesn't flow right now – water management is needed for the future.
- Water access affects agriculture – a second water tank will open up almost 200 acres for agriculture
    - Concern farm lots are not being farmed
    - Need plan & funding to get ag lots farming
- Aloha our 'āina and kai – these values need to be re-instilled
    - Respect other people's property
    - No dumping
    - No brown water
- Would like to see the ahupua'a system reflected in the vision statement
- Seeing there is a problem unifying the community
    - Anahola Village area is an area where not everyone lives on Hawaiian Home Lands
    - Some people feel that those who live on fee simple lots are living on stolen land
    - Goes back to the history of 999-year homestead leases given out before the Hawaiian Homes Commission Act

  - There are 13 lots in Anahola Village that are Hawaiian Home Lands – which means they were not purchased from the original 999-year homestead lease from DLNR
- How we define "community" and "Anahola" needs work in the vision statement

Issues & Opportunities

ISSUES	OPPORTUNITIES

• Lessees not able to get qualified for home loans
  o Income limits to qualify for assistance
• Outdated DHHL rules and regulations
• Upgrading wastewater treatment is expensive
• State ag land rules about dwellings are not aligned with Hawaiian ways of living
• Blood quantum requirement is a hurdle for future generations
• Genetic testing should not be required – make it optional
  o The science behind it is dependent on data the service has accumulated
  o Māori in Aotearoa never talk about blood quantum
• Ocean access is blocked – some areas are blocked by residences
• Need to build trust to move forward
• Kumu Camp not been benefitting homesteaders/the community (e.g., there is not a discounted rate for Hawaiians to rent out for family reunions, etc.)
• Anahola Marketplace commercial kitchen is not available to benefit homesteaders/the community
	• Community can build own homes
	• Affordable housing alternatives like tiny homes
	• Allow more creative ways for people to live
	  o Acknowledge that people are already living on vacant lands and being creative
	• Update rules and guidance for off-grid infrastructure and alternative wastewater systems on homesteads, e.g.:
	  o solar water pumps
	  o composting toilets
	• Tiny home building class offered at Kaua'i Community College – hands on education brings the community together.
	• Building a trades academy for high schoolers
	• Transparent process for gaining access to the coastline (e.g., establishing walking paths)
	• Community building events that bring people and families together (e.g., movie nights)
	• Kumu Camp was successful in cleaning up an area that was infested with trash, drugs, etc.
	• Transparent information about how the community can access and get benefits from Kumu Camp and Anahola Marketplace.
	• Regional Plan can help unite us, build trust and bring transparency

Project Ideas

- Housing Resource Center Building Co-op
  - Use OHA to get the word out
  - Identify partners to access alternative funding

Additional Research Requests

- Project team research more on alternative technologies, resources and examples to help with developing a feasible housing resource center building co-op project

Group 2

General feedback on regional plan update process

- Not all lessees got the letter that was mailed
- Applicants are interested in community planning too, should include them in the plan update process
- Need better outreach – use social media

Regional Values & Vision Statement

- Values statements look good
- Modern ahupuaʻa vision statement – suggest combining values of the past and technology of today to build a better future of tomorrow
- Not mentioned but vision statement should address that "healing" within the community is also needed
- Vision doesn't include workforce development – build the future, develop skills
    - See them as seeds – the skills they need to stay here
    - We have kids are good with their hands – smart and have ingenuity but need training
- Open up coastal access – this is the community's icebox and it is hard to get there because its blocked off and other people, not from Anahola, are there that should not be there
    - Moʻopuna need access to the coastal resources
    - Subsistence – we live off the land

Issues & Opportunities

ISSUES	OPPORTUNITIES
• Crown lands in Anahola Village – ag lots • Facilities not open or accessible to the community – gym, kitchen, etc. • Village people are upset – very few are left • Tractors driving down there at the bridge near Anahola Village which caused its closure • Akule – can't fish down there by Anahola Village • Makai area is unsafe • Drug use, uncontrolled crime, no law enforcement • Neighbors dealing drugs and Kauaʻi Police are not enforcing in community • Blood quantum requirements • Vacant lots in Piʻilani Mai Ke Kai for 15 years – just paying people to cut grass now	• Allow youth at Kumu Camp • Families learning from kūpuna – pass on knowledge • Farming to bring together farmers and fisherman – used to work in harmony as a community. • Bring water to makai area to grow vegetables, kalo and open up access to fish so that there is a place to pass knowledge on to the youth • HHCA is federal and part of Dept. of Interior – use federal officers to evict, send to federal court • Fix jurisdiction issues to allow for better enforcement against criminal activity • Change blood quantum requirement to pass down lease to 1/32 • Allow access to cultural places

• Mauka area – trees are growing back, need a lease to maintain area for Kuleana • Wastewater systems - cesspools, going into the ocean • Waitlisted beneficiaries – no more people dying on the waitlist • Anahola community needs healing • Need trust and transparency - earned	• Get people on the vacant lots, homes built • Kuleana lots to live off-grid • 2010 Regional Plan included project for wastewater treatment plant • Political push to get people off the waitlist – organize to push elected officials to act. Research and share how many people have died on the waitlist • Use DHHL lands that are not being used

Project Ideas

- Pedestrian safety – Safe routes to school
  - Crosswalks, speedbumps along around Kanuikapono PCS
- Fire/Police Station – Emergency Services
  - Police need jurisdiction
- Build a Resilience Center
  - Copy Kīlauea Resilience Center
  - Hurricane shelter
  - Possible location: across from U-Turn for Christ
- Trades School – Hōʻā Ke Ola Pono
  - Lawaiʻa is developing
- Open Coastline access
  - Allow fishermen in
  - Create enforcement, training for kuleana lot living (e.g., solar, composting, etc.)
  - Projects work together in this plan – limu restoration, farm lots, etc.
- Removing cars from makai lands
  - Takes a long time
  - Costs money - funding needed
  - Important for safety of children and the land
- Fund community capacity building
  - Develop organizational skills

Additional Research Requests

- Update on Hawaiian Home Lands in Anahola Village
- Update on Moloaʻa
- Update on $600m funding in 2022 Legislature
- Update on Wailua (can be on the side or in email to Rae/Kuulei from KKOA)
- Update on meeting notice efforts, if possible, consideration of social media notices.

Meeting Adjourned at 8:10 p.m.

Anahola Regional Plan Update

Community Meeting #2

February 24, 2022

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

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Tonight's Agenda

1. Sign-in & Open House
2. Welcome, Introductions & Updates
3. Discussion Groups
   a. Community Values & Visions
   b. Issues & Opportunities
   c. Project Ideas
4. Report Back
5. Closing & Next Steps

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Team Introductions

DHHL Planning Office Team:

- Andrew Choy (Acting Planning Program Manager)
- Nancy McPherson (Project Manager, Kaua'i Liaison)

DHHL Homestead Kaua'i District Office:

- Erna Kamibayashi
- Rhonda Gadingan

DHHL Land Management Division:

- Kaipo Duncan (Kaua'i Land Agent)

Consultant Team (SSFM International):

- Melissa May (Principal-in-charge)
- Jared Chang (Planner, Facilitator)
- Malachi Krishok (Project Manager, Planner)

SSFM Experience/Related Projects:

- DHHL General Plan Update (ongoing)
- DHHL Hanapēpē Master Plan & EA (completed 2020)
- County of Kaua'i General Plan (completed 2018)

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Tonight's Discussion Kuleana

- Be Open: open your mind, ears and heart. Take home new ideas and information.
- Be comfortable: move around and use facilities(while practicing social distancing).
- Be Respectful: please do not interrupt the person that is talking, show aloha, treat others how you would like to be treated.
- Be Creative: work towards future solutions/aspirations.
- Agree to Disagree: accept that others may have different perspectives and opinions.
- Cellphones off or on silent: please take calls/texts outside.

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Tonight's Meeting Objectives

- Address all requests on priority project status & regional project updates requested during meeting #1.
- Receive feedback on Draft Anahola value statements and Draft Anahola vision statement; Does it resonate with you?
- Document issues, opportunities and existing community resources and assets.
- Compile an initial list of Anahola priorities for further consideration at future regional plan meetings.

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Tonight's Meeting Format

- Open House Area
- Presentation
  1. Mtg #1 Re-cap
  2. Draft Regional Values & Vision
  3. Updates on 2010 Priority Projects & Other Regional Projects
- Breakout group discussion & activity
  1. Regional Values & Vision
  2. Issues & Opportunities
  3. Project Ideas
- Report back

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COMMUNITY MEETING #1 REVIEW & RE-CAP

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Purpose of Regional Plans



- For the community to be involved in planning for their region.
- For the community to identify and prioritize projects within the region.
- For the plan to include detailed action steps needed to implement the priority projects.

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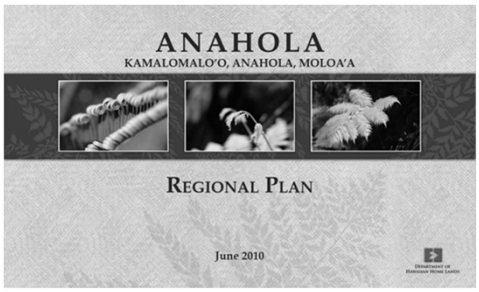
What Will the Update Include?



- Homestead Regional Profile
- Regional Lands & Development
- Infrastructure
- Homestead Issues, Opportunities & Priorities
- Vision Statement & Community Values for Region
- Implementation Action Steps for each Priority Project

Anahola was selected for a Regional Plan update because despite much of the last plan's priority projects not being implemented, there has been a lot of community led action over the last 10 years – the update provides the opportunity to take a breath together and coordinate those actions moving forward.

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Anahola Regional Plan Update Beneficiary Consultation Schedule



Tentative Schedule, Subject to Change

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Meeting #1 Re-Cap

INFO REQUESTED:

- Make copies of 2010 Plan available
- Updates on what has been done for each 2010 priority project
- Updates on Pi'ilani Mai Ke Kai and homestead awards in Anahola
- List of vacant lots



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2010 PRIORITY PROJECTS & OTHER REGIONAL PROJECT UPDATES

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2010 Regional Plan Priority Projects

1. Ke Aloha O Ko Kakou ʻĀina - Anahola Town Center Plan (ATCP)



In 2009, the Anahola community created the Anahola Town Center Community-Based Conceptual Land Use Plan for 194 acres along Kūhiō Highway next to the existing DHHL Anahola homestead subdivision.

Status:

Commercial kitchen constructed. Cemetery/ secure resting place for iwi kupuna not yet implemented. ATCP & implementation strategy need to be revisited & KIP LUD's need amending.

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2010 Regional Plan Priority Projects

2. Anahola Clubhouse & Park Improvements





Improvements are needed at the Clubhouse and park to ensure safety and continued use of the resources.

Status:

In 2018-19, County of Kaua'i completed various projects that included:

- Complete basketball court renovation.
- Parking lot paving & striping.
- Complete playground renovation.
- Construction of ADA walkways that connect Clubhouse with baseball & basketball amenities.
- Baseball field improvements: new fencing, new ADA walkways, new dugouts, concrete pads for bleachers, concrete pad for announcers' booth, and reworking of infield dirt & outfield grass.

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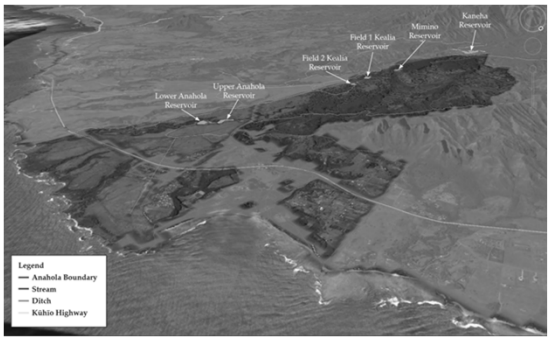
2010 Regional Plan Priority Projects

3. Secure & Manage Surface Water Resources (non-potable)



Surface water resources from the Kealia watershed through Anahola are an asset and the community would like to better understand current conditions for safety and potential future uses.

Status:

In 2016 DHHL received notice of $3 million funding from USDA Rural Development to match DHHL's $3.8 million contribution for a total of $6.8 million. Funds are being used for major capital improvements to the DHHL Anahola Farm Lots Public (drinking) Water System (PWS #432).

Surface water resources were reevaluated in response to beneficiary feedback during the Anahola Kuleana Homestead Settlement Plan process.

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2010 Regional Plan Priority Projects

4. Support Kanuikapono 21st Century Ahupua'a Place Based Labs



Kanuikapono charter school had two priority projects:

1. Construction of a new Learning Resource Center, to be located on DHHL land adjacent to the Pi'ilani Mai Ke Kai subdivision;
2. Establish a mobile educational place-based learning labs throughout the ahupua'a of Anahola.

Status:

Funding needed for construction of the Learning Resource Center. DHHL to work with Anahola community to identify locations for educational learning labs in Anahola. May be revisited when discussing Anahola Town Center Plan during this Anahola Regional Plan Update.

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2010 Regional Plan Priority Projects

5. Improve Road & Traffic Circulation to Kūhiō Highway



The proposed project seeks to improve roadway connectivity in Anahola by increasing direct access to Kūhiō Highway. The purpose of these improvements is to support future commercial and residential activities in Anahola such as Pi'ilani Mai Ke Kai and the Anahola Town Center.

Status:

Discussions with State Department of Transportation-Highways and County of Kaua'i are ongoing.

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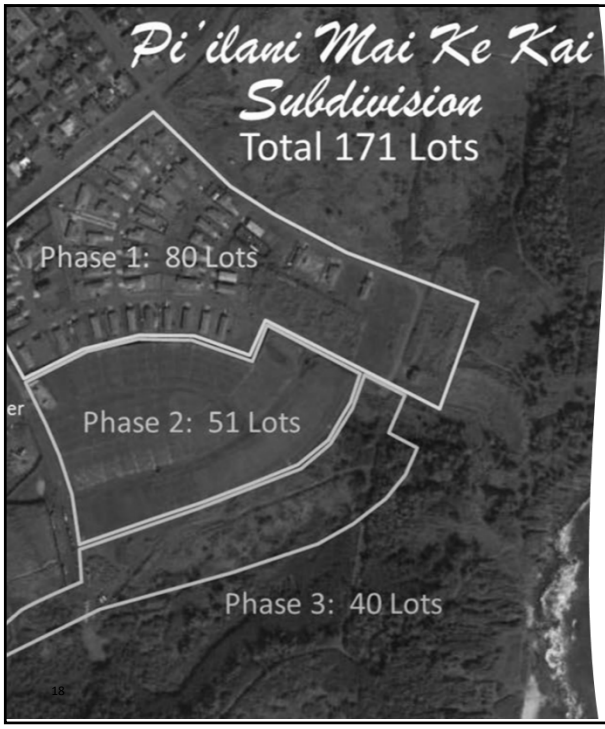

Pi'ilani Mai Ke Kai Updates

- Redesign of the master plan was required due to the presence of wetlands.
- Phase 2 will offer 51 lots and offer letters are expected to go out this year.
- Construction for phase 3 is approximately three years out, subject to funding.

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Anahola Kuleana Settlement Plan

Progress to-date

- Kuleana Settlement Planning completed in July 2020.
- Ch. 343 EA prepared and completed in May 2021.
- Settlement Plan includes 101 2-acre subsistence agriculture lots, 14 10-acre pastoral lots and 28 acres designated for community use.

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Anahola Kuleana Settlement Plan

Actions Moving Forward

- DHHL is currently going through procurement process to select a vendor to do metes and bounds survey to stakeout homestead lot boundaries and design internal road improvements within the settlement.
- DHHL looking at temporary land management options to manage the area during the interim period before award of homestead lots to beneficiaries.
- DHHL is developing an orientation program for prospective lessees to:
  1. Make aware of what a Kuleana Homestead lot is and is not
  2. Prepare prospective future lessees to better be able to successfully settle on their lot.

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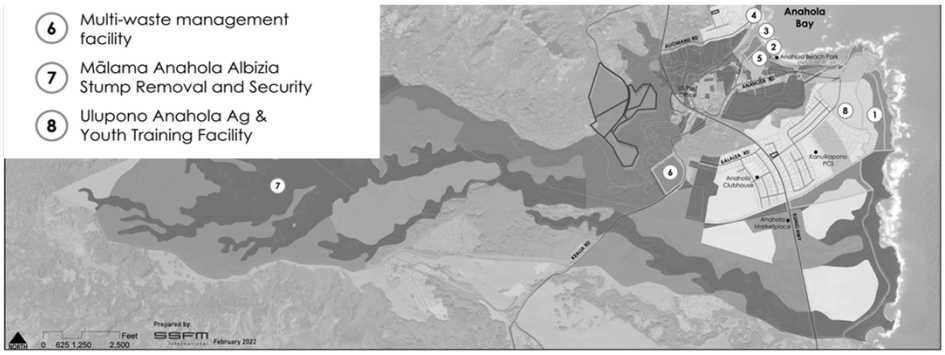
Other Projects and Land Requests

1. Anahola Hazard Mitigation / Modern Ahupua'a Project
2. Anahola Bay Kumu & Youth Academy
3. Cross-Fit at Camp Faith
4. Ko'olau Limu Project
5. Gathering Place for At-Risk Youth
6. Multi-waste management facility
7. Mālama Anahola Albizia Stump Removal and Security
8. Ulupono Anahola Ag & Youth Training Facility



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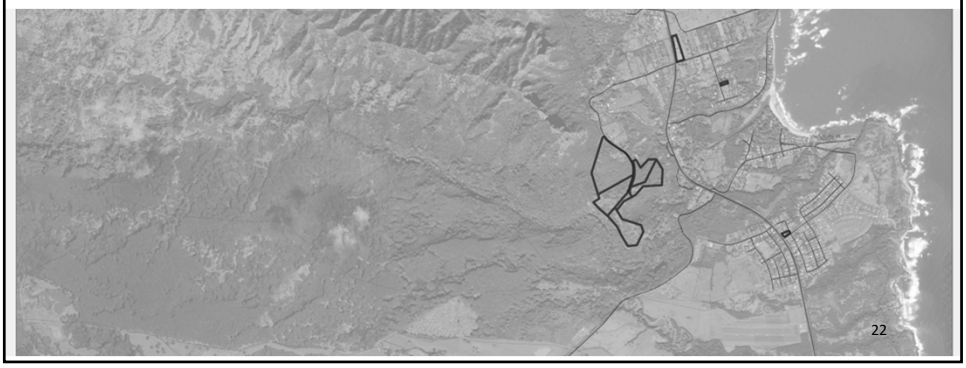
Vacant Lots

- Currently total of 9 vacant Homestead lots in Region:
  - 2 Residential
  - 7 Agricultural



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REGIONAL VALUES & VISION

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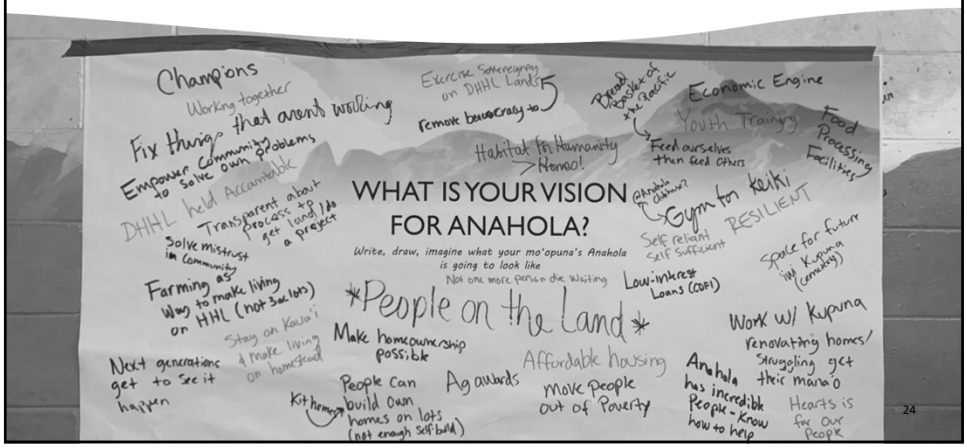
Where are we headed?

- Regional Plans are vision-based documents
  - A shared vision that supports common community values is the foundation for the overall plan and priority projects.



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Draft Regional Values

- Support & Care for our Kūpuna
- Uplift and Empower our Youth
- Self-Reliance & Self-Sufficiency
- Community Support & Collective Action
- Trust & Transparency

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Draft Vision Statement

Anahola, Kamalomaloʻo, and Moloaʻa, collectively known as the Anahola region, is the largest Hawaiian homestead community on Kauaʻi. Anahola is a community that supports and cares for our kūpuna, uplifts and empowers our youth and builds self-reliance and self-sufficiency of our people. We envision a unified community working to heal and come together toward a resilient future grounded in Hawaiian values, culture, and love for this place.

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BREAKOUT GROUPS:

1. Regional Values & Vision
2. Issues, Opportunities, & Resource
3. Project Ideas

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REPORT BACK

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WRAP-UP & NEXT STEPS

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Please feel free to contact us:

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(808) 620-9519

Malachi Krishok, Planner
mkrishok@ssfm.com
(808) 356-1272

IF YOU OR SOMEONE IN YOUR HOUSEHOLD HAS TESTED POSITIVE FOR COVID-19 OR HAVE SYMPTOMS OF COVID-19 WITHIN 2 DAYS OF THIS MEETING PLEASE CONTACT US.

THIS WILL HELP WITH CONTACT TRACING AND HELP SLOW THE SPREAD OF COVID-19 IN THE COMMUNITY.

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Appendix C - Beneficiary Consultation Meeting #3 Summary

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

DHHL Anahola Regional Plan Update
Community Meeting #3 Summary
May 11, 2022
Anahola Clubhouse

Attendance

Beneficiaries: 32 signed in

Beneficiary	Name
Both	Carla K. Contrades Barrett
Both	Jason Kaleiohi
Applicant	Makana Bacon
Applicant	Luella Lemn
Both	Nalani (Lorrie) Kaneakua
Other	Sandy DeFries
Both	Kaala Clarke
Lessee	Manulele Clarke
Both	Erwin Haumea
No Response	Steve Kaui
No Response	Tammy Kaui
Other	Faith Burgess
Lessee	Marie Noelaiu Kauolio Ornellas
Other	Chatson Barrett
Other	Benny Lagmay
No Response	Sandi Cummings Jr.
No Response	Frank Cummings Jr.
No Response	Steve Lizama
No Response	Daniel Lizama
No Response	Pua Loketi
Both	Lawaiʻa Nahe
Both	Dennis Neves
No Response	H. Lagmay
Both	Jeremie Makepa
Lessee	Edward Taniguchi
Both	Delta-Dawn Taniguchi
Other	Josh Boteilho
Other	Pepe (T) Boteilho
Lessee	Ben Kuhaulua
Both	Deny E
Both	Samuel Keopuhiwa
Other	Tita Kuhaulua

Project Team:

- **SSFM:** Jared Chang, Malachi Krishok
- **DHHL:** Nancy McPherson, Andrew Choy, Rhonda Gadingan, Kaipo Duncan

Other Guests:

- **Hawaiian Homes Commission:** Commissioner Dennis Neves (lessee in Bayview)

Handouts:

- Project Planning Resources and Examples
- Project Fact Sheet
- 2010 Regional Plan

Agenda

1. Sign-in & Open House
2. Welcome & Introductions
3. Group Presentation
    a. Community Meeting 2 Re-cap
    b. Responses to information and info requested in Community Meeting 2
    c. Updated Draft Vision & Values
    d. Issues & Opportunities & Initial Project Ideas
4. Breakout Group Discussions
    a. 2010 Priority Projects
    b. Regional Project Ideas

Summary Notes

1. Open House

An open house area was set-up in the indoor clubhouse space for meeting attendees to peruse prior to the start of the group meeting. The open house included posters cover the following information:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status & Anahola Town Center Plan Bubble Map
- UPDATED Draft Regional Values & Vision Statement
- UPDATED Regional Map showing comments from Community Meeting 2

The posters are attached to this summary in Appendix A.

2. Opening Presentation

Hawaiian Homes Commissioner, Dennis Neves, opened the group meeting with a pule and DHHL Planning Office Manager, Andrew Choy, gave welcoming remarks. Jared Chang began the PowerPoint presentation reviewing the purpose of DHHL Regional Plans, what the Anahola Regional Plan update will include, and sharing the beneficiary consultation schedule moving ahead, noting the following changes: Community Meeting 3 was delayed from April to May and Community Meeting 4 was delayed from May to June; the draft Regional Plan Update is still scheduled for beneficiary review in September with target adoption by the Hawaiian Homes Commission in November 2022.

Following Jared, Nancy McPherson addressed the list of information and updates requested during Community Meeting 2 in February 2022. She noted that 51 lots were awarded in the Piʻilani Mai Ke Kai Subdivision with a third phase planned for construction over the next 3 years, pending funding. Nancy also provided updates on the $600 million in legislative funding recently appropriated to DHHL, sharing that DHHL is currently in the process of developing a strategic plan for how to spend the funds, which will be published by December 2022.

To finish the PowerPoint presentation, Malachi Krishok read the updated regional values and vision statement, revised based on input received in Community Meeting 2. He then shared information on why priority projects are included in DHHL Regional Plans and finished by walking through the initial project ideas developed during Community Meeting 2, tying the issues and opportunities discussed during the meeting with each potential project.

Updated Vision Statement presented:

> *Anahola is a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai. We come together to heal our differences and work toward a sustainable future, drawing wisdom from Hawaiian knowledge and traditions while incorporating the tools and technologies of today.*

Updated Regional Values presented:

- Support and Care for Our Kūpuna
- Uplift and Empower our Youth
- Community Education and Capacity Building
- Sustainable and Resilient Aloha ʻĀina Economy
- Community Support and Collective Action
- Trust and Transparency

No comments were received on the updated Vision Statement or Regional Values during the meeting.

The list of initial projects presented:

- Housing Resource Center & Building Co-op
- Shoreline Management Plan/process to open up access
- Resilience & Emergency Services Center
- Hoʻakeolapono Trade Academy
- Community Capacity Building Fund
- Pedestrian Safety – Safe Routes

The PowerPoint slides are attached to this summary in Appendix B.

3. Breakout Group Discussion Notes

After the PowerPoint presentation, the meeting participants separated into two breakout groups to continue discussing initial project ideas and begin refining the project description, location and resources necessary to move forward with the idea. The 2010 Anahola Regional Plan priority projects were also discussed to determine if any of the projects or project components should be carried forward.

Group 1

General Comments

- People must be put first
  - Families must have a place to live and grow
  - Large families with multiple generations living together need more than 1-acre to live off of, farm, and feed family
- Community involvement - more Kanaka need to get involved
- Community needs more control over the priority projects that are on Hawaiian home lands
- Prioritize putting Hawaiians back on the land
- Stream conservation and restoration
  - Streambeds are dry
  - Diminishing prawn and ʻōpae populations
- $600m awarded could be used on the Housing and Resource Center
  - The money can provide financing to beneficiaries for building homes
- If there are more people accessing the shoreline it would deter bad actors

2010 Priority Projects

- Anahola Town Center Plan
  - Not a priority anymore for those in the group
- Anahola Clubhouse & Park Improvements
  - No comments
- Secure & Manage Surface Water Resources (non-potable)
  - 2022 update – water access and management to return water flow to homestead lots
  - Identify old stream beds and restore water flow
  - Kūpuna know where the water used to flow – there are dry streambeds that run through homesteads
- Support Kanuikapono 21st Century Ahupuaʻa Place Based Labs
  - Should be revisited but for all kids in the community – a lot of students at Kanuikapono are not from Anahola and not all kids in Anahola go to the school
  - Kanuikapono has been working with Kūkulu Kumuhana O Anahola for place-based learning and could also work with Hoʻakeolapono Trades Academy and ʻĀina Alliance for place-based labs at the home building resource center and shoreline management projects
- Improve Road and Traffic Circulation to Kūhiō Highway

- 2022 update – focus on pedestrian safety improvements
- Improved roads are necessary, but not sure if that is a regional project – should be State or County's kuleana

Project Ideas

1. Housing Resource Center and Home Building Cooperative
    - Project Components:
        - Being a cooperative is important
        - Hoʻakeolapono Trades Academy can help run it – students are always willing and able to work
        - Use entity to purchase wholesale building materials
        - Have rental tools, equipment, and operators available
    - Location:
        - Across from KIUC on Kūhiō Hwy, close to Emergency & Resilience Center
    - Timing:
        - Timing should be aligned with expected need with Piʻilani Mai Ke Kai vacant lots and mauka Kuleana lots opening up
2. Shoreline Management Plan and Program
    - Project Components:
        - ʻĀina Alliance did a lot of work to remove and clean the area and have Right-of-Entry to the area through DHHL
            - Can manage the programming
        - Permitting system as a part of the shoreline management plan can be added for camping and access
            - Permitting can be managed by the community/ʻĀina Alliance
    - Location:
        - Makai lands between Kealia Kai and Kukuihale Rd., currently managed by ʻĀina Alliance under a right of entry permit
        - Extend up to ʻAliomanu
    - Timing:
        - Not discussed
    - Champions and leaders:
        - Jeremie Makepa - ʻĀina Alliance
        - Nalani Kaneakua - Lessee
3. Emergency & Resilience Center
    - Project Components:
        - Model after Kilauea Community Ag Center (ʻĀina Hoʻokupu o Kīlauea)
        - Domes to protect against fire, and wind
        - Provide spaces to distribute medical services and food
    - Location:
        - Across from KIUC on Kūhiō Hwy, close to proposed Housing Resource Center
    - Timing

        - Not discussed
4. Implement Anahola Farm Lots (Subsistence Ag lots)
    - Project Components:
        - Implement the existing plan for small farm lots and award lots
    - Location:
        - Mauka
    - Timing
        - Not discussed
5. Lease Enforcement
    - Project Components:
        - Someone from DHHL on island – enforcement but with education component = "Supportsment" officer
        - Address vacant lots
        - Address ag lots with no agricultural activities happening
    - Location:
        - Vacant residential lots
        - Vacant/non-compliant ag lots
    - Timing:
        - Not discussed

Group 2

General Comments

- Kanaka should be able to use their land
- Hawaiians want to come back to Hawai'i
- Access to the land and cultural significance
    - Food keeps Kanaka connected to the 'āina
    - Access to the ocean and cultural sites
    - Blood quantum shouldn't be an issue to grow food
- Kuleana - responsibility to take care of the land and water
- It is about helping one another and helping ourselves – self-help
- We shouldn't need a building permit or permission from DHHL to build
- Sustainability and community resilience
- Underdeveloped lots
    - Albizia and Guinea grass has regrown
- Greater attention to the state of the community – Waiting for agriculture lots, renting to non-Kanaka, lessee enforcement, abandoned homes and lots
- Sewage problem
    - Cesspool conversion, water, sewer
- Need security
- Need funding for farming grants
- Need green waste facility – in the 2010 plan "multi-waste facility"
    - People are dumping on the makai side

- Need resources for taking care of the soil
- Free electricity for homesteads

Project Ideas

1. Consolidated Multi-Waste Management Facility
    - Project Components:
        - Green waste dumping
        - Transfer station for recycling and trash
    - Location:
        - Not discussed
    - Timing:
        - Not discussed
2. Implement Anahola Farm Lots (Subsistence Ag Lots)
    - Project Components:
        - Not discussed
    - Location:
        - Mauka
    - Timing:
        - Not discussed
3. Community Kitchen
    - Project Components:
        - Free and community-based certified kitchen
        - Cold storage
        - Dry house – for dehydration of fruit
        - Made and grown in Anahola marketing
        - Certified coconut processing facility
    - Location:
        - Not discussed
    - Timing:
        - Not discussed
4. Lease Enforcement
    - Project Components:
        - Re-awards for vacant and abandoned lots
        - Address ag lots with no agricultural activities happening
    - Location:
        - Vacant residential lots
        - Vacant/non-compliant ag lots
    - Timing:
        - Not discussed

4. Next Steps

- Kou Mana'o Questionnaire #3 for Priority Project Selection will be mailed to all lessees and available online
    - Responses may be dropped off at KDO, mailed in or filled out online, which is preferred
- Next meeting is scheduled for June 6th and included on the invitation letter that went out in April

Meeting Adjourned at 8:15 p.m.

Anahola Regional Plan Update

Community Meeting #3

May 11, 2022

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

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2. Welcome, Introductions & Updates
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   a. Identify and Prioritize Regional Projects
4. Report Back
5. Closing & Next Steps

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- Nancy McPherson (Project Manager, Kaua‘i Liaison)

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- DHHL General Plan Update (ongoing)
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Tonight’s Discussion Kuleana

- Be Open: open your mind, ears and heart. Take home new ideas and information
- Be comfortable: move around and use facilities(while practicing social distancing)
- Be Respectful: please do not interrupt the person that is talking, show aloha, treat others how you would like to be treated
- Be Creative: work towards future solutions/aspirations
- Agree to Disagree: accept that others may have different perspectives and opinions
- Cellphones off or on silent: please take calls/texts outside

E hoʻōki i ka hoʻina wale, o hōʻino ʻia mai ke kumu. *#291*
One should never go home without [some knowledge] lest his teacher be criticized.

Aloha mai nō, aloha aku: ʻo ka huhū ka mea e ola ʻole ai. *#113*
When love is given, love should be returned; anger is the thing that gives no life.

E lawe i ke aʻo a mālama, a e ʻoi mau ka naʻauao. *#328*
He who takes his teachings and applies them increases his knowledge.

ʻAʻohe pau ka ʻike i ka hālau hoʻokahi. *#203*
All knowledge is not taught in the same school.
[One can learn from many sources.]

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Tonight's Meeting Objectives

- Address requests for additional information and updates from meeting #2
- Continue refining regional project ideas and identify information gaps/needs
- Begin project prioritization

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Purpose of Regional Plans

- For the community to be involved in planning for their region
- For the community to identify and prioritize projects within the region
- For the plan to include detailed action steps needed to implement the priority projects

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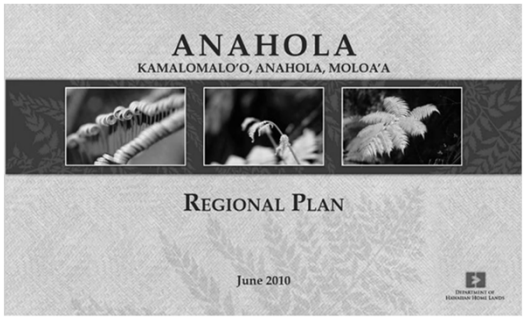
What Will the Update Include?



- Homestead Regional Profile
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- Homestead Issues, Opportunities & Priorities
- Vision Statement & Community Values for Region
- Implementation Action Steps for each Priority Project

Anahola was selected for a Regional Plan update because despite much of the last plan's priority projects not being implemented, there has been a lot of community led action over the last 10 years – the update provides the opportunity to take a breath together and coordinate those actions moving forward.

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Anahola Regional Plan Update Beneficiary Consultation Schedule - UPDATED



Tentative Schedule, Subject to Change

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MEETING #2 RE-CAP INFORMATION & UPDATES

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Meeting #2 Re-Cap

- Info & Updates Requested
- Vision & Values Review/Input
- Issues & Opportunities
- Initial Project Ideas



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Meeting #2

INFO REQUESTED:

- Info on Regional Plan Update meeting notices
- Anahola Village History
- Moloa‘a Updates
- Pi‘ilani Mai Ke Kai Award Updates
- $600 million legislative funding to DHHL

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Pi‘ilani Mai Ke Kai Updates

- 51 vacant lots were awarded this past April
- Phase 3 is approximately 3 years out

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Legislative Funding Update

- Next step: Governor has to sign the bill to have it become law
- Once Governor signs bill into law, DHHL will roll out a Strategic Plan that will detail how the $600 million will be allocated
  - Lot development projects and estimated timelines to lease issuance
  - Mortgage assistance, including down payment assistance and mortgage relief
  - Rental subsidies
  - Other services as necessary to address the waiting list
- Per the HB2511, the deadline to submit the Strategic Plan to the Legislature is Dec. 10, 2022; however, DHHL intends to have a draft plan shortly after the Governor signs the bill into law

Link to read HB2511_CD1 online:
https://www.capitol.hawaii.gov/session2022/bills/HB2511_CD1_.HTM

Link to download a pdf of the final bill:
https://www.capitol.hawaii.gov/session2022/bills/HB2511_CD1_.pdf

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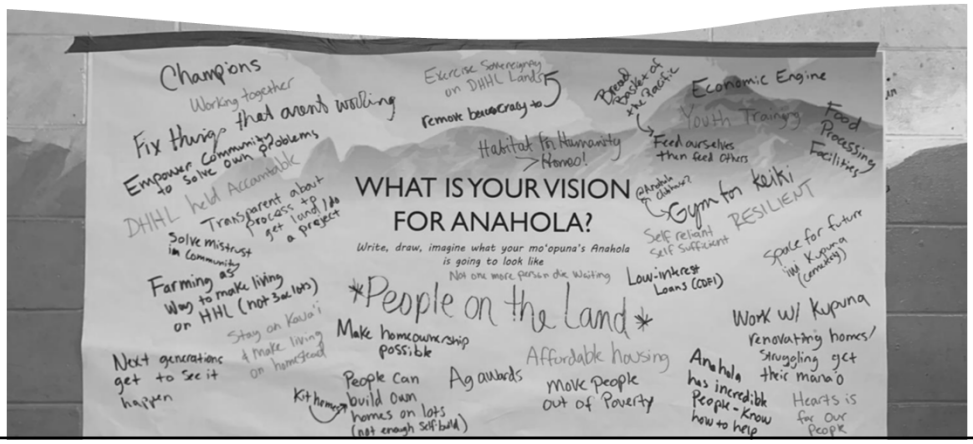
Where are we headed?

- Regional Plans are vision-based documents
  - A shared vision that supports common community values is the foundation for the overall plan and priority projects.



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UPDATED Draft Regional Values

- Support & Care for Our Kūpuna
- Uplift and Empower Our Youth
- Community Education & Capacity Building
- Sustainable and Resilient Aloha ʻĀina Economy
- Community Support & Collective Action
- Trust & Transparency

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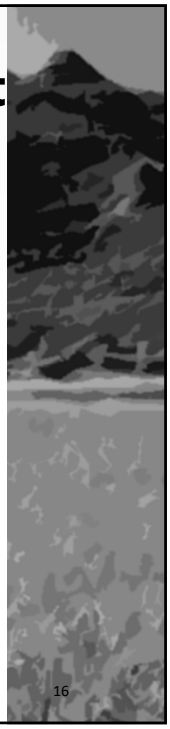
UPDATED Draft Vision Statement

Anahola is a thriving Hawaiian community that cares for our land, ocean, and natural resources from mauka to makai. We come together to heal our differences and work toward a sustainable future, drawing wisdom from Hawaiian knowledge and traditions while incorporating the tools and technologies of today.



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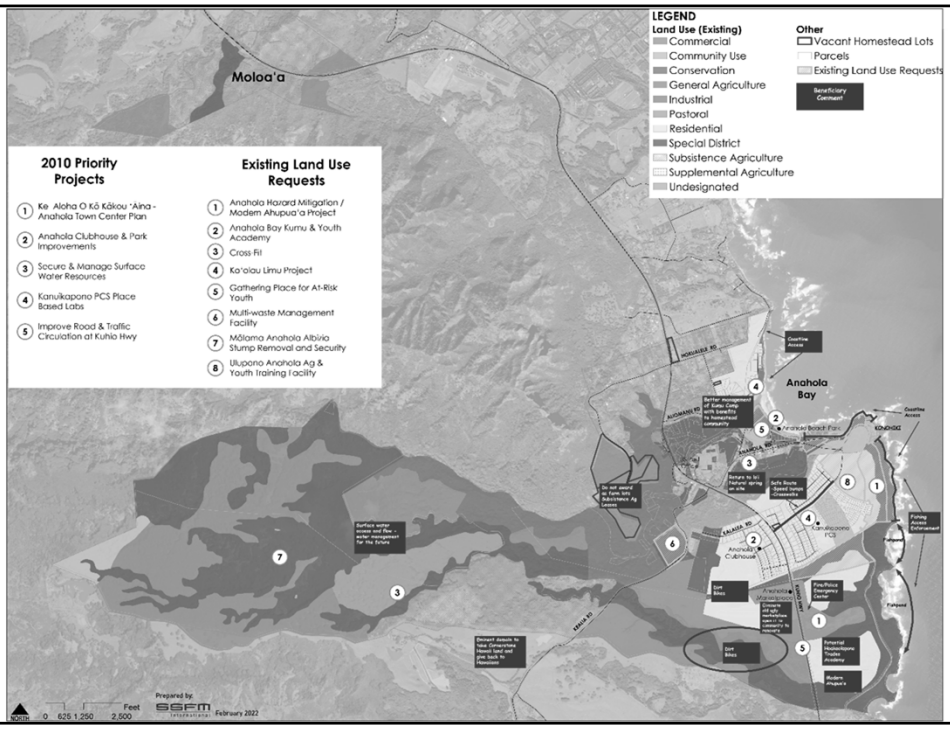
Issues & Opportunities

- Housing Resources
- Shoreline Access & Management
- Safety & Emergency Services Center
- Youth Education & Trades Skills
- Community Capacity Building
- Pedestrian Safety



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Priority Projects

- Projects identified for the Regional Plan are meant to address the issues and concerned expressed by the community.
- Five Priority Projects were identified in 2010 and some may remain a priority in the update.

2010 Regional Plan Priority Projects

1. Ke Aloha O Ko Kakou ʻĀina - Anahola Town Center Plan (ATCP)
2. Anahola Clubhouse & Park Improvements
3. Secure & Manage Surface Water Resources (non-potable)
4. Support Kanuikapono 21st Century Ahupuaʻa Place Based Labs
5. Improve Road & Traffic Circulation to Kūhiō Highway

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Priority Projects Status

2010 Priority Project	Status
1. Ke Aloha O Ko Kakou ʻĀina – Anahola Town Center Plan (ATCP)	Commercial kitchen constructed. Cemetery/secure resting place for iwi kupuna not yet implemented.
2. Anahola Clubhouse & Park Improvements	In 2018-19, County of Kauaʻi completed various projects that included: basketball court renovation, parking lot improvements, playground renovations, ADA walkways, baseball field improvements.
3. Secure & Manage Surface Water Resources (non-potable)	Surface water resources were reevaluated in response to beneficiary feedback during the Anahola Kuleana Homestead Settlement Plan process.
4. Support Kanuikapono 21st Century Ahupuaʻa Place Based Labs	Funding needed for construction of the Learning Resource Center.
5. Improve Road & Traffic Circulation to	Discussions with State Department of Transportation-Highways and County of Kauaʻi are ongoing.

19

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Issues & Opportunities → Initial Project Ideas

Housing Issues

- Lessees are not able to qualify for home loans.
- Infrastructure and code requirements not aligned with Hawaiian ways of living.
- Upgrading cesspools and other infrastructure is expensive.
- Growing need for affordable home building with new PMKK vacant lot awards and future Kuleana lots.

Housing Opportunities

- People in community have skills & knowledge to build homes.
- Affordable housing alternatives exist (e.g., Tiny Homes).
- New and emerging technology for off-grid and alternative infrastructure.

PROJECT IDEA:
Housing Resource Center & Home Building Cooperative

20

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Issues & Opportunities → Initial Project Ideas

Shoreline Access Issues

- Unable to access shoreline for fishing, teaching, etc.
- People not from Anahola are going into the area.
- Some areas blocked by residences.
- Dumping and other illegal activities.
- Need access to cultural places and resources.

Shoreline Access Opportunities

- Bring together fishermen and farmers to teach mo'opuna subsistence skills.
- Create enforcement/monitoring team from Anahola community.
- Work together with other projects in the area – limu restoration, farm lots, etc.
- Removing cars and improving safety.
- Makai Resource Management Plan was identified in 2010 Regional Plan.

PROJECT IDEA:
Shoreline Management Planning & Programming

21

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Issues & Opportunities → Initial Project Ideas

Resilience & Emergency Preparedness Issues

- Jurisdiction issues with police.
- Drug dealing and illegal activities in community.
- Makai area is unsafe.
- Need hurricane shelter & other emergency preparedness resources.

Resilience & Emergency Preparedness Opportunities

- Work with law enforcement to fix jurisdiction issues.
- Fire Dept. involved in fire prevention.

PROJECT IDEA:
Anahola Emergency Services & Resilience Center

22

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Issues & Opportunities → Initial Project Ideas

Youth Education and Trades Skills Issues

- Need safe spaces for youth.
- Need for skilled workers and job training.
- Kūpuna and others in community need help fixing and maintaining homes.

Youth Education and Trades Skills Opportunities

- Already underway and developing through KKOA and Hoʻākeolapono Trades Academy programs.
- Local nonprofits and businesses interested in partnering.
- Grow own food and create places to pass knowledge on to the youth.

PROJECT IDEA:
Hoʻākeolapono Trades Academy Physical Site

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Other Issues Not Covered in the Initial Projects Shared?

- Community Capacity Building Fund
- Pedestrian Safety Improvements and Safe Routes to Schools
- Water Management – Additional Water Tank/Access

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BREAKOUT GROUPS:

Project Identification

1. What will the project do? What community need will the project serve?
2. Who will lead the project?
3. Where will the project be located?
4. What other information and technical assistance is needed? (i.e., Ch 343, land disposition, design, building permits & construction)
5. How much will the project cost?
6. How will the project be funded?
7. When will the project be completed?

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REPORT BACK

26

WRAP-UP & NEXT STEPS

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WHAT DO YOU THINK?

Kou Mana‘o Questionnaire #3 – Priority Projects

Will be mailed to all lessees

1. Scan QR code to fill-out online
2. Mail-in questionnaire response
3. Drop-off questionnaire at DHHL Kaua‘i District Office

Please respond before June 6th Meeting

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Please feel free to contact us:

Nancy McPherson, Planner
nancy.m.mcpherson@hawaii.gov
(808) 620-9519

Malachi Krishok, Planner
mkrishok@ssfm.com
(808) 356-1272

IF YOU OR SOMEONE IN YOUR HOUSEHOLD HAS TESTED POSITIVE FOR COVID-19 OR HAVE SYMPTOMS OF COVID-19 WITHIN 2 DAYS OF THIS MEETING PLEASE CONTACT US.

THIS WILL HELP WITH CONTACT TRACING AND HELP SLOW THE SPREAD OF COVID-19 IN THE COMMUNITY.

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2010 Regional Plan Priority Projects

1. Ke Aloha O Ko Kakou ʻĀina - Anahola Town Center Plan (ATCP)



In 2009, the Anahola community created the Anahola Town Center Community-Based Conceptual Land Use Plan for 194 acres along Kūhiō Highway next to the existing DHHL Anahola homestead subdivision.

Status:

Commercial kitchen constructed. Cemetery/ secure resting place for iwi kupuna not yet implemented. ATCP & implementation strategy need to be revisited & KIP LUD's need amending.

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2010 Regional Plan Priority Projects

2. Anahola Clubhouse & Park Improvements





Improvements are needed at the Clubhouse and park to ensure safety and continued use of the resources.

Status:

In 2018-19, County of Kaua'i completed various projects that included:

- Complete basketball court renovation.
- Parking lot paving & striping.
- Complete playground renovation.
- Construction of ADA walkways that connect Clubhouse with baseball & basketball amenities.
- Baseball field improvements: new fencing, new ADA walkways, new dugouts, concrete pads for bleachers, concrete pad for announcers' booth, and reworking of infield dirt & outfield grass.

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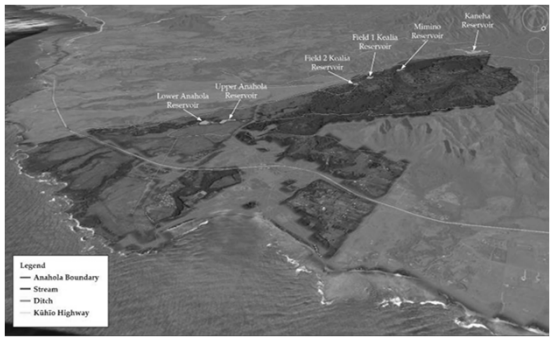
2010 Regional Plan Priority Projects

3. Secure & Manage Surface Water Resources (non-potable)



Surface water resources from the Kealia watershed through Anahola are an asset and the community would like to better understand current conditions for safety and potential future uses.

Status:

In 2016 DHHL received notice of $3 million funding from USDA Rural Development to match DHHL's $3.8 million contribution for a total of $6.8 million. Funds are being used for major capital improvements to the DHHL Anahola Farm Lots Public (drinking) Water System (PWS #432).

Surface water resources were reevaluated in response to beneficiary feedback during the Anahola Kuleana Homestead Settlement Plan process.

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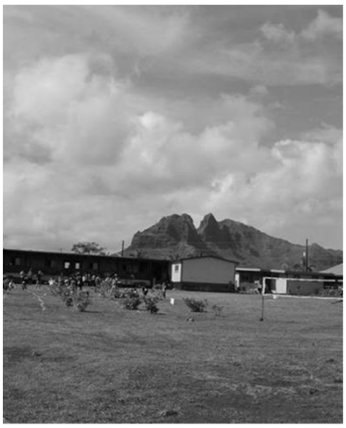
2010 Regional Plan Priority Projects

4. Support Kanuikapono 21st Century Ahupua‘a Place Based Labs



Kanuikapono charter school had two priority projects:

1. Construction of a new Learning Resource Center, to be located on DHHL land adjacent to the Pi‘ilani Mai Ke Kai subdivision;
2. Establish a mobile educational place-based learning labs throughout the ahupua‘a of Anahola.

Status:

Funding needed for construction of the Learning Resource Center. DHHL to work with Anahola community to identify locations for educational learning labs in Anahola. May be revisited when discussing Anahola Town Center Plan during this Anahola Regional Plan Update.

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2010 Regional Plan Priority Projects

5. Improve Road & Traffic Circulation to Kūhiō Highway



The proposed project seeks to improve roadway connectivity in Anahola by increasing direct access to Kūhiō Highway. The purpose of these improvements is to support future commercial and residential activities in Anahola such as Pi‘ilani Mai Ke Kai and the Anahola Town Center.

Status:

Discussions with State Department of Transportation-Highways and County of Kaua‘i are ongoing.

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Appendix D - Beneficiary Consultation Meeting #4 Summary

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

DHHL Anahola Regional Plan Update
Community Meeting #4 Summary
June 6, 2022
Anahola Clubhouse

Attendance

Beneficiaries/Attendees: 3S signed in

Ben. Status	Name
	Shirley Anu L. Kauahi
Beneficiary	Marie Noelani Kaioolio Ornellas
	Sandra Cummings
Beneficiary	Frank Cummings Jr.
Beneficiary	Aggie Marti-Kini
	Sal Marti-Kini
Beneficiary	Jason Kaleiohi
Beneficiary	Dennis Neves
Beneficiary	Kaui Neves
	Kuuleialoha Punui
Other	Josephine Bonaparte Locey
Applicant	Benny W Lagmay
Lessee	Agapto J. Navor
Applicant	Makana Bacon
	Lyman Kahaunaele
Both	Ed Taniguchi
	Lawaiʻa Naihe
	Henry Kupihea
Other	Loraine Rapozo
Both	John Kaohelaulii
Both	Benjamin W.O. Kuhaulua
Both	Erwin Haumea
Both	Jeremie Makepa
Other	Tinamarie (Aki) Soboleski
Other	Tracey Lynne (Pēpē) Boteilho
	Kula Tuailoa
	Kainoa Tuailoa
	Bill Raman
Applicant	Carla Barnett
	Upalea Barnett
	Rachelle Nam
Both	N. Lagmay

Project Team:

- **SSFM:** Jared Chang, Melissa May, Malachi Krishok
- **DHHL:** Nancy McPherson, Andrew Choy, Rhonda Gadingan, Kaipo Duncan

Other Guests:

- **Hawaiian Homes Commission:** Commissioner Dennis Neves (lessee in Bayview)
- **State Representative:** Representative Nadine Nakamura (District 14)

Handouts:

- Project Planning Resources and Examples
- Project Fact Sheet

Agenda

1. Sign-in & Open House
2. Welcome & Introductions
3. PowerPoint Presentation
4. Project Prioritization Discussion
5. Closing & Next Steps

Summary Notes

1. Open House

An open house area was set-up in the indoor clubhouse space for meeting attendees to peruse prior to the start of the group meeting. The open house included posters covering the following information:

- DHHL Anahola Regional Plan Purpose and Process
- 2010 Anahola Regional Plan Priority Projects and Current Status
- Draft Final Regional Values & Vision Statement
- Regional Map showing existing land requests and comments from Community Meeting 2

The posters are attached to this summary in Appendix A.

2. Opening Presentation

Aunty Shirley Kauahi opened the group meeting with a pule and DHHL Planning Office Manager, Andrew Choy, gave welcoming remarks. Jared Chang began the PowerPoint presentation, reviewed the purpose of DHHL Regional Plans and shared the beneficiary consultation schedule moving ahead, emphasizing that Community Meeting 4 is the last community meeting before the Beneficiary Review Draft. It was also noted that the community will have an opportunity to provide input on the Draft Plan and priority projects at the final meeting scheduled for September 2022.

Following Jared, Malachi Krishok presented a slide on priority projects, sharing that priority projects are meant to address community issues and concerns, build common agreement on how the community would like to spend its time and energy, and help DHHL prioritize its limited resources. In addition, it was shared that projects that are selected as priorities in the Regional Plan will include implementation action steps and will be considered to have gone through beneficiary consultation. Projects that are not selected as priorities will still be included in the plan, but with less detailed project descriptions. Next, he shared that Kou Manaʻo Questionnaire #3 was mailed to 499 Anahola lessees as well as emailed to all who attended previous Regional Plan Update community meetings and provided an email address. Preliminary

results of the survey responses submitted prior to the meeting were also shared. Final voting results are included in Section 4 of this summary.

Next, Nancy McPherson shared updates on the Anahola Kuleana Settlement Plan. Completed work at the time of the meeting included: Anahola non-potable water infrastructure study (May 2021) and the Kuleana Settlement Plan Final EA/Finding of No Significant Impact (FONSI) (published June 2021). Nancy also shared that additional implementation is scheduled to survey, generate metes and bounds, stake and map lots, and design internal road and drainage improvements. Kaua'i Land Agent Kaipo Duncan and the Kaua'i District Office will coordinate with the DHHL Planning Office and Land Development Division to communicate additional updates prior to commencing the various phases of work moving forward.

To finish the PowerPoint presentation, Nancy McPherson presented additional resources for project implementation beginning with the community organization and development process, which helps guide community organizations who wish to undertake projects. She finished by walking through the master planning and land development process on Hawaiian Home Lands. To close, Jared shared guiding questions to lead into the project prioritization and implementation steps discussion.

The PowerPoint slides are attached to this summary in Appendix B.

3. Discussion Notes

After the PowerPoint presentation, the group moved into a facilitated discussion aimed at filling in implementation steps for the projects identified in the previous meetings and included in Kou Mana'o Questionnaire #3. The notes below show the general comments and the implementation posters that were filled in based on the meeting discussion.

General Comments

- Mauka farm lot implementation is a priority
- Putting families on the land is #1
    - Need more than farm lots.
    - Equal homes - size of lot, sidewalks
- If giving land for project, make sure it's to benefit Hawaiians
- Does shoreline management plan include Anahola Beach Park?
    - There is a group taking care of it
- No like see bike path go through community all the way
- What is the plan for the 500 acres with ROE?
    - Water is accessible
- Shoreline Management Plan has to cover all ahupua'a in planning area
    - Need groups to take care of different areas
- Need green waste / recycling centers
    - Do our own mulching – look at Moloa'a project
    - Sustainability – learn how to grow
- Take care of the kids, motor bike riders
    - Get a track for them to ride
    - Sports facilities
- Take kids from Kapa'a HS to farm and wood shop to teach them
    - CTE program – small engine repairs, culinary

  - Kahale Pono 501(c)(3) is set-up for programming and accepts donations
  - Opportunities to partner with other community groups in Anahola
  - Work with Kapa‘a HS as partner on youth projects
- Wastewater treatment & waste management
  - Mālama Na ‘Apapa as partners
  - Include wastewater treatment to R-1 water that can be used for irrigation
- Emergency Services/Resilience Center – - look at example in Kīlauea
  - Could co-locate with training program
  - Originally proposed by County as just a fire station
  - Expanded resilience center could include shelter, kitchen, helipad, etc.
- Community kitchen needed
  - Teach how to process fruit
  - Juice Bar as lead
- Need more advertisement, participation in these meetings
  - Every 10 years is too long
  - DHHL needs social media
- Cemetery needed
- Love what Jeremie’s group (‘Āina Alliance) is doing with shoreline
- Sometimes we need help from outside the community
  - Learn from other places, get funding
  - We have to start somewhere
  - Vet outside pastures
  - Lots of people in Anahola show up to help too.
- Speak from the piko
- All of the activities here have the intention - na‘au
  - Should help the community and our youth
- Give hope – people are not just dying on the waitlist, they are committing suicide

Project Implementation

Project	**Lead/Partners**	**Early Needs**	**Location**	**Implementation** ✓ **= needed**
Shoreline Management Plan	**Lead:** ‘Āina Alliance **Partners:** • Kūpuna • Fishermen • All find areas of kuleana	• Proposal • ROE held by ‘Āina Alliance	Should cover all ahupua‘a in region	☑ Due Diligence ☑ Master Plan ☐ EA/Permits- Maybe ☐ Construction- Maybe ☐ Operations- Maybe
Secure & Manage Surface Water Resources	**Lead:** DHHL **Partners:** • Mauka Ag Lessee • Kuleana Ag Lessee			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations

Project	Lead/Partners	Early Needs	Location	Implementation = needed
Home Building Cooperative & Resource Center	**Lead:** Hō'ākeolapono T.A. **Partners:** • CTE Programs- Kapa'a HS, • Kahalapono		• Kūhiō Hwy, across from KIUC • (big truck radius access, off of new road)	☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Implement Mauka Farm Lot Plan	**Lead:** DHHL **Partners:** • Kaua'i Applicants • Future Kuleana Lessees			☑ Due Diligence- DONE ☑ Master Plan ☑ EA DONE ☐ Construction ☐ Operations
Support 21st Century Place Based Labs	**Lead:** Kūkulu Kumuhana O Anahola **Partners:** • Hawaiian families • Kapa'a HS • Ulupono • Malama Na 'Apapa			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Anahola Emergency Services & Resilience Center	Lead: **Partners**: • Kaua'i Fire Dept. • County of Kauai			☑ Due Diligence ☑ Master Plan ☑ EA/Permits ☑ Construction ☑ Operations
Anahola Clubhouse & Park Improvements	**Lead:** **Partners:** • County Parks			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Improve Lease Enforcement	**Lead:** DHHL **Partners:**			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations

Project	Lead/Partners	Early Needs	Location	Implementation = needed
Implement ATCP Cemetery	**Lead:** DHHL? Partners:			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Multi-waste Management Facility	**Lead:** Mālama Na ʻApapa **Partners:** • County of Kauaʻi • Juice Bar • Mulch experts		• Tie to kuleana lots; combine with wastewater treatment	☑ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Improve Pedestrian Safety & Safe Routes	**Lead:** **Partners:** • HDOT • DOH • County of Kauai			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations
Regional Wastewater Treatment Plant	**Lead:** Mālama Na ʻApapa **Partners:** • County of Kauaʻi • WAI • DHHL			☐ Due Diligence ☐ Master Plan/Business Plan ☐ EA/Permits ☐ Construction ☐ Operations

4. Kou Manaʻo Questionnaire #3 Results

Questionnaire #3 was closed on 6/10/2022, the Friday following Community Meeting #4. 45 individual responses were submitted. Each respondent was able to select up to five priorities from the list, each selection holding equal rank. In addition to voting, respondents were able to submit additional comments, which are included below. The five projects highlighted in yellow received the most votes and were confirmed by beneficiaries who attended the meeting as the top five priorities for the Regional Plan Update.

Votes	Project	Draft Description
26	Secure & Manage Surface Water Resources	Investigate water resources mauka and explore watershed development and stream flow restoration projects to secure homestead water rights.
25	Home Building Cooperative & Resource Center	Develop a home building cooperative and resource center in conjunction with Hoʻakeolapono Trades Academy and Institute that brings together education, building materials, equipment, and

Votes	Project	Draft Description
		skilled labor resources to provide affordable home building, repair and maintenance to the Anahola community.
25	Shoreline Management Plan	Develop a plan to manage shoreline resources and access to DHHL's lands makai of Kūhiō Highway currently managed by ʻĀina Alliance.
21	Support 21st Century Ahupuaʻa Place Based Labs	Support the development of learning spaces for Hawaiian cultural, place-based learning in partnership with Kanuikapono PCS, Kūkulu Kumuhana O Anahola, and other community-based programs serving Anahola youth.
19	Implement Mauka Farm Lot Plan	Subdivide and issue subsistence agriculture and pastoral awards and work with DHHL to ensure housing and infrastructure alternatives are available to lessees.
17	Multi-waste Management Facility	Develop a consolidated transfer station for recycling, trash, and green waste.
16	Improve Lease Enforcement	Work with DHHL to better address vacant lots and improve agricultural production on agriculture lots.
15	Anahola Clubhouse & Park Improvements	Continue implementing improvements to the Clubhouse and park to ensure safety and continued community use of the resources and space.
14	Anahola Emergency Services & Resilience Center	Develop an emergency services and resilience center to provide emergency shelter and serve as a distribution hub for public safety and emergency services in the region.
13	Regional Wastewater Treatment Facility	With cesspool conversions needed by 2050, seek federal funding to develop a wastewater treatment plant to accommodate homes and businesses in Anahola.
12	Implement Anahola Town Center Plan (ATCP) Cemetery	Pursue lease agreements with DHHL and other authorities to establish a cemetery as identified in the Ke Aloha O Ko Kākou ʻĀina - Anahola Town Center Plan.
11	Improve Pedestrian Safety & Safe Routes	Develop a plan for pedestrian routes and safety measures, particularly around schools and parks.

5. Next Steps

- Project team will prepare Draft Regional Plan
- Follow-up and gather additional info from project POC, potential partners, and DHHL staff
- HHC on Kauaʻi and Community Meeting – August 2022
- Upcoming Schedule (subject to change)
    - Draft Regional Plan Community Meeting – September 2022
    - Final Draft Regional Plan for HHC approval - November 2022

Meeting Adjourned at 8:05 p.m.

Anahola Regional Plan Update

Community Meeting #4

June 6, 2022

HAWAIIAN HOME LANDS
Hawaiian Homes Commission
Department of Hawaiian Home Lands

SSFM International

1

Team Introductions

DHHL Planning Office Team:

- Andrew Choy (Planning Program Manager)
- Nancy McPherson (Project Manager, Kaua'i Liaison)

DHHL Homestead Kaua'i District Office:

- Erna Kamibayashi
- Rhonda Gadingan

DHHL Land Management Division:

- Kaipo Duncan (Kaua'i Land Agent)

SSFM International

Consultant Team (SSFM International):

- Melissa May (Planner, Principal-in-charge)
- Jared Chang (Planner, Facilitator)
- Malachi Krishok (Planner, Project Manager)

SSFM Experience/Related Projects:

- DHHL General Plan Update (ongoing)
- DHHL Hanapēpē Master Plan & EA (completed 2020)
- County of Kaua'i General Plan (completed 2018)

2

Tonight's Meeting Objectives

- Share results from Kou Manaʻo Questionnaire #3 – Project Prioritization
- Share DHHL land development process
- Discuss implementation action steps for selected priority projects
- Confirm priority projects to move forward into the Draft Regional Plan Update
- Closing & Next Steps

3

3

Tonight's Discussion Kuleana

- Be Open: open your mind, ears and heart. Take home new ideas and information
- Be comfortable: move around and use facilities(while practicing social distancing)
- Be Respectful: please do not interrupt the person that is talking, show aloha, treat others how you would like to be treated
- Be Creative: work towards future solutions/aspirations
- Agree to Disagree: accept that others may have different perspectives and opinions
- Cellphones off or on silent: please take calls/texts outside

E hoʻōki i ka hoʻina wale, o hōʻino ʻia mai ke kumu. *#291*
One should never go home without [some knowledge] lest his teacher be criticized.

Aloha mai nō, aloha aku: ʻo ka huhū ka mea e ola ʻole ai. *#113*
When love is given, love should be returned; anger is the thing that gives no life.

E lawe i ke aʻo a mālama, a e ʻoi mau ka naʻauao. *#328*
He who takes his teachings and applies them increases his knowledge.

ʻAʻohe pau ka ʻike i ka hālau hoʻokahi. *#203*
All knowledge is not taught in the same school.
[One can learn from many sources.]

4

4

Anahola Regional Plan Update
Beneficiary Consultation Schedule



Tentative Schedule, Subject to Change

5

5

PRIORITY PROJECT SELECTION

6

6

Priority Projects

- Projects identified for the Regional Plan are meant to address the issues and concerned expressed by the community
- Priority projects help DHHL to prioritize its limited resources and helps community to decide where/how to spend time and energy
- Projects that are not selected as priorities can still move forward but would require additional beneficiary consultation

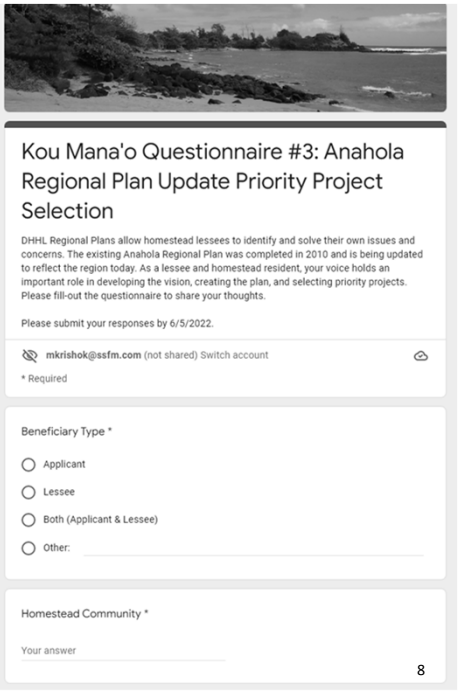
7

7

Kou Mana‘o Questionnaire #3

- Mailed to all Anahola lessees
- Available to take online or hardcopy
- Twelve project options for beneficiaries to vote on (choose up to 5)

- Mailed to 499 lessees
- Emailed to all who attended previous meetings and provided email address
- **Total of 32 responses received**



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Kou Mana‘o Questionnaire Results

Votes	Project	Draft Description
8	Regional Wastewater Treatment Plant	With cesspool conversions needed by 2050, seek federal funding to develop a wastewater treatment plant to accommodate homes and businesses in Anahola.
8	Improve Pedestrian Safety & Safe Routes	Develop a plan for pedestrian routes and safety measures, particularly around schools and parks.
9	Multi-waste Management Facility	Develop a consolidated transfer station for recycling, trash, and green waste.
10	Implement Anahola Town Center Plan Cemetery	Pursue lease agreements with DHHL and other authorities to establish a cemetery as identified in the Ke Aloha O Ko Kākou ‘Āina - Anahola Town Center Plan.
10	Anahola Emergency Services & Resilience Center	Develop an emergency services and resilience center to provide emergency shelter and serve as a distribution hub for public safety and emergency services in the region.
11	Improve Lease Enforcement	Work with DHHL to better address vacant lots and improve agricultural production on agriculture lots.

9

9

Results continued…

Votes	Project	Draft Description
11	Anahola Clubhouse & Park Improvements	Continue implementing improvements to the Clubhouse and park to ensure safety and continued community use of the resources and space.
13	Support 21st Century Place Based Labs	Support the development of learning spaces for Hawaiian cultural, place-based learning in partnership with Kanuikapono PCS, Kūkulu Kumuhana O Anahola, and other community-based programs serving Anahola youth.
14	Implement Mauka Farm Lot Plan	Subdivide and issue subsistence agriculture and pastoral awards and work with DHHL to ensure housing and infrastructure alternatives are available to lessees.
17	Secure & Manage Surface Water Resources	Investigate water resources mauka and explore watershed development and stream flow restoration projects to secure homestead water rights.
19	Home Building Cooperative & Resource Center	Develop a home building cooperative and resource center in conjunction with Ho‘akeolapono Trades Academy and Institute that brings together education, building materials, equipment, and skilled labor resources to provide affordable home building, repair and maintenance to the Anahola community.
19	Shoreline Management Plan	Develop a plan to manage shoreline resources and access to DHHL’s lands makai of Kūhiō Highway currently managed by ‘Āina Alliance.

10

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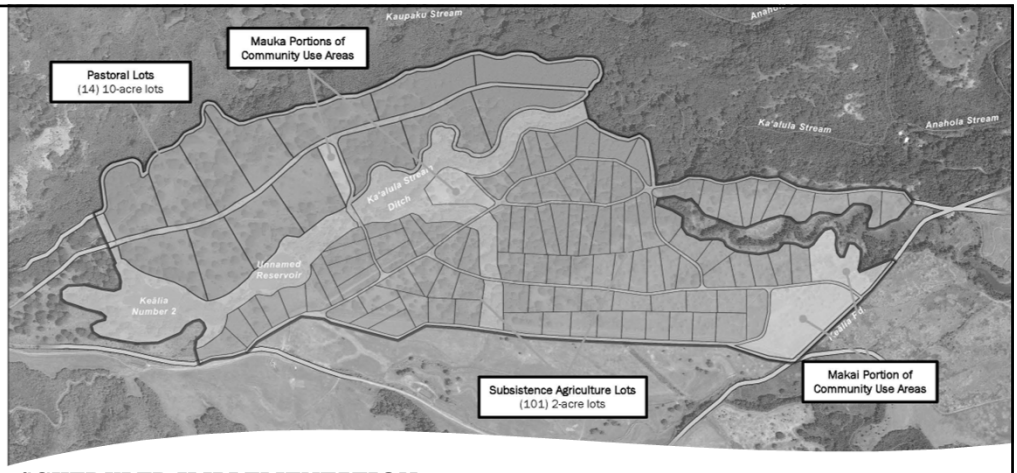
Update: Anahola Kuleana Settlement Plan



COMPLETED WORK

- Anahola Non-Potable Water Infrastructure Study finalized May 2021
- Kuleana Settlement Plan Final EA/FONSI published June 2021

https://dhhl.hawaii.gov/wp-content/uploads/2021/06/2021-06-23-KA-FEA-Anahola-Kuleana-Homestead-Settlement-Plan-Sized.pdf

SCHEDULED IMPLEMENTATION

- DHHL's Land Development Division (LDD) has contracted with G70 to survey, generate metes and bounds, stake and map lots and design internal road and drainage improvements; Notice to Proceed (NTP) issued 5/5/2022
- ControlPoint Surveying, Inc. will be subcontracted for survey work, which may include drone flights. Project schedule is still being prepared
- DHHL (LDD and PO) will coordinate with LMD Land Agent Kaipo Duncan and Kaua'i District Office to provide notifications and updates to Anahola lessees and homestead associations prior to commencement of various phases of work

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PROJECT IMPLEMENTATION

Credit: Laurel Smith / The Garden Island 12

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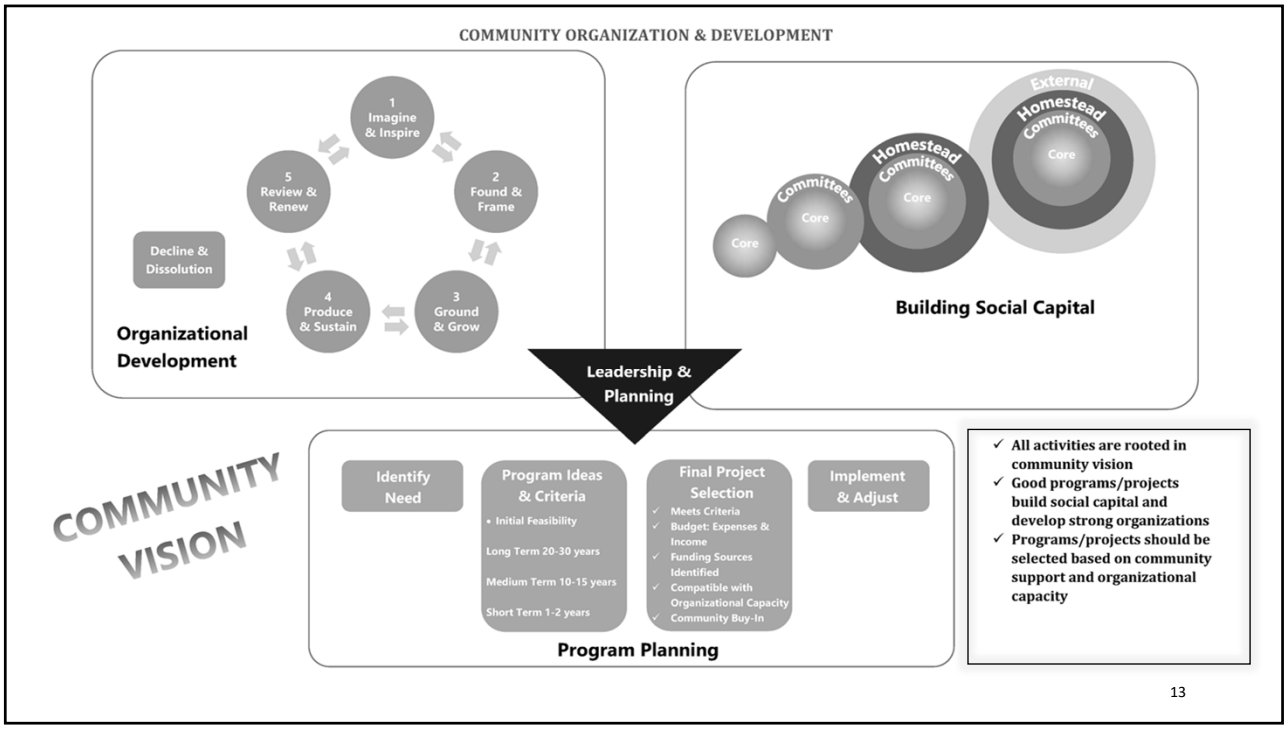
COMMUNITY ORGANIZATION & DEVELOPMENT
1 Imagine & Inspire
2 Found & Frame
3 Ground & Grow
4 Produce & Sustain
5 Review & Renew
Decline & Dissolution
Organizational Development
External
Homestead Committees
Committees
Core
Building Social Capital
Leadership & Planning
COMMUNITY VISION
Identify Need
Program Ideas & Criteria
Initial Feasibility
Long Term 20-30 years
Medium Term 10-15 years
Short Term 1-2 years
Final Project Selection
Meets Criteria
Budget: Expenses & Income
Funding Sources Identified
Compatible with Organizational Capacity
Community Buy-In
Implement & Adjust
Program Planning
All activities are rooted in community vision
Good programs/projects build social capital and develop strong organizations
Programs/projects should be selected based on community support and organizational capacity
13

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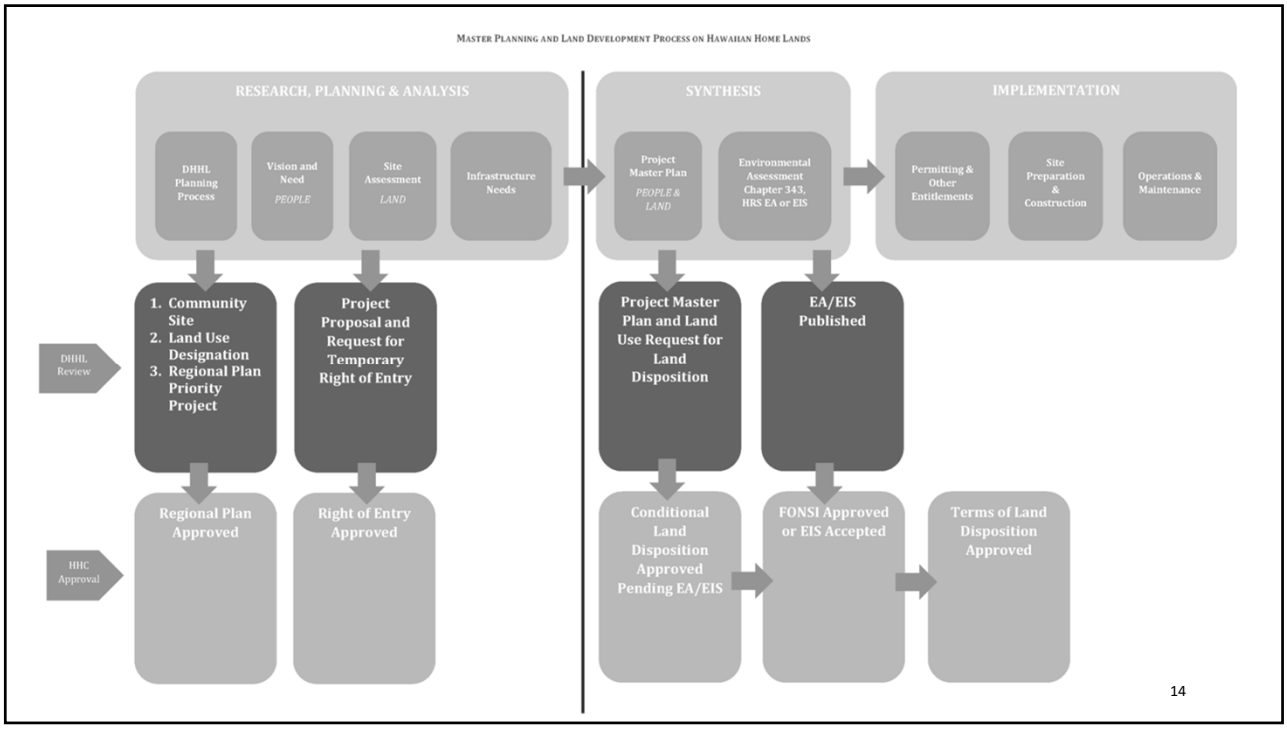
Master Planning and Land Development Process on Hawaiian Home Lands
RESEARCH, PLANNING & ANALYSIS
DHHL Planning Process
Vision and Need
PEOPLE
Site Assessment
LAND
Infrastructure Needs
SYNTHESIS
Project Master Plan
PEOPLE & LAND
Environmental Assessment Chapter 343, HRS EA or EIS
IMPLEMENTATION
Permitting & Other Entitlements
Site Preparation & Construction
Operations & Maintenance
DHHL Review
1. Community Site
2. Land Use Designation
3. Regional Plan Priority Project
Project Proposal and Request for Temporary Right of Entry
Project Master Plan and Land Use Request for Land Disposition
EA/EIS Published
HHC Approval
Regional Plan Approved
Right of Entry Approved
Conditional Land Disposition Approved Pending EA/EIS
FONSI Approved or EIS Accepted
Terms of Land Disposition Approved
14

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Project Implementation

Research, Planning, & Analysis

- ❑ Is there an organization/entity leading project?
- ❑ How does the project fit vision & needs of community?
- ❑ Has a project location been selected?
- ❑ Has the lead organization/entity requested right-of entry & completed site assessment/ due diligence

Synthesis

- ❑ Does the project require a master plan?
- ❑ Does the project require a business plan?
- ❑ Does the project require an Environmental Assessment?
- ❑ Has the lead organization/entity requested lease/license?

Implementation

- ❑ What permits & other entitlements are necessary?
- ❑ When will site preparation & construction begin? Be complete?
- ❑ What are the ongoing operations & maintenance needs?

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WRAP-UP & NEXT STEPS

Laurel Smith / The Garden Island 16

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What's Next?

- Project team will prepare Draft Regional Plan
- Follow-up and gather additional info from project POC, potential partners, and DHHL staff
- HHC on Kaua'i and Community Meeting – August 2022
- Draft Regional Plan Community Meeting – September 2022
- Final Draft Regional Plan for HHC approval - November 2022

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Please feel free to contact us:

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(808) 620-9519

Malachi Krishok, Planner
mkrishok@ssfm.com
(808) 356-1272

IF YOU OR SOMEONE IN YOUR HOUSEHOLD HAS TESTED POSITIVE FOR COVID-19 OR HAVE SYMPTOMS OF COVID-19 WITHIN 2 DAYS OF THIS MEETING PLEASE CONTACT US.

THIS WILL HELP WITH CONTACT TRACING AND HELP SLOW THE SPREAD OF COVID-19 IN THE COMMUNITY.

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Appendix E - Beneficiary Consultation Meeting #5 Summary

DEPARTMENT OF HAWAIIAN HOME LANDS

SSFM International

DHHL Anahola Regional Plan Update
Community Open House #5 Summary
October 22, 2022, 10 AM – 1 PM
Anahola Beach Park

Attendance

Beneficiaries/Attendees: 32 signed in

Beneficiary	Name
Both	Alapa Mitchell
Applicant	Alroy L.N. Enos
Applicant	Carla Contrada-Barrett
Applicant	Ceslee K. Enos
Both	Dennis Neves
Both	Evalani Lizama
Lessee	Frances Dinnan
Applicant	Janet Shirley
Lessee	Jeremie Makepa
Applicant	Kainoa Thaxton
Other	Kealaohona Iopa
Other	Kim Dickinson
Lessee	Kula Thaxton
Both	Lawaia Naihe
Both	Leiola Kamalani-Oliver
Lessee	Lorna L. Enos
Both	Lovell
Both	Luella Lemn
Applicant	Lynnette Neves
Both	Melissa Sugai
Other	Napua Gardner
Both	Noelani Freitas
	Norman K. Solomon
Other	Patrick Kinzie
Applicant	Rachelle Nam
Other	Randall Lemn
Other	Ronnie Lynn Lemn
	Ronny Kaulukukui
	Sarah Kaneaonalii
Both	Shirley Ann L. Kauahi
Other	Steve Lizama
	Tina Soboleski

Project Team:

- **SSFM:** Jared Chang, Melissa May, Malachi Krishok

- **DHHL:** Nancy McPherson, Julie-Ann Cachola, Erna Kamibayashi, Rhonda Gadingan

Other Guests:

- **Hawaiian Homes Commission:** Commissioner Dennis Neves (lessee in Bayview)
- **Hōʻākeolapono Trades Academy and Institute Volunteers**

Handouts:

- Anahola Regional Plan Update – Draft Plan Open House Overview (Appendix A)
- Meeting Summaries from Community Meetings 1-4 were also available for open house attendees to take as hardcopies or scan a QR code and download

Overview of Open House

The purpose of the Anahola Regional Plan Update Draft Community Open House was to provide lessees and beneficiaries from the Anahola, Kamalomaloʻo, and Moloaʻa region the opportunity to review and comment on the draft regional plan update, including the draft priority projects. The open house was hosted by beneficiary led organization, Kahu O Ka Pāka Kahakai ʻo Anahola, on the site the volunteer caretake at Anahola Beach Park.

The open house stations mirrored the sections of the Regional Plan Update draft and the information presented was summarized from the draft text. Full copies of the plan were available for open house attendees to peruse and guests were invited to provide their information to receive a hard copy of the draft plan in the mail, if interested. After the introductory station (see 1 & 2) below, each section of the open house provided opportunities to provide comments or input. The open house stations were:

1. Regional Plan Update Process Overview
2. Beneficiary Consultation Summary
3. Draft Regional Plan Vision and Values
4. Regional Overview
5. Infrastructure Overview
6. Issues and Opportunities Map
7. Previous Priority Projects and Status Update
8. Draft Regional Plan Update – Priority Projects
    a. Surface Water Resource Management
    b. Hōʻākeolapono Trades Academy and Institute: Home Building Resource Center
    c. Makai Management Plan
    d. Anahola Place-Based Education Network
    e. Mauka Farm Lot Implementation
9. Other Project Ideas Proposed

Notes of all input received at each station is included in the next section.

Three of the priority projects are community driven: Hōʻākeolapono Trades Academy and Institute: Home Building Resource Center, Makai Management Plan, and Anahola Place-Based Education Network; each of these stations had a community champion or point of contact to answer questions and encourage beneficiaries to sign-up to kōkua with the future implementation. Two priority projects

require DHHL to lead implementation efforts: Surface Water Resource Management and Mauka Farm Lot Implementation; DHHL staff were available to answer questions, gather feedback and encourage beneficiaries to sign-up to support implementation at these stations. Project team staff were also floating between stations to listen to feedback and answer questions.

Open House Station Notes

1. Regional Plan Update Process Overview
    - No comments

2. Beneficiary Consultation Summary
    - No comments

3. Draft Regional Plan Vision and Values
    - No comments

4. Regional Overview
    - No comments

5. Infrastructure Overview
    - Comments:
        - DHHL hire engineering firm to utilize reservoir system more efficiently to serve community
        - DHHL should lobby legislature for credits to convert septic systems. Also, funding be made available to owners

6. Issues and Opportunities Map
    - Comment: Dirt Bikes use Anahola Beach Park hill, which dangerous for people walking/driving

7. Previous Priority Projects and Status Update
    - Anahola Clubhouse Improvements
        - Comment: Include a skatepark?

    - Improve Road & Traffic Circulation to Kūhiō Highway
        - Comment: Residential roads need pedestrian walkways…sidewalks?

8. Draft Regional Plan Update – Priority Projects
    - Surface Water Resource Management
        - Comments:
            1. KIUC community center built but closed. No one assigned – do an open house
            2. Dams need to open up and need to look at rules and regs
            3. PMKK SIC put in up to home but no connection
            4. Anahola Subdivision before PMKK has cesspools – are dry? (increments)

5. Maintain reservoirs for flood control – control the overflow system
6. Old ditch system goes all the way to the Bay
7. All other water system in Anahola are pumped, the reservoir system is gravity (Read Sugar Water book)
8. Mauka intakes (on DLNR land) are in good condition – can open up the ‘auwai relatively inexpensively
9. Removal of albizia in mauka lands is now causing a runoff issue. Green energy left stumps in – DHHL should remove the stumps and use the material to build dams to stop runoff

- Map Notes
  1. Runoff wherever ditches exist
  2. Intake/source on Anahola River
  3. Community use area mauka does make sense
- Kōkua Sign-up
  1. Steve Lizama
  2. Melissa Sugoi – Admin
  3. Kukaumanu Thaxton – Helpful
  4. Lynette Neves
  5. Ceslee Enos

- Hōʻākeolapono Trades Academy and Institute: Home Building Resource Center
  - Kōkua Sign-up:
    1. Shirley Ann L Kanahi – Teacher, Vice-Principal, Principal
    2. Dennis Neves – 10x12 shed
    3. Alex Wong – Agriculture, Planning, GIS/GPS, Drone Survey, Small business development
    4. Lynette Medina
    5. Carla Contrades – Agriculture/compost care
    6. Luella Lemn – Interested in computer class
    7. Noelani Ornellas – Agriculture helper
- Makai Management Plan
  - Comments:
    1. Space for agriculture?
  - Kōkua Sign-up:
    1. Noelani Ornellas – Agriculture helper
    2. Roddy Kaulukukui

- Anahola Place-Based Education Network
  - Kōkua Sign-up
    1. Leiola Kamalani Oliver – Anything
    2. Carla Contrades – Consultant/Hawaiian medicine
    3. Evalani Lizama – Crafts and wellness
    4. Luella Lemn – Anything

- Mauka Farm Lot Implementation

- Is GET Pau?
- Kealia Road washed out – drainage, plot water
- Historical ??
- Anahola Beach well private owner
    1. Melissa Sugoi
    2. Kaua‘i EC Res
- Anahola H2O study – where is it?
    1. Give to LDD

9. Other Project Ideas Proposed
    - Need property for all my juice bar compost
    - Community kitchen for homesteaders

Open House ended at 1:00 p.m.

STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Andrew H. Choy, Planning Program Manager

Subject: Declare a Finding of No Significant Impact for the Waimea Nui Regional Community Development Initiative Kīpuka o Ke Ola Clinic Relocation Final Environmental Assessment, TMK (3)-6-4-038:011 (por.), Puʻukapu, Waimea, Hawaiʻi Island

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 Waimea Nui Regional Community Development Initiative Kīpuka o Ke Ola (KOKO) Clinic Relocation Final Environmental Assessment

Discussion

An informational briefing regarding the Draft Environmental Assessment for the Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation was presented to the HHC in October of 2022 (Exhibit A). the focus of this submission is to review the KOKO Clinic Relocation FEA. Primarily, we will review changes made to the DEA as a result of comments received on the DEA during the 30-day public comment period that occurred between November 8 and December 8 2022.

Background

The Waimea Hawaiian Homesteaders' Association (WHHA) incorporated Kīpuka o ke Ola (KOKO) as the Association's Medical Division. KOKO was founded by Five Mountains Hawaiʻi Inc., a 501c3 non-profit organization that was inspired by Dr. Earl Bakken and Kenneth Brown. In January 2014, Five Mountains Hawaiʻi, Inc. elected a new Board of Directors, new Executive Management Team, and officially

began doing business as KOKO. The KOKO Native Hawaiian Health Clinic ("KOKO Clinic") was established in response to a community needs assessment conducted by the Waimea Hawaiian Homesteaders' Association (WHHA), which called for a health clinic that could specifically address the health disparities endured by Native Hawaiians in North Hawai'i.

The clinic's mission statement is: "KOKO provides cultural, spiritual, medical, and psychological services to all residents of North Hawai'i with a special emphasis for the Kānaka Maoli. This mission is our kuleana. KOKO provides culturally-informed direct services, actively collaborates with Hawaiian agencies and associations in order to meet their members' needs, and is led by the community it serves." KOKO is designed to provide a full range of bio-psycho-social services to the residents of North Hawai'i. It provides primary care services (including pediatric services), women's health services, individual, couple, and family psychotherapy services, acupuncture/lomilomi massage, and psycho-educational trainings for the community and organizations.

The WHHA and its subsidiary organization, the Waimea Nui Community Development Corporation (WNCDC) have been actively conceptualizing a community development project for over 40 years to address the cultural, economic, and social needs of the Waimea area and of Waimea Homestead families. The Waimea Nui Regional Community Development Initiative (WNR-CDI) was developed based upon the ideas and concepts articulated by the homestead community, and it incorporates the long-term visions of both WHHA and the Department of Hawaiian Home Lands (DHHL), as outlined in the DHHL Waimea Regional Plan (2012).

In 2015, a Final Environmental Assessment - Finding of No Significant Impact (FEA-FONSI) was prepared for the WNR-CDI (Exhibit A), which proposed the following facilities and land uses to be located within approximately 114-acres of DHHL Homestead Land in a portion of Tax Map Key (TMK) (3) 6-4-038:011: a homestead cemetery/chapel which includes:

- Columbarium;
- Community agriculture complex inclusive of a community agricultural park, a green waste biodigester with

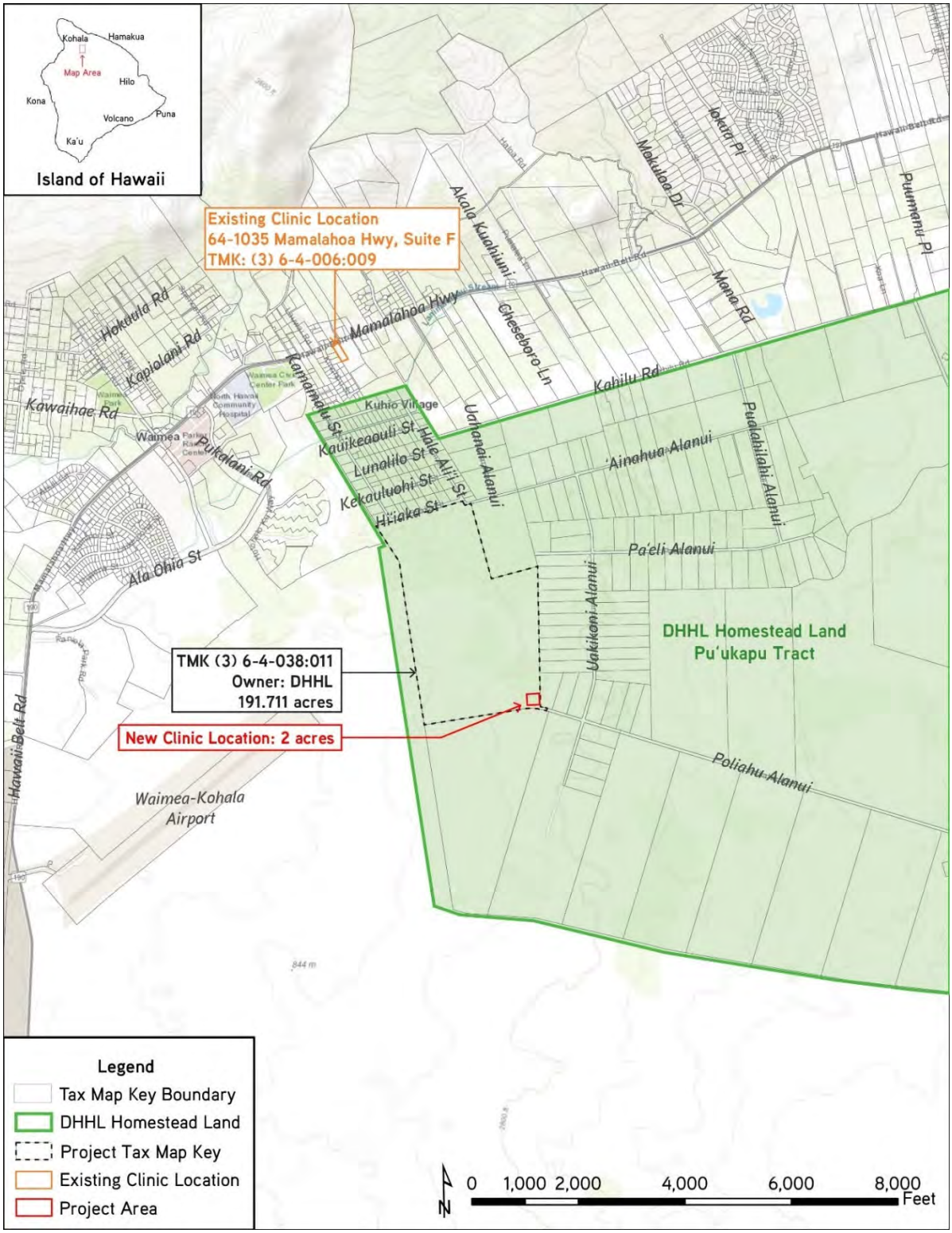
electric grid, a post-harvest facility, and commercial kitchen;

- An equestrian center; and
- A golf facility inclusive of playing greens, driving range, chip and putt, and a clubhouse.

Following completion of the FEA-FONSI, the Hawaiian Homes Commission approved a 65-year General Lease to WNCDC that encompasses 161-acres of land within TMK (3) 6-4-038:011 to develop the aforementioned facilities and land uses (Exhibit B). The 161-acre property is inclusive of the 114-acres covered in the 2015 FEA-FONSI.

The WNR-CDI proposes to relocate the KOKO Clinic from its existing location at 64-1035 Māmalahoa Highway, to an approximate 2 to 5 acre portion of the undeveloped 161-acre property leased by WNCDC. The clinic's proposed location would be within 2 acres of the area that was previously identified for the equestrian center in the 2015 WNR-CDI FEA-FONSI. The clinic is a new land use that is being considered for inclusion with the land uses proposed in the WNR-CDI's 2015 FEA-FONSI and therefore supplemental Draft Environmental Assessment (DEA) has been prepared in accordance with the requirements of Hawai'i Revised Statutes (HRS), Chapter 343 and Hawai'i Administrative Rules (HAR), Title 11, Department of Health, Chapter 200.1, Environmental Impact Statement Rules. The proposed project will require the use of State lands, as it would be located on DHHL Homestead lands, and the use of State funds, thus triggering the preparation of an Environmental Assessment (EA) as prescribed by HAR 11-200.1-8(1) and HRS, Chapter 343-5(a)(1). (Exhibit C)

Figure 1 -- Project Location Map

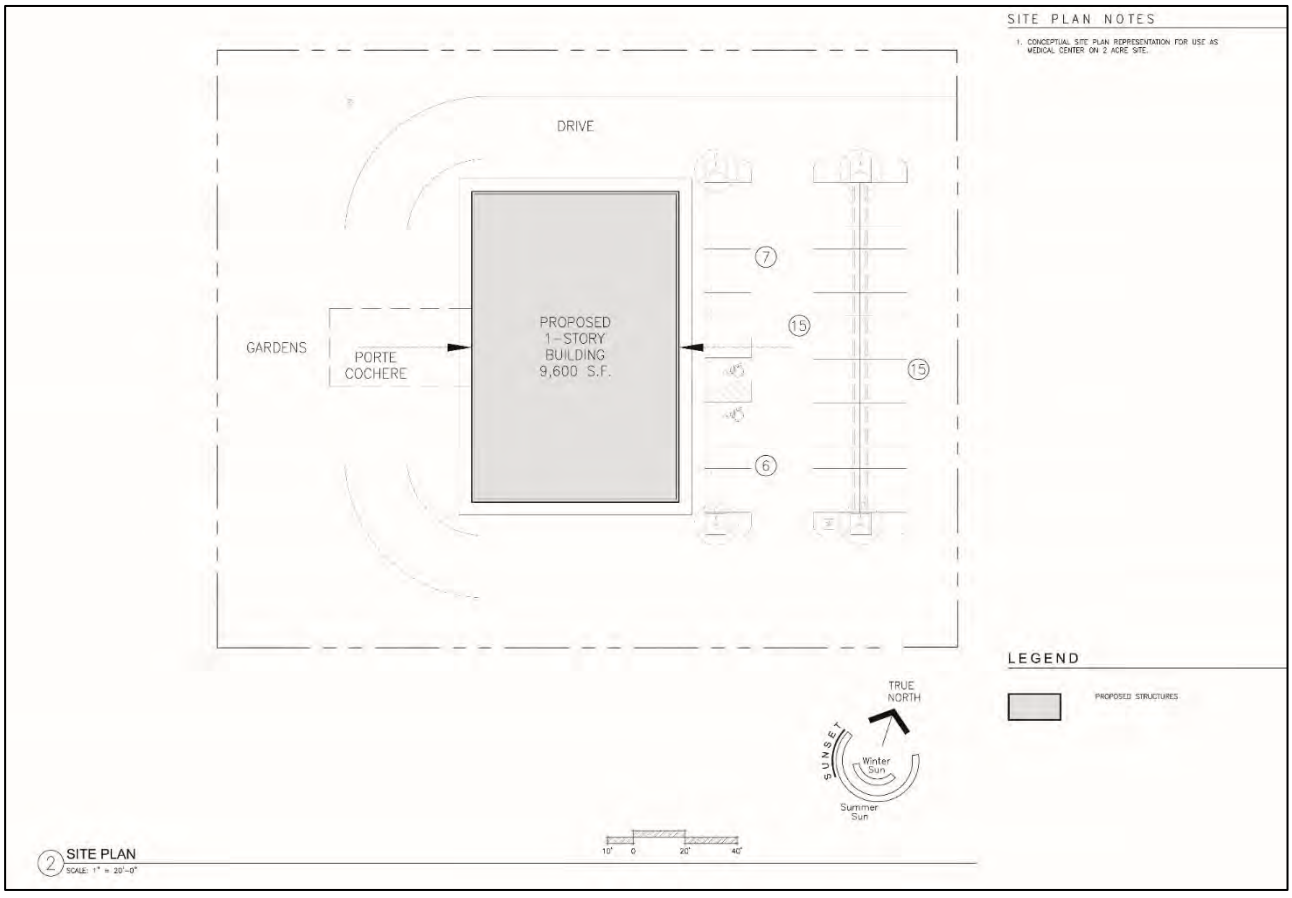


Proposed Action: Relocation of the KOKO Clinic

The proposed action includes the development of an approximate 9,600 square feet (SF), one-story building for the KOKO Clinic within a 2-acre portion of TMK (3) 6-4-038:011 (see Figure 2). The new clinic would include treatment rooms to provide primary care, psychiatry, psychology, women's health, la'au lapa'au, lomilomi and acupuncture services. In addition, the clinic would expand its Ulu Laukahi Program that addresses chronic care disease management, which would require a certified kitchen, workout facilities, and meeting rooms.

The expansion of the KOKO Clinic would result in an additional five full-time positions to increase the clinic's treatment capacity to 800 additional patients. Operations at the clinic would remain the same; Monday through Friday from 8:00AM to 5:00PM.

Figure 2 -- Project Site Map



Summary of Substantive Comments Received During the 30-Day Public Comment Period

Various government agencies at the federal, state, and county level and individual stakeholders commented on the DEA. A summary of the comments received during the DEA 30-day public comment period are provided in Table 1 along with a summary of responses and edits made to the FEA. A complete record of comments received and responses are appended to the FEA (Exhibit B).

Agencies/Organizations/Individuals	Date Received	Summary	FEA Section	FEA Changes
STATE				
State of Hawai'i, Department of Health, Indoor and Radiological Health Branch	7-Nov-22	Project activities shall comply with the following Administrative Rules of the Department of Health: • Chapter 11-39 Air Conditioning & Ventilating • Chapter 11-41 Lead-based Paint Activities • Chapter 11-45 Radiation Control • Chapter 11-46 Community Noise Control • Chapter 11-501 Asbestos Requirements • Chapter 11-504 Asbestos Abatement Certification Program	Sections 2.4 and 3.14	None, same comment from Pre-Assessment Consultation - already addressed in Draft EA
State of Hawai'i, Department of Accounting and General Services	21-Nov-22	DAGS has an executive order for management and control of the Waimea Civic Center, identified by TMK: (3) 6-7-002:011, which is located approximately 1.5 miles from the proposed project area. The Waimea State Office Building, which is managed by DAGS, is located within this property. We do not anticipate the proposed project to have any impact to DAGS' projects or existing facilities.	None	None

Agencies/Organizations/Individuals	Date Received	Summary	FEA Section	FEA Changes
State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife	2-Dec-22	DOFAW concurs with the mitigation measures included in the DEA intended to avoid construction and operational impacts to State-listed species.	Section 3.6	None, DOFAW concurred with listed mitigation measures in the Draft EA and has no additional comments
State of Hawai'i, Department of Land and Natural Resources	7-Dec-22	At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division-Hawaii District on the subject matter.	None	None, only DOFAW provided comments (see above)
FEDERAL (No Federal Agencies Commented)				
U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office	29-Nov-22	At this time we are unable to review the draft EA due to staff shortages. proposed project description and the draft EA if this has not already been done.	Section 3.6.2	None, same comment from Pre-Assessment Consultation - already addressed in Draft EA
COUNTY				
County of Hawai'i, Fire Department	14-Nov-22	In regards to the above mentioned project, Fire Department Access and Water Supply shall comply with Chapter 18 of the 2018 Hawai'i State Fire Code and Chapter 26 of the Hawai'i County Code.	Section 3.12.1	None, same comment from Pre-Assessment Consultation - already addressed in Draft EA

Agencies/Organizations/Individuals	Date Received	Summary	FEA Section	FEA Changes
Private Organizations and Individuals				
None Received by Private Organizations or Individuals				

Finding of No Significant Impact

Based upon the analysis completed in the DEA, staff anticipates a finding of no significant impact for the Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation. This determination is based upon the 13 criteria of significance that approving agencies must consider as specified in HAR 11-200-12.

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Discussion: The proposed project would not adversely impact any known or existing natural or cultural resource. The project site is proposed to be on undeveloped agricultural lands with no significant natural resources. As discussed in Section **Error! Reference source not found.**, no significant archaeological or historical sites are known to exist within the project site. Should any cultural or archaeological resources be found during construction, the SHPD will be immediately notified and the necessary protection measures would be administered.

(2) Curtails the range of beneficial uses of the environment;

Discussion: The proposed project would be developed on a 2 acre portion of a 191.71 acre lot that is currently undeveloped and zoned for agricultural use. The proposed project is part of the WNR-CDI master plan which includes agricultural uses such as a community agriculture park, agriculture resource center, post-harvest and co-op facilities, and a farmers market building. The project would not curtail the range of beneficial or agricultural uses of the surrounding environment as it would be part of a larger development that includes agricultural uses. In addition, there is a generous supply of agricultural land within the surrounding environment and the Waimea region.

(3) Conflicts with the State's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

Discussion: The proposed project does not conflict with the State's long-term environmental policies or goals. The project supports the intention of the environmental policies and goals relative to creating opportunities for residents to improve their health, well-being, and quality of life through health care services that are economically viable.

(4) Substantially affects the economic or social welfare of the community or State;

Discussion: The proposed project would not have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State. Rather, the project would support the economic and social welfare, and cultural practices of the community and Native Hawaiians by providing affordable health services and programs that are rooted in traditional Hawaiian values and culture. In addition, the design, construction work, and expanded operations of the KOKO Clinic would provide employment opportunities for the surrounding community and island of Hawai'i.

(5) Substantially affects public health;

Discussion: The proposed project will not have a substantial adverse effect on public health. The project would provide long-term beneficial effects on public health through the expanded capacity of health services and programs that would be provided at the KOKO Clinic. Short-term effects to noise, air, and traffic that could result from construction activities would be limited to the construction phase and would be mitigated through BMPs and adherence to regulatory requirements.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

Discussion: The proposed project would not result in substantial secondary or cumulative impacts to the natural or built environment, or to the social and economic community. Future traffic conditions with or without the project would require traffic signal installation and/or improvements to improve the LOS at the intersections of Māmalahoa Highway and Mana Road and Māmalahoa Highway and Kamamalu Street. As proposed in the 2015 FEA-FONSI for the WNR-CDI, the impacts to water and wastewater generation would be mitigated through the use of available surface water that would be treated on-site as potable water. No impacts to the existing aviation easement restrictions are anticipated as the KOKO Clinic would be within the acceptable design parameters.

(7) Involves a substantial degradation of environmental quality;

Discussion: The proposed project will not involve substantial degradation of environmental quality. All project activities will be conducted in compliance with Federal, State, and COH rules and regulations governing environmental quality and public health.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

Discussion: The proposed project would have a limited and negligible impact on the natural and cultural environment

while providing an overall general improvement to the health and well-being of the Pu‘ukapu Homestead beneficiaries and Waimea residents. While the project is proposed to be relocated within the WNR-CDI development, the environmental impacts for the WNR-CDI have been previously analyzed and resulted in a FONSI determination. The addition of the KOKO Clinic in the WNR-CDI is not considered to be substantial compared to the overall development planned for the parcel, and would not result in a commitment for larger actions than what has already been assessed in the WNR-CDI FEA-FONSI.

(9) Substantially affects a rare, threatened or endangered species or its habitat;

Discussion: The proposed project will not have a substantial adverse effect on rare, threatened, or endangered species or its habitat.

10) Detrimentally affects air or water quality or ambient noise levels;

Discussion: The proposed project will not have a substantial adverse effect on air or water quality or ambient noise levels. Construction activities would result in short-term effects on air, water quality and ambient noise levels but would be mitigated by compliance with COH and DOH rules regulating construction-related activities.

During operations, the impacts on air and water quality would be minimal. Noise levels would be minimally increased with the addition of the new clinic within the project area, however it is not anticipated to be perceptible by the surrounding land uses.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Discussion: The project site is not 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.

(12) Substantially affects scenic vistas and view planes identified in County or State plans or studies;

Discussion: The project site is currently undeveloped, and the KOKO Clinic relocation would not deter from the overall appearance or aesthetics of the area. The KOKO Clinic is proposed to be one-story tall and would not constrain any view planes to Mauna Kea and the Kohala Mountains.

(13) Requires substantial energy consumption.

Discussion: The proposed project would not require substantial energy consumption. The KOKO Clinic's new facility would not require a substantially greater amount of energy consumption compared to the current consumption used for their existing operations.

Next-Steps

The Draft EA will be published in the Environmental Notice Bulletin on October 23, 2022. The 30-day public comment period will commence on that day and end on November 22, 2022. KOKO and DHHL will review comments received during the 30-day comment period and revise the DEA as needed based on public comments. The Final Environmental Assessment is tentatively anticipated to be presented to the HHC at its December 2022 for its consideration to approve.

Recommendation

DHHL staff respectfully requests approval of the recommended motion as stated above.

ITEM G-4 EXHIBIT A

STATE OF HAWAIʻI
DEPARTMENT OF HAWAIIAN HOME LANDS

October 17-18, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Andrew H. Choy, Planning Program Manager

Subject: (For Information Only) Anticipated Finding of No Significant Impact for the Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation Draft Environmental Assessment, TMK (3)-6-4-038:011 (por.), Puʻukapu, Waimea, Hawaiʻi Island

Recommended Action

For Information Only. No action required.

Discussion

The purpose of this informational briefing is to introduce HHC members to the DEA for the Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation and provide the HHC an opportunity to provide comments on the DEA.

Background

The Waimea Hawaiian Homesteaders' Association (WHHA) incorporated Kīpuka o ke Ola (KOKO) as the Association's Medical Division. KOKO was founded by Five Mountains Hawaiʻi Inc., a 501c3 non-profit organization that was inspired by Dr. Earl Bakken and Kenneth Brown. In January 2014, Five Mountains Hawaiʻi, Inc. elected a new Board of Directors, new Executive Management Team, and officially began doing business as KOKO. The KOKO Native Hawaiian Health Clinic ("KOKO Clinic") was established in response to a community needs assessment conducted by the Waimea Hawaiian Homesteaders' Association (WHHA), which called for a health clinic that could specifically address the health disparities endured by Native Hawaiians in North Hawaiʻi.

The clinic's mission statement is: "KOKO provides cultural, spiritual, medical, and psychological services to all residents of North Hawai'i with a special emphasis for the Kānaka Maoli. This mission is our kuleana. KOKO provides culturally-informed direct services, actively collaborates with Hawaiian agencies and associations in order to meet their members' needs, and is led by the community it serves." KOKO is designed to provide a full range of bio-psycho-social services to the residents of North Hawai'i. It provides primary care services (including pediatric services), women's health services, individual, couple, and family psychotherapy services, acupuncture/lomilomi massage, and psycho-educational trainings for the community and organizations.

The WHHA and its subsidiary organization, the Waimea Nui Community Development Corporation (WNCDC) have been actively conceptualizing a community development project for over 40 years to address the cultural, economic, and social needs of the Waimea area and of Waimea Homestead families. The Waimea Nui Regional Community Development Initiative (WNR-CDI) was developed based upon the ideas and concepts articulated by the homestead community, and it incorporates the long-term visions of both WHHA and the Department of Hawaiian Home Lands (DHHL), as outlined in the DHHL Waimea Regional Plan (2012).

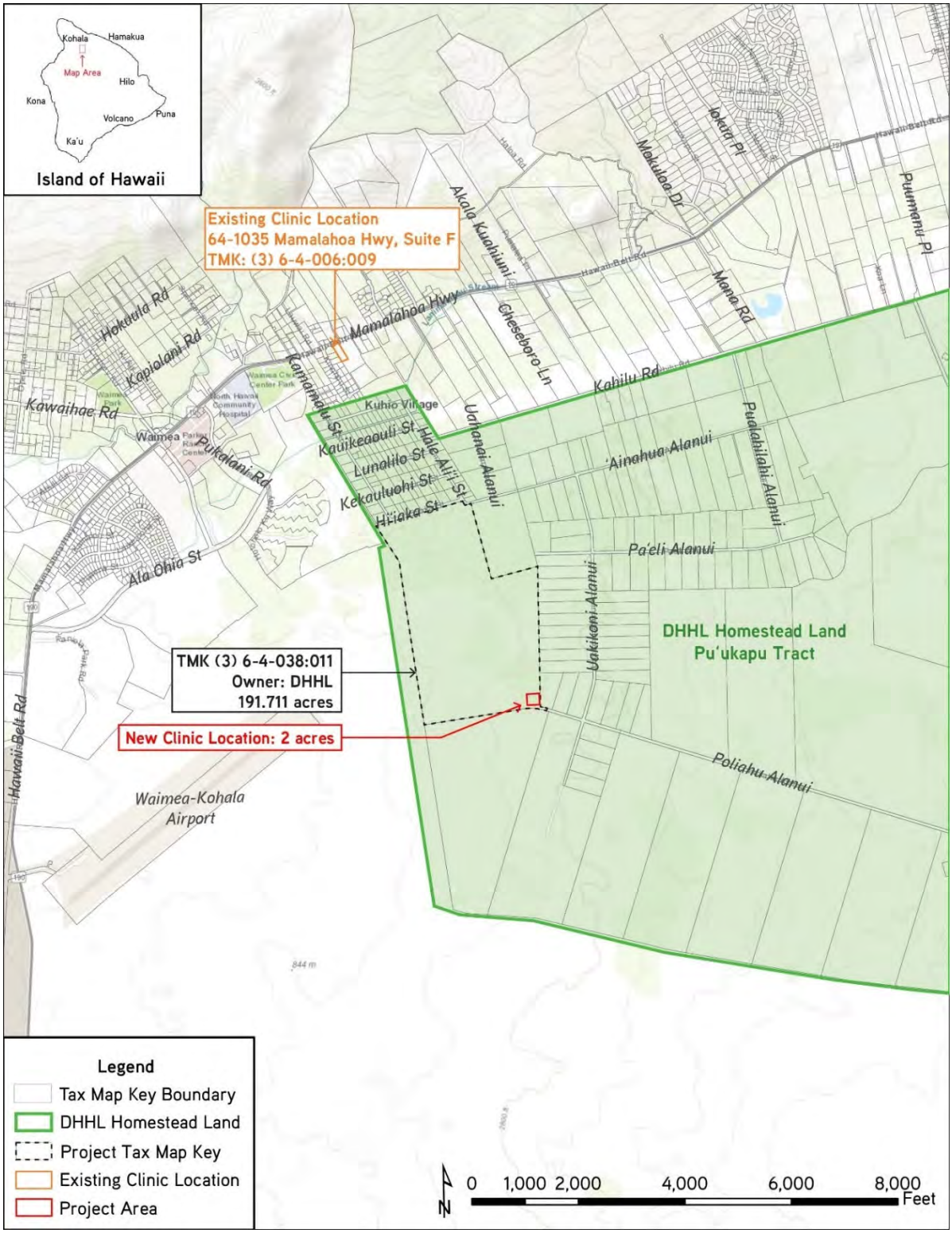
In 2015, a Final Environmental Assessment - Finding of No Significant Impact (FEA-FONSI) was prepared for the WNR-CDI (Exhibit A), which proposed the following facilities and land uses to be located within approximately 114-acres of DHHL Homestead Land in a portion of Tax Map Key (TMK) (3) 6-4-038:011: a homestead cemetery/chapel which includes:

- Columbarium;
- Community agriculture complex inclusive of a community agricultural park, a green waste biodigester with electric grid, a post-harvest facility, and commercial kitchen;
- An equestrian center; and
- A golf facility inclusive of playing greens, driving range, chip and putt, and a clubhouse.

Following completion of the FEA-FONSI, the Hawaiian Homes Commission approved a 65-year General Lease to WNCDC that encompasses 161-acres of land within TMK (3) 6-4-038:011 to develop the aforementioned facilities and land uses (Exhibit B). The 161-acre property is inclusive of the 114-acres covered in the 2015 FEA-FONSI.

The WNR-CDI proposes to relocate the KOKO Clinic from its existing location at 64-1035 Māmalahoa Highway, to a 2-acre portion of the undeveloped 161-acre property leased by WNCDC. The clinic's proposed location would be within 2 acres of the area that was previously identified for the equestrian center in the 2015 WNR-CDI FEA-FONSI. The clinic is a new land use that is being considered for inclusion with the land uses proposed in the WNR-CDI's 2015 FEA-FONSI and therefore supplemental Draft Environmental Assessment (DEA) has been prepared in accordance with the requirements of Hawai'i Revised Statutes (HRS), Chapter 343 and Hawai'i Administrative Rules (HAR), Title 11, Department of Health, Chapter 200.1, Environmental Impact Statement Rules. The proposed project will require the use of State lands, as it would be located on DHHL Homestead lands, and the use of State funds, thus triggering the preparation of an Environmental Assessment (EA) as prescribed by HAR 11-200.1-8(1) and HRS, Chapter 343-5(a)(1). (Exhibit C)

Figure 1 -- Project Location Map

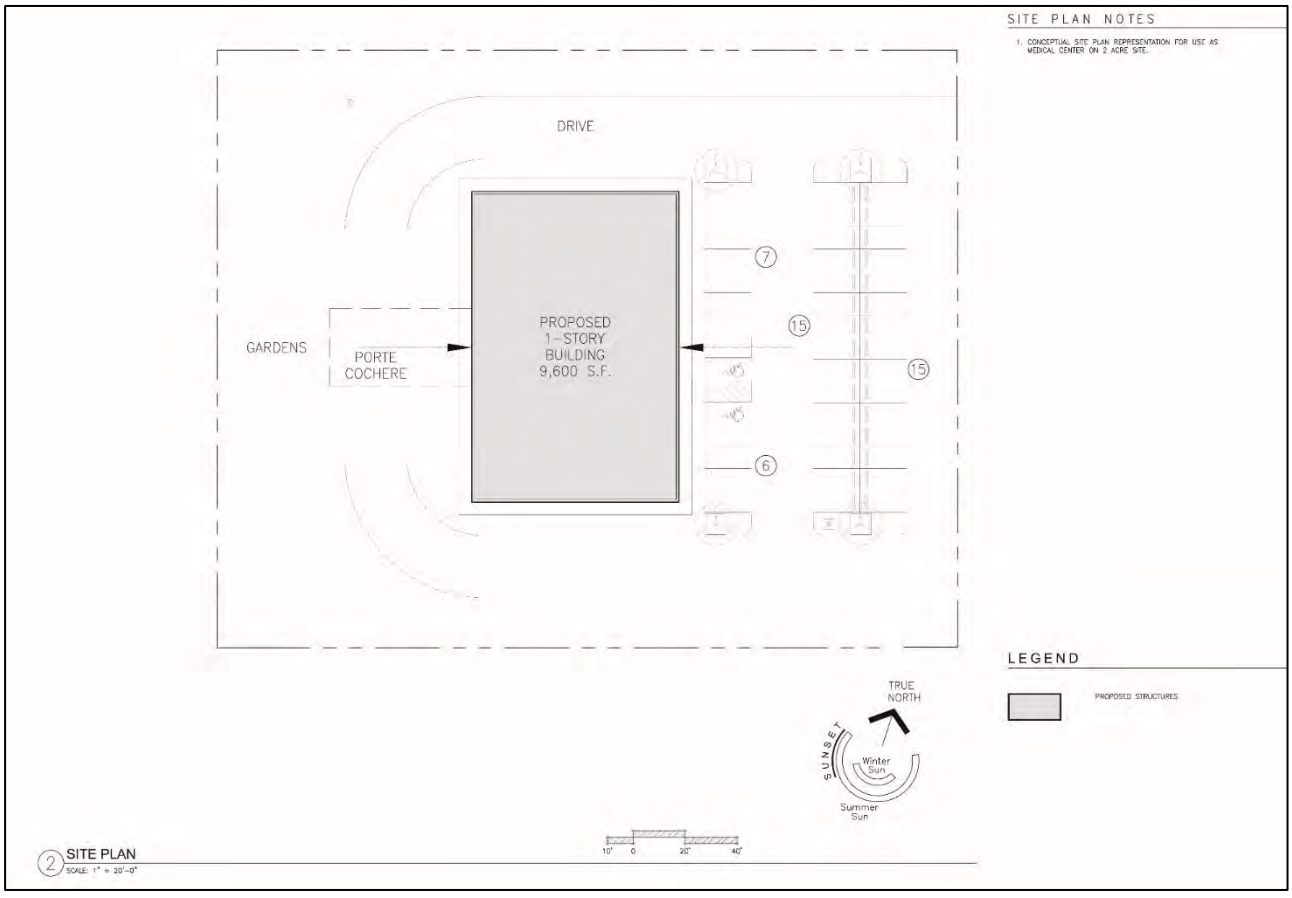


Proposed Action: Relocation of the KOKO Clinic

The proposed action includes the development of an approximate 9,600 square feet (SF), one-story building for the KOKO Clinic within a 2-acre portion of TMK (3) 6-4-038:011 (see Figure 2). The new clinic would include treatment rooms to provide primary care, psychiatry, psychology, women's health, la'au lapa'au, lomilomi and acupuncture services. In addition, the clinic would expand its Ulu Laukahi Program that addresses chronic care disease management, which would require a certified kitchen, workout facilities, and meeting rooms.

The expansion of the KOKO Clinic would result in an additional five full-time positions to increase the clinic's treatment capacity to 800 additional patients. Operations at the clinic would remain the same; Monday through Friday from 8:00AM to 5:00PM.

Figure 2 -- Project Site Map



DEA Summary

The DEA (Exhibit C) assesses the potential environmental impact of the KOKO Clinic building on a 2-acre portion of TMK (3) 6-4-038:011. The following discussion summarizes the analysis of the DEA assessment of the project's impact to various resources.

Natural Resources

A Botanical Survey was conducted by AECOS in support of the 2015 FEA-FONSI for the WNR-CDI during November 2014; the project site is within the same boundary of the surveyed area for the 2015 FEA-FONSI. The survey found that the current vegetation of the site consists of pasture grasses and a limited number of herbaceous plants. All plants found during the site survey were non-native species, and no federally listed endangered or threatened species were found.

Avian and mammalian surveys were conducted by AECOS in support of the 2015 FEA-FONSI for the WNR-CDI during November 2014; the project site is within the same boundary of the surveyed area for the 2015 FEA-FONSI. Based on the survey, the site is mainly vacant of mammalian species with the exception of domestic cattle (Bos taurus) found on the site and adjoining pastures, along with mice (Mus musculus domesticus) and wild pigs (Sus scrofa). No Hawaiian hoary bats were detected during the survey given the lack of suitable roosting trees.

A total of 15 different bird species were recorded during station counts in 2014. One of the species detected, the Pacific Golden-Plover (Pluvialis fulva), is an indigenous migratory shorebird species that are found to return to Hawai'i and the Pacific during the fall and winter months. The remainder of avian species recorded were considered to be alien to Hawai'i; none of the species were listed as endangered, threatened or proposed for listing under the Federal or State endangered species programs.

Although it was not detected during the 2014 survey, it is possible that the endangered endemic Hawaiian Petrel

(Pterodroma sandwichnesis), and the threatened Newell's Shearwater (Puffinus auricularis newelli) may fly over the project area between the months of April to December. The Hawaiian goose (branta sandvicensis) may also be present in the vicinity of the proposed project area at any time of the year, although it was not observed during the survey.

The construction and operation of the KOKO Clinic is not anticipated to result in an adverse impact to native birds or the Hawaiian hoary bat. No plant, avian, or mammalian species that are protected or proposed for protection under the Federal or State of Hawai'i endangered species programs were detected during the 2014 surveys. Per the State Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) pre-assessment consultation letter dated July 27, 2022, it is recommended to use native plant species for landscaping that are appropriate for the area. In addition, DOFAW recommended consultation with the Big Island Invasive Species Committee during the design and construction of the project to help minimize the risk of spreading invasive species.

Historic and Cultural Resources

An Archaeological Inventory Survey (AIS) was conducted in support of the 2015 FEA-FONSI for the WNR-CDI by Keala Pono Archaeological Consulting, LLC (KPAC). The AIS was conducted to determine the presence, nature, and extent of archaeological resources in the project area. A surface survey was conducted by KPAC by walking 16 – 26 feet transects throughout the project area. Results of the surface survey revealed one archaeological site, which was then mapped, documented, and excavated. Controlled test units were excavated by hand at the site. A total of 10 trenches in arbitrary locations were mechanically excavated for the purpose of sampling the subsurface conditions (see Figure 11). No cultural remains, either prehistoric or historic, were encountered in any of the trenches. Stratigraphy consisted entirely of natural deposits with bedrock below.

The results of the AIS indicated that the WNR-CDI project area consisted of one site (Site 30195). This site is not within the KOKO Clinic project area.

Based on the findings of the AIS conducted for the 2015 FEA-FONSI for the WNR-CDI, the proposed KOKO Clinic is not anticipated to adversely impact any known or found archaeological sites. Subsurface properties associated with former traditional Hawaiian activities, such as artifacts, cultural layers, and burials may be present despite the historical pasture use in the area. For this reason, personnel involved in the project should be informed of the possibility of inadvertent cultural finds and should be made aware of the appropriate notification measures to follow. If any previously unidentified sites or remains are encountered during site work and construction, work in the immediate area shall cease. An archaeologist from SHPD shall be notified and work in the area would be suspended until further recommendations are made.

Infrastructure -- Traffic

As part of the 2015 FEA-FONSI for the WNR-CDI, a Traffic Impact Analysis Report (TIAR) was completed by Traffic Management Consultant, Inc. in 2014. For this Draft EA, an update to the 2014 TIAR was conducted by SSFM International, Inc. to account for the addition of the KOKO Clinic (see Appendix C). The 2022 TIAR supplements the previous 2014 TIAR and assessed the impacts of the proposed KOKO Clinic relocation on Future with Project Analysis; the "Future Without Project" analysis will include the project-related trips from the 2014 TIAR using updated background growth rates and intersection turning movement counts taken in September 2021. In compliance with Hawai'i County Code Chapter 25, Section 25-2-46 Concurrency Requirements, traffic impacts were analyzed for the years 2026, 2031 and 2041, which are future five, ten, and 20 year timelines from the existing year of analysis (2021).

The existing roadways analyzed in the 2022 TIAR include Māmalahoa Highway, Kamamalu Street, Hiiaka Street, Ainahua Lanaui Street, Mana Road, Uakikoni Alanui, and Poliahu Alanui. Four existing study intersections were identified and analyzed to consider the impacts from the proposed project (see Figure 12); Māmalahoa Highway at Kamamalu Street, Hiiaka Street at KOKA Charter School Main Driveway, Ainahua Alanui Street at KOKA Charter School Eastern Driveway, and Māmalahoa Highway at Mana Road.

As proposed in the 2015 WNR-CDI TIAR, a new road would be constructed that branches south off of Hiiaka Street to serve as the primary access to the WNR-CDI development. The intersection of Hiiaka Street and the new road is proposed to be an unsignalized three-way intersection; the new road would have two lanes.

An access point through the west end of Poliahu Alanui road, west of the intersection with Uakikoni Alanui road, will be used in the interim as temporary access. When the new road is constructed, the temporary access point will become the secondary access point. The KOKO Clinic is anticipated to generate 30 to 37 trips in the AM and PM peak hours, respectively. The low number of trips are not expected to have a significant impact on the surrounding roadway network, therefore a separate analysis of the secondary access was not conducted.

The overall size and traffic impact of the KOKO Clinic is minimal compared to the other land uses proposed in the 2015 WNR-CDI TIAR. At the intersection of Māmalahoa Highway and Mana Road, the northbound right approach will worsen to level of service (LOS) E in the Future With Project analyzed year of 2026, and further to LOS F in Future With Project year 2041. The northbound left turn also operates at LOS E during the Future With Project year 2041. Due to the worsening LOS, this intersection satisfied the Peak Hour Traffic Signal Warrant to install a traffic signal by the Future With Project year 2026. However, even with the installation of a traffic signal, the eastbound approach in the PM peak hour operates near capacity in 2041 with or without the proposed project, which is likely due to the forecasted regional growth. It is therefore recommended that this intersection be studied in the future in collaboration with HDOT to assess the need for a traffic signal.

At the intersection of Māmalahoa Highway and Kamamalu Street, the northbound left turn worsens to LOS E during the PM peak hours in 2041 with or without the proposed project. Based on the future projected volumes, it is anticipated that up to nine vehicles per cycle would be queued at this approach to the intersection. It is recommended that the signal timing at the intersection be monitored and adjusted if needed.

Infrastructure – Water & Wastewater

Potable water service in the general area is provided by the County Department of Water Supply's (DWS) 4.0 million gallons (MG) water reservoir at the water treatment plant with a spillway elevation of 3,052 feet above mean sea level (msl). Based on the DWS' pre-assessment consultation letter dated July 13, 2022 (see Appendix A), the project parcel is currently serviced by a combination 8-inch by 4-inch meter, which is allocated 25 units of water, or 10,000 gallons per day. DWS indicated that additional water is unavailable at this time.

Should the clinic water demand exceed 10,000 gallons per day, DWS indicated that a Water Development Agreement would need to be drafted to identify agreed upon improvements needed to the DWS system in order to provide additional potable water to the project site.

The majority of Waimea relies on Individual Wastewater Systems (IWS) or a Wastewater Treatment Works. There are no existing municipal sewer systems near the project site. As the KOKO Clinic would be relocated to the development proposed by the WNR-CDI, the wastewater system proposed in the 2015 FEA-FONSI is anticipated to service the project site. Wastewater flows produced from the WNR-CDI development would be handled through a Wastewater Treatment Works, as this would be considered to comply with the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33B, which regulates developments within the proximity of airports. The project site is located near the Waimea-Kohala Area of Operations delineation where new wastewater facilities are typically not permissible due to concerns that such facilities could attract wildlife to the area. However, an enclosed underground system can be designed whereby treated effluent for reuse purposes such as irrigation could be distributed evenly through the project area as to not create ponding areas.

All wastewater collection and treatment components would be designed in compliance with HAR Section 11-62 relating to Wastewater Systems. Wastewater re-use is the most viable option for the proposed project and can be

utilized if designed in accordance with DOH Guidelines for the Treatment and Use of Recycled Water.

DHHL Planning System Consistency

The DHHL's 2002 Hawai'i Island Plan evaluates the DHHL holdings on Hawai'i island and identifies land use plans developed to meet beneficiary needs. Island Plans are part of the second tier in DHHL's planning process that focuses on island-specific land use projections. The proposed project is within the Pu'ukapu Tract, which consists of primarily pastoral and supplemental agriculture DHHL land uses. Under the Hawai'i Island Plan, the proposed project area was designated for General Agriculture in the 2002 Plan. However, in 2015, after beneficiary consultation, the HHC approved a land use amendment to the Hawai'i Island Plan changing the land use from General Agriculture to Community Use. The Community Use designation is consistent with the proposed uses of the WNR-CDI and the KOKO Clinic relocation effort.

Based upon the analysis completed in the DEA, staff anticipates a finding of no significant impact for the Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation. This determination is based upon the 13 criteria of significance that approving agencies must consider as specified in HAR 11-200-12.

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;

Discussion: The proposed project would not adversely impact any known or existing natural or cultural resource. The project site is proposed to be on undeveloped agricultural lands with no significant natural resources. As discussed in Section **Error! Reference source not found.**, no significant archaeological or historical sites are known to exist within the project site. Should any cultural or archaeological resources be found during construction, the SHPD will be immediately notified and the necessary protection measures would be administered.

(2) Curtails the range of beneficial uses of the environment;

Discussion: The proposed project would be developed on a 2 acre portion of a 191.71 acre lot that is currently undeveloped and zoned for agricultural use. The proposed project is part of the WNR-CDI master plan which includes agricultural uses such as a community agriculture park, agriculture resource center, post-harvest and co-op facilities, and a farmers market building. The project would not curtail the range of beneficial or agricultural uses of the surrounding environment as it would be part of a larger development that includes agricultural uses. In addition, there is a generous supply of agricultural land within the surrounding environment and the Waimea region.

(3) Conflicts with the State's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

Discussion: The proposed project does not conflict with the State’s long-term environmental policies or goals. The project supports the intention of the environmental policies and goals relative to creating opportunities for residents to improve their health, well-being, and quality of life through health care services that are economically viable.

(4) Substantially affects the economic or social welfare of the community or State;

Discussion: The proposed project would not have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State. Rather, the project would support the economic and social welfare, and cultural practices of the community and Native Hawaiians by providing affordable health services and programs that are rooted in traditional Hawaiian values and culture. In addition, the design, construction work, and expanded operations of the KOKO Clinic would provide employment opportunities for the surrounding community and island of Hawai‘i.

(5) Substantially affects public health;

Discussion: The proposed project will not have a substantial adverse effect on public health. The project would provide long-term beneficial effects on public health through the expanded capacity of health services and programs that would be provided at the KOKO Clinic. Short-term effects to noise, air, and traffic that could result from construction activities would be limited to the construction phase and would be mitigated through BMPs and adherence to regulatory requirements.

(6) Involves substantial secondary impacts, such as population changes or effects on public facilities;

Discussion: The proposed project would not result in substantial secondary or cumulative impacts to the natural or built environment, or to the social and economic community. Future traffic conditions with or without the project would require traffic signal installation and/or improvements to improve the LOS at the intersections of Māmalahoa Highway and Mana Road and Māmalahoa Highway and Kamamalu Street. As proposed in the 2015 FEA-FONSI for the WNR-CDI, the impacts to water and wastewater generation would be mitigated through the use of available surface water that would be treated on-site as potable water. No impacts to the existing aviation easement restrictions are anticipated as the KOKO Clinic would be within the acceptable design parameters.

(7) Involves a substantial degradation of environmental quality;

Discussion: The proposed project will not involve substantial degradation of environmental quality. All project activities will be conducted in compliance with Federal, State, and COH rules and regulations governing environmental quality and public health.

(8) Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for larger actions;

Discussion: The proposed project would have a limited and negligible impact on the natural and cultural environment

while providing an overall general improvement to the health and well-being of the Pu‘ukapu Homestead beneficiaries and Waimea residents. While the project is proposed to be relocated within the WNR-CDI development, the environmental impacts for the WNR-CDI have been previously analyzed and resulted in a FONSI determination. The addition of the KOKO Clinic in the WNR-CDI is not considered to be substantial compared to the overall development planned for the parcel, and would not result in a commitment for larger actions than what has already been assessed in the WNR-CDI FEA-FONSI.

(9) Substantially affects a rare, threatened or endangered species or its habitat;

Discussion: The proposed project will not have a substantial adverse effect on rare, threatened, or endangered species or its habitat.

10) Detrimentally affects air or water quality or ambient noise levels;

Discussion: The proposed project will not have a substantial adverse effect on air or water quality or ambient noise levels. Construction activities would result in short-term effects on air, water quality and ambient noise levels but would be mitigated by compliance with COH and DOH rules regulating construction-related activities.

During operations, the impacts on air and water quality would be minimal. Noise levels would be minimally increased with the addition of the new clinic within the project area, however it is not anticipated to be perceptible by the surrounding land uses.

(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Discussion: The project site is not 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.

(12) Substantially affects scenic vistas and view planes identified in County or State plans or studies;

Discussion: The project site is currently undeveloped, and the KOKO Clinic relocation would not deter from the overall appearance or aesthetics of the area. The KOKO Clinic is proposed to be one-story tall and would not constrain any view planes to Mauna Kea and the Kohala Mountains.

(13) Requires substantial energy consumption.

Discussion: The proposed project would not require substantial energy consumption. The KOKO Clinic's new facility would not require a substantially greater amount of energy consumption compared to the current consumption used for their existing operations.

Next-Steps

The Draft EA will be published in the Environmental Notice Bulletin on October 23, 2022. The 30-day public comment period will commence on that day and end on November 22, 2022. KOKO and DHHL will review comments received during the 30-day comment period and revise the DEA as needed based on public comments. The Final Environmental Assessment is tentatively anticipated to be presented to the HHC at its December 2022 for its consideration to approve.

Recommendation

For information only. No action required.

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

November 16-17, 2015

To: Chairman and Members, Hawaiian Homes Commission

From: Peter "Kahana" Albinio Jr., Acting Administrator
Land Management Division

Kaleo L. Manuel, Acting Program Manager
Planning Office

Subject: Issuance of a General Lease, Waimea Hawaiian Homestead Association Inc., Waimea, Puukapu, Hawaii Island TMK (3) 6-4-038:011 (por.)

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission (HHC) grant its **FINAL** approval to issue a sixty-five (65)-year General Lease to Waimea Hawaiian Homestead Association Inc., a 501(c)3 non-profit community organization, to use a 161-acre parcel of Hawaiian home lands in Puukapu, identified by Tax Map Key No. (3) 6-4-038:011 (por.), and as shown as the cross-hatched area on Exhibit "A."

The final approval is subject to the following terms and conditions:

1. LESSEE: Waimea Hawaiian Homestead Association Inc. (WHHAI), with the ability to assign the lease to Waimea Nui Community Development Corporation (WNCDC), an IRS 501c3 organization. Any proposed lease assignment to another entity other than the WNCDC is subject to the approval of the Hawaiian Homes Commission.

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 161 acres of Hawaiian Home Lands in Puukapu, Waimea, Island of Hawaii.

4. BASE RENT: Gratis for the term of the lease.

5. ADDITIONAL RENT: At such time when LESSEE reports annual increase in net assets of $20,000 or more, additional rent shall be charged in the amount of 10% of the reported annual increase in net assets. As used herein, annual increase in net assets shall equal LESSEE's revenues less expenses as reported on IRS form 990.

6. PERMITTED USE: LESSEE shall use the premises for the projects identified in the May 2015 Final EA, namely: homestead cemetery/chapel, equestrian center, community agriculture complex, and golf facility. The equestrian center and golf facility uses shall be permitted subject to the provisions in paragraph 7 below. Other future uses as envisioned in the Waimea Nui Community Development Initiative Conceptual Master Plan dated March 5, 2013 may be permitted via lease amendment subject to approval by the Hawaiian Homes Commission.

7. LESSEE shall obtain a private letter ruling from the IRS or alternative form of certification from the IRS confirming that all proposed activities and uses of the Premises that are not specifically identified in the LESSEE's IRS Form 1023 are in furtherance of charitable exempt purposes prior to the implementation of those activities.

8. 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.

9. 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.

10. As part of LESSOR's regular review of LESSEE activities, and in exchange for gratis base rent, LESSEE shall submit an ANNUAL PROGRESS REPORT to LESSOR each year on the anniversary date of lease commencement. The ANNUAL PROGRESS REPORT shall document the 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 pre-construction 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 the Waimea Hawaiian Homestead Association Inc. and the boards of other current or future beneficiary membership organizations in the Waimea Nui region indicating whether or not the LESSEE has satisfactorily provided programs and services to its respective organization's members in the respective year of the ANNUAL PROGRESS REPORT. Note: Waimea Nui Region is defined as the region that is specified in the 2012 DHHL Waimea Nui Regional Plan.

11. LESSOR shall have the right to charge rent equal to the fair market rental of the property if the LESSEE does not submit ANNUAL PROGRESS REPORTS to the LESSOR in a timely manner. Fair market rent shall be determined by an independent appraiser selected by the LESSOR.

12. 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 WNCDC or WHHAI by any third party, sublessee or beneficiary membership organizations utilizing any portion of the premises.

13. LESSEE shall at no time own less than 51% of leasehold interest in all facilities located on the Premises.

14. 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 sub-lessee.

15. 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.

16. 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.

17. 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 & Conditions

18. 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.

19. 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 clean-up of any contamination or hazardous materials brought onto the site or caused by LESSEE'S activities on the site.

20. 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.

21. 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.

22. The non-refundable processing ($200.00) and documentation ($75.00) fee of $275.00 shall be waived.

23. LESSEE shall comply with all federal, state and county statutes, regulations, codes and ordinances applicable to LESSEE'S use of the premises.

24. LESSEE agrees to pay for all the costs of establishing utility services to the property and pay for all consumption of utilities on the Premises, should LESSEE'S use require such utility services.

25. 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.

26. 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. LESSEE shall also notify LESSOR to do a site inspection when LESSEE has completed removal.

27. LESSEE shall keep the Premises neat and clean at all times and shall not allow its trash to spread to other surrounding areas.

28. LESSEE shall be responsible for the security of the Premises and all of LESSEE'S personal property thereon.

29. The lease document is subject to the approval of the State of Hawaii Department of Attorney General.

30. Other terms and conditions deemed prudent by the Hawaiian Homes Commission may be added.

DISCUSSION

Since August 2012, WHHAI has been actively developing its own capacity to plan, implement and manage a community development initiative on Tax Map Key No. (3) 6-4-038:011 (por.). The Waimea Nui Regional Community Development Initiative is comprised of several elements to address the cultural, economic and social needs of beneficiaries in the Waimea Nui region. The facilities that make up this initiative came from the expressed desires of the homestead community, and are aimed at creating the fundamental infrastructure needed to build a vibrant, self-sufficient community grounded in traditional Hawaiian values. The priority projects of the initiative that WHHAI is focusing on in the near term include: an agricultural complex, cemetery, golf facility, and equestrian center. This undertaking was also identified as a priority project in the 2012 DHHL Waimea Nui Regional Plan.

At the September 23-24, 2013 meeting, the Hawaiian Homes Commission granted a preliminary approval to issue a 65-year general lease to Waimea Hawaiian Homestead Association Inc. (WHHAI) for the development of its proposed Waimea Nui Regional Community Development Initiative (Exhibit B). Preliminary approval was conditioned upon the following:

- Completion of a Final Environmental Assessment (FEA) of the project and a finding of no significant impact (FONSI) declaration by the HHC;
- DHHL along with WHHAI must conduct at least one informational meeting for the beneficiaries that reside in or near the Waimea Nui region to provide information to beneficiaries regarding this project and consider any input received;
- The Waimea Nui Community Development Corporation obtain Internal Revenue Service (IRS) 501c3 status.

All three of the above conditions have been met. The HHC declared a FONSI based on the FEA of the project at its May 18-19 2015 meeting (Exhibit C). DHHL conducted a beneficiary consultation meeting in Waimea to amend the DHHL Island Plan land use designation for this project on March 5, 2015 and the HHC accepted the beneficiary consultation report from that meeting and additional comments received on the project during the 30-day comment period as public record of beneficiary input and feedback at its April 20-21 2015 meeting (Exhibit D). The WNCDC obtained IRS 501c3 status on October 2, 2014 (Exhibit E).

After the lease is executed, it is the intent of both DHHL and WHHAI to continue further discussion to clarify an operational definition of "revenue" and "expenses" for the purposes of calculating additional rent owed DHHL. It is also the intention of both DHHL and WHHAI to continue further discussion on the concept of the creation of a special fund in which excess net income generated on the premises is deposited into the special fund for the purposes of providing financial assistance to other homestead community economic development projects across the pae aina.

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 and Planning Office requests approval of the motion as stated.

ITEM G-4 EXHIBIT B

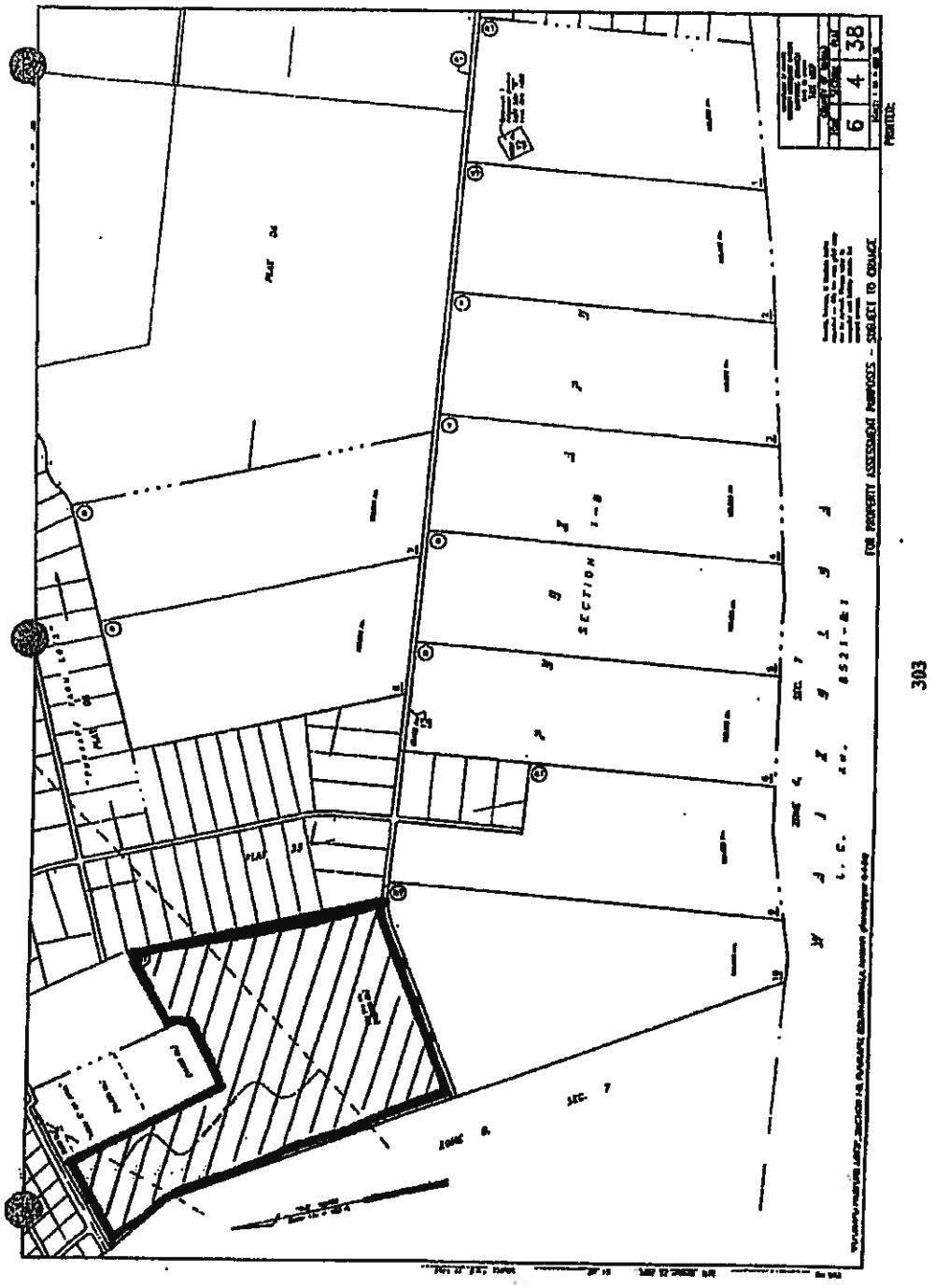


EXHIBIT "A"

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

September 23 - 24, 2013

To: Chairman and Members, Hawaiian Homes Commission

From: Linda Chinn, Administrator
Land Management Division

Subject: Preliminary Approval to the Issuance of a General Lease to Waimea Hawaiian Homestead Association, Inc., Waimea, Hawaii

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission ("HHC") grant its **PRELIMINARY** approval to the issuance of a 65-year general lease to Waimea Hawaiian Homestead Association, Inc. (WHHA) to use a portion of Hawaiian home lands located in Puukapu, Waimea, island of Hawaii, further identified by TMK No. (3) 6-4-038:011 (por.) (See Exhibit "A"), for the development of the proposed community facility, to include cultural, educational, and economic components.

This **PRELIMINARY** approval is intended to provide WHHA, the Waimea Nui Community Development Corporation (WNCDC), its beneficiary CDC organization, and its financiers with sufficient comfort to expend resources and pursue financial commitments.

The **PRELIMINARY** approval is subject to the following basic terms and conditions and is subject to **FINAL** approval by the Hawaiian Homes Commission:

(1) LESSEE: Waimea Hawaiian Homestead Association, Inc., (WHHA) with the ability to assign the lease to Waimea Nui Community Development Corporation (WNCDC), its development arm, upon IRS award of the non-profit status

(2) TERM: 65 years

(3) LAND AREA: Approximately 161 acres of Hawaiian Home Lands in Puukapu, Waimea, Hawaii, in total, although property may be subdivided consistent with phased implementation of the community-envisioned Waimea Nui Region Community Development Initiative.

(4) PURPOSE: The site shall be used for homestead economic development (including agricultural training) and community

public purposes. Through extensive consultation with beneficiaries and especially the Waimea Hawaiian Homesteaders' Association (WHHA) members, WNCDC and WHHA have compiled community requested projects for the site that balance public service and revenue sustainability.

(5) COMMUNITY BENEFITS AGREEMENT: WHHA/WNCDC shall work with DHHL to formulate and agree to a Community Benefits Agreement (CBA) to address benefits to the Waimea region of HHCA beneficiaries and/or the larger Hawaii Island community, and should include economic and employment benefits, community development including capacity building and education, as well as philanthropic support of Hawaiian culture, youth and elders.

(6) BASE RENT: To be determined later based on the final development plan on proposed land uses.

(7) BENEFICIARY CONSULTATION - Before FINAL approval is brought to the HHC for consideration, DHHL along with WHHA must conduct at least one informational meeting for the beneficiaries that reside in or near the Waimea Nui region to provide information to the beneficiaries and consider any input received.

DISCUSSION

Since August 2012, WHHA has been actively developing its own capacity to plan, implement and manage the envisioned projects. WHHA has created the Waimea Nui Community Development Corporation (WNCDC), its beneficiary CDC organization, which is currently in the process of getting its IRS 501(c)(3) status.

The Waimea Nui Region Community Development Initiative (CDI) is comprised of several elements to address the cultural, economic and social needs of the Waimea area, especially the Waimea Hawaiian Homesteads. The numerous facilities that make up the CDI came from the expressed desires of the homestead community, and are aimed at creating the fundamental infrastructure needed to build a vibrant, self-sufficient community grounded in traditional Hawaiian values. The priority projects of the CDI that WHHA is focusing in the near term include: the agricultural park, cemetery, and golf facility.

The community has been the driving force to make this CDI a reality. However, with the elimination of the Kulia I Ka Nu`u program and the component of Kulia that dealt with community economic development, DHHL has not had a mechanism to assist communities like WHHA to advance their projects.

September 2013

As DHHL looks at how best to proceed forward with supporting community economic development, DHHL has identified the Waimea Nui Initiative as a strong candidate to implement one test pilot project to see how collaboration can best work. Under this pilot, DHHL proposes that it work with the WHHA to complete the necessary pre-development planning, feasibility, and environmental studies for the first set of projects envisioned by WHHA within the Initiative. Through the pilot project, DHHL would contract and manage a consultant and work closely with WHHA.

To proceed forward, the 161-acre parcel under consideration will need to remain in DHHL's inventory as the pre-development planning, feasibility, and environmental studies are being completed since the contract will be a DHHL contract. Once this work is complete, however, FINAL approval for a long-term general lease to WHHA/WNCDC can be brought to the HHC for action.

The anticipated time frame for the completion of the consultant's proposed scope of work is approximately six to nine months.

RECOMMENDATION

Land Management Division requests approval of the recommended motion as stated.

EXHIBIT "B"

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

May 18-19, 2015

To: Chairman and Members, Hawaiian Homes Commission

Thru: M. Kaleo Manuel, Acting Planning Program Manager

From: Andrew H. Choy, Planner

Subject: Declare a Finding of No Significant Impact (FONSI) for Final Environmental Assessment (FEA) Waimea Nui Regional Community Development TMK No. (3) 6-4-038:011 (por.) Waimea Nui, Hawaii Island

Recommended Action

That the Hawaiian Homes Commission declare a FONSI based on the FEA for the Waimea Nui Regional Community Development Initiative.

Discussion

BACKGROUND

At its September 2013 meeting, the Hawaiian Homes Commission authorized the Chairman to undertake a pilot project in which DHHL works with the Waimea Hawaiian Homestead Association (WHHA) to complete the necessary pre-development planning, feasibility, and environmental studies for the first set of projects envisioned by WHHA within the Waimea Nui Community Development Initiative (Exhibit A). Through the pilot project, DHHL has contracted and managed a consultant to work closely with WHHA to complete planning studies, feasibility studies, and an environmental assessment in accordance with Hawaii Revised Statutes (HRS) Chapter 343 for the project area. Upon completion, WHHA would be poised to solicit funding from private and public sources to complete the design and construct the first set of projects, offering WHHA the opportunity to operate and maintain an envisioned community economic development project that is self-sustaining and supports economic development within the region.

ITEM NO. G-2

EXHIBIT "C"

The Waimea Nui Regional Community Development Initiative consists of the following priority projects:

Priority Project	Acres
Homestead Cemetery/Chapel	10
Equestrian Center	14.7
Community Agriculture Complex	42.2
Golf-Facility	32.2

DRAFT ENVIRONMENTAL ASSESSMENT

In February 2015, DHHL staff and the Waimea Hawaiian Homestead Association presented the public review draft environmental assessment (DEA) conducted for this project to the Hawaiian Homes Commission (Exhibit B). The DEA assessed the potential environmental impact to the surrounding environment of the Waimea Nui Regional Community Development Initiative. In summary the DEA found that these proposed uses will have no to minimal impact on the surrounding environment.

The DEA also addressed the proposed project uses for consistency with existing plans and applicable land use policies. For the most part, the priority projects are consistent with the existing plans and applicable land use policies in the region. However, the DHHL Hawaii Island Plan Land Use Designation for the project area will need to be amended from General Agriculture to Community Use in order for the project to be completely consistent (see HHC May 2015 Agenda Item G-1).

Based upon the analysis completed in the DEA, staff anticipated a finding of no significant impact (AFONSI) for the priority projects of the Waimea Nui Regional Community Development Initiative. Per Hawaii Administrative Rules (HAR) 11-200-11, the DEA and AFONSI are required to be published in the state Office of Environmental Quality Control "Environmental Notice" bulletin for a 30-day public review and comment period. The public comment period was from February 8, 2015 to March 10, 2015. DHHL also accepted comments from agencies after the close of the comment period.

EXHIBIT "C"

FINAL ENVIRONMENTAL ASSESSMENT (SUMMARY)

Various government agencies at the federal, state, and county level, as well local community groups and associations were asked to comment on the DEA. Revisions to the DEA were made based on the comments received during the public consultation period. These changes are reflected in the FEA (Exhibit C). The FEA includes a ramsayer format that indicates which sections of the original DEA were modified.

A summary of the more important key substantive issues identified by other agencies during the public comment period and how those comments were addressed in the FEA are highlighted in the following table. A complete record of comments received and responses to those comments are included in appendix A of Exhibit C.

Agency	Comment (Summary)	Response to Comment
Dept. of Agriculture (DOA)	Recommend that the total water demand incorporate DOA's 3,400 gallons per acre per day (GPAD) estimate.	FEA incorporates DOA recommendation to utilize the 3,400 GPAD estimate to project water use.
DOA	Explain what the impact of the new water demand based on the 3,400 GPAD estimate will have on the existing Waimea Irrigation System (WIS).	The project will incorporate storage into the system design with the intent of drawing water from the WIS during evening hours when irrigation systems of other users are not in use. This will ensure adequate water pressure in the WIS. DOA will be the lead agency overseeing the design phase of the water system and DOA will have oversight to ensure that the water system will be designed to not adversely affect the WIS.
Dept. of Transportation Airports Division	Ensure that the proposed project does not attract wildlife to the project area. Additional wildlife, especially birds, will pose a hazard to airplanes that utilize the Waimea-Kohala Airport.	The project will avoid creating above-ground standing water that will attract wildlife. The project will provide adequate drainage so that storm water will not pond. The project will incorporate an underground closed water treatment system.
State Historic Preservation Division (SHPD)	Additional information is needed regarding the background history of this parcel, results of subsurface testing, and identification of the two historic properties prior to acceptance of the Archaeological Inventory Survey (AIS) pursuant to HAR 13-284-5.	Additional information requested by SHPD has been provided and a new updated AIS is included in the FEA. The AIS will be listed as Appendix C (Revised) in the FEA with an April 2015 date. Upon submittal of the new information that was requested, the AIS was accepted by SHPD.

EXHIBIT "C"

ITEM G-4 EXHIBIT B

County Department of Public Works (DPW)	The additional traffic created by the proposed projects is not insignificant and may warrant traffic mitigation improvements by the developer including intersection improvements, traffic signals, and other traffic calming measures.	WNR-CDI programs will be coordinated in such a manner that will avoid AM and PM peak hours. In addition, the WNR-CDI will be servicing primarily homestead residents in the near vicinity. As such, impacts to the main Mamalahoa Highway is expected to be minimal. In order to assist DPW with its Mamalahoa Highway improvement project, DHHL is considering cost sharing the widening of Kahilu Road with DPW so that the Kahilu Road can be used as a suitable bypass during the County's Mamalahoa highway improvement project. We hope that collaborative efforts such as the above situation between DHHL and DPW to improve regional traffic will be taken into consideration and be credited as a meaningful improvement by the developer to improve existing regional traffic conditions. Additional consultation with DPW about traffic mitigation measures including possible opportunities to collaborate on traffic improvements will occur.

EXHIBIT "C"

ITEM G-4 EXHIBIT B

As stated previously, staff anticipated a finding of no significant impact based on the findings of the DEA. The comments in the above table were the most substantive comments that were received during the public comment period. Appropriate mitigation measures and solutions were identified to address these comments. The mitigation measures and solutions were incorporated into the FEA.

Comments from other agencies either concurred with the findings of the DEA or suggested other policy standards that the project should consider during its development. These policy standards were incorporated into the FEA. As a result, the comments received during the public-comment period and the incorporation of those comments in the FEA will cause the WNR-CDI to have an even more reduced impact on the surrounding environment.

Based on the 13 criteria for determining significance of potential effect a project may have on the environment as outlined in Hawaii Revised Statutes Chapter 343 and Section 11-200-12 State Administrative Rules (discussed in greater detail in Chapter Six of Exhibit C) staff concludes that the WNR-CDI will not have a significant impact on the project area or surrounding environment.

Recommended Motion/Action

Staff respectfully requests that the HHC approve the recommended motion as stated.

PLANNING OFFICE
DEPARTMENT OF HAWAIIAN HOME LANDS

April 20-21, 2015

TO: Chairman and Members
Hawaiian Homes Commission

THROUGH: M. Kaleo Manuel
Acting Planning Program Manager

FROM: Andrew H. Choy, Planner

SUBJECT: Accept the Beneficiary Consultation Report for the Proposed Amendment to the DHHL Hawaii Island Plan Land Use Designation for TMK (3)-6-4-038:011 Waimea, Hawaii Island

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission accepts this Beneficiary Consultation Report as public record of beneficiary input and feedback relative to the Proposed Amendment to the DHHL Hawaii Island Plan Land Use Designation for TMK (3)-6-4-038:011 Waimea, Hawaii Island.

DISCUSSION

Background

The Hawaii Island Plan was adopted by the HHC in 2002. Island plans serve two main purposes: (1) Identify island-specific needs, opportunities, constraints, and development priorities and (2) Provide land use controls that designate allowable uses for DHHL land holdings. DHHL Island Plans specify 10 different types of land use. The 2002 Hawaii Island Plan designated TMK (3)-6-4-038:011 (EXHIBIT A) as "General Agriculture" use. The "General Agriculture" land use designation is defined as lands set aside for:

"Intensive or extensive farming or ranching allowed. [General Agriculture lands] May serve as an interim use until opportunities for higher and better uses become available."

Since the adoption of the Hawaii Island Plan in 2002, the Waimea Hawaiian Homestead Association (WHHA) has completed a master plan for a variety of uses meant to benefit the homestead community on TMK (3)-6-4-038:011. The current initiative, also known as the Waimea Nui Regional Community Development Initiative, is composed of four priority projects:

Priority Project	Acres
Homestead Cemetery/Chapel	10
Equestrian Center	14.7
Community Agriculture Complex	42.2
Golf-Facility	32.2

These proposed uses are more consistent with the Hawaii Island Plan "Community Use" land use designation than the "General Agriculture" designation. The "Community Use" designation will also allow for the WHHA to develop future projects on the 161 acre parcel in the future. The "Community Use" designation can be defined as:

"Common areas for community uses and public facilities. Includes space for parks and recreation, cultural activities, community-based economic development, utilities, and other public facilities."

Amendments to DHHL Island Plan land use designations must be approved by the HHC as the HHC has exclusive land use authority over Hawaiian Home Lands per the Hawaiian Homes Commission Act. Beneficiary feedback and input collected from DHHL Beneficiary Consultation on the proposed amendment is one of the types of information that the HHC must in its decision to amend Island Plan land use designations.

Beneficiary Consultation

The Department's Beneficiary Consultation Policy, approved January 2009, recognizes that meaningful, timely, and effective beneficiary consultation is essential to the successful implementation of Hawaiian Homes Commission policies, programs, and projects. The purpose of this DHHL beneficiary consultation

was to collect beneficiary feedback and input on a proposed land use designation to the DHHL Island Plan for TMK (3)-6-4-038:011. The existing land use designation is "General Agriculture." DHHL would like to designate the parcel "Community Use" in order to accommodate the future plans and programs proposed for this parcel by the Waimea Hawaiian Homestead Association (WHHA). WHHA has proposed a community economic development initiative that consists of several projects to be located on TMK (3)-6-4-038:011 as detailed in Exhibit A.

The proposed amendment to the DHHL Hawaii Island Plan went through the following steps prior to the March 5, 2015 Beneficiary Consultation meeting to ensure that beneficiaries were informed about the opportunity to provide feedback on this project prior to HHC approval.

STEP 1. THE PROPOSED ACTION IS DESCRIBED:

The meeting will provide information on a proposed Land Use Designation Amendment to the DHHL Hawaii Island Plan in the Waimea Region related to TMK parcel (3)-6-4-038:011. The existing Land Use Designation for the parcel is "General Agriculture." DHHL would like to amend the Land Use Designation for this parcel to "Community Use." DHHL would like to designate the parcel "Community Use" in order to accommodate the future plans and programs proposed for this parcel by the Waimea Hawaiian Homestead Association Inc.

STEP 2. BENEFICIARIES WERE NOTIFIED OF OPPORTUNITIES TO CONSULT (See Exhibit B):

1. An invitation letter to attend the March 5, 2015 Beneficiary Consultation meeting Waimea. Approximately 700 letters were mailed lessees, undivided interest lessees, and all Homestead applicants who reside in the Waimea zipcode of 96743.

STEP 3. PRESENTATION MATERIALS FOR ALL MEETINGS ARE AVAILABLE FOR FEEDBACK (See Exhibit C):

1. Presentation materials were posted online for public review and comment March 9, 2015.

STEP 4. COMMENTS ARE COMPILED INTO MEETING REPORTS (See Exhibit D):

1. March 5, 2015 Waimea Beneficiary Consultation Meeting Notes and List of Meeting Participants.

2. April 4, 2015 30-day period for additional comments on project ends.

The March 5, 2015 Beneficiary Consultation meeting in Waimea was well-attended. The proceeding table and data below attempt to capture the level of participation and engagement at the meeting.

Table 1: Summary of March 5, 2015 DHHL Hawaii Island Plan Proposed Land Use Amendment Beneficiary Consultation Attendance and Participation

Beneficiary Consultation Meeting	Estimated Attendance	No. Sign In	No. Self-ID as DHHL Beneficiaries	No. of Comments
March 5, 2015 Kūhiō Hale	70-80	72	39	24
Written Comments Received during 30-Day Comment Period	--	--	--	3

Summary of Beneficiary Consultation Comments and Staff Recommendations

1. *Comments Received During the Beneficiary Consultation Process* ***Support*** *the Proposed Land Use Amendment to the DHHL Hawaii Island Plan for TMK (3)-6-4-038:011.*

The proposed land use amendment was well received by beneficiaries. Several of the comments of support included:

"To give you all some background, in 2001 when we participated in the Island Plan [process], DHHL had to come up with a land use plan. We asked that the whole acreage be set aside for community use at that time. It's been 63 years

since we started homesteading in Waimea - now we are finally going to have a place for the community - Eo - it's good."

"[I] support this land use change because it directly benefits beneficiaries of our land trust."

"I am in favor of and would appreciate DHHL moving forward to designate the subject parcel as 'Community Use.'

DHHL staff recommends that the Hawaiian Homes Commission support the proposed land use amendment to the DHHL Hawaii Island Plan.

2. *The Waimea Nui Regional Community Development Initiative is driven by the Waimea Hawaiian Homestead Association and not DHHL.*

Many of the meeting attendees were WHHA members and have been active participants in developing the concepts for this initiative. Many of them reminded other participants that this is not a DHHL driven initiative, it is a community driven initiative and DHHL is just playing a supportive role in the process.

"This has been in the planning phase for 40-50 years - not a new development. The Department is not providing the groundwork - all of us went door to door and did the survey, decided as a community that this is what we needed."

"If you have any questions [about the initiative] - don't drill DHHL [with questions], ask the WHHA Committee members, it's the Association's project. DHHL is doing what we want them to do."

DHHL staff recommends that in future messaging and communication about this project DHHL continues to emphasize that this is a WHHA-driven project.

3. *Ensure that the Waimea Nui Regional Community Development Initiative Benefits DHHL Beneficiaries.*

Several meeting participants referenced instances in the past in which a community facility located on Hawaiian Home Lands has been used in a manner that does not directly benefit DHHL

beneficiaries. These participants would like to ensure that this initiative benefits DHHL beneficiaries.

> *"…Kanu [charter school],-- kind of disturbing - Hawaiian kids were trying to get in to [that] school, but were denied."*
>
> *"…I'm for it [the initiative], just don't make a mistake like Kanu….I don't see Hawaiian kids at the charter school…Make sure we don't make the same mistake. Make sure this project benefits beneficiaries."*

DHHL staff recommends working with WHHA to develop regular reporting to monitor and demonstrate how beneficiaries are benefiting from the uses proposed in this initiative.

CONCLUSION

Based on the comments received during the DHHL beneficiary consultation process:

(1) DHHL beneficiaries support the proposed land use amendment to the DHHL Hawaii Island Plan for TMK (3)-6-4-011:038, Waimea, Hawaii Island;

(2) The Waimea Nui Regional Community Development Initiative is driven by the Waimea Hawaiian Homestead Association and not DHHL;

(3) Ensure that the Waimea Nui Regional Community Development Initiative Benefits DHHL Beneficiaries.

RECOMMENDATION

Staff respectfully requests that the Hawaiian Homes Commission accept this beneficiary consultation report as the public record of beneficiary input and feedback relative to the Proposed Amendment to the DHHL Hawaii Island Plan Land Use Designation for TMK (3)-6-4-038-011 Waimea, Hawaii Island.

ITEM G-4 EXHIBIT B

INTERNAL REVENUE SERVICE
P. O. BOX 2508
CINCINNATI, OH 45201

DEPARTMENT OF THE TREASURY

Date: OCT 0 2 2014

WAIMEA NUI COMMUNITY DEVELOPMENT
CORPORATION
PO BOX 126
KAMUELA, HI 96743

Employer Identification Number:
46-2823884
DLN:
17053277336023
Contact Person:
MARK BRECKNER
ID# 95217
Contact Telephone Number:
(877) 829-5500
Accounting Period Ending:
December 31
Public Charity Status:
170(b)(1)(A)(vi)
Form 990 Required:
Yes
Effective Date of Exemption:
May 23, 2013
Contribution Deductibility:
Yes
Addendum Applies:
No

Dear Applicant:

We are pleased to inform you that upon review of your application for tax exempt status we have determined that you are exempt from Federal income tax under section 501(c)(3) of the Internal Revenue Code. Contributions to you are deductible under section 170 of the Code. You are also qualified to receive tax deductible bequests, devises, transfers or gifts under section 2055, 2106 or 2522 of the Code. Because this letter could help resolve any questions regarding your exempt status, you should keep it in your permanent records.

Organizations exempt under section 501(c)(3) of the Code are further classified as either public charities or private foundations. We determined that you are a public charity under the Code section(s) listed in the heading of this letter.

For important information about your responsibilities as a tax-exempt organization, go to www.irs.gov/charities. Enter "4221-PC" in the search bar to view Publication 4221-PC, Compliance Guide for 501(c)(3) Public Charities, which describes your recordkeeping, reporting, and disclosure requirements.

Sincerely,

Director, Exempt Organizations

Letter 947

EXHIBIT "E"

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

SHAN S. TSUTSUI
LT. GOVERNOR
STATE OF HAWAII

JOBIE M. K. MASAGATANI
CHAIRMAN
HAWAIIAN HOMES COMMISSION

WILLIAM J. AILA, JR.
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P. O. BOX 1879
HONOLULU, HAWAII 96805

November 3, 2015

Mr. Michael Hodson, President
Waimea Hawaiian Homestead Association Inc.,
P.O. Box 126
Kamuela, HI 96796

Dear Mr. Hodson:

Subject: Request for General Lease to use Hawaiian Home Lands situated at TMK: (3) 6-4-038:011 (por.) Puukapu, Waimea, Island of Hawaii

After careful consideration, the Land Management Division (LMD) of the Department of Hawaiian Home Lands (DHHL) is agreeable with your intent to general lease a portion of TMK: (3) 6-4-038:011.

However, prior to seeking acceptance and approval by the Hawaiian Homes Commission, we need to reach an understanding on certain material terms and conditions. In this regard, we propose the following for your consideration:

Terms & Conditions Unique to this General Lease

1. LESSEE: Waimea Hawaiian Homestead Association Inc. (WHHAI), with the ability to assign the lease to Waimea Nui Community Development Corporation (WNCDC), an IRS 501c3 organization. Any proposed lease assignment to another entity other than the WNCDC is subject to the approval of the Hawaiian Homes Commission.

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 161 acres of Hawaiian Home Lands in Puukapu, Waimea, Island of Hawaii.

EXHIBIT "F"

4. BASE RENT: Gratis for the term of the lease.

5. ADDITIONAL RENT: At such time when LESSEE reports annual increase in net assets of $20,000 or more, additional rent shall be charged in the amount of 10% of the reported annual increase in net assets. As used herein, annual increase in net assets shall equal LESSEE's revenues less expenses as reported on IRS form 990.

6. PERMITTED USE: LESSEE shall use the premises for the projects identified in the May 2015 Final EA, namely: homestead cemetery/chapel, equestrian center, community agriculture complex, and golf facility. The equestrian center and golf facility uses shall be permitted subject to the provisions in paragraph 7 below. Other future uses as envisioned in the Waimea Nui Community Development Initiative Conceptual Master Plan dated March 5, 2013 may be permitted via lease amendment subject to approval by the Hawaiian Homes Commission.

7. LESSEE shall obtain a private letter ruling from the IRS or alternative form of certification from the IRS confirming that all proposed activities and uses of the Premises that are not specifically identified in the LESSEE's IRS Form 1023 are in furtherance of charitable exempt purposes prior to the implementation of those activities.

8. 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.

9. 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.

10. As part of LESSOR's regular review of LESSEE activities, and in exchange for gratis base rent, LESSEE shall submit an ANNUAL PROGRESS REPORT to LESSOR each year on the anniversary date of lease commencement. The ANNUAL PROGRESS REPORT shall document the 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 pre-construction 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 the Waimea Hawaiian Homestead Association Inc. and the boards of other current or future beneficiary membership organizations in the Waimea Nui region indicating whether or not the LESSEE has satisfactorily provided programs and services to its respective organization's members in the respective year of the ANNUAL PROGRESS REPORT. Note: Waimea Nui Region is defined as the region that is specified in the 2012 DHHL Waimea Nui Regional Plan.

11. LESSOR shall have the right to charge rent equal to the fair market rental of the property if the LESSEE does not submit ANNUAL PROGRESS REPORTS to the LESSOR in a timely manner. Fair market rent shall be determined by an independent appraiser selected by the LESSOR.

12. 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 WNCDC or WHHAI by any third party, sublessee or beneficiary membership organizations utilizing any portion of the premises.

13. LESSEE shall at no time own less than 51% of leasehold interest in all facilities located on the Premises.

14. 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 sub-lessee.

15. 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.

16. 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.

17. 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.

Standard General Lease Terms & Conditions

18. 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.

19. 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 clean-up of any contamination or hazardous materials brought onto the site or caused by LESSEE'S activities on the site.

20. 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.

21. 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.

22. The non-refundable processing ($200.00) and documentation ($75.00) fee of $275.00 shall be waived.

23. LESSEE shall comply with all federal, state and county statutes, regulations, codes and ordinances applicable to LESSEE'S use of the premises.

24. LESSEE agrees to pay for all the costs of establishing utility services to the property and pay for all consumption of utilities on the Premises, should LESSEE'S use require such utility services.

25. 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.

26. 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. LESSEE shall also notify LESSOR to do a site inspection when LESSEE has completed removal.

27. LESSEE shall keep the Premises neat and clean at all times and shall not allow its trash to spread to other surrounding areas.

28. LESSEE shall be responsible for the security of the Premises and all of LESSEE'S personal property thereon.

29. The lease document is subject to the approval of the State of Hawaii Department of Attorney General.

30. Other terms and conditions deemed prudent by the Hawaiian Homes Commission may be added.

If the terms and conditions contained herein and described above are acceptable, please sign, date and return a copy of this letter. Department staff will then prepare the request to the Hawaiian Homes Commission (Commission) for approval to issue the lease, consistent with the terms outlined above.

This signed letter will not be binding on either party, although it will be used as a basis for requesting Commission approval and for drafting the lease. Nor will this letter constitute a defacto lease or any other disposition of Hawaiian home lands. Only the actual lease itself - if approved by the Commission and signed by the parties - will be binding.

If you have questions, contact Andrew H. Choy, at (808)620-9279 or email andrew.h.choy@hawaii.gov.

Aloha,

Peter "Kahana" Albinio Jr., Acting
Administrator
Land Management Division

AGREED AND ACCEPTED:

WAIMEA HAWAIIAN HOMESTEAD ASSOCIATION INC.,

By _____ Date 11/05, 2015
Its President
Michael Hodson

EXHIBIT "F"

Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola Clinic Relocation

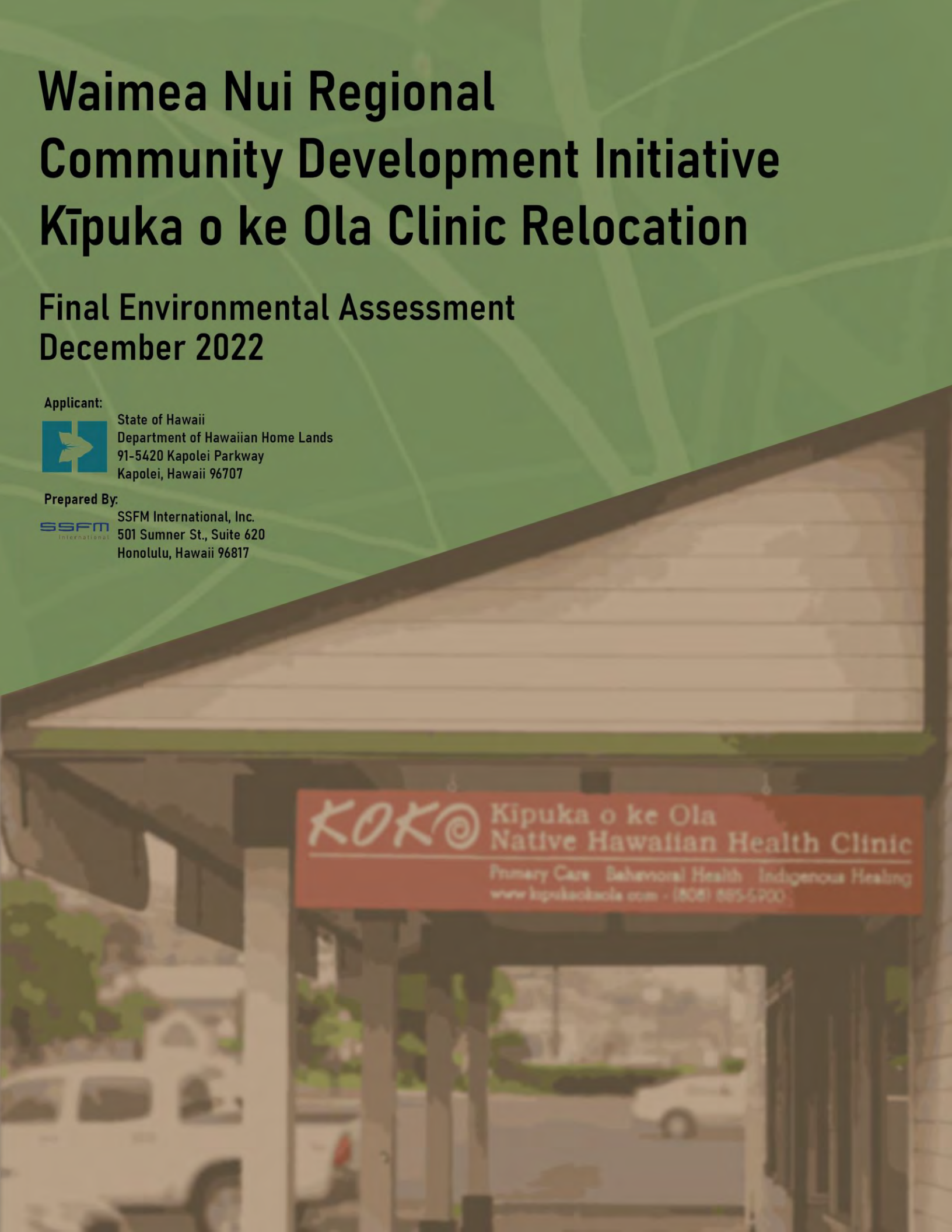
Final Environmental Assessment
December 2022

Applicant:

State of Hawaii
Department of Hawaiian Home Lands
91-5420 Kapolei Parkway
Kapolei, Hawaii 96707

Prepared By:

SSFM International, Inc.
501 Sumner St., Suite 620
Honolulu, Hawaii 96817



Cover photo by Kīpuka o ke Ola (KOKO) Clinic

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Project Information Summary

Project Name	Waimea Nui Regional Community Development Initiative Kīpuka o ke Ola (KOKO) Clinic Relocation
Applicant	State of Hawai‘i, Department of Hawaiian Home Lands 91-5420 Kapolei Parkway Kapolei, Hawai‘i 96707 Contact: Andrew Choy Email: andrew.h.choy@hawaii.gov
Accepting Authority	Hawaiian Homes Commission Department of Hawaiian Home Lands Hale Kalaniana‘ole 91-5420 Kapolei Parkway Kapolei, Hawai‘i 96707
EA Preparer	SSFM International, Inc. 501 Sumner St., Suite 620 Honolulu, Hawai‘i 96817 Contact: Carah Kadota, Project Planner Email: ckadota@ssfm.com Phone: (808) 356-1233
Project Location	Pu‘ukapu, Waimea, Island of Hawai‘i
Tax Map Key	(3) 6-4-038:011 (por.)
Parcel Lot Area	191.71 acres
Project Area	Approximately 5 acres
Landowner	State of Hawai‘i, Department of Hawaiian Home Lands
Existing Use	Undeveloped land
State Land Use District	Agricultural District
DHHL Existing Land Use	General Agricultural (per the Waimea Nui Regional Plan)
County of Hawai‘i Zoning	A-40a
County of Hawai‘i Land Use Pattern Allocation Guide	Important Agricultural Lands
County of Hawai‘i Community Development Plan	South Kohala Community Development Plan
Special Management Area	Not in SMA
Flood Zone	Zone X
Chapter 343, HRS Trigger	Use of State funds and lands per HAR 11-200.1-8(1)
Proposed Uses	Independent rural health clinic

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1.0 BACKGROUND

1.1 Kīpuka o ke Ola (KOKO) Clinic

The Waimea Hawaiian Homesteaders' Association (WHHA) incorporated Kīpuka o ke Ola (KOKO) as the Association's Medical Division. KOKO was founded by Five Mountains Hawai'i Inc., a 501c3 non-profit organization that was inspired by Dr. Earl Bakken and Kenneth Brown. In January 2014, Five Mountains Hawai'i, Inc. elected a new Board of Directors, new Executive Management Team, and officially began doing business as KOKO. The KOKO Native Hawaiian Health Clinic ("KOKO Clinic") was established in response to a community needs assessment conducted by the WHHA, which called for a health clinic that could specifically address the health disparities endured by Native Hawaiians in North Hawai'i.

The clinic's mission statement is: "*KOKO provides cultural, spiritual, medical, and psychological services to all residents of North Hawai'i with a special emphasis for the Kānaka Maoli. This mission is our kuleana. KOKO provides culturally-informed direct services, actively collaborates with hawaiian agencies and associations in order to meet their members' needs, and is led by the community it serves."* KOKO is designed to provide a full range of bio-psycho-social services to the residents of North Hawai'i. It provides primary care services (including pediatric services), women's health services, individual, couple, and family psychotherapy services, acupuncture/lomilomi massage, and psycho-educational trainings for the community and organizations.

On March 28, 2017, the clinic received Federal Accreditation as the first independent Rural Health Clinic in the State of Hawai'i. An "independent" rural health clinic is one that is not owned by a hospital, nursing home, or home health agency. To be accredited as a rural health clinic, the following criteria must be met:

- Employ a Nurse Practitioner (NP) or Physician's Assistant (PA)
- Have a NP, PA, or Certified Nurse-Midwife (CNM) working at the clinic at least 50 percent of the time the RHC operates
- Directly furnish routine diagnostic and laboratory services
- Have arrangements with one or more hospitals to furnish medically necessary services that are not available at the rural health clinic
- Have available drugs and biologicals necessary for the treatment of emergencies
- Furnish all of these laboratory tests on site: chemical examination of urine by stick or tablet method or both; hemoglobin or hematocrit; blood sugar; examination of stool specimens for occult blood; pregnancy tests; primary culturing for transmittal to a certified laboratory

1.1.1 Ulu Laukahi Program

In 2022, the KOKO Clinic established the Ulu Laukahi Program, which is designed to recruit Native Hawaiian community members at-risk or struggling with chronic diseases (diabetes, hypertension, obesity, and mental health concerns) to provide prevention/intervention services to mitigate the factors that contribute to the need for emergency interventions. The goal of the program is to help Native Hawaiians achieve a longer and healthier lifestyle, and to educate, inspire, and assist participants to successfully integrate healthy habits to pass along to future generations. The program is a free year-long program for Native Hawaiians, and includes access to a personal fitness coach, yearlong membership to a fitness center, nutritional guidance from a licensed nutritionist, monthly educational workshops, quarterly medical care visits, psychotherapy intervention, and community support.

1.2 Waimea Nui Community Development Initiative

The WHHA and its subsidiary organization, the Waimea Nui Community Development Corporation (WNCDC) have been actively conceptualizing a community development project for over 40 years to address the cultural, economic, and social needs of the Waimea area and of Waimea Homestead families. The Waimea Nui Regional Community Development Initiative (WNR-CDI) was developed based upon the ideas and concepts articulated by the homestead community, and it incorporates the long-term visions of both WHHA and the Department of Hawaiian Home Lands (DHHL), as outlined in the DHHL Waimea Regional Plan (2012).

In 2015, a Final Environmental Assessment - Finding of No Significant Impact (FEA-FONSI) was prepared for the WNR-CDI, which proposed the following facilities and land uses to be located within approximately 114-acres of DHHL Homestead Land in a portion of Tax Map Key (TMK) (3) 6-4-038:011: a homestead cemetery/chapel which includes a columbarium; a community agriculture complex inclusive of a community agricultural park, a green waste biodigester with electric grid, a post-harvest facility, and commercial kitchen; an equestrian center; and a golf facility inclusive of playing greens, driving range, chip and putt, and a clubhouse. Following completion of the FEA-FONSI, the Hawaiian Homes Commission approved a 65-year General Lease to WNCDC that encompasses the 161-acres of land within TMK (3) 6-4-038:011 to develop the aforementioned facilities and land uses. The 161-acre property is inclusive of the 114-acres covered in the 2015 FEA-FONSI.

1.3 Purpose of Environmental Assessment

The WNR-CDI proposes to relocate the KOKO Clinic from its existing location at 64-1035 Māmalahoa Highway, to a 5 acre portion of the undeveloped 161-acre property leased by WNCDC. The clinic's proposed location would be within 5 acres of the area that was previously identified for the equestrian center in the 2015 WNR-CDI FEA-FONSI. The clinic is a new land use that is being considered for inclusion with the land uses proposed in the WNR-CDI's 2015 FEA-FONSI.

This Final Environmental Assessment (Final EA) has been prepared in accordance with the requirements of Hawai‘i Revised Statutes (HRS), Chapter 343 and Hawai‘i Administrative Rules (HAR), Title 11, Department of Health, Chapter 200.1, Environmental Impact Statement Rules. The proposed project will require the use of State lands, as it would be located on DHHL Homestead lands, and the use of State funds, thus triggering the preparation of an Environmental Assessment (EA) as prescribed by HAR 11-200.1-8(1) and HRS, Chapter 343-5(a)(1).

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2.0 PROJECT DESCRIPTION

2.1 Purpose and Need

The KOKO Clinic has outgrown their current facility resulting in a need for more space to 1) provide clinical space for rent, and 2) to serve more patients, as an increase in number of patients is anticipated to occur as DHHL awards more homestead lots in the Waimea region. Per the KOKO Clinic's 2019 Annual Report, the clinic saw a 20% increase in number of patients from 2018, for a total of 2,663 patients. In 2019 the clinic had 8,800 patient encounters amongst the seven healthcare providers and seven support staff at the facility. In addition, the clinic is focused on expanding their Ulu Laukahi Program, which is designed to address chronic care disease management. The expansion of the program's services would require a certified kitchen, workout facilities, and group meeting rooms for patient education.

The relocation of the KOKO Clinic to the WNR-CDI planned development aligns with the goals and vision of the initiative to build a vibrant and self-sufficient community, and to move towards the intent of the Hawaiian Homes Commission Act of 1921 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 addition, the KOKO Clinic's relocation and upgrade in facility size and capacity would better prepare the Waimea region for anticipated growth as more homestead lots are awarded. The KOKO Clinic envisions serving up to 800 patients in anticipation of the future growth from awarded homestead lots.

The proposed project would support Hawaiian Homes Commission Act beneficiaries by creating jobs for current and future beneficiaries, as well as providing additional capacity to provide medical services to native Hawaiian beneficiaries and the larger region of North Hawai'i.

2.2 Project Location

The KOKO Clinic is currently located in Waimea at 64-1035 Māmalahoa Highway within the Uilani Plaza building, which contains other commercial units. The clinic proposes to develop its own facility on a 5-acre portion of the 191.711-acre parcel identified as TMK (3) 6-4-038:011 ("project site"), which is owned by DHHL; approximately 161 acres of the parcel will be under lease to the WNCDC. The project site is located approximately 1.5 miles (or 2.5 driving miles) from the KOKO Clinic's current site (see Figure 1).

The project site is located in the South Kohala District on the island of Hawai'i, within the Pu'ukapu Tract of DHHL Homestead Lands (see Figure 1). The Waimea-Kohala Airport is located approximately 1.5 miles southwest of the site. Kanu O Ka 'Āina Charter School (KOKA Charter School) and residential farm lots are located north west of the site along Hi'iaka Street.

2.3 Proposed Action

The proposed action includes the development of an approximate 9,600 square feet (SF), one-story building for the KOKO Clinic within a 5-acre portion of TMK (3) 6-4-038:011 (see Figure 2). The new clinic would include treatment rooms to provide primary care, psychiatry, psychology, women's health, laʻau lapaʻau, lomilomi and acupuncture services. In addition, the clinic would expand its Ulu Laukahi Program that addresses chronic care disease management, which would require a certified kitchen, workout facilities, and meeting rooms.

The expansion of the KOKO Clinic would result in an additional five full-time positions to increase the clinic's treatment capacity to 800 additional patients. Operations at the clinic would remain the same; Monday through Friday from 8:00AM to 5:00PM.

2.4 Approvals and Permits

To implement the proposed action, the following Federal, State, and County permits and approvals listed in Table 1 are anticipated to be required.

Table 1: Potential Permits and Approvals Required

Federal Approvals/Permits	
Federal Aviation Administration	Form 7460-1 Notice of Proposed Construction or Alteration Approval
U.S. Department of Agriculture (USDA), Rural Development Agency	Compliance with requirements per 7 Code of Federal Regulations (CFR) Part 1970 – Environmental Policies and Procedures
State Approvals/Permits	
State of Hawaiʻi, Department of Health (DOH), Clean Water Branch	• National Pollutant Discharge Elimination System (NPDES) General Permit • Approval of wastewater system construction documents

State of Hawai‘i, Department of Agriculture	• Application for Irrigation Water Service • Approval letter for use of agriculture water for potable use
State of Hawai‘i, Department of Health, Safe Drinking Water Branch	Approval of water treatment system construction documents
State of Hawai‘i, Department of Health, Wastewater Branch	Approval of wastewater system construction documents
State of Hawai‘i, Department of Health, Indoor and Radiological Health Branch	• Form 1 - Air Conditioning and Ventilation Application for Permit • Noise Permit Application
State of Hawai‘i, Department of Land and Natural Resources (DLNR), State Historic Preservation Division (SHPD)	HRS Chapter 6E-8 Review
County Approvals/Permits	
County of Hawai‘i (COH), Planning Department	Plan Approval
County of Hawai‘i, Department of Public Works (DPW), Building Division	• Building Permit (Non-Residential) • Electrical Permit (Non-Residential) • Plumbing Permit (Non-Residential) • Sign Permit • Outdoor Lighting Permit

County of Hawai'i, Department of Public Works, Engineering Division	• Grading and Grubbing Permit • Driveway Connection Permit
County of Hawai'i, Department of Water Supply (DWS)/Water Board	Water Development Agreement

Figure 1: Project Location

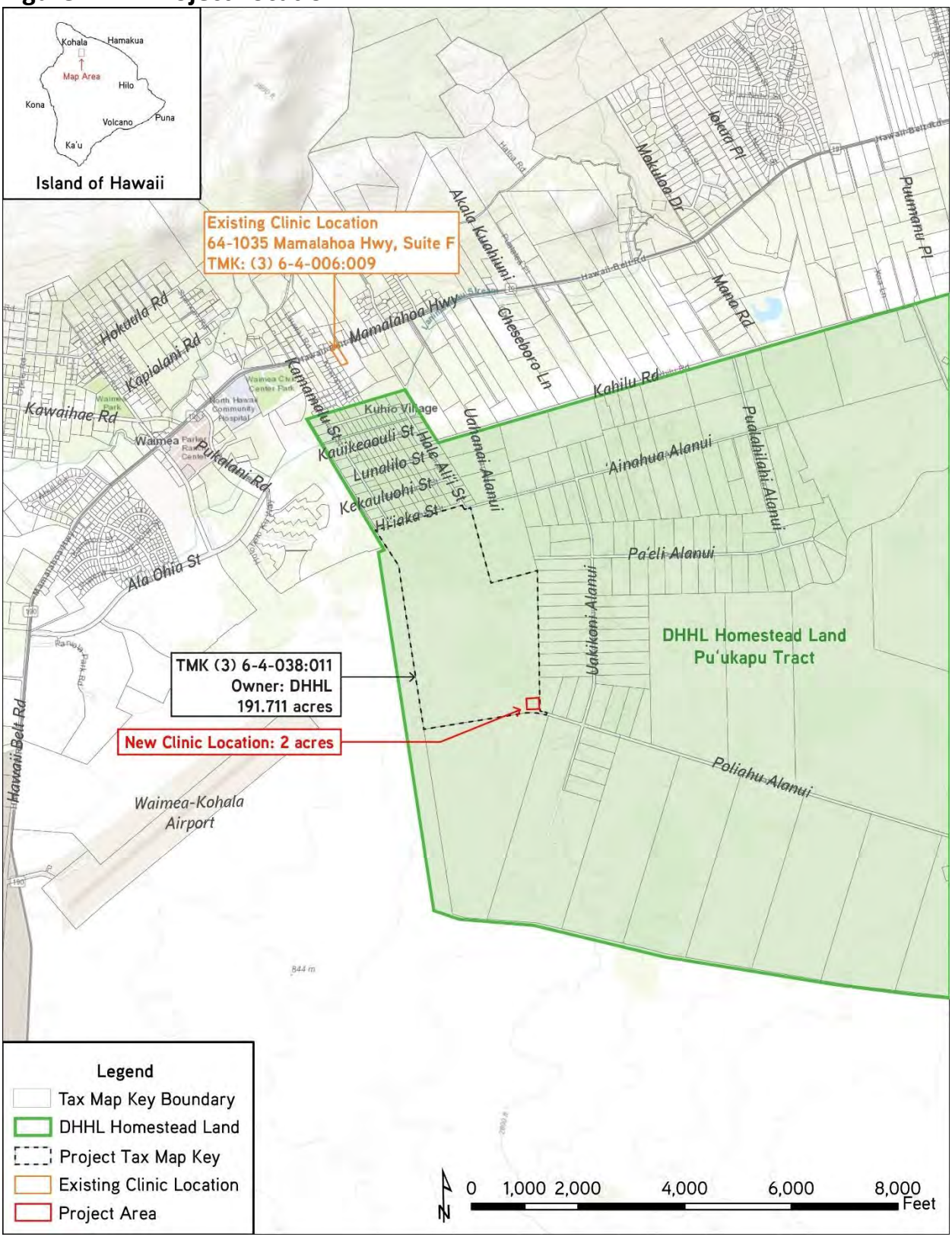
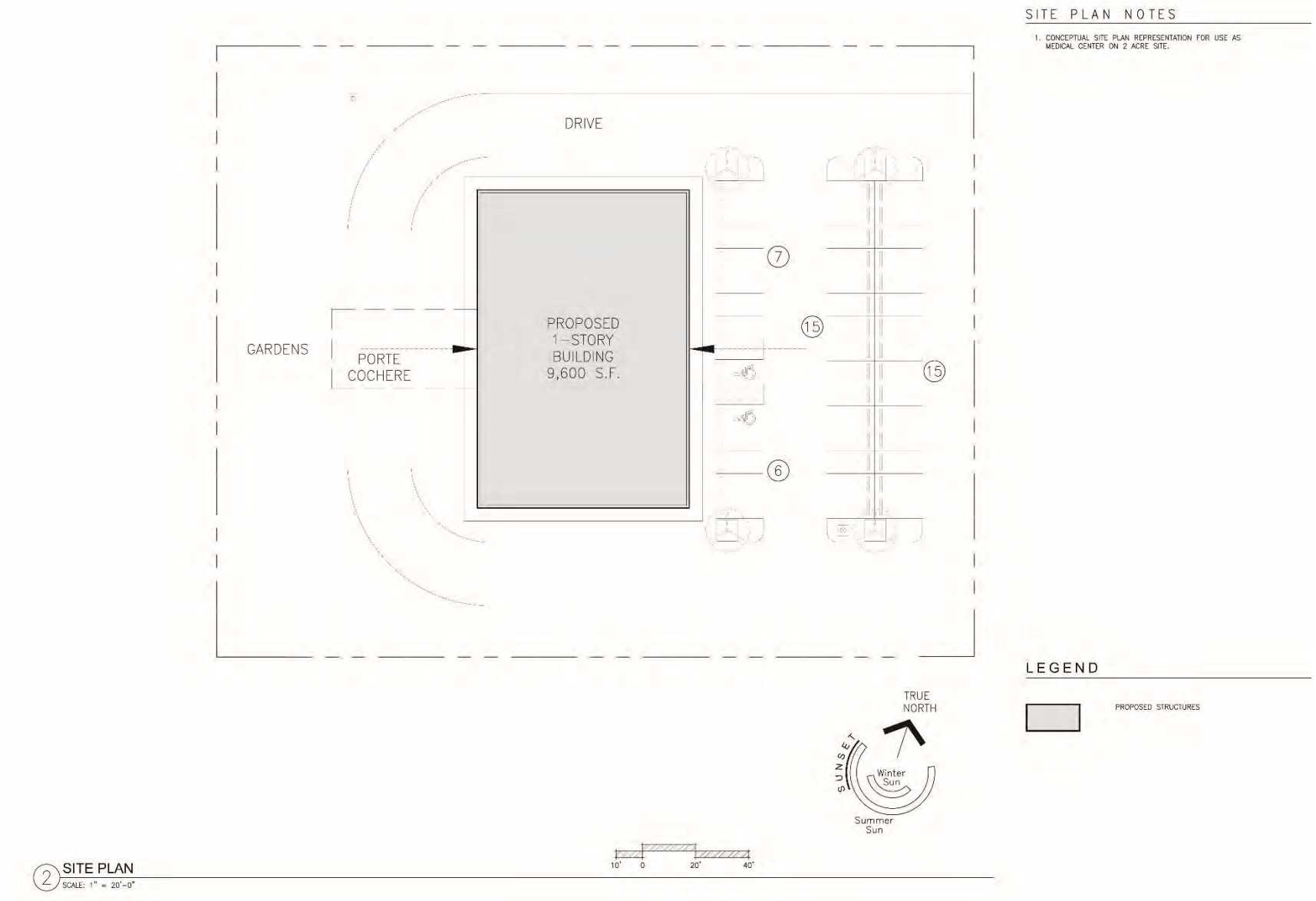


Figure 2: Site Plan



3.0 AFFECTED ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

3.1 Climate and Climate Change

The annual temperature in Waimea is relatively cool due to its high elevation; it averages at 65 degrees Fahrenheit (Giambelluca, et al., 2014). The annual rainfall in the project area is approximately 26 inches, with most rainfall occurring between November to April. Annual wind speed in this area averages at 10 miles per hour (mph).

The rapid build-up of greenhouse gases from human activity, particularly carbon dioxide but also methane, nitrous oxide, and fluorinated gases, is causing global warming and climate disruption (Hawai'i Climate Mitigation and Adaptation Commission, 2017). Global atmosphere and ocean warming is leading to glacier mass loss and ocean thermal expansion and is causing an acceleration in global mean sea level rise. The islands of Hawai‘i are uniquely exposed to the impacts of climate change and sea level rise. Many existing developments including hotels, houses, roads, beach parks, public facilities, and infrastructure have been located close to hazard prone and low-lying shorelines.

Sea level rise will multiply the impacts from coastal hazards, resulting in the acceleration of shoreline erosion, increase in chronic and event-based flooding along the shoreline and in low lying areas, and impediment of stormwater drainage. The Hawai‘i Sea Level Rise Vulnerability and Adaptation Report modeled exposure to chronic coastal flooding and erosion using projections from the Intergovernmental Panel on Climate Change (IPCC) 5th Assessment Report (IPCC, 2013) where the high-end scenario was up to 3.2-ft of sea level rise by the end of the century (Courtney et al., 2020). The National Oceanic and Atmospheric Administration (NOAA) (Sweet et al., 2017) updated global and regional projections based on a review of the most up-to-date scientific literature on sea level rise (Courtney et al., 2020) and identified 3 ft. of sea level rise in this century as a mid-range scenario, and a “physically plausible” upper-end projection of 6 to 8 ft. of sea level rise by the end of this century.

Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have an adverse effect on the climatic conditions of the Waimea region. The development of the KOKO Clinic would result in short-term release of greenhouse gas (GHG) emissions from construction activities, which is anticipated to be minor and temporary in nature.

The project site is located 10 miles away from the nearest shoreline, and thus is not anticipated to be subject to climate change and sea level rise impacts.

3.2 Geology and Topography

The project site is located at an elevation of approximately 2,760 feet in between Mauna Kea and the Kohala Mountains (see Figure 3). The site is relatively flat and slopes down towards the northwest side of the site. There are no significant landforms on the proposed site.

Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have an adverse impact on the topography of the site. Development of the new KOKO Clinic will require excavation and grading for the clinic building, parking lot, and utilities; however it is not anticipated to adversely impact any significant landforms in the area. Grading of the project site would be done in conformance with Hawai'i County Code, Chapter 10 – Erosion and Sedimentation Control.

As the disturbed area would be greater than one acre, a NPDES Permit would be required. Grading activities would follow Best Management Practices (BMPs) in compliance with the NPDES Permit and the County's Grading Permit to mitigate any potential impacts of soil erosion and fugitive dust during grading or excavation.

3.3 Soils

Based on the USDA Natural Resources Conservation Service (NRCS) Web Soil Survey, the soils within the surrounding project area are primarily Kikoni medial very fine sandy loam (map unit symbol 487), Waimea medial very fine sandy loam (map unit symbol 383), and Kikoni medial silt loam (map unit symbol 493) (see Figure 4). The Kikoni and Waimea series of soils are found on the northern side of Mauna Kea on the Waimea plains and consist of well-drained very fine sandy loams that formed in volcanic ash. Permeability is moderately rapid, runoff is slow, and the erosion hazard is slight. The project site consists of mainly the Waimea medial very fine sandy loam soil.

In Hawai'i, three classification systems are commonly used to rate soils: 1) Land Capability Grouping, 2) Agricultural Lands of Importance to the State of Hawai'i (ALISH), and 3) Overall Productivity Rating. The following is a description of the project site's soils' rating under each classification system.

Land Capability Grouping, U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) Rating

The 1972 Land Capability Grouping by the NRCS groups soils primarily based on their capability to produce common cultivated crops and pasture plants without deteriorating over a long period of time. The capability class is the broadest category in the classification system and contains eight levels, ranging from the highest classification level "Class I", which indicates soils have slight limitations, to the lowest level "Class VIII", which are soils that have limitations that preclude their use for commercial plant production. The capability subclass is the second category in the land classification system that contains class codes "e", "w", "s", and "c".

Figure 3: Topography Map

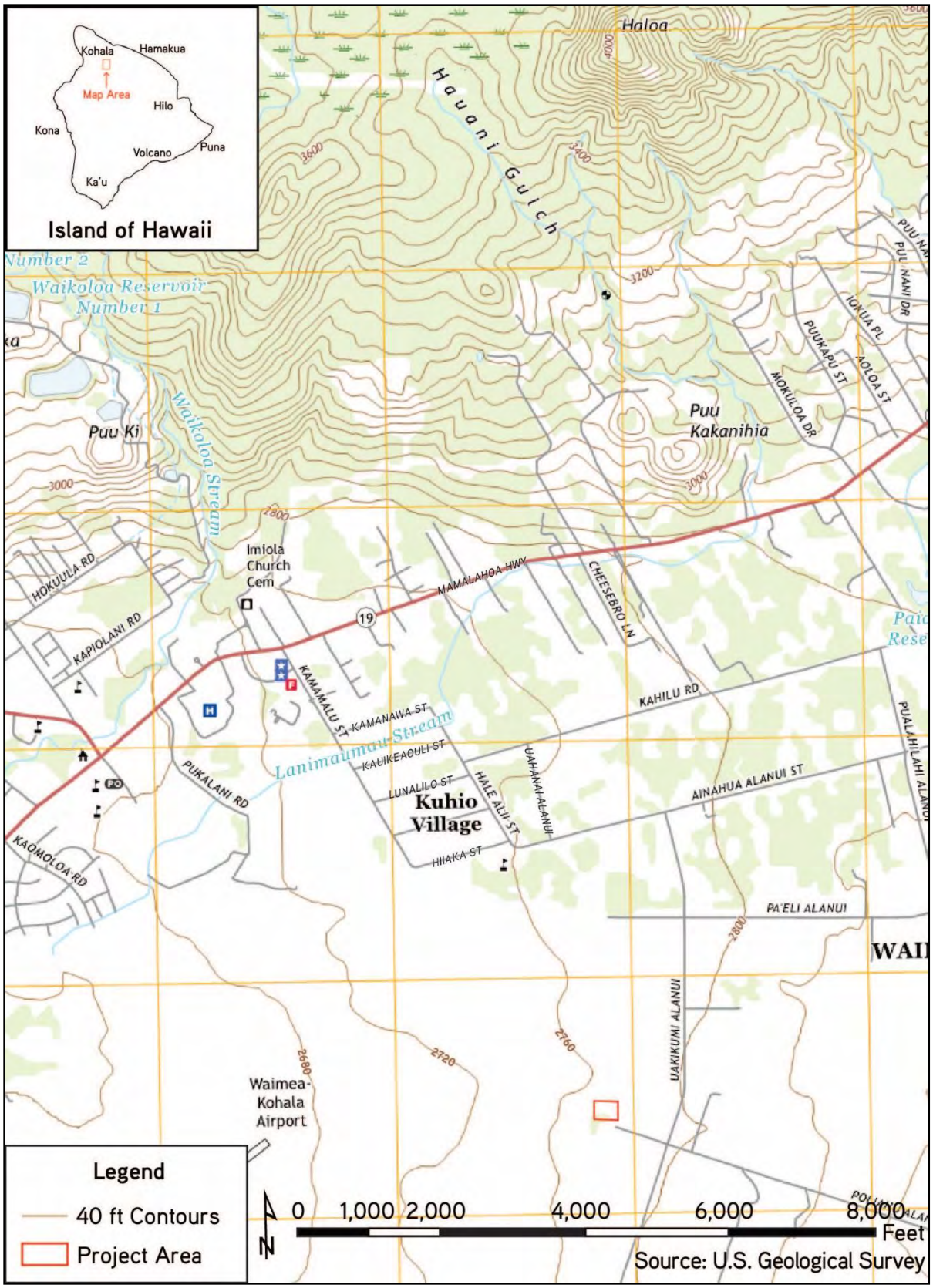
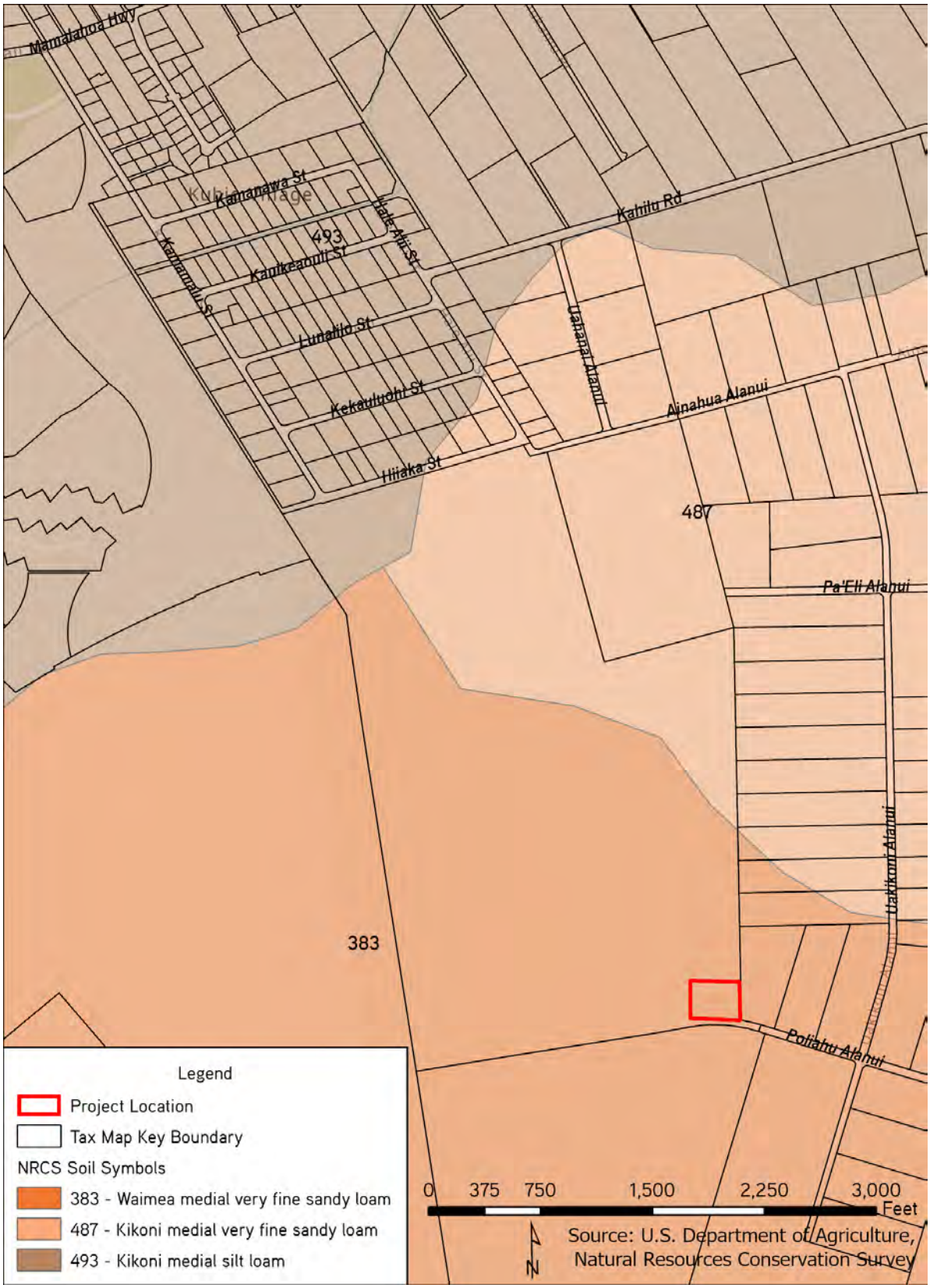


Figure 4: NRCS Soils



The Waimea medial very fine sandy loam and the Kikoni medial very fine sandy loam fall within Class IIe, while the Kikoni medial silt loam falls within Class I (when irrigated) and Class IIc (non-irrigated). Class I soils have few limitations that restrict their use, while Class II soils have moderate limitations that reduce the choice of plants or require moderate conservation practices. Subclass "c" soils shows that the primary limitation is climate that is very cold or very dry.

Agricultural Lands of Importance in the State of Hawai'i (ALISH)

The State of Hawai'i, Department of Agriculture, with the assistance of the Soil Conservation Service, USDA, and the University of Hawai'i College of Tropical Agriculture and Human Resources, established a classification system to identify Agricultural Lands of Importance to the State of Hawai'i (ALISH) that is primarily, but not exclusively, based on soil characteristics in an effort to inventory important farmlands. The classification system identifies three classes of ALISH: "prime", "unique", and "other". The proposed project site would be located on land classified as ALISH "other", which is defined as land that is non-prime and non-unique agricultural land that is important to the production of crops (see Figure 5).

Overall Productivity Rating, University of Hawai'i Land Study Bureau (LSB)

The University of Hawai'i's Land Study Bureau (LSB) established a five-class soil productivity rating system from "A" to "E", with "A" representing the class of highest productivity and "E" as the lowest. The rating system is based on soil properties such as drainage, texture, stoniness, structure, slope, rainfall, material, and depth/penetration of roots. The project is located on land with soils classified as "C" (see Figure 6).

Potential Impacts and Mitigation Measures

Paving in the project area will minimally reduce permeability and increase runoff velocity in selected areas (i.e. parking lot). The proposed drainage improvements would be designed in compliance with the County's Storm Drainage Standard. Pre-development flow patterns and rates will generally remain in post-development conditions, with runoff remediated on-site.

All grading operations would be conducted in compliance with Hawai'i County Code, Chapter 10 – Erosion and Sedimentation Control. BMPs such as sediment basins, filter fences, diversion swales, and bio-filtration swales may be considered in the site design to minimize the amount of erosion and transport of sediment. Temporary impacts from construction activities would be mitigated by implementation of erosion and dust control measures.

Any landscape management on the project site would include proper management of fertilizers and pesticides. Increased surface runoff from newly paved parking and pedestrian areas would be minimized through these methods.

Figure 5: Agricultural Lands of Importance to the State of Hawai'i

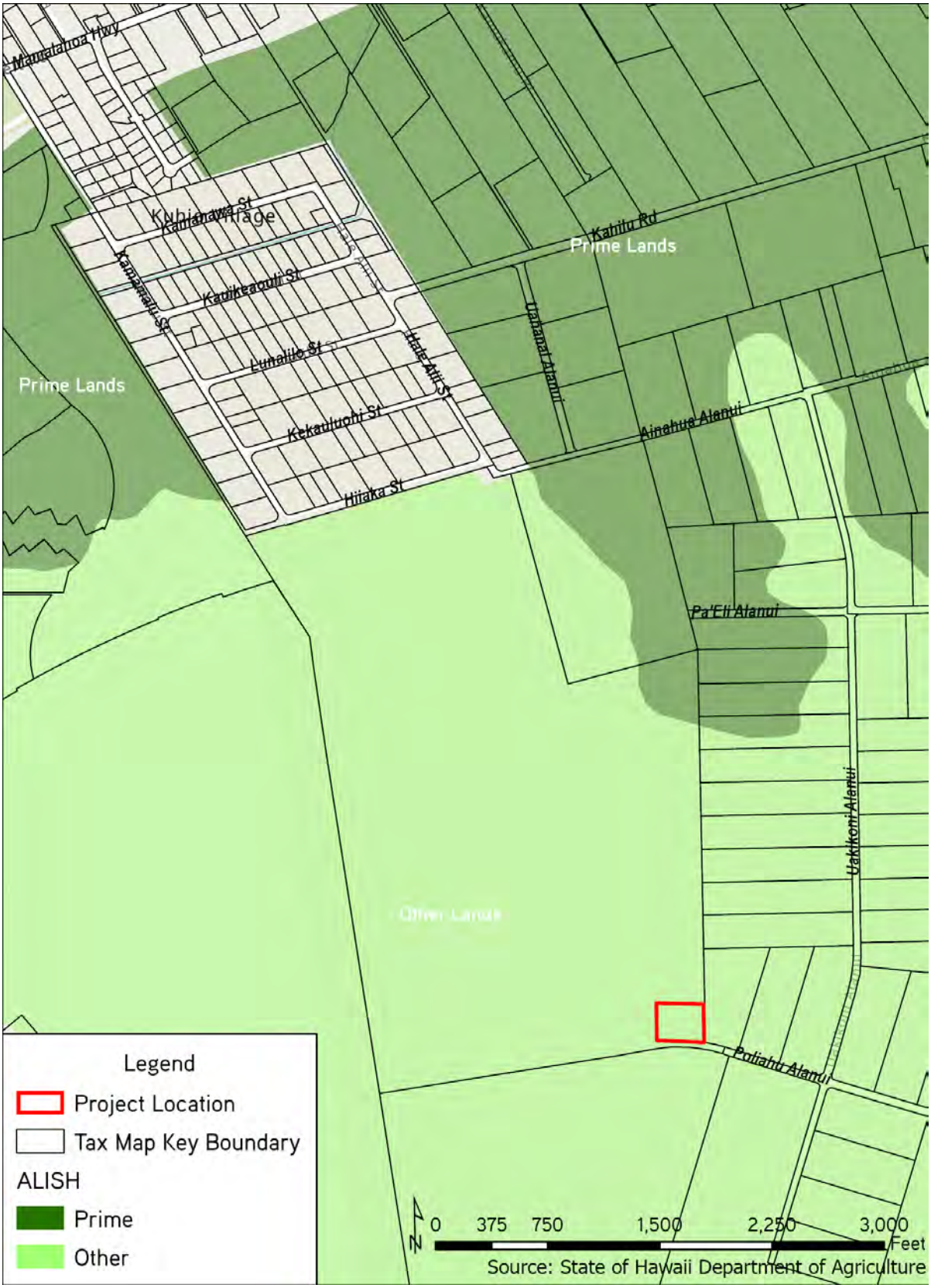
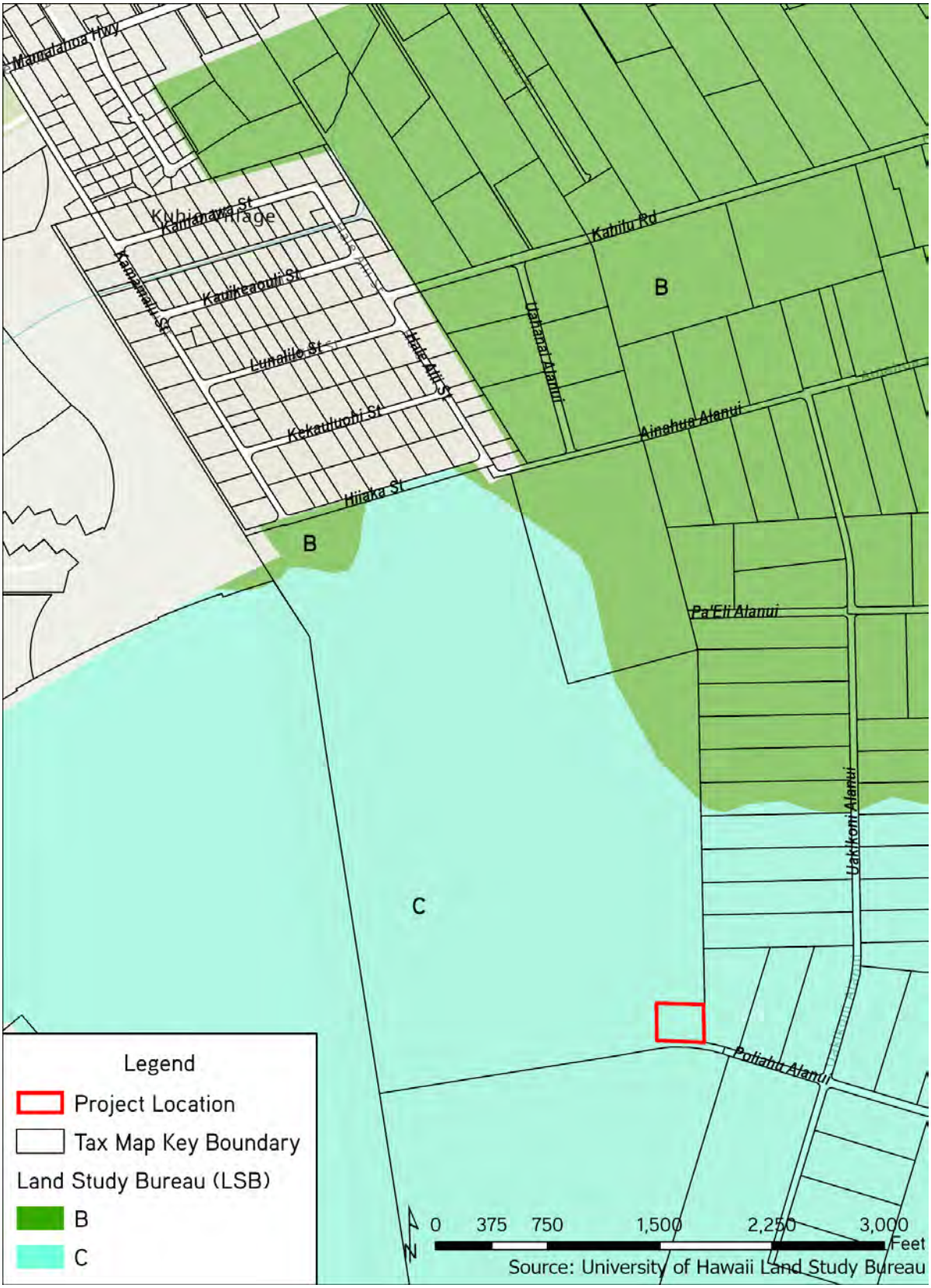


Figure 6: Land Study Bureau



Although the project site is located on agricultural land and is not considered an agricultural use, the project would be part of a larger community plan, as identified in the 2015 FEA-FONSI for the WNR-CDI, which includes agricultural uses. In addition, the use of agricultural land for the project site would not limit or substantially reduce the availability of land for agricultural uses in the Waimea region.

3.4 Surface and Marine Waters

There are no existing sources of surface water located on the project site. The nearest surface water source is the Lanimaumau Stream, which is located approximately a half mile northwest of the site. There is no existing drainage system on the site.

The project site is not within or in near proximity to any marine or coastal waters.

Potential Impacts and Mitigation Measures

Construction of the KOKO Clinic and parking areas may slightly alter the velocities, directions, and quantities of natural drainage patterns in the project area, however, the project will be designed to direct water flow to the proposed drainage system. The proposed drainage system will be designed in compliance with the County's Storm Drainage Standard. Pre-development flow patterns and rates will generally remain in post-development conditions with runoff remediated on-site.

3.5 Natural Hazards

The entire island of Hawai'i is subject to geologic hazards due to volcanic action. The project site is located near the boundary of the extinct Kohala volcano and the dormant Mauna Kea volcano, which results in a low risk level. The site is within the Lava Flow Hazard Zone 8, on a scale of ascending risk from Zone 9 to Zone 1 (see Figure 7). Zone 8 areas are within "the remaining part of Mauna Kea. Only a few percent of this area has been covered by lava in the last 10,000 years." (USGS, 1991).

The project site is within the Federal Emergency Management Agency's (FEMA) Flood Zone X according to FEMA's Flood Insurance Rate Map (see Figure 8). Flood Zone X corresponds to areas outside the 1-percent annual chance floodplain that are subject to minimal hazard from the principal source of flood in the area. Flood Zone X is not a special flood hazard zone, thus there are no regulations for development.

The proposed KOKO Clinic site is within the former Waikoloa Maneuver Area (WMA), which is a Formerly Used Defense Site (FUDS) as identified by the U.S. Army Corps of Engineers, Honolulu District (see Figure 9). The U.S. Marine Corps, through a verbal agreement with Richard Smart of Parker Ranch, acquired over 220,000 acres in South Kohala in December 1943 (USACE, 2019).

Figure 7: Lava Flow Hazard Zones

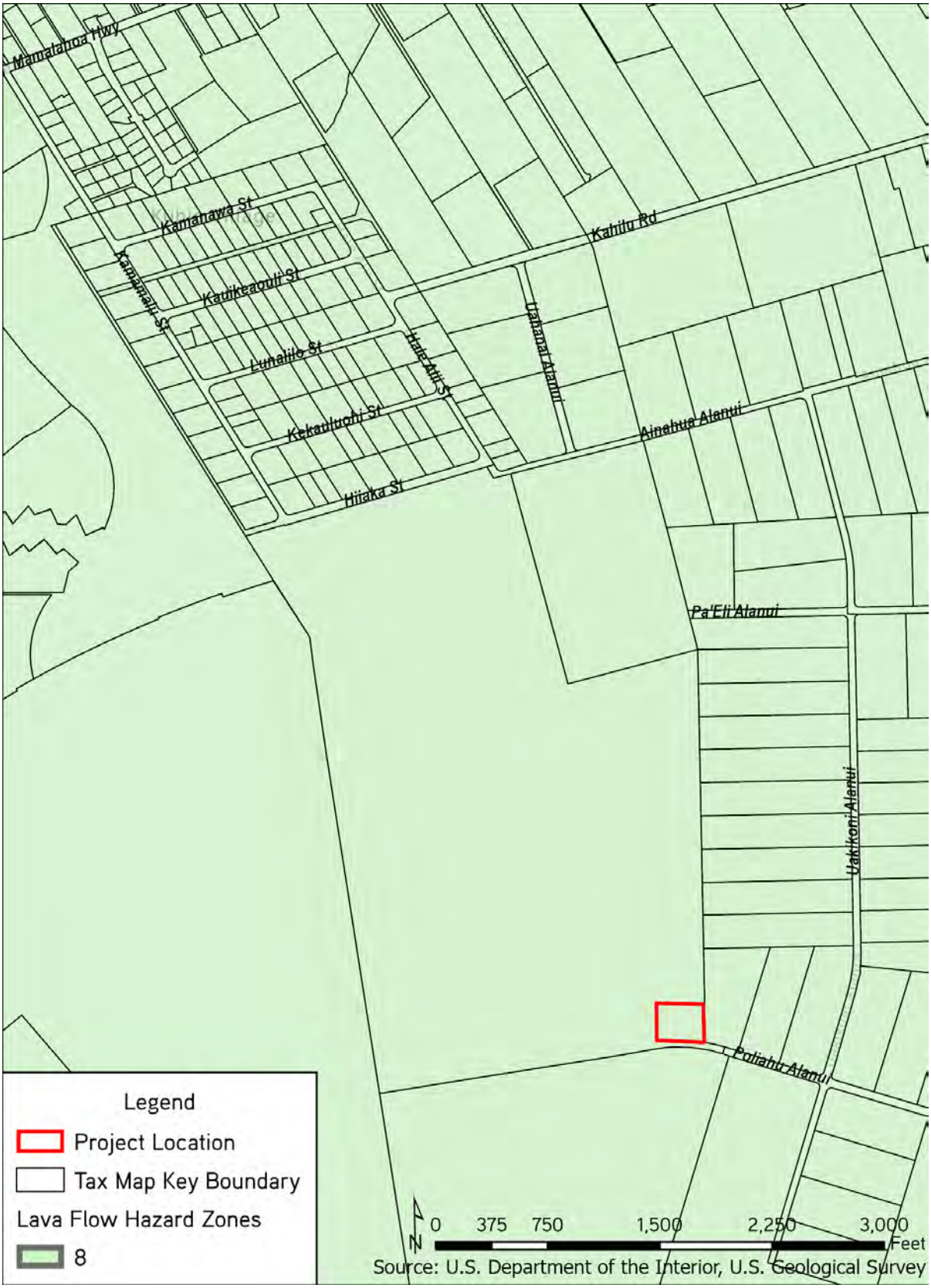


Figure 8: FEMA Flood Hazard Zones

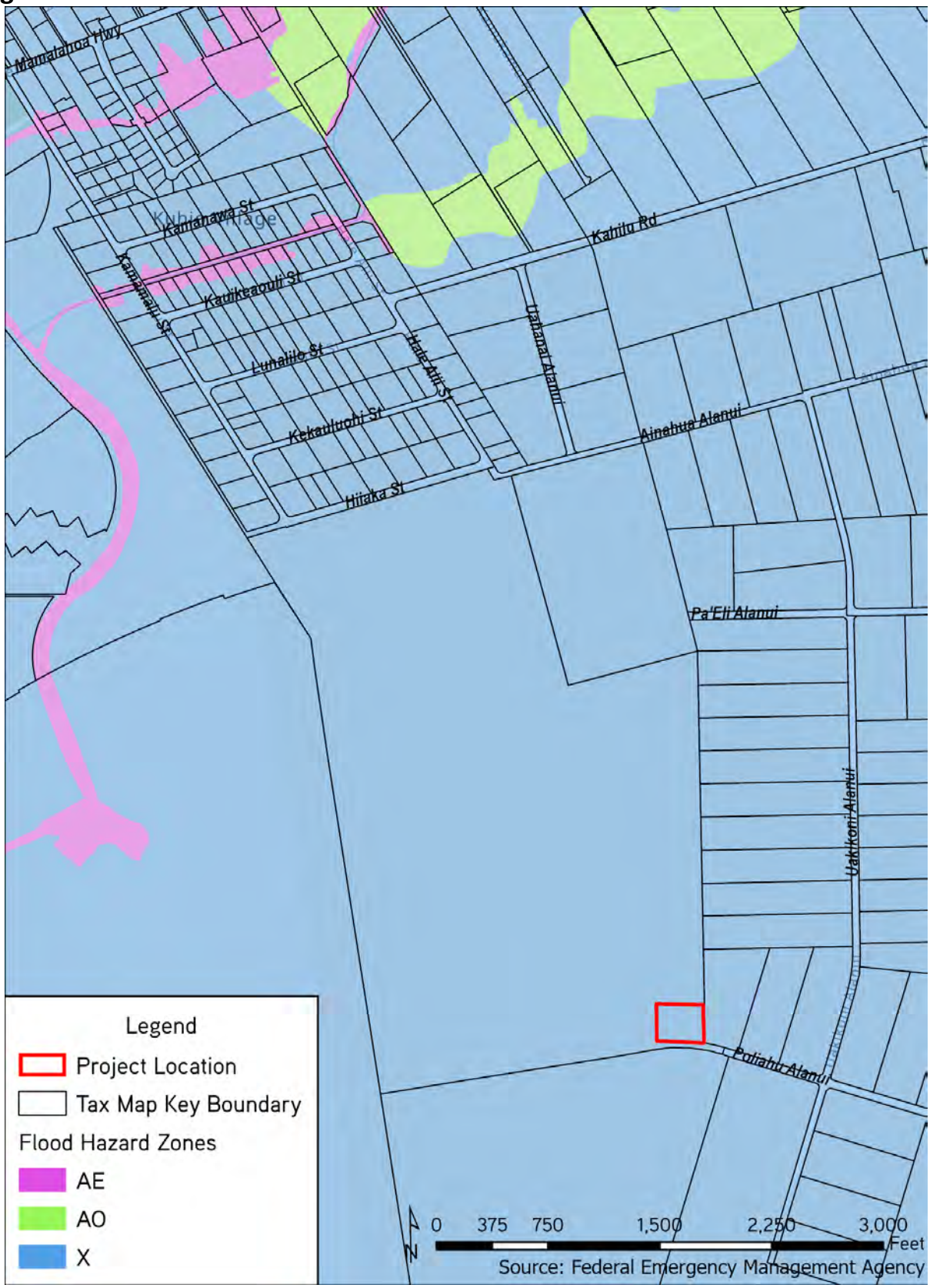
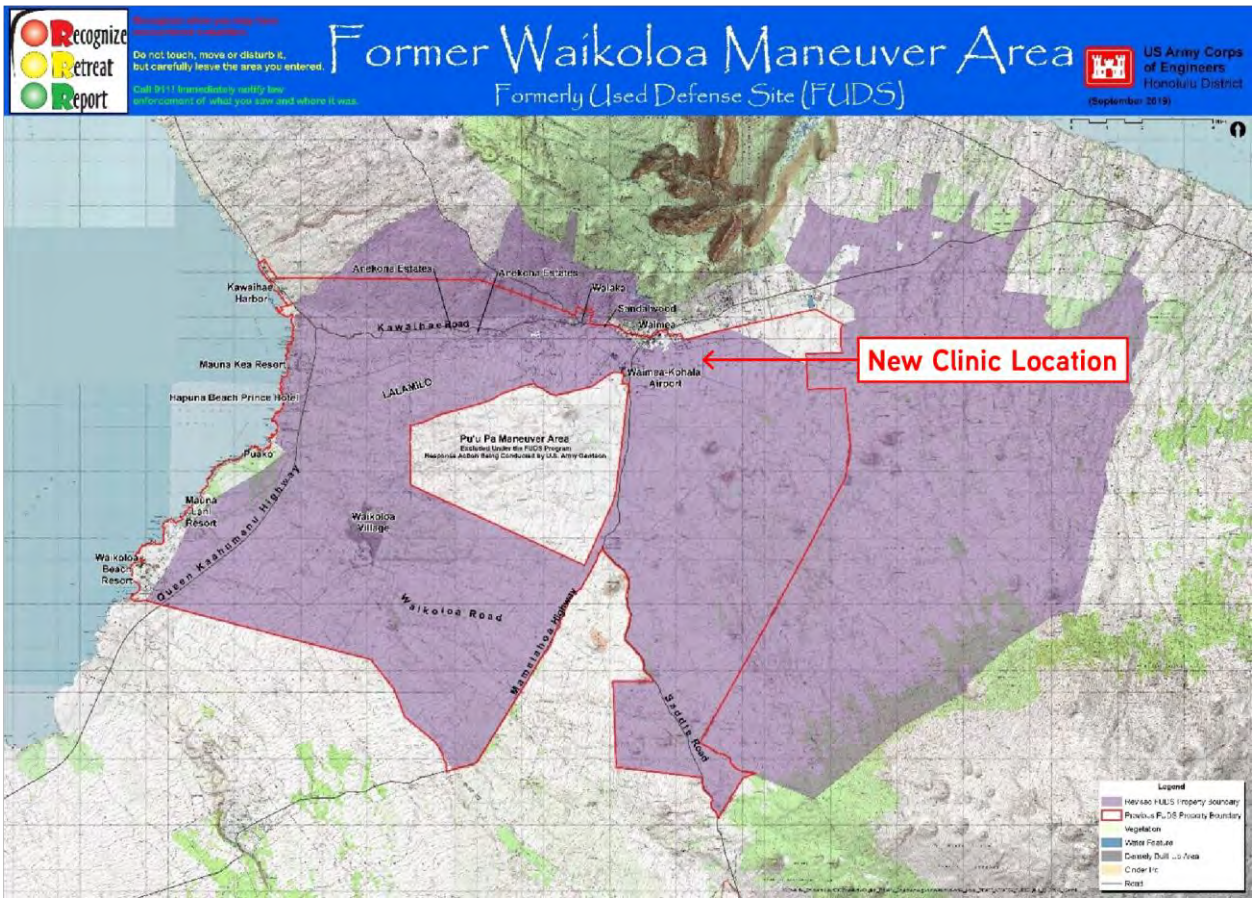


Figure 9: Waikoloa Maneuver Area



Source: USACE

Portions of the land were used as an artillery firing range on which live ammunition and other explosives were employed, while the remaining acreage was utilized for troop maneuvers and Camp Tarawa.

The military has conducted multiple munitions clearance efforts within the area, including in 1946 and 1954. Since 2009 to the present, focused Remedial Investigation/Feasibility Studies (RI/FS) have been conducted at individual munitions response sites within the WMA to identify the nature and extent of munitions and explosives of concern (MEC) (USACE, 2019). USACE, in conjunction with DHHL, have held community meetings in Pu‘ukapu to raise awareness regarding the potential for unexploded ordnance (UXO) contamination.

In the USACE’s Comprehensive Strategic Plan for Fiscal Year (FY) 2021 – FY 2022 for the Former Waikoloa Maneuver Area published in 2021, the WMA is divided into sectors based on type, quantity, location, and depth of UXO and munitions debris recovered; documented records of previous MEC finds; past, current and reasonably anticipated future land use; and input from local agencies, stakeholders, and the community. The project site is located within Sector 15 (see Figure 10). Based on the strategic plan, Sector 15 is classified as a “5” under Munitions

Response Site Prioritization Protocol and "3" under the State Management Action Plan Priority. Section 15 is one of eight sectors currently in the RI/FS stage.

Potential Impacts and Mitigation Measures

In general, geologic and flood conditions do not impose any major constraints on the project. The KOKO Clinic would be constructed in compliance with regulatory controls to meet County Building Code requirements.

Based on the 2015 FEA-FONSI for the WNR-CDI, project construction was proposed to follow safety procedures articulated by USACE, and a certified UXO removal technician was proposed to be utilized during project construction if it was deemed necessary after further consultation with USACE. As construction activities for the WNR-CDI have not been initiated at time of publication of this Final EA, it is recommended that USACE be consulted prior to the development of the KOKO Clinic site.

3.6 Flora and Fauna

3.6.1 Flora

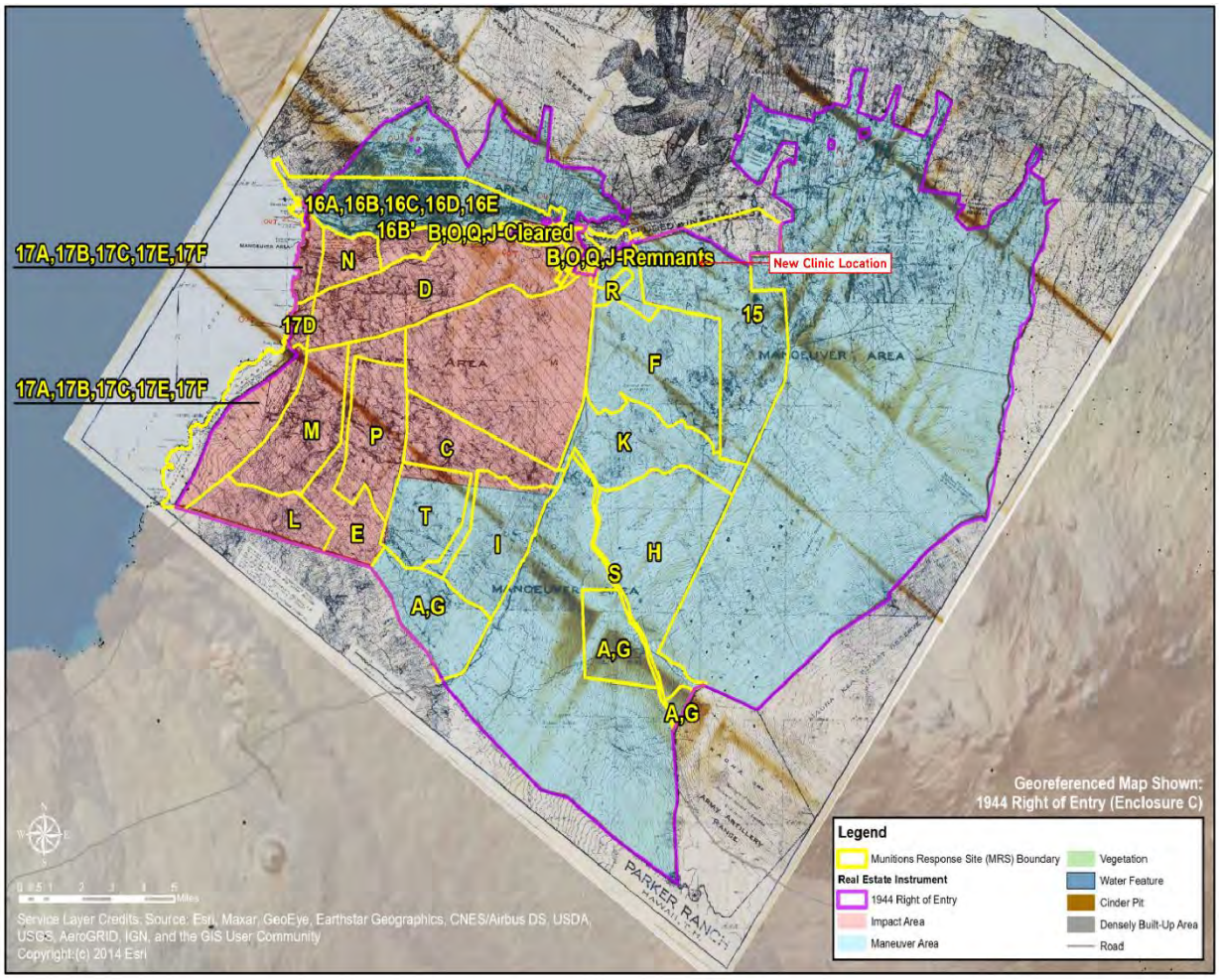
A Botanical Survey was conducted by AECOS in support of the 2015 FEA-FONSI for the WNR-CDI during November 2014; the project site is within the same boundary of the surveyed area for the 2015 FEA-FONSI. The survey found that the current vegetation of the site consists of pasture grasses and a limited number of herbaceous plants. All plants found during the site survey were non-native species, and no federally listed endangered or threatened species were found.

3.6.2 Fauna

Avian and mammalian surveys were conducted by AECOS in support of the 2015 FEA-FONSI for the WNR-CDI during November 2014; the project site is within the same boundary of the surveyed area for the 2015 FEA-FONSI. Based on the survey, the site is mainly vacant of mammalian species with the exception of domestic cattle (*Bos taurus)* found on the site and adjoining pastures, along with mice *(Mus musculus domesticus)* and wild pigs *(Sus scrofa)*. No Hawaiian hoary bats were detected during the survey given the lack of suitable roosting trees.

A total of 15 different bird species were recorded during station counts in 2014. One of the species detected, the Pacific Golden-Plover (*Pluvialis fulva),* is an indigenous migratory shorebird species that are found to return to Hawai'i and the Pacific during the fall and winter months. The remainder of avian species recorded were considered to be alien to Hawai'i; none of the species were listed as endangered, threatened or proposed for listing under the Federal or State endangered species programs. The list of bird species recorded during the survey are included in Table 1.

Figure 10: Waikoloa Maneuver Area Sectors



Source: USACE

Table 2: Faunal Species Observed Within and Surrounding the Project Site

Species	Common Name	Status
Francolinus pondicerianus	Gray francolin	Alien
Coturnix japonica	Japanese quail	Alien
Gallus sp.	Domestic chicken	Domesticated
Phasianus colchicus	Ring-necked pheasant	Alien

Bubulcus ibis	Cattle egret	Alien
Pluvialis fulva	Pacific golden-plover	Indigenous Migratory
Columba livia	Rock pigeon	Alien
Streptopelia chinensis	Spotted dove	Alien
Geopelia striata	Zebra dove	Alien
Zenaida macroura	Mourning dove	Alien
Alauda arvensis	Sky lark	Alien
Acridotheres tristis	Common myna	Alien
Passer domesticus	House sparrow	Alien
Euodice cantans	African silverbill	Alien
Lonchura oryzivora	Java sparrow	Alien

Although it was not detected during the 2014 survey, it is possible that the endangered endemic Hawaiian Petrel (*Pterodroma sandwichnesis*), and the threatened Newell's Shearwater *(Puffinus auricularis newelli)* may fly over the project area between the months of April to December. The Hawaiian goose (*branta sandvicensis*) may also be present in the vicinity of the proposed project area at any time of the year, although it was not observed during the survey.

U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC)

In an email dated July 13, 2022, the U.S. Fish and Wildlife Service (USFWS) provided a pre-assessment consultation comment for the project recommending the use of their online Information for Planning and Consultation (IPaC) system to obtain a species list and recommended avoidance and minimization measures to avoid adverse effects and take of federally listed species that may potentially be present within the project area (see Appendix A for a copy of the email). Based on the resource list generated for the project site, the following species listed in Table 3 are potentially affected by project activities in this location. It should be noted that this list is not an official species list from the USFWS and is only used as a resource per recommendation by the USFWS.

Table 3: USFWS IPaC Species List

Species	Common Name	Status
Bird Species		
Oceanodroma castro	Band-rumped Storm-petrel	Endangered
Loxops coccineus	Hawai'i Akepa	Endangered
Anas wyvilliana	Hawaiian Duck	Endangered
Fulica americana alai	Hawaiian Coot	Endangered
Branta sandvicensis	Hawaiian Goose	Threatened
Pterodrom sandwichensis	Hawaiian Petrel	Endangered
Himantopus mexicanus knudseni	Hawaiian Stilt	Endangered
Puffinus auricularis newelli	Newell's Townsend's Shearwater	Threatened
Insects		
Manduca blackburni	Blackburn's Sphinx Moth	Endangered
Flowering Plants		
Pleomele hawaiiensis	Hala Pepe	Endangered
Ochrosia haleakalae	Holei	Endangered
Ochrosia kilaueansis	Holei	Endangered

Haplostachys haplostachya	Honohono	Endangered
Portulaca villosa	Ihi	Endangered
Lipochaeta venosa	Nehe	Endangered
Portulaca sclerocarpa	Poe	Endangered
Solanum incompletum	Popolo Kū Mai	Endangered
Silene hawaiiensis		Threatened
Stenogyne angustifolia var. angustifolia		Endangered
Tetramolopium arenarium		Endangered
Mezoneuron kavaiense	Uhi Uhi	Endangered
Vigna o-wahuensis		Endangered
Ferns and Allies		
Microlepia strigose var. mauiensis		Endangered
Critical Habitats		
There are no critical habitats at this location.		

Potential Impacts and Mitigation Measures

The construction and operation of the KOKO Clinic is not anticipated to result in an adverse impact to native birds or the Hawaiian hoary bat. No plant, avian, or mammalian species that are protected or proposed for protection under the Federal or State of Hawai‘i endangered species programs were detected during the 2014 surveys.

Per the State Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) pre-assessment consultation letter dated July 27, 2022, it is recommended to use native plant species for landscaping that are appropriate for the area. In addition, DOFAW recommended consultation with the Big Island Invasive Species Committee during the design and construction of the project to help minimize the risk of spreading invasive species. Per the pre-assessment consultation comments submitted by the State Department of Transportation (HDOT), it is recommended that the proposed garden and surrounding landscaping should not include vegetation that will create a wildlife attractant, including vegetation that produces seeds, fruits, or berries, or provides dense roosting or nesting cover, in accordance with the Federal Aviation Administration (FAA) Advisory Circular 150/5200-33C, Hazardous Wildlife Attractants On or Near Airports.

However, to minimize the potential for any impacts, construction activities would implement the following avoidance, minimization, and conservation measures, as provided by the USFWS IPaC system's General Project Design Guidelines (see Appendix B) and DOFAW:

Minimization Measures for Plant Species

- Minimizing disturbance outside of proposed development
- Use of native plants, as appropriate and whenever possible, for landscaping purposes.
- Ensure all construction equipment, personnel, and supplies are properly checked and are free of contamination (weed seeds, organic matter, or other contaminants) before entering the project area.

Minimization Measures for Hawaiian Waterbirds

- In areas where waterbirds are known to be present, post and enforce reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- Incorporate the Service's Best Management Practices for Work in Aquatic Environments into the project design.
- If a nest or active brood is found:
    - Contact the Service within 48 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.

Minimization Measures for Hawaiian Goose or nene

- Do not approach, feed, or disturb nene.
- If nene are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with nene nesting behavior survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).
- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed project, or a previously undiscovered nest is found within the 150-foot radius after work begins.
- In areas where nene 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.

Minimization Measures for Hawaiian Petrel, Newell's Shearwater, and Hawai'i Distinct Population Segment of the Band-Rumped Storm-Petrel

- 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.

Minimization Measures for Hawaiian Hoary Bat

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Minimization Measures for Blackburn's Sphinx Moth

- Consult with the DOFAW Hawai'i Island Branch for further information about where the blackburn's sphinx moth may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by the moth.
- Remove any tree tobacco less than 3 feet tall during the dry time of year to avoid harm to the moth.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during, and after the proposed ground-disturbing activity. This monitoring for can be completed by any

staff, such as groundskeeper or regular maintenance crew, if they are provided with picture placards of tree tobacco at different life stages.

Minimization Measures for Hawaiian Hawk or ʻIo (Buteo solitarius)

- Survey surrounding area to ensure no Hawaiian Hawk nests are present, if trees are to be cut
- Hawaiian Hawk nests may be present during the breeding season from March to September.

3.7 Air Quality

The State of Hawaiʻi, Department of Health (DOH) operates air quality monitoring stations around the state. The nearest air quality monitoring station to the project site is the Waikoloa Station, which is approximately 16 miles southwest of the site. The Waikoloa Station measures for volcanic emissions. In the State, both Federal and State environmental health standards pertaining to outdoor air quality are generally met due to prevalent trade winds and the absence of major stationary sources of pollutant emissions.

Volcanic emissions of sulfur dioxide from the Kīlauea Volcano convert into particulate sulfate forming a volcanic haze, locally called “vog”. South Kohala receives small quantities of vog from winds blowing north from Kona, although in general it is kept away by dominant trade winds.

Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have a long-term impact on air quality. There would be short-term impacts associated with construction activities, including exhaust from increased traffic and fugitive dust from construction.

A dust control management plan would be developed, which would identify and address activities that have a potential to generate fugitive dust. Fugitive dust control can be accomplished by the establishment of a frequent watering program to keep bare dirt surfaces in construction areas from becoming significant sources of dust. In dust prone or dust sensitive areas, other control measures such as limiting the area that can be disturbed at any given time, applying chemical soil stabilizers, mulching and/or using wind screens may be necessary. Onsite mobile and stationary construction equipment also would emit air pollutants from engine exhausts, but no sensitive receptors are present. The contractor will be required to prepare a dust control plan during construction compliant with provisions of HAR, Chapter 11-60.1 Air Pollution Control and Section 11-60.1-33 Fugitive Dust.

Operations at the KOKO Clinic are not anticipated to be a source of greenhouse gas or other air pollutant emissions that would adversely impact the air quality of the surrounding environment.

The proposed project would comply with the DOH Administrative Rules §11-39 Air Conditioning & Ventilating for the installation of the air conditioning system at the new KOKO Clinic, which would require a permit for installation and operation of an air conditioning or ventilating unit.

3.8 Historic and Archaeological Resources

An Archaeological Inventory Survey (AIS) was conducted in support of the 2015 FEA-FONSI for the WNR-CDI by Keala Pono Archaeological Consulting, LLC (KPAC). The AIS was conducted to determine the presence, nature, and extent of archaeological resources in the project area.

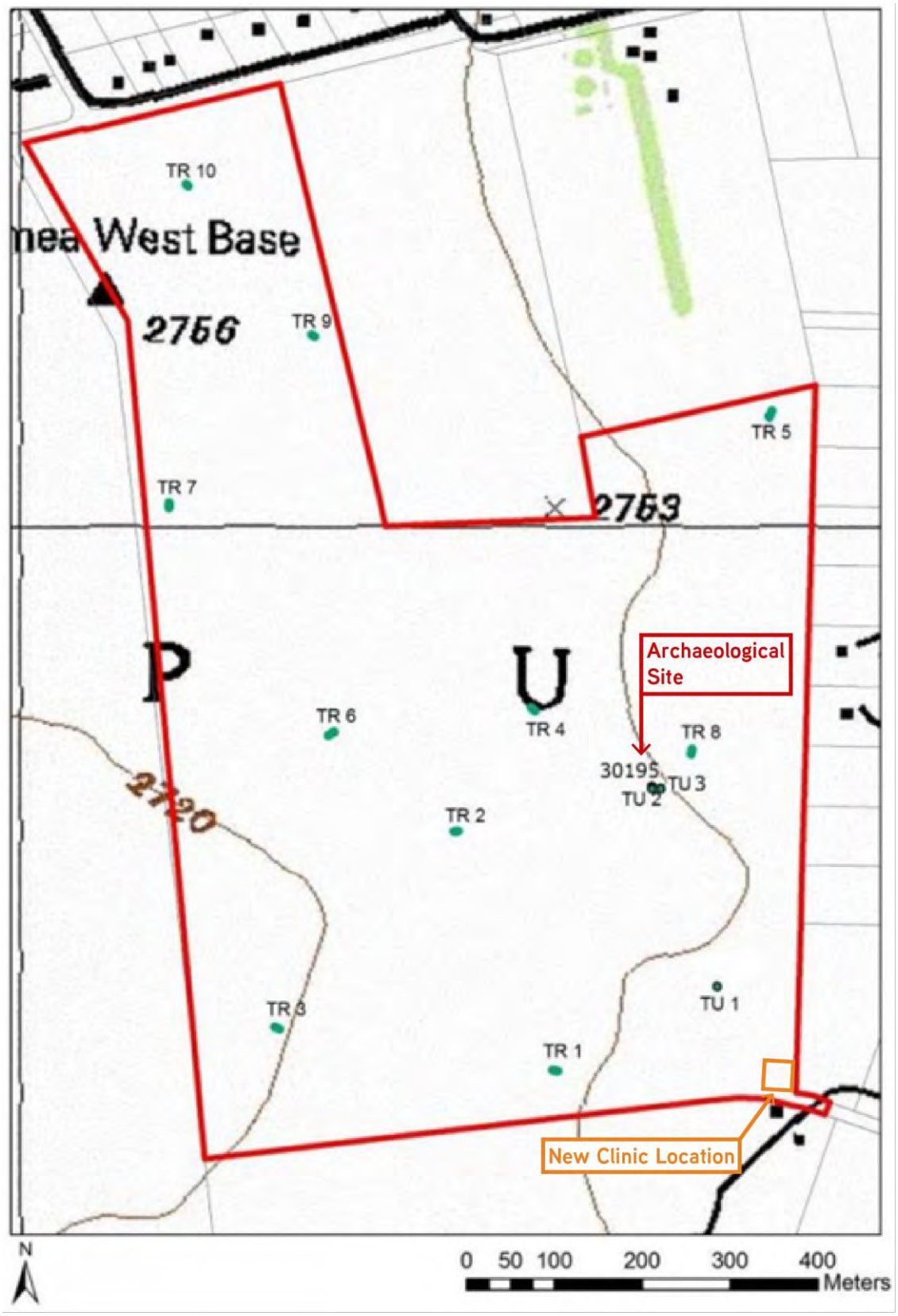
A surface survey was conducted by KPAC by walking 16 – 26 feet transects throughout the project area. Results of the surface survey revealed one archaeological site, which was then mapped, documented, and excavated. Controlled test units were excavated by hand at the site. A total of 10 trenches in arbitrary locations were mechanically excavated for the purpose of sampling the subsurface conditions (see Figure 11). No cultural remains, either prehistoric or historic, were encountered in any of the trenches. Stratigraphy consisted entirely of natural deposits with bedrock below.

The results of the AIS indicated that the WNR-CDI project area consisted of one site (Site 30195). This site is not within the KOKO Clinic project area.

Potential Impacts and Mitigation Measures

Based on the findings of the AIS conducted for the 2015 FEA-FONSI for the WNR-CDI, the proposed KOKO Clinic is not anticipated to adversely impact any known or found archaeological sites. Subsurface properties associated with former traditional Hawaiian activities, such as artifacts, cultural layers, and burials may be present despite the historical pasture use in the area. For this reason, personnel involved in the project should be informed of the possibility of inadvertent cultural finds and should be made aware of the appropriate notification measures to follow. If any previously unidentified sites or remains are encountered during site work and construction, work in the immediate area shall cease. An archaeologist from SHPD shall be notified and work in the area would be suspended until further recommendations are made.

Figure 11: Location of Trench Sites



3.9 Cultural Resources

A Cultural Impact Assessment (CIA) was conducted in support of the 2015 FEA-FONSI for the WNR-CDI by KPAC, which consisted of background research and oral interviews.

The project site is located in the ʻili (land section or subdivision of an ahupuaʻa) of Puʻukapu, in the ahupuaʻa of Waimea. Puʻukapu means "sacred hill", and Waimea means "reddish water". Through recent history, this area of Waimea has been a part of the grazing lands of Parker Ranch.

Traditional Hawaiian Background

Waimea is known to be a place where famous historical battles over the governance of land were fought. Prior to Western contact in the early 18th century, Aliʻinui Alapaʻinui ruled all of Hawaiʻi island. Internal conflicts led to the division of the island, leaving Alapaʻinui to rule the northern districts. Following his death, his son Keaweʻōpala inherited his seat, and was challenged by Kalaniʻōpuʻu, who ruled the southern lands, for control of the northern lands. Kalaniʻōpuʻu won and assumed control of all of Hawaiʻi island. After Kalaniʻōpuʻu's death, his son Kiwalao governed the land until he was challenged by and lost to Kamehameha. Following that battle, the governance of Hawaiʻi Island was divided into three parts; Kona, Hilo, and the districts of Kaʻu and Puna.

Traditional and Historic Land Tenure and Use

The Waimea environment was naturally suited for intensive upland farming, which supported a sizable village population. At the time of Captain Cook's arrival in 1778, there were an estimated 23,000 or more natives living in the Kohala district. The area is noted for having cultivated ʻuala and dryland taro.

After the arrival of foreigners to Hawaiʻi, Waimea underwent rapid transformation with the presence of ranchers, whalers, missionaries, sandalwood traders, and other agricultural businessmen. Waimea's rich ranching history stems from the late 18th century when Captain George Vancouver arrived on Hawaiʻi Island. Captain Vancouver brought gifts of cattle, goats, and sheep for Kamehameha I, who placed a restriction on the livestock; anyone caught harming the animals could be persecuted by death. As a result, the population of cattle, goats, and sheep multiplied across Waimea and the rest of Northern Hawaiʻi Island.

After the restriction on cattle was lifted in 1815, Kamehameha appointed John Palmer Parker to be his authorized cattle hunter. The hunting of animals and processing and production of beef products became a rising industry. In 1832, the first of numerous Mexican cowboys arrived in Hawaiʻi to lend their expertise and skills in handling cattle. In 1847, the Parker Ranch was established, with the lands in Waimea, Kawaihae, and South Kohala becoming centers of the cattle industry.

Overlapping with the arrival of foreign sailors, whalers, and cowboys were the arrival of Christian missionaries. One of the early missionaries was Lorenzo Lyons who arrived in the

islands in 1832, and later erected his church in Waimea. His description of the natural environment of Waimea match other oral accounts of the area, which describe Waimea has being filled with wind, rain, and running water. Reverend William Ellis offered another historical account of Waimea, documenting the agricultural abundance and the fertile characteristic of the soil and access to water.

The proposed project site is within the lands known as Puʻukapu, which are owned by DHHL. DHHL was established through the Hawaiian Homes Commission Act of 1920, championed by Prince Jonah Kūhiō Kalanianaʻole with the primary goal of providing for the rehabilitation of the Native Hawaiʻi people through a homestead program. The Puʻukapu Homestead tract is the largest subdivision on Hawaiʻi Island with over 11,000 acres.

By 1943, the U.S. military opened Camp Tarawa in Waimea through a lease from Parker Ranch. Approximately 91,000 acres was used for military training. The camp hosted 50,000 troops between 1943 to 1945, and was abandoned after the end of World War II in 1946. The infrastructure deteriorated and the lands were reabsorbed by Parker Ranch until the lease expired and the land was turned over to DHHL. Surface clearing of UXO was conducted in 1946 and 1954 for Camp Tarawa and other areas in the WMA.

Potential Impacts and Mitigation Measures

Based on research conducted by KPAC, no previously identified historic properties exist in the WNR-CDI project site, which also encompasses the KOKO Clinic site. Although the land was part of a contiguous landscape impacted by the historical land tenure transitions, there does not appear to be any specific or known cultural practices being actively conducted within or near vicinity to the project area. It is anticipated that the proposed project would not have an adverse impact on significant cultural resources.

3.10 Socio-Economic Conditions

According to the 2021 State of Hawaiʻi Data Book produced by the State Department of Business, Economic Development and Tourism (DBEDT), the population in South Kohala as of 2020 is 19,310. Within the census designated place of Waimea, the population is 10,969, and within the Puʻukapu Homestead the population is 936.

Businesses in the South Kohala district range from service industries, wholesale and retail trade, government, ranching, diversified agriculture, manufacturing, and construction. Waimea exhibits a higher proportion of service occupations, particularly within the food, accommodation, and entertainment industries, reflecting the importance of tourism for the area.

Potential Impacts and Mitigation Measures

The project would create short-term benefits as a result of design and construction employment and would create jobs for local construction personnel. Local material suppliers

and retail businesses may also be expected to benefit through the proposed project's construction activities.

The operations of the KOKO Clinic would expand to increase their patient capacity, which is anticipated to result in an additional five full-time positions. The clinic's increase in capacity would benefit the Pu'ukapu homestead community and the residents of Waimea by providing additional medical services. The KOKO Clinic's Ulu Laukahi Program would be a primary focus of expansion, which would focus on addressing chronic disease care management. The socio-economic impacts of the proposed project would be positive for the local community, homestead beneficiaries, as well as the County of Hawai'i and the State.

3.11 Viewplanes

The project site is located on the edge of a developed urban residential neighborhood on vacant and undeveloped agricultural land. Existing views from the site consist of the surrounding open space, the KOKA Charter School, the Kohala mountains, and the slopes of Mauna Kea.

Section 7.5.6 of the 2005 County of Hawai'i General Plan identifies sites and view planes of natural landforms, and describes the scenic views of the Waimea region: "The Kohala Mountains provide a backdrop of rolling hills and volcanic cones covered with pastures kept green by fog, fine mist, and rain. Mauna Kea provides a distant but dramatic mass as it rises steeply above the plateau. Viewed at a distance, Waimea town lies nestled at the base of the Kohala Mountains…The pastures and puu immediately above Waimea Town have been identified as a vista of exceptional natural beauty."

Potential Impacts and Mitigation Measures

The proposed project is not anticipated to significantly impact the views in the area. The views of the open pastoral landscape would be minimally affected by the new project elements; however, the new clinic would maintain the same character, mass and height as surrounding buildings in the area. Design details and landscaping would be utilized to maintain the visual character of the project site.

3.12 Infrastructure

In support of the 2015 FEA-FONSI for the WNR-CDI, a Preliminary Engineering Report was completed by Group 70 International which assessed the anticipated infrastructure needs for the development.

3.12.1 Water

There is currently no water system servicing the site. Potable water service in the general area is provided by the County Department of Water Supply's (DWS) 4.0 million gallons (MG) water reservoir at the water treatment plant with a spillway elevation of 3,052 feet above mean sea

level (msl). Based on the DWS' pre-assessment consultation letter dated July 13, 2022 (see Appendix A), the project parcel is currently serviced by a combination 8-inch by 4-inch meter, which is allocated 25 units of water, or 10,000 gallons per day. DWS indicated that additional water is unavailable at this time.

Potential Impacts and Mitigation Measures

DWS has indicated that the project parcel does not have additional water capacity at this time. To service the project site, extensive improvements and additions would be required, which may include, but not be limited to, source, storage, booster pumps, transmission, and distribution facilities. DWS also indicated that the project may enter into a Water Development Agreement with the Water Board, in accordance with Rule 5 of the Department's Rules and Regulations, to obtain a water commitment from the Department for the proposed development. The Agreement would establish, amongst other things, the scope of the necessary water system improvements, facilities charges to be paid, and a timeline for construction. The water system improvements required by the Agreement would need to be completed and conveyed to the Water Board before granting water service to the project.

In the 2015 FEA-FONSI, it was proposed that the WNR-CDI development use agriculture water from the Waimea Irrigation System, which is managed by the State Department of Agriculture (DOA), to be treated and distributed on-site for potable use. The system would be certified through the DOH as a public water system. As the Waimea Irrigation System experiences low pressure during peak flows, a tank farm was proposed to be constructed so that water from the system would fill on-site tanks during off-peak hours to meet potable and non-potable water demands without adversely affecting the irrigation system. As the KOKO Clinic would be relocated to the WNR-CDI's site, it is anticipated that it would be serviced by the same water system. It should be noted that the water system and proposed developments indicated in the 2015 FEA-FONSI have not been developed as of the date of publication of this Final EA.

Further coordination with the DWS and DOA is required to determine the best possible solution to provide potable water to the project site.

In addition to establishing a potable water system, the project would be required to comply with Chapter 18 of the 2018 Hawai'i State Fire Code and Chapter 26 of the Hawai'i County Code to provide for the COH Fire Department access and water. Water efficient fixtures would be installed, and water efficient practices implemented throughout the KOKO Clinic to reduce the increased demand on freshwater resources. Landscape irrigation conservation BMPs endorsed by the Landscape Industry Council of Hawai'i would also be used as applicable to the project.

3.12.2 Wastewater System

The majority of Waimea relies on Individual Wastewater Systems (IWS) or a Wastewater Treatment Works. There are no existing municipal sewer systems near the project site.

Potential Impacts and Mitigation Measures

As the KOKO Clinic would be relocated to the development proposed by the WNR-CDI, the wastewater system proposed in the 2015 FEA-FONSI is anticipated to service the project site. Wastewater flows produced from the WNR-CDI development would be handled through a Wastewater Treatment Works, as this would be considered to comply with the FAA Advisory Circular 150/5200-33C Hazardous Wildlife Attractants On or Near Airports, which regulates developments within the proximity of airports. The project site is located near the Waimea-Kohala Area of Operations delineation where new wastewater facilities are typically not permissible due to concerns that such facilities could attract wildlife to the area. However, an enclosed underground system can be designed whereby treated effluent for reuse purposes such as irrigation could be distributed evenly through the project area as to not create ponding areas.

All wastewater collection and treatment components would be designed in compliance with HAR Section 11-62 relating to Wastewater Systems. Wastewater re-use is the most viable option for the proposed project, and can be utilized if designed in accordance with DOH Guidelines for the Treatment and Use of Recycled Water.

3.12.3 Drainage

The County's storm drainage system serving the Waimea area consists of a network of storm drainage pipes and culverts. Storm runoff collected by these pipes and culverts is either disposed of in sumps, drywells, or injection wells. The existing site is unoccupied and has no drainage system.

Potential Impacts and Mitigation Measures

Construction of the KOKO Clinic and parking lot would change the velocities, directions and quantities of the water drainage. The flow pattern of excess rain runoff would need to be controlled to prevent flood damage. The project would incorporate efficient design to moderate stormwater runoff such as increased pervious surfaces, use of pavers, and landscaping to absorb water runoff.

3.12.4 Electrical and Communications

Electrical power on Hawai'i Island is provided by Hawaiian Electric Light Company. Hawai'i Telecom and Sandwich Isles Communications, Inc. provide telephone and telecommunications services in the area.

Potential Impacts and Mitigation Measures

The 2015 FEA-FONSI for the WNR-CDI proposed that electricity would be provided on-site by the anaerobic biodigester. The biodigester will use waste from agricultural uses, municipal solid waste, and wastewater to fuel the anaerobic digestion process. During the process, a solid output, called digestate, can be produced and used in soil or as fertilizer. Anaerobic microbes

used in the digestion process also produce large quantities of biogas, which contains methane and carbon dioxide, that can be used as a renewable biofuel to produce electricity. It was estimated that the digester could provide sufficient fuel for 12 hours per day of 450 kilowatt-hour (kwh) generation and 12 hours per day of 225 kwh production, enabling the generation facility to provide 450 kwh during peak power demand periods. Energy produced by the biodigester would be fed and regulated at a distribution hub located in the central portion of the WNR-CDI development. In addition, the anaerobic biodigester would be properly enclosed and maintained to prevent any wildlife from being attracted to the area, as this could pose a potential hazard to aircraft operations at the nearby Waimea-Kohala Airport.

In the event that the biodigester is out of service for an extended period of time, backup storage of propane as well as provisions to hook up to a propane truck would be available at the biodigester facility for continuous electricity generation. It is anticipated that the KOKO Clinic would connect to the same electrical system and service being provided by the WNR-CDI's biodigester.

3.12.5 Traffic

As part of the 2015 FEA-FONSI for the WNR-CDI, a Traffic Impact Analysis Report (TIAR) was completed by Traffic Management Consultant, Inc. in 2014. For this Final EA, an update to the 2014 TIAR was conducted by SSFM International, Inc. to account for the addition of the KOKO Clinic (see Appendix C). The 2022 TIAR supplements the previous 2014 TIAR and assessed the impacts of the proposed KOKO Clinic relocation on Future With Project analysis; the "Future Without Project" analysis will include the project-related trips from the 2014 TIAR using updated background growth rates and intersection turning movement counts taken in September 2021. In compliance with Hawai'i County Code Chapter 25, Section 25-2-46 Concurrency Requirements, traffic impacts were analyzed for the years 2026, 2031 and 2041, which are future five, ten, and 20 year timelines from the existing year of analysis (2021).

The existing roadways analyzed in the 2022 TIAR include Māmalahoa Highway, Kamamalu Street, Hiiaka Street, Ainahua Lanaui Street, Mana Road, Uakikoni Alanui, and Poliahu Alanui. The portion of Māmalahoa Highway included in the analysis between Kamamalu Street and Mana Road falls under the County of Hawai'i's jurisdiction; State jurisdiction of Māmalahoa Highway starts from west of Kahawai Street (Mile Post 57.800) continuing west, and Kipuupuu Street (Mile Post 52.090) continuing east. Four existing study intersections were identified and analyzed to consider the impacts from the proposed project (see Figure 12); Māmalahoa Highway at Kamamalu Street, Hiiaka Street at KOKA Charter School Main Driveway, Ainahua Alanui Street at KOKA Charter School Eastern Driveway, and Māmalahoa Highway at Mana Road.

Potential Impacts and Mitigation Measures

As proposed in the 2015 WNR-CDI TIAR, a new road would be constructed that branches south off of Hiiaka Street to serve as the primary access to the WNR-CDI development. The

intersection of Hiiaka Street and the new road is proposed to be an unsignalized three-way intersection; the new road would have two lanes.

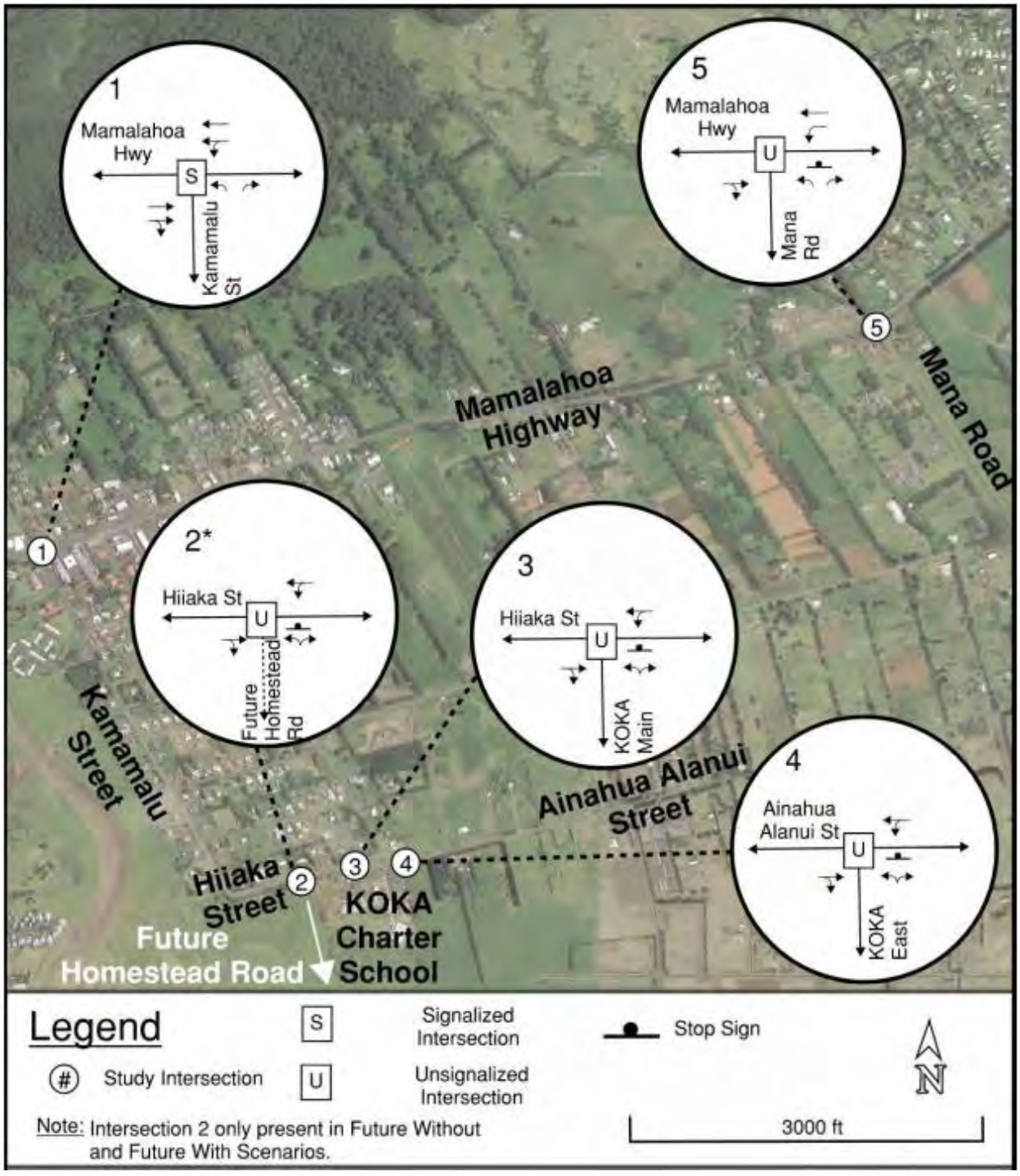
An access point through the west end of Poliahu Alanui road, west of the intersection with Uakikoni Alanui road, will be used in the interim as temporary access. When the new road is constructed, the temporary access point will become the secondary access point. The KOKO Clinic is anticipated to generate 30 to 37 trips in the AM and PM peak hours, respectively. The low number of trips are not expected to have a significant impact on the surrounding roadway network, therefore a separate analysis of the secondary access was not conducted.

The overall size and traffic impact of the KOKO Clinic is minimal compared to the other land uses proposed in the 2015 WNR-CDI TIAR. At the intersection of Māmalahoa Highway and Mana Road, the northbound right approach will worsen to level of service (LOS) E in the Future With Project analyzed year of 2026, and further to LOS F in Future With Project year 2041. The northbound left turn also operates at LOS E during the Future With Project year 2041. Due to the worsening LOS, this intersection satisfied the Peak Hour Traffic Signal Warrant to install a traffic signal by the Future With Project year 2026. However, even with the installation of a traffic signal, the eastbound approach in the PM peak hour operates near capacity in 2041 with or without the proposed project, which is likely due to the forecasted regional growth. It is therefore recommended that this intersection be studied in the future in collaboration with HDOT to assess the need for a traffic signal.

At the intersection of Māmalahoa Highway and Kamamalu Street, the northbound left turn worsens to LOS E during the PM peak hours in 2041 with or without the proposed project. Based on the future projected volumes, it is anticipated that up to nine vehicles per cycle would be queued at this approach to the intersection. It is recommended that the signal timing at the intersection be monitored and adjusted if needed.

It is anticipated that there will be no net change in traffic volume to the west of Kamamalu Street and to the east of Mana Road, resulting in no net change to the traffic volume of the State-owned portion of Māmalahoa Highway.

Figure 12: Existing Study Intersections and Lane Configurations



Source: SSFM International

3.13 Airport Easement

Based on the 2015 FEA-FONSI for the WNR-CDI, the project site is not within the aviation easement for the Waimea-Kohala Airport (see Figure 13). Building height limitations in the aviation easement are dependent upon the site location in relation to the distance from the runway. Per HAR §19-12-7, building height limitations within the aviation easement would be limited to a range of 13 to 51 feet dependent on the specific area elevations and distance from the runway.

Potential Impacts and Mitigation Measures

The proposed KOKO Clinic will be one-story tall and would fall within the range for building height limitations. As identified in Table 1, a FAA Form 7460-1 Notice of Proposed Construction or Alteration would be required for the project.

3.14 Noise

Primary noise sources surrounding the project site are related to traffic and adjacent residential and airport activities. Noise primarily comes from the Māmalahoa Highway and the Waimea-Kohala airport. Due to the project site's close proximity to the Waimea-Kohala Airport, the site may be subject to single event noise and vibrations resulting from occasional aircraft flight operations over the area. However, in general the project site is generally quiet due to the surrounding rural uses for residential and agricultural activities.

The primary noise receptors in the surrounding environment are farm dwellings and residences in DHHL's Pu'ukapu Tract, residences located north of the project site, and the KOKA Charter School. The KOKA Charter School is located closest to the site approximately 0.15 miles away.

Potential Impacts and Mitigation Measures

Short-term impacts to the ambient noise levels of the surrounding environment are anticipated from construction activities. However, these impacts would be temporary and would occur during the day. Mitigation measures and best management practices (BMPs) to minimize construction noise would include, but not be limited to, using mufflers on diesel and gasoline engines, using properly tuned and balanced machines, etc. A noise permit application would be submitted to DOH, and all construction activities would comply with HAR §11-46 Community Noise Control.

The KOKO Clinic is not anticipated to substantially increase the ambient noise levels within the surrounding environment. Noise anticipated to be generated by the clinic would be related to incoming/outgoing vehicular traffic and the building's mechanical equipment (i.e. air conditioning and ventilation equipment). These noise emissions are not anticipated to be readily perceptible by the nearby KOKA Charter School.

Figure 13: Aviation Easement



Source: Group 70 International

3.15 Public Facilities and Services

3.15.1 Hospitals, Clinics, and Urgent Care

The North Hawai'i Community Hospital operated by Queen's Health Systems is the only hospital in the Waimea region, and is one of six hospitals on the island of Hawai'i. Within proximity to the project site are two clinics and one urgent care facility; the Queen's Medical Center Primary Care Clinic, Kaiser Permanente Waimea Clinic, and the Waimea Urgent Care. Of the two clinics located within proximity to the project site, the Queen's Medical Center Primary Care Clinic is the only clinic that also offers Native Hawaiian Health services, which includes customized care for patients managing chronic diseases and individual and group therapy.

3.15.2 Police

The COH Police Department's Waimea Station is located approximately 0.7 miles away from the project site on Kamamalu Street. The Waimea Station services the South Kohala District, which is approximately 688 square miles, and is within the Police Department's Area II – West Hawai'i. During FY 2020 – 2021, the South Kohala Patrol Division were assigned a total of 2,491 criminal calls for service, and 5,652 non-criminal calls for service. As four major State highways and numerous County thoroughfares traverse the South Kohala District, the Waimea Station's primary task is traffic enforcement.

3.15.3 Fire

The COH Fire Department's Waimea Station is located near the Police Department's Waimea Station on Kamamalu Street, approximately 0.7 miles away from the project site.

3.15.4 Schools

The State of Hawai'i, Department of Education (DOE) operates the State's public school system. The proposed project is within the DOE's Hawai'i District, Honoka'a-Kealakehe-Kohala-Konawaena Complex Area, within the Honoka'a Complex specifically. The DOE's Waimea Elementary School is within proximity to the project site (see Figure 14).

The State Public Charter School Commission is the State's charter school authorizer. The Commission is made up of nine members that are appointed by the State's Board of Education (BOE). The Waimea Middle Public Conversion Charter School and the KOKA Charter School are within proximity to the project site (see Figure 14).

Two independent schools are also located near the project site. Parker School is a non-profit, independent, co-educational day school that serves grades kindergarten to 12th grade. The Waimea Country School is an independent elementary day school that serves children ages four to twelve.

3.15.5 Parks and Recreation

The Waimea Civic Center Park, located near the South Kohala District Court on Māmalahoa Highway, is the closest park/recreational facility to the project site. Other parks and recreational facilities within proximity to the project site are the Waimea District Park, Waimea Park and Community Center, Ulu La'au (Waimea Nature Park), Anuenue Playground, and the Waimea Skatepark.

Potential Impacts and Mitigation Measures

The proposed project is not anticipated to adversely impact public facilities and services in the area. The proposed KOKO Clinic is anticipated to have a positive impact for residents in the Waimea district as well as Pu'ukapu Homestead beneficiaries as it would provide an increase in medical service capacity. This benefit would result in added convenience and access to medical services for the beneficiaries of Hawaiian Home Lands and Waimea residents.

3.16 Potential Cumulative and Secondary Impacts

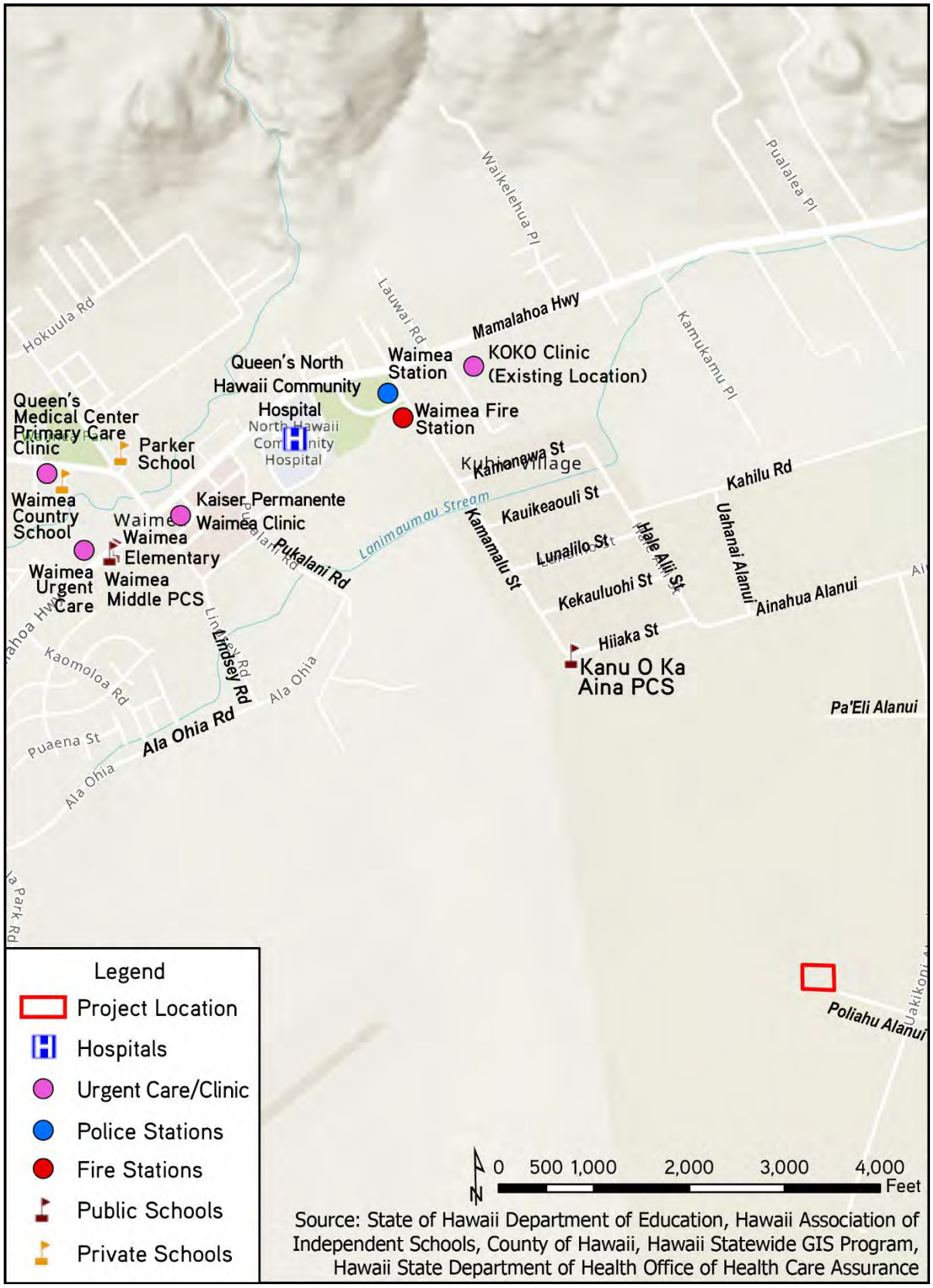
Cumulative impacts are impacts which result from the incremental effects of an activity when added to other past, present, and reasonably foreseeable future actions, regardless of what agency or person undertake such actions. The proposed KOKO Clinic is not anticipated to generate substantial cumulative impacts. The KOKO Clinic is proposed to be located in the planned development of the WNR-CDI; the land uses and potential impacts of the WNR-CDI have been assessed in the 2015 FEA, which declared a FONSI determination. In addition, the

proposed KOKO Clinic is not substantially greater in size or operations in comparison to the clinic's existing operations.

The KOKO Clinic's relocation and upgrade in facility size and capacity would better prepare the Waimea region for anticipated growth as more homestead lots are awarded. The KOKO Clinic envisions serving up to 800 patients in anticipation of the future growth from awarded homestead lots.

In addition, the proposed project would support Hawaiian Homes Commission Act beneficiaries by creating jobs for current and future beneficiaries, as well as providing additional capacity to provide medical services to the larger region of North Hawai'i. The relocation and upgrade of the KOKO Clinic would also allow for the expansion of the clinic's Ulu Laukahi Program, which was created to help Native Hawaiians achieve a longer and healthier lifestyle by providing the necessary tools and lifestyle changes needed to mitigate the factors that contribute to the need for emergency interventions. Expanding the Ulu Laukahi Program would allow the clinic to provide more services and treat more Native Hawaiians in the North Hawai'i region.

Figure 14: Public Facilities and Services



4.0 RELATIONSHIP TO PLANS AND POLICIES

4.1 Federal Aviation Administration

The Federal Aviation Administration (FAA) administers standards and criteria to ensure safe, efficient use and preservation of the navigable airspace surrounding airports. Any construction or alteration to a structure that is more than 200-ft above ground level, or "exceeds an imaginary surface extending outward and upward" at a slope of "50 to 1 for a horizontal distance of 10,000-ft from the nearest point of the nearest runway" of an airport, requires the filing and submittal of FAA Form 7460-1 Notice of Proposed Construction or Alteration. The project site is located approximately 4,500 ft. northeast of the Waimea-Kohala Airport runway. To ensure compliance with the FAA rules and regulations, the FAA Form 7460-1 will be filed for FAA review and determination.

Should the KOKO Clinic propose the installation of a solar energy photovoltaic (PV) system, a glint and glare analysis will be prepared as required by the FAA for all solar energy PV systems near airports. A separate FAA Form 7460-1 would also be prepared specifically for the solar energy PV system.

In addition, the FAA has published criteria under 14 Code of Federal Regulations (CFR), Part 150 to assess land use compatibility in and around the vicinity of airports. The *Waimea-Kohala Airport (MUE) Noise Compatibility Program (NCP)*, describes current and future noncompatible land uses based upon the parameters established in Federal Aviation Regulation (FAR) Part 150*, Airport Noise Compatibility Planning (November 1998, rev. December 1999, August 2000)*. The NCP recommends a total of seven measures to prevent the introduction of additional noncompatible land uses and to reduce the effect of the noise generated at the airport. The following measures were identified to be applicable to the proposed project:

1. Comprehensive Planning and Zoning (Page 7-2, Sec. 7.2.2)

Description of element: *Use comprehensive planning and zoning to maintain compatible land use. Prohibit zoning changes which will change a compatible land use into an incompatible land use. However, if the community determines that there is a need for new housing in an area exposed to noise levels of 60 to 65 Yearly Day-Night Average Sound Levels (DNL), then the County of Hawai'i , and the State of Hawai'i-Land Use Commission, should require an avigation easement to State Department of Transportation, Airports Division (DOTA) and acoustical treatment to maintain an interior value of 45 DNL. DOTA should request that new residential developments have lesser densities (i.e. larger size lots), since visual flight rules (VFR) aircraft flight tracks can vary greatly and overflights may be more common. In addition, the DOTA should pursue an "Airport zone" within the airport environs to address height restrictions, noise and other DOTA and FAA concerns.*

FAA Action: APPROVED: *This measure is considered to be within the authority of the State of Hawai'i and the County of Hawai'i. FAA prefers that no noncompatible development take place*

within the noise exposure map contours. Remedial noise mitigation for new construction that takes place after October 1, 1998, would not be approved under Part 150.

2. Avigation Easements (Page 7-3, Sec. 7.2.2)

Description of element: *Acquiring avigation easements from landowners that presently have compatible land but may become incompatible due to future development. The acquisition of avigation easements will maintain the operational characteristics of the Airport. The key areas are those lands directly under the aircraft flight tracks.*

FAA Action: APPROVED. *This approval does not constitute a commitment by the FAA to provide federal financial assistance for this project. FAA prefers that no noncompatible development take place within the noise exposure map contours.*

Discussion: The proposed project may fall within the 55 DNL Contour, as depicted in the 2015 FEA-FONSI for the WNR-CDI (see Figure 13). Per the NCP, the Comprehensive Planning and Zoning noise mitigation element is within the authority of the State and County. The proposed project will ensure compliance with State and County noise regulations that may apply to this project.

Additional guidance on land uses near airports is described in the State of Hawai‘i Office of Planning and Sustainable Development (OPSD) Technical Assistance Memorandum (TAM) dated August 1, 2016, which is intended to provide technical assistance to State and County agencies regarding FAA Order 5190.6B that may impact the use of land adjacent to or in the immediate vicinity of Hawai‘i’s airports. The KOKO Clinic does not currently propose the use of the listed land use practices that may attract hazardous wildlife, with the exception of exterior property lights and landscaping. As previously noted, the FAA Form 7460-1 will be filed for FAA review and determination as the design of the clinic progresses, and further coordination with the FAA will be conducted as needed to mitigate any potential hazardous wildlife attractants and/or incompatible land uses.

4.2 State of Hawai‘i Policies

4.2.1 Hawai‘i State Plan

The Hawai‘i State Plan was set forth by the Hawai‘i State Planning Act, which was signed into law in 1978 and codified under HRS Chapter 226. The plan is a long-range comprehensive plan that identifies goals, objectives, policies, and priorities for the State. The plan is divided into three parts, in which the first part identifies the overall theme, goals, objectives, and policies of the State. The listing in the following table identifies the objectives and policies that are met by the proposed project.

Table 4: Hawai'i State Planning Act Objectives and Policies

HRS Chapter 226 Hawai'i State Planning Act Part I. Overall Theme, Goals, Objectives and Policies	Applicability to Project
§226-5 Objective and policies for population	**Applicable**
§226-6 Objectives and policies for the economy--in general	Not applicable
§226-7 Objectives and policies for the economy-- agriculture	Not applicable
§226-8 Objective and policies for the economy--visitor industry	Not applicable
§226-9 Objective and policies for the economy--federal expenditures	Not applicable
§226-10 Objective and policies for the economy--potential growth and innovative activities	Not applicable
§226-10.5 Objectives and policies for the economy--information industry	Not applicable
§226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources	Not applicable
§226-12 Objective and policies for the physical environment--scenic, natural beauty, and historic resources	Not applicable
§226-13 Objectives and policies for the physical environment--land, air, and water quality	Not applicable
§226-14 Objective and policies for facility systems--in general	Not applicable
§226-15 Objectives and policies for facility systems--solid and liquid wastes	Not applicable
§226-16 Objective and policies for facility systems--water	Applicable
§226-17 Objectives and policies for facility systems--transportation	Not applicable
§226-18 Objectives and policies for facility systems--energy	Not applicable
§226-18.5 Objectives and policies for facility systems--telecommunications	Not applicable
§226-19 Objectives and policies for socio-cultural advancement--housing	Not applicable
§226-20 Objectives and policies for socio-cultural advancement--health	**Applicable**
§226-21 Objective and policies for socio-cultural advancement--education	Not applicable
§226-22 Objective and policies for socio-cultural advancement--social services	Not applicable
§226-23 Objective and policies for socio-cultural advancement--leisure	Not applicable
§226-24 Objective and policies for socio-cultural advancement--individual rights and personal well-being	Not applicable
§226-25 Objective and policies for socio-cultural advancement--culture	**Applicable**
§226-26 Objective and policies for socio-cultural advancement--public safety	Not applicable
§226-27 Objective and policies for socio-cultural advancement--government	Not applicable

*§**226-5 Objective and policies for population.** (a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter.*

(b) To achieve the population objective, it shall be the policy of this State to:

(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.

(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.

(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.

(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.

(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.

(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.

(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area. [L 1978, c 100, pt of §2; am L 1986, c 276, §4; am L 1988, c 70, §3; am L 1993, c 213, §3]

Discussion: The proposed project supports the State's objectives and policies in planning for population growth, as one of the purposes for the project is to support the anticipated growth of the Pu'ukapu Homestead. The KOKO Clinic's relocation and upgrade in facility size and capacity would better prepare the Waimea region for anticipated growth as more homestead lots are awarded. The KOKO Clinic envisions serving up to 800 patients in anticipation of the future growth from awarded homestead lots.

The proposed project would support Hawaiian Homes Commission Act beneficiaries by creating jobs for current and future beneficiaries, as well as providing additional capacity to provide medical services to the larger region of North Hawai'i.

§226-20 Objectives and policies for socio-cultural advancement--health. *(a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:*

(1) Fulfillment of basic individual health needs of the general public.

(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.

(3) Elimination of health disparities by identifying and addressing social determinants of health.

(b) To achieve the health objectives, it shall be the policy of this State to:

(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.

(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.

(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.

(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.

(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.

(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.

(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data. [L 1978, c 100, pt of §2; am L 1986, c 276, §19; am L 2014, c 155, §2]

Discussion: The proposed project supports the State's objectives and policies in planning for the socio-cultural advancement with regard to health. The KOKO Clinic provides broad services such as primary care services (including pediatric services), women's health services, individual, couple, and family psychotherapy services, acupuncture/lomilomi massage, and psycho-education trainings for community and organizations. In addition, the clinic created the Ulu Laukahi Program, which focuses on providing prevention/intervention services to treat chronic diseases such as diabetes, hypertension, obesity, and mental health concerns (i.e. depression and anxiety). The program is a free, year-long health program for Native Hawaiians that consists of quarterly health screenings, individualized health plans, nutrition and fitness support, and connection to community support and health coaches. The goal of this program is to help Native Hawaiians achieve a longer and healthier lifestyle by providing the necessary tools and lifestyle changes needed to mitigate the factors that contribute to the need for emergency interventions. The relocation and upgrade in facility size and capacity would better prepare the Waimea region for anticipated growth as more homestead lots are awarded and would also allow the clinic to expand their Ulu Laukahi Program to provide more services and treat more Native Hawaiians.

§226-25 Objective and policies for socio-cultural advancement--culture. *(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the*

achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.

(b) To achieve the culture objective, it shall be the policy of this State to:

(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.

(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.

(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.

(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors. [L 1978, c 100, pt of §2; am L 1986, c 276, §24]

Discussion: The proposed project supports the State's objectives and policies in planning for socio-cultural advancement with regard to culture. The KOKO Clinic's mission and value statement is rooted in fostering Hawaiian cultural, spiritual, and medical practices to treat patients.

The KOKO Clinic Mission Statement reads as follows:

> **"***KOKO provides cultural, spiritual, medical, and psychological services to all residents of North Hawai'i with a special emphasis for the Kānaka Maoli. This mission is our kuleana.*
>
> *KOKO provides culturally-informed direct services, actively collaborates with hawaiian agencies and associations in order to meet their members' needs, and is led by the community it serves."*

The KOKO Clinic Values Statement reads as follows:

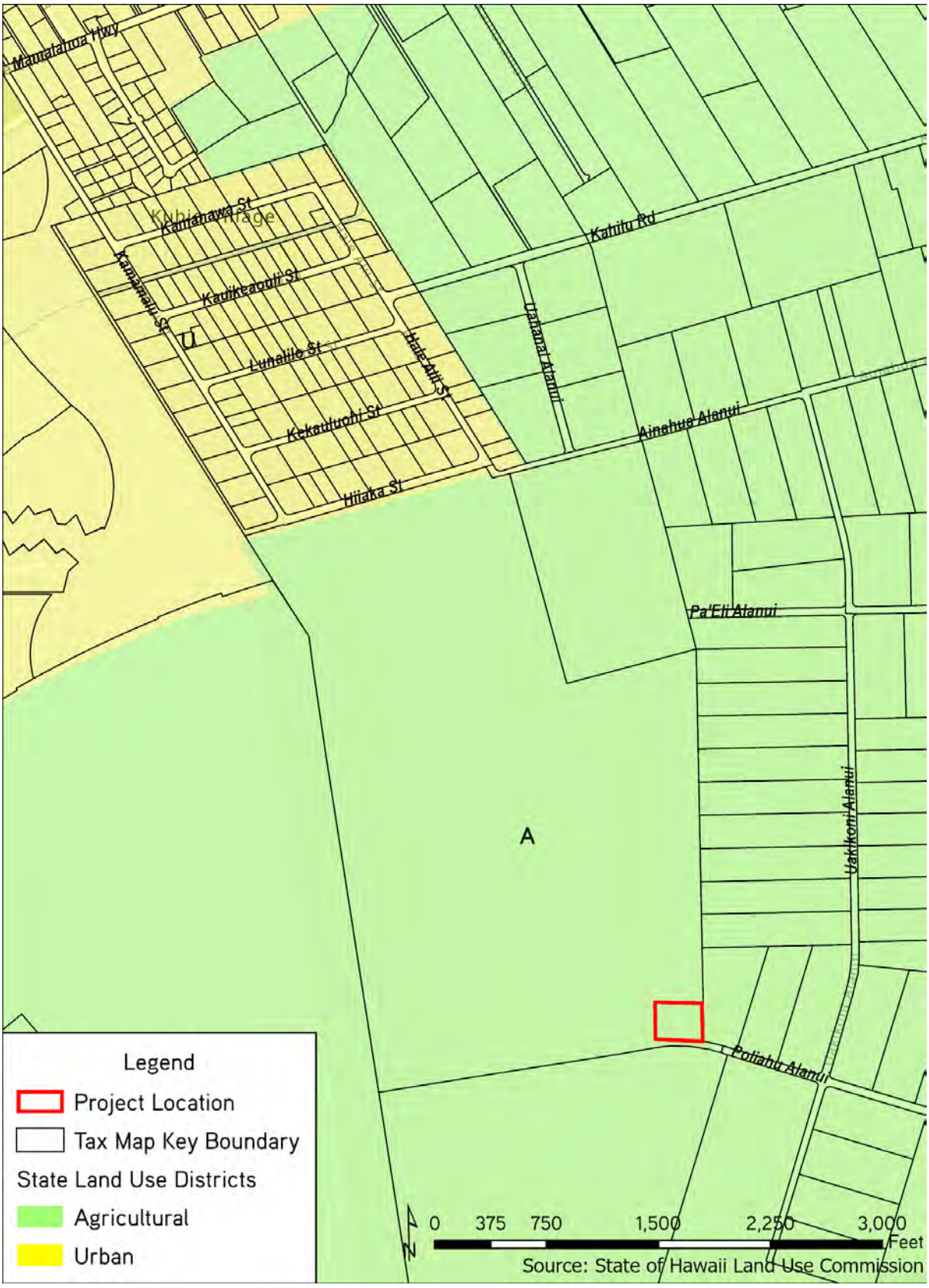
- ***ha'aha'a (humility)*** *- we will endeavor to be humble servants of the community we serve.*
  - ***ho'omana*** *(to empower) - we will respect, honor, and give determination to the Kanaka Maoli host culture so that their aspirations for optimal wellness are realized.*
  - ***lāhui*** *(united people) - we will build and honor local capacity by selecting staff & strategic partners from those who consider this 'aina (land/place) their home, who are culturally-fluent, and who have a deep resonance with the vision and mission of KOKO.*
  - ***'ohana*** *(family) - we will conduct our organizational life as a family infused with Kanaka Maoli values and perspectives and will serve the 'ohana of North Hawai'i.*

4.2.2 State Land Use Classification

The Hawai'i State Land Use Law, HRS Chapter 205, State Land Use Commission (SLUC), was adopted in 1961. The purpose of the law is to establish a framework of land use management and regulation in which all lands in the State are classified into one of four state land use districts: Urban, Rural, Agricultural or Conservation.

The proposed project is located in the State Land Use Agricultural District (see Figure 15). As the project is within DHHL lands, it is not subject to statutes controlling land use, per Section 206 of the Hawai'i Homes Commission Act, which stipulates "*The powers and duties of the governor and the board of land and natural resources, in respect to lands of the State, shall not extend to lands having the status of Hawaiian home lands, except as specifically provided in this title."* Therefore, the Hawaiian Homes Commission is the authority that determines its land use designations and governs the allowable use and activities within the parcel.

Figure 15: State Land Use Districts



4.2.3 Coastal Zone Management Program, HRS Chapter 205A

The State Coastal Zone Management (CZM) Program, as formalized in HRS Chapter 205A, establishes objectives and policies to "provide for the effective management, beneficial use, protection, and development of the coastal zone." The following are the objectives and policies of the CZM, and the relationship of the proposed project to the applicable considerations:

1) Recreational Resources Objective: Provide coastal recreational opportunities accessible to the public.

a) Improve coordination and funding of coastal recreational planning and management; and

b) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;

ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Discussion: The proposed project site is not located near coastal areas, as the nearest coastline is approximately 10 miles away. Coastal recreational resources are not anticipated to be impacted by the project.

2) Historic Resources Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

a) Identify and analyze significant archaeological resources

b) Maximize information retention through preservation of remains and artifacts or salvage operations; and

c) Support state goals for protection, restoration, interpretation, and display of historic resources

Discussion: Based on the findings of the AIS conducted for the 2015 FEA-FONSI for the WNR-CDI, the proposed KOKO Clinic is not anticipated to adversely impact any known or found archaeological sites. Personnel involved in the project would be informed of the possibility of inadvertent cultural finds and would be made aware of the appropriate notification measures to follow. If any previously unidentified sites or remains are encountered during site work and construction, work in the immediate area shall cease. An archaeologist from SHPD shall be notified and work in the area would be suspended until further recommendations are made.

3) Scenic and Open Space Resources Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

a) Identify valued scenic resources in the coastal zone management area;

b) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

c) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

d) Encourage those developments that are not coastal dependent to locate in inland areas.

Discussion: The project is not proposed to be located along the coastline and would not impact any shoreline open space and/or scenic resources. The project's inland location would support the CZM Program in preserving the shoreline open space and scenic resources.

4) Coastal Ecosystems Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

a) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

b) Improve the technical basis for natural resource management;

c) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

d) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

e) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion: The proposed project will not impact coastal ecosystems as it is not located along a coastal area.

5) Economic Uses Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

a) Concentrate coastal dependent development in appropriate areas;

b) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

c) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

i) Use of presently designated locations is not feasible;

ii) Adverse environmental effects are minimized; and

iii) The development is important to the State's economy.

Discussion: The proposed project will not be located near coastal areas and would not affect coastal development areas of importance to the State's economy or the County of Hawaii.

6) Coastal Hazards Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

a) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

b) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

c) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

d) Prevent coastal flooding from inland projects.

Discussion: The proposed project's inland location would support this objective, as it would be located away from coastal areas that are vulnerable to tsunamis, storm waves, stream flooding, erosion, subsidence, and pollution. The KOKO Clinic would be located approximately 10 miles away from the nearest shoreline, thus it would be outside the tsunami inundation zone and the 3.2 ft sea level rise exposure area. In addition, the project location is within FEMA's Flood Zone X, which is outside of the 1-percent annual chance floodplain.

7) Managing Development Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

a) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

b) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

c) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion: The proposed project would conform to all applicable State regulations; a list of potential permits and approvals required for the project is provided in Section 2.4. In addition, the project is not located within the coastal zone and would not impact any coastal resources.

8) Public Participation Objective: Stimulate public awareness, education, and participation in coastal management.

a) Promote public involvement in coastal zone management processes;

b) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

c) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: The provision for public participation will be provided through the environmental review process as required in HRS, Chapter 343. Agencies and stakeholders consulted during the EA process for the 2015 FEA-FONSI WNR-CDI were contacted during the pre-assessment consultation (see Section 7.0 and Appendix A) and were also notified of publication of the Draft EA.

9) Beach Protection Objective: Protect beaches for public use and recreation.

a) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

b) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

c) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: The proposed project would not affect any beaches, as the project site is located approximately 10 miles away from the nearest shoreline.

10) Marine Resources Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

a) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

b) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

c) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

d) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

e) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: The proposed project does not involve the use or development of marine and coastal resources.

4.2.4 State Historic Preservation

The State Historic Preservation Program, codified by HRS Chapter 6E, is administered by the DLNR SHPD. The program and DLNR SHPD work to provide leadership in preserving, restoring, and maintaining historic and cultural property. Per HRS §6E-08, prior to the commencement of any State agency project that may affect historic property, the agency shall allow the SHPD an opportunity for review of the effect of the proposed project on historic properties, aviation artifacts, or burial sites, especially those listed on the HRHP.

An AIS was prepared for the WNR-CDI during the 2015 FEA-FONSI, which covered the proposed project site. The findings documented in the AIS indicate either no historic properties or a low likelihood that historic properties exist within the proposed KOKO clinic project site. Nonetheless, the project will be reviewed by SHPD in accordance with HRS Chapter 6E. The AIS will be provided as supporting documentation for this review.

4.3 County of Hawai‘i Plans and Polices

4.3.1 County of Hawai‘i General Plan

The COH General Plan was adopted by Ordinance in 1989 and most recently amended in 2012. The County is currently engaged in a comprehensive review of the draft General Plan 2040. The General Plan for the COH sets forth long-range objectives for the general welfare and prosperity of the people of Hawai‘i Island, and broad policies to attain those objectives. The General Plan provides policies and courses of action intended to guide and coordinate growth patterns through the designation and preservation of lands for specified uses.

The COH General Plan includes a Land Use Pattern Allocation Guide (LUPAG), which indicates the general location of various land uses in relation to each other. The LUPAG was created based on projections of future population based on economic and employment evaluations, existing land uses and zoned areas, determination of community facility needs, and transportation demands for the island of Hawai‘i. As shown in Figure 16, the project site is designated as Important Agricultural Land according to the LUPAG.

Per the General Plan, Important Agricultural Lands were designated as those with better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors.

The proposed project advocates the following goals and policies of the COH General Plan:

Public Facilities

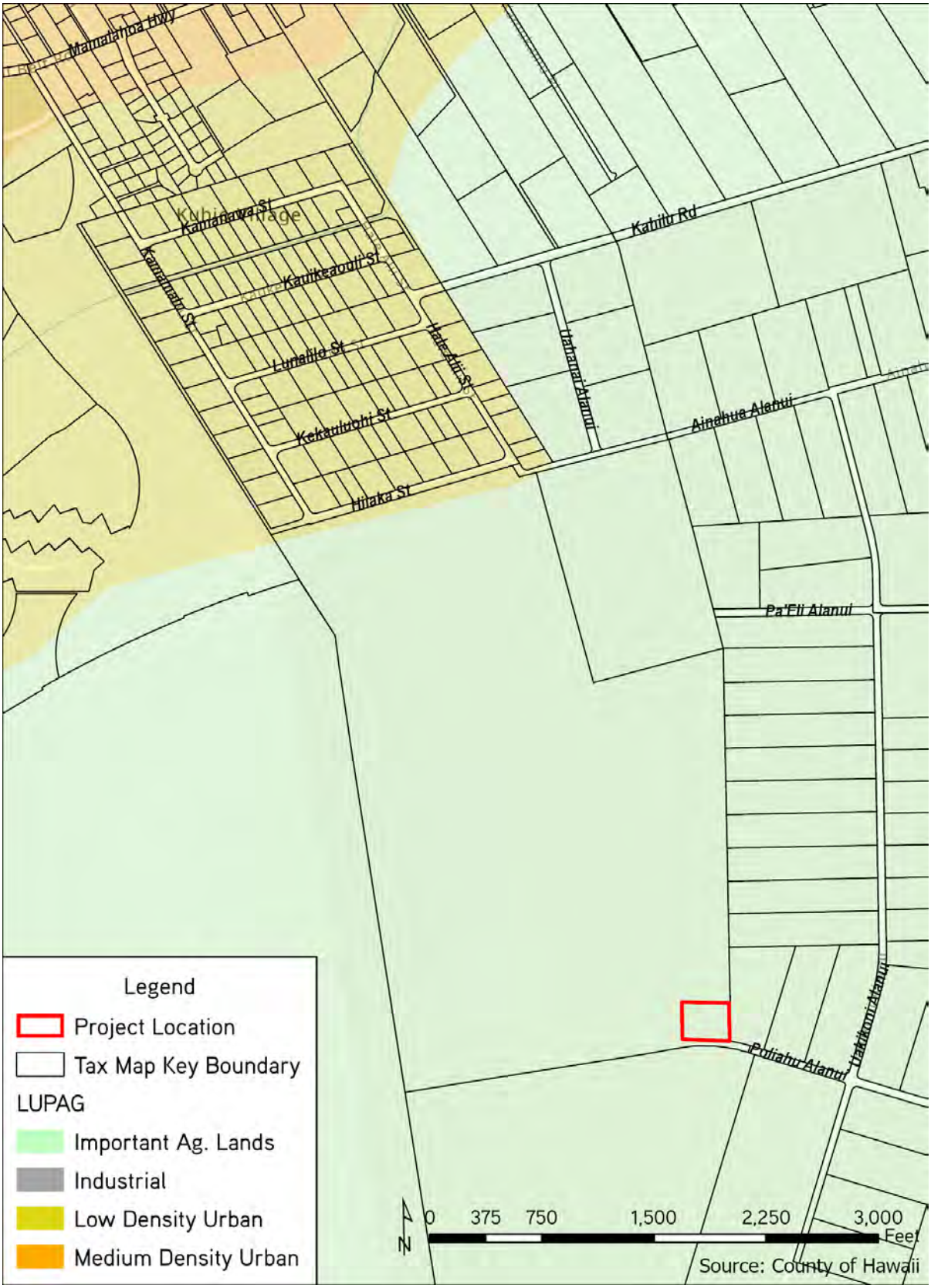
Goal: Encourage the provision of public facilities that effectively service community and visitor needs and seek ways of improving public service through better and more functional facilities in keeping with the environmental and aesthetic concerns of the community.

Policies for Public Facilities - Health and Sanitation:

a) *Encourage the development of new health care facilities or the improvement of existing health care facilities to serve the needs of Hamakua, North and South Kohala, and North and South Kona.*
d) *Encourage the establishment or expansion of community health centers and rural health clinics.*

Discussion: The proposed project would support the COH General Plan’s goal and policies for public facilities by providing additional capacity for medical services to serve the needs of the Pu‘ukapu Homestead beneficiaries, the South Kohala district, and the North Hawai‘i region. In addition, the KOKO Clinic is the first independent (not owned by a hospital, nursing home, or home health agency) rural health clinic in the State. The project proposes to expand the KOKO Clinic’s current operations and capacity and its continued functions as a rural health clinic.

Figure 16: Land Use Pattern Allocation Guide



Land Use

Goal: Designate and allocate land uses in appropriate proportions and mix and in keeping with the social, cultural, and physical environments of the County. (b) Protect and encourage the intensive and extensive utilization of the County's important agricultural lands. (c) Protect and preserve forest, water, natural and scientific reserves and open areas.

Policies:

(c) Allocate appropriate requested zoning in accordance with the existing or projected needs of neighborhood, community, region and County.

(f) Encourage the development and maintenance of communities meeting the needs of its residents in balance with the physical and social environment

(j) Encourage urban development within existing zoned areas already served by basic infrastructure, or close to such areas, instead of scattered development.

Discussion: The project would be relocated to the planned development for the WNR-CDI, which is proposed to be a mixed-use development. This would support the COH General Plan's goal and policies to serve the community's needs, while being cognizant of the balance between the physical and social environment. The WNR-CDI development, in addition to the KOKO Clinic, would address a wide range of agricultural, economic, recreational, health and well-being, and cultural needs.

4.3.2 South Kohala Community Development Plan

The South Kohala Community Development Plan (SK-CDP) was adopted in 2008 and is one of seven community development plans for the COH. The SK-CDP encompasses the towns of Kawaihae, Puakō, Waikoloa, and Waimea. The plan was intended to identify the community's priority issues and develop appropriate policies and actions to address the issues and guide future land use for the district.

Within the SK-CDP, five policies were identified for the Waimea Community, which are based on input received from community meetings, focus group meetings, the South Kohala Steering Committee meetings, and planning studies conducted during that time. The proposed project supports the following policies for the Waimea Community:

1. ***PRESERVATION OF WAIMEA'S SENSE OF PLACE*** *shall be the principal, overarching land use policy for Waimea. This policy shall be implemented through measures for responsible growth, and through the preservation and protection of important lands and resources, including important cultural and historic sites and structures, important agricultural lands, and visually and environmentally important open space areas in Waimea Town.*

Discussion: The proposed project supports the Waimea Community's policy to preserve Waimea's sense of place. The project would not impact any known cultural and/or historic sites that were found during the AIS for the 2015 FEA-FONSI for the WNR-CDI. The KOKO Clinic's expansion exhibits responsible growth as the clinic is preparing for the future growth in population as more homestead lots are awarded within Waimea.

3. ***ENVIRONMENTAL STEWARDSHIP*** *shall be an overarching land use policy for Waimea. Land use decisions shall be based on wise management practices for forests, watersheds, natural drainage ways and streams, native ecosystems, and important agricultural lands.*

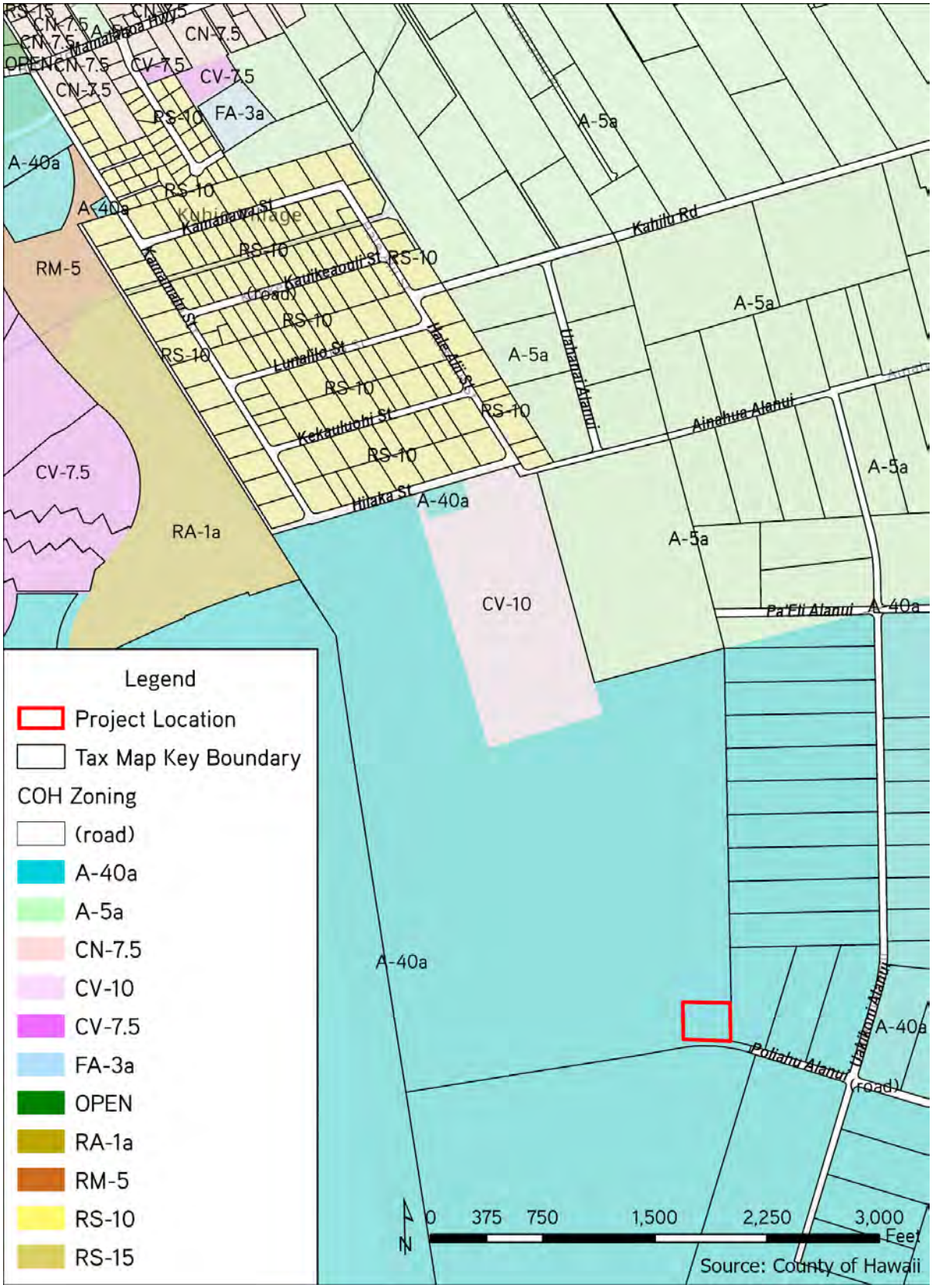
Discussion: The proposed project supports the Waimea Community's policy of environmental stewardship as the project would not impact any forests, watersheds, natural drainage ways and streams, native ecosystems, and/or important agricultural lands that are planned for future agricultural uses.

4.3.3 COH Comprehensive Zoning Ordinance

The COH's Zoning Code is codified under Hawai'i County Code, Chapter 25. The Zoning Code defines the permitted land uses within the State Land Use Urban and Agricultural Districts and provides the development standards and limitations for each zone. The proposed project is within the A-40a zone (see Figure 17), which is an agricultural zone that requires a minimum building site area of 40 acres. The project would be developed within a 5-acre portion of the TMK parcel lot, which is 191.71 acres in total.

In 2002, a Memorandum of Agreement (MOA) between DHHL and the COH was established to identify the respective roles, responsibilities, and obligations of the COH and DHHL relating to land use planning, infrastructure maintenance, enforcement of laws, and collection of taxes and other fees on Hawaiian home lands. As stated in the MOA, the Hawaiian Homes Commission is "responsible for determining land use on Hawaiian home lands. The County may not use its land use and zoning powers to prevent the Hawaiian Homes Commission from controlling the use of Hawaiian home lands." However, both the COH and DHHL share common goals in planning for the uses of Hawaiian home lands and are committed to the integration of planning by each entity. DHHL will work with the COH to ensure that the project is consistent with the surrounding land uses and environment.

Figure 17: County of Hawai'i Zoning



4.4 Department of Hawaiian Home Lands Plans

4.4.1 DHHL Hawai‘i Island Plan

The DHHL's 2002 Hawai‘i Island Plan evaluates the DHHL holdings on Hawai‘i island and identifies land use plans developed to meet beneficiary needs. Island Plans are part of the second tier in DHHL's planning process that focuses on island-specific land use projections. The proposed project is within the Pu‘ukapu Tract, which consists of primarily pastoral and supplemental agriculture DHHL land uses. Under the Hawai‘i Island Plan, the proposed project area is designated for General Agricultural under DHHL's land use categories due to the favorable climate, soil, and slope.

The Pu‘ukapu lots were identified as a non-priority site for development in the Hawai‘i Island Plan. Based on the 2015 FEA-FONSI for the WNR-CDI, the plans for the WNR-CDI were conceptualized and vetted by the Homestead community and was considered a priority project for DHHL. As the KOKO Clinic proposes to be relocated to the WNR-CDI development, the proposed project would follow the development schedule for the WNR-CDI.

The 2015 FEA-FONSI for the WNR-CDI also identified the requirement of a Land Use Designation Amendment approval to DHHL's Hawai‘i Island Plan from the Hawaiian Homes Commission after the FONSI determination. To ensure compliance with Department rules and regulations, the project would ensure that a Land Use Designation Amendment has been filed for the WNR-CDI and would seek to complete any other required amendments needed for the project to be included in the proposed WNR-CDI development.

4.4.2 DHHL Waimea Nui Regional Plan

DHHL regional plans and area development plans are part of the department's third tier in the departments planning system. These plans identify and address issues and opportunities relative to existing homestead communities and their future development. The proposed project is located within the Waimea Nui Regional Plan area. The Waimea Nui Regional Plan includes a list of proposed projects, including a proposed Community Complex in Pu‘ukapu.

The proposed project would support the Waimea Nui Regional Plan through the expansion of the clinic, which would provide health benefits to the Pu‘ukapu Homestead community and the general public. In addition, the relocation of the KOKO Clinic to the WNR-CDI planned development aligns with the goals and vision of the initiative to build a vibrant and self-sufficient community, and to move towards the intent of the Hawaiian Homes Commission Act of 1921 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…"

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5.0 ALTERNATIVE TO THE PROPOSED ACTION

The no action alternative would involve no effort to relocate and expand the KOKO Clinic's facility and operations. Under this alternative, environmental effects resulting from development activities would be averted and project costs would be spared. The existing land would instead be developed as an equestrian center complex as was previously planned.

However, the no action alternative would result in none of the community benefits mentioned that would be provided by the KOKO Clinic's relocation and expansion. The proposed project would service the existing and future homestead population that is anticipated to grow as more lots are awarded in the Puʻukapu Tract. The KOKO Clinic anticipates that it's expansion could service up to 800 additional patients.

Through the no action alternative, the KOKO Clinic would not be able to expand its Ulu Laukahi Program, which provides free year-long health programs for Native Hawaiians. The no action alternative would not support the needs and goals of the homestead community, and would not provide the support services needed to combat the existing and future shortfalls facing the Native Hawaiian community in Waimea and the island of Hawaiʻi.

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6.0 FINDINGS AND DETERMINATION

6.1 Determination

The KOKO Clinic Relocation project is determined to not result in a significant impact based on the criteria set forth in HAR §11-200.1-13. This Final EA includes the discussion of potential environmental effects, which includes the sum of effects on the quality of the environment along with cumulative long-term effects.

As set forth in HAR §11-200.1-13, a prescribed set of 13 Significance Criteria is used to determine the project's impact on the environment. The project's relationship to each criterion is discussed in this section.

6.2 Significance Criteria Findings

To determine whether a proposed action may have a significant effect on the environment under HAR §11-200.1, the Proposing Agency needs to consider every phase of the action, the expected primary and secondary consequences, cumulative effect, and the short- and long-term effects. 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 effect on the environment, and an Environmental Impact Statement Preparation Notice should be issued, or 2) the action would not have a significant effect warranting a FONSI.

1. ***Irrevocably commit a natural, cultural, or historic resource;***

   The proposed project would not adversely impact any known or existing natural or cultural resource. The project site is proposed to be on undeveloped agricultural lands with no significant natural resources. As discussed in Section 3.8, no significant archaeological or historical sites are known to exist within the project site. Should any cultural or archaeological resources be found during construction, the SHPD will be immediately notified and the necessary protection measures would be administered.

2. ***Curtail the range of beneficial uses of the environment;***

   The proposed project would be developed on a 2 acre portion of a 191.71 acre lot that is currently undeveloped and zoned for agricultural use. The proposed project is part of the WNR-CDI master plan which includes agricultural uses such as a community agriculture park, agriculture resource center, post-harvest and co-op facilities, and a farmers market building. The project would not curtail the range of beneficial or agricultural uses of the surrounding environment as it would be part of a larger development that includes agricultural uses. In addition, there is a generous supply of agricultural land within the surrounding environment and the Waimea region.

3. Conflict with the State's environmental policies or long-term environmental goals established by law;

The proposed project does not conflict with the State's long-term environmental policies or goals. The project supports the intention of the environmental policies and goals relative to creating opportunities for residents to improve their health, well-being, and quality of life through health care services that are economically viable.

4. Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

The proposed project would not have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State. Rather, the project would support the economic and social welfare, and cultural practices of the community and Native Hawaiians by providing affordable health services and programs that are rooted in traditional Hawaiian values and culture. In addition, the design, construction work, and expanded operations of the KOKO Clinic would provide employment opportunities for the surrounding community and island of Hawai'i.

5. Have a substantial adverse effect on public health;

The proposed project will not have a substantial adverse effect on public health. The project would provide long-term beneficial effects on public health through the expanded capacity of health services and programs that would be provided at the KOKO Clinic. Short-term effects to noise, air, and traffic that could result from construction activities would be limited to the construction phase and would be mitigated through BMPs and adherence to regulatory requirements.

6. Involve adverse secondary impacts, such as population changes or effects on public facilities;

The proposed project would not result in substantial secondary or cumulative impacts to the natural or built environment, or to the social and economic community. Future traffic conditions with or without the project would require traffic signal installation and/or improvements to improve the LOS at the intersections of Māmalahoa Highway and Mana Road and Māmalahoa Highway and Kamamalu Street. As proposed in the 2015 FEA-FONSI for the WNR-CDI, the impacts to water and wastewater generation would be mitigated through the use of available surface water that would be treated on-site as potable water. No impacts to the existing aviation easement restrictions are anticipated as the KOKO Clinic would be within the acceptable design parameters.

7. Involve a substantial degradation of environmental quality;

The proposed project will not involve substantial degradation of environmental quality. All project activities will be conducted in compliance with Federal, State, and COH rules and regulations governing environmental quality and public health.

8. ***Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;***

   The proposed project would have a limited and negligible impact on the natural and cultural environment while providing an overall general improvement to the health and well-being of the Pu'ukapu Homestead beneficiaries and Waimea residents. While the project is proposed to be relocated within the WNR-CDI development, the environmental impacts for the WNR-CDI have been previously analyzed and resulted in a FONSI determination. The addition of the KOKO Clinic in the WNR-CDI is not considered to be substantial compared to the overall development planned for the parcel, and would not result in a commitment for larger actions than what has already been assessed in the WNR-CDI FEA-FONSI.

9. ***Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat;***

   The proposed project will not have a substantial adverse effect on rare, threatened, or endangered species or its habitat.

10. ***Have a substantial adverse effect on air or water quality or ambient noise levels;***

    The proposed project will not have a substantial adverse effect on air or water quality or ambient noise levels. Construction activities would result in short-term effects on air, water quality and ambient noise levels but would be mitigated by compliance with COH and DOH rules regulating construction-related activities.

    During operations, the impacts on air and water quality would be minimal. Noise levels would be minimally increased with the addition of the new clinic within the project area, however it is not anticipated to be perceptible by the surrounding land uses.

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;***

    The project site is not 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.

12. ***Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or***

    The project site is currently undeveloped, and the KOKO Clinic relocation would not deter from the overall appearance or aesthetics of the area. The KOKO Clinic is proposed to be one-story tall and would not constrain any view planes to Mauna Kea and the Kohala Mountains.

13. Require substantial energy consumption or emit substantial greenhouse gases.

The proposed project would not require substantial energy consumption. The KOKO Clinic's new facility would not require a substantially greater amount of energy consumption compared to the current consumption used for their existing operations.

7.0 AGENCIES AND ORGANIZATIONS CONSULTED

7.1 Consultation List

The following agencies and organizations listed in Table 5 were included in both the pre-assessment consultation and Draft EA publication notification. The comment and response letters from the pre-assessment consultation are included in Appendix A. The comments received during the Draft EA public comment period, and the responses provided are included in Section 7.2; a copy of the Draft EA comment and response letters are included in Appendix D.

Table 5: Agency Consultation List

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
FEDERAL AGENCIES				
U.S. Fish and Wildlife Service	X	X	X	X
U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS)	X		X	
U.S. Department of Agriculture, Hawai'i County Farm Service Agency	X		X	
U.S. Department of Agriculture, Rural Development	X	X	X	
U.S. Department of Transportation, Federal Aviation Administration, Flight Standards District Offices	X		X	
U.S. Environmental Protection Agency	X		X	

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
U.S. Army Corps of Engineers, Regulatory Office	X		X	
U.S. Geological Survey, Pacific Island Ecosystems Research Center	X		X	
STATE OF HAWAIʻI AGENCIES				
State of Hawaiʻi, Department of Land and Natural Resources, Commission on Water Resource Management	X	X	X	
State of Hawaiʻi, Department of Land and Natural Resources, Division of Forestry and Wildlife	X	X	X	X
State of Hawaiʻi, Department of Land and Natural Resources, Division of Aquatic Resources	X		X	
State of Hawaiʻi, Department of Land and Natural Resources, Engineering Division	X	X	X	X
State of Hawaiʻi, Department of Land and Natural Resources, Land Division	X	X	X	X
State of Hawaiʻi, Department of Land and Natural Resources, State Historic Preservation Division	X		X	

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
State of Hawai'i, Department of Business, Economic Development & Tourism	X		X	
State of Hawai'i, Department of Health, Environmental Health Services Division	X		X	
State of Hawai'i, Department of Health, Indoor and Radiological Health Branch	X	X	X	X
State of Hawai'i, Department of Health, Clean Air Branch	X		X	
State of Hawai'i, Department of Health, Clean Water Branch	X		X	
State of Hawai'i, Department of Health, Wastewater Branch	X		X	
State of Hawai'i, Office of Planning and Sustainable Development	X		X	
State of Hawaii, Department of Education	X	X	X	
State of Hawai'i, Department of Transportation	X	X	X	X
State of Hawai'i, Department of Transportation, Airports Division	X	X	X	X

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
State of Hawai'i, Department of Accounting and General Services	X	X	X	X
Hawai'i State Library, Hawai'i Documents Center	X		X	
Hawai'i, State Public Library, Thelma Parker Memorial Public Library	X		X	
Office of Hawaiian Affairs	X		X	
State of Hawai'i, Department of Hawaiian Home Lands, West Hawai'i District Office	X		X	
COUNTY OF HAWAI'I				
County of Hawai'i, Department of Environmental Management	X		X	
County of Hawai'i, Department of Public Works	X		X	X
County of Hawai'i, Department of Water Supply	X	X	X	X
County of Hawai'i, Planning Department	X	X	X	
County of Hawai'i, Department of Parks and Recreation	X		X	

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
County of Hawai'i Fire Department	X	X	X	X
County of Hawai'i Police Department	X	X	X	
ELECTED OFFICIALS				
Office of the Mayor	X		X	
Senate District 4	X		X	
House District 7	X		X	
Hawai'i County Council District 9	X		X	
COMMUNITY GROUPS AND ASSOCIATIONS				
Waimea Hawaiian Homesteaders' Association	X		X	
Waimea Community Association	X		X	
Parker Ranch	X		X	
South Kohala Community Development Plan Action Committee	X		X	
Hawai'i Island Economic Development Board	X		X	

Distribution	Pre-Assessment Consultation Recipient	Pre-Assessment Comments Received	Draft EA Notification Recipient	Draft EA Comments Received
North Hawai'i Community Hospital	X		X	

7.2 Summary of Comments

Table 6 provides a summary of the comments received during the Draft EA public comment period, along with the associated responses and referenced sections in the Final EA. A copy of the comment letters received, and response letters provided are included in Appendix D.

Table 6: Draft EA Comments and Responses

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
November 7, 2022	State of Hawai'i, Department of Health, Indoor and Radiological Health Branch	Thomas G. Lileikis, Program Manager	Thank you for your submittal requesting comments to a Draft Environmental Assessment to relocate the Kipuka o ke Ola (KOKO) Native Hawaiian Rural Health Clinic to Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, South Kohala District, Hawai'i Island, Tax Map Key (3) 6-4-038:011. Project activities shall comply with the following Administrative Rules of the Department of Health: • Chapter 11-39 Air Conditioning & Ventilating • Chapter 11-41 Lead-based Paint Activities • Chapter 11-45 Radiation Control • Chapter 11-46 Community Noise Control • Chapter 11-501 Asbestos Requirements Chapter 11-504 Asbestos Abatement Certification Program	The DHHL acknowledges the comment provided by the DOH, Indoor and Radiological Health Branch that project activities shall comply with the listed Administrative Rules of the DOH. Sections 2.4 and 3.14 of the Final EA includes references to the applicable Administrative Rules of the DOH, including Chapter 11-39 Air Conditioning & Ventilating and Chapter 11-46 Community Noise Control.	Sections 2.4 and 3.14

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
November 14, 2022	County of Hawai'i, Fire Department	Captain Clinton Baybayan, Fire Prevention Captain	In regards to the above mentioned project, Fire Department Access and Water Supply shall comply with Chapter 18 of the 2018 Hawai'i State Fire Code and Chapter 26 of the Hawai'i County Code.	The DHHL acknowledges the County of Hawai'i, Fire Department's comment regarding compliance with Chapter 18 of the 2018 Hawai'i State Fire Code and Chapter 26 of the Hawai'i County Code. The project's requirement to comply with these codes has been noted in Section 3.12.1 of the Final EA.	Section 3.12.1
November 21, 2022	State of Hawai'i, Department of Accounting and General Services	Christine L. Kinimaka, Public Works Administrator	The Department of Accounting and General Services (DAGS) has an executive order for management and control of the Waimea Civic Center, identified by TMK: (3) 6-7-002:011, which is located approximately 1.5 miles from the proposed project area. The Waimea State Office Building, which is managed by DAGS, is located within this property. We do not anticipate the proposed project to have any impact to DAGS' projects or existing facilities.	The DHHL acknowledges that DAGS does not anticipate the proposed project to have any impact to DAGS' projects or existing facilities.	N/A
November 29, 2022	U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office	Lindsy Asman, Island Team Manager	We received your request for comments on the draft EA for this project and appreciate the coordination with us to protect federally listed species and their habitat. At this time we are unable to review the draft EA due to staff shortages. However, we recommend	The DHHL acknowledges the comment and instructions provided by the U.S. Fish and Wildlife Service regarding species list being available on the online Information for Planning and Consultation (IPaC) system. The species list for the proposed project area has been included in Section	Section 3.6.2

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			acquiring a species list from IPaC, our online system, and incorporating all recommended avoidance and minimization measures into the proposed project description and the draft EA if this has not already been done. I have attached instructions on how to acquire a species list and avoidance and minimization measures to avoid adverse effects to listed species. We highly recommend paying particular attention to the avoidance and minimization measures called "General project design guidelines" in the species list produced. Implementing these avoidance and minimization measures for listed species likely to be present within the action area should avoid adverse effects to listed species and the need for an incidental take permit.	3.6.2 of the Final EA. The relevant minimization measures included in the "General Project Design Guidelines" have also been included in Section 3.6.2, and are included as Appendix B of the Final EA.	
December 2, 2022	County of Hawai'i, Department of Public Works	Alan K. Thompson, Division Chief	We have reviewed the request for comments for the draft Environmental Assessment dated November 3, 2022, and have the following comments: 1. All development generated runoff shall be disposed of on-site and shall not be directed toward adjacent properties. A	The DHHL acknowledges the comments provided by the County of Hawai'i, Department of Public Works (DPW) Engineering Division and provide the following responses: 1. Stormwater runoff from impervious areas will be collected by a proposed drainage system that will be designed in	Sections 3.2, 3.5, and 3.12.3

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			drainage study shall be prepared by a licensed civil engineer and the recommended drainage system shall be constructed meeting the approval of the Department of Public Works. 2. All earthwork and grading activity shall conform to Chapter 10, Erosion and Sedimentary Control, of the Hawaii County Code. 3. The subject parcel is in an area designated as Flood Zone X on the Flood Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone X is an area determined to be outside the 500-year floodplain.	compliance with the County's Storm Drainage Standard and will meet the approval of the DPW. In addition, runoff will be disposed of on-site and will not be directed toward adjacent properties. A drainage study and design of a drainage system will be prepared as the project design progresses. This has been added to Section 3.12.3. 2. The requirement of all earthwork and grading activity to conform to Chapter 10, Erosion and Sedimentary Control of the Hawai'i County Code is included in Section 3.2. 3. The project site's location within the FEMA Flood Zone X has been noted in Section 3.5.	
December 2, 2022	State of Hawai'i, Department of Land and Natural Resources, Division of Forestry and Wildlife	Lainie Berry, Wildlife Program Manager	The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments for the Draft Environmental Assessment and Anticipated Finding of No Significant Impact for the Waimea Nui Regional Community Development Initiative (WNR-CDI) to relocate the Kipuka o ke Ola (KOKO) Native Hawaiian Rural Health	The DHHL acknowledges DOFAW's concurrence with the listed mitigation measures included in Section 3.6 of the Draft and Final EA, and that the division has no additional comments regarding the potential for the proposed project to affect listed species in the vicinity of the project area.	Section 3.6

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			Clinic to the Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, on the island of Hawai'i; TMK: (3) 6-4-038:011 (por.). The proposed project consists of developing 9,600 square feet, one-story building KOKO Clinic facility on a 2-acre portion of the 191.711-acre parcel owned by DHHL. DOFAW concurs with the mitigation measures included in the DEA intended to avoid construction and operational impacts to State-listed species including the Hawaiian Hoary bat or 'Ōpe'ape'a (Lasiurus cinereus semotus), Hawaiian Duck (Anas wyvilliana), Hawaiian Stilt (Himantopus mexicanus knudseni), Hawaiian Coot (Fulica alai), Hawaiian Goose or Nēnē (Branta sandvicensis), Hawaiian Hawk (Buteo solitarius), Blackburn's Sphinx Moth (Manduca blackburni) and seabirds. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i, please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf. We also appreciate the measures outlined to prevent the spread of invasive species and for the use of native plant species. DOFAW has no additional comments regarding the		

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			potential for the proposed work to affect listed species in the vicinity of the project area. We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible.		
December 5, 2022	County of Hawai'i, Department of Water Supply	Keith K. Okamoto, P.E., Manager – Chief Engineer	We have reviewed the subject Draft Environmental Assessment. Please note that any water system improvements required by a Water Development Agreement, will need to be completed and conveyed to the Water Board before granting water service to the project.	The DHHL acknowledges the comment provided by the DWS and has noted this requirement in Section 3.12.1 of the Final EA.	Section 3.12.1

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
December 7, 2022	State of Hawai'i, Department of Land and Natural Resources	Russell Y. Tsuji, Land Administrator	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. At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division-Hawaii District on the subject matter.	The DHHL acknowledges that the DLNR's Engineering Division and Land Division-Hawai'i District have no further comments, and that the comments received by DOFAW have been included and addressed in the Final EA.	N/A
December 8, 2022	State of Hawai'i, Department of Transportation	Edwin Sniffen, Director of Transportation	HDOT has the following comments: HDOT's Pre-Assessment Comments were inadvertently omitted from the published Draft EA, as referred in letter SSFM 2021_043.000, dated November 14, 2022 (see attached). <u>Airports Division (HDOT-A)</u> 1. Section 3.12.2, page 36 (PDF Viewer 47), discusses the wastewater system and its compliance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/2500-33B, Hazardous Wildlife	The DHHL acknowledges HDOT's comments and provides the following responses: HDOT's Pre-Assessment Comments were inadvertently omitted from the published Draft EA; the Pre-Assessment Comment letter and response letter have been included in Appendix A of the Final EA. <u>Airports Division (HDOT-A)</u> 1. The updated FAA Advisory Circular 150/5200-33C Hazardous Wildlife Attractants On or Near Airports has been	Sections 3.12.2, 3.12.4, and 3.12.5

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			Attractants On Or Near Airports. Please note that although this was the most current AC when the 2015 Final EA – Finding of No Significant Impact (FONSI) was published, the AC has since been updated. The HDOT-A recommends reviewing the most updated version, FAA AC 150/5200-33C, Hazardous Wildlife Attractants On Or Near Airports. 2. Section 3.12.4, page 36 (PDF Viewer 47), discusses the use of an anaerobic biodigester which was proposed in the 2015 Final EA – FONSI. The biodigester shall be properly enclosed and maintained to prevent any possible wildlife being attracted to the area, which can potentially become a hazard to aircraft operations. Please review the aforementioned AC for guidance. If the project's anaerobic biodigester creates a wildlife attractant, the developer shall immediately mitigate the hazard upon notification by the HDOT-A and/or FAA. <u>Highways Division</u> 1. HDOT provided comments on the proposed KOKO Clinic relocation Pre-Assessment Consultation letter in July 2022. Highways comments appear to	reviewed, and the reference in Section 3.12.2 has been updated. 2. Section 3.12.4 has been updated to note that the biodigester shall be properly enclosed and maintained to prevent possible wildlife from being attracted to the area. <u>Highways Division</u> 1. DHHL acknowledges HDOT's comment that HDOT-Highways comments have been addressed in the Draft EA. 2. DHHL acknowledges that HDOT concludes "The project is not anticipated to have a significant impact to State highway facilities." 3. Construction of the interior access road extending to Kamamalu Street has begun on the southern portion of the WNR-CDI parcel, but the road has not been completed and the land is currently vacant. DHHL confirms that the KOKO Clinic is in the vicinity of the new site and is accessed via local roads intersecting with Route 19 within the same County segment of Route 19 as the new site.	

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			have been addressed in the Draft EA, including our request for a Traffic Impact Assessment Report (TIAR). 2. HDOT provided comments on the Draft EA and TIAR for the Waimea Nui Regional Community Development Initiative (WNR-CDI) in February 2015. The WNR-CDI proposed a variety of land uses on Department of Hawaii Home Lands land. The proposed primary access to the WNR-CDI site was via Kamamalu Street, which intersects with Mamalahoa Highway (Route 19). This segment of Route 19 is under County jurisdiction. We concluded, "The project is not anticipated to have a significant impact to State highway facilities." 3. No WNR-CDI construction has occurred, including the interior access road extending to Kamamalu Street, and the land is vacant. The existing KOKO clinic is in the vicinity of the new site and is accessed via local roads intersecting with Route 19 within the same County segment of Route 19 as the new site. 4. The relocation of KOKO clinic to the WNR-CDI development area is not anticipated to have a significant impact	4. The TIAR and Section 3.12.5 of the Final EA have been updated to describe the nearest boundary of State and County of Hawai'i (COH) jurisdiction of Route 19 and potential impacts to State Route 19 traffic conditions. The portion of Mamalahoa Highway within the project vicinity (between Kamamalu Street and Mana Road) fall under the COH's jurisdiction. It is anticipated that there will be no net change in traffic volume to the west of Kamamalu Street and to the east of Mana Road, resulting in no net change to the traffic volume and traffic operations of the State-owned portion of Route 19.	

Date of Letter	Agency/ Organization	Sender	Comments	Response	Reference Section
			on State highway facilities. However, we suggest the Final EA and TIAR describe the nearest boundary of State and County jurisdiction of Route 19, and qualitatively describe the potential impacts to State Route 19 traffic conditions.		

8.0 REFERENCES

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Appendix A – Pre-assessment Consultation Comment Letters

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

In reply, please refer to
File:

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

July 5, 2022

Mr. Jared K. Chang, AICP
SSFM International
501 Sumner Street, Suite 620
Honolulu, HI 96817

Dear Mr. Chang:

Thank you for your submittal requesting comments to a Pre-Assessment Consultation for a Draft Environmental Assessment to relocate the Kipuka o ke Ola (KOKO) Native Hawaiian Rural Health Clinic to Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, South Kohala District, Hawaii Island, Tax Map Key (3) 6-4-038:011.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning & Ventilating
- Chapter 11-41 Lead-based Paint Activities
- Chapter 11-45 Radiation Control
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-504 Asbestos Abatement Certification Program

Information pertaining to other health and environmental issues may be addressed by other programs within our department.

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Thomas G. Lileikis
Program Manager
Indoor and Radiological Health Branch

SSFM International
Innovate | Adapt | Sustain

October 3, 2022

SSFM 2021_043.000

TO: State of Hawai‘i
Department of Health
Indoor and Radiological Health Branch
P.O. Box 3378
Honolulu, Hawai‘i 96801

Attention: Mr. Thomas Lileikis, Program Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai‘i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Lileikis,

Thank you for your July 5, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the comment provided by the State Department of Health (DOH), Indoor and Radiological Health Branch that project activities shall comply with the listed Administrative Rules of the DOH. Sections 2.4 and 3.14 of the Draft Environmental Assessment (Draft EA) includes references to the applicable Administrative Rules of the DOH, including Chapter 11-39 Air Conditioning & Ventilating and Chapter 11-46 Community Noise Control.

A copy of your July 5, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

SSFM INTERNATIONAL, INC.
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STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

JUL - 7 2022

SSFM International, Inc.
Attn: Jared Chang
501 Sumner Street, Suite 620
Honolulu, HI 96817

Dear Mr. Chang:

Subject: Pre-Consultation Assessment for Draft Assessment for
Waimea Nui Regional Community Development Initiative
Kipuka o ke Ola (KOKO) Clinic Relocation
Waimea, S. Kohala, Hawaii Island, Hawaii
TMK: (3) 6-4-038: 011

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities. However, as we serve many of the agencies to be located in the facility, we would like to be kept informed of the progress and may offer comments at a later date

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at (808) 586-0584.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

GT:mo
c: Mari Joy Angsioco, DAGS HDO

SSFM International
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October 3, 2022

SSFM 2021_043.000

TO: State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810

Attention: Ms. Christine Kinimaka, Public Works Administrator

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Ms. Kinimaka,

Thank you for your July 7, 2022 letter commenting on the Pre-Assessment Consultation Letter for the subject project. The State Department of Hawaiian Home Lands acknowledges that the State Department of Accounting and General Services does not have any comments to offer at this time.

A copy of your July 7, 2022 letter, as well as this response letter, will be included in the Draft Environmental Assessment. We appreciate your participation in the Environmental Assessment process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

501 Sumner Street | Suite 620 | Honolulu, Hawaii 96817 | Tel 808.531.1308 | Fax 855.329.7736 | www.ssfm.com
Planning | Project & Construction Management | Structural, Civil & Traffic Engineering

DEPARTMENT OF WATER SUPPLY • COUNTY OF H
345 KEKŪANAŌ'A STREET, SUITE 20 • HILO, HAWAI'I 96720
TELEPHONE (808) 961-8050 • FAX (808) 961-8657

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July 13, 2022

Mr. Jared K. Chang, AICP, Senior Planner
SSFM International, Inc.
501 Sumner Street, Suite 620
Honolulu, HI 96817

Dear Mr. Chang:

SUBJECT: Waimea Nui Regional Community Development Initiative
Kipuka o ke Ola (KOKO) Clinic Relocation
Pre-Assessment Consultation for Draft Environmental Assessment
Tax Map Key 6-4-038:011

We have reviewed the Pre-Assessment for the Draft Environmental Assessment and have the following comments.

Please be informed that the water availability in the area, which is subject to change without notice, allows for up to a maximum of 25 units of water per pre-existing lot of record. Each unit of water is equal to an average daily usage of 400 gallons. The subject parcel is currently serviced by a combination 8-inch x 4-inch meter, which is allocated 25 units of water or 10,000 gallons per day.

Therefore, the Department cannot provide additional water at this time. Extensive improvements and additions, which may include, but not be limited to, source, storage, booster pumps, transmission, and distribution facilities, would be required. Currently, sufficient funding is not available from the Department for such improvements and no time schedule is set.

The applicant of the subject parcel may proceed to enter into a Water Development Agreement with the Water Board, in accordance with Rule 5 of the Department's Rules and Regulations, to obtain a water commitment from the Department for the proposed development. The Agreement will establish, among other things, the scope of the necessary water system improvements, facilities charges to be paid, and a timeline for construction.

Should there be any questions, please contact Mr. Troy Samura of our Water Resources and Planning Branch at (808) 961-8070, extension 255.

Sincerely yours,

Keith K. Okamoto, P.E.
Manager-Chief Engineer

TS:dmj

. . . Water, Our Most Precious Resource . . . Ka Wai A Kāne . . .

The Department of Water Supply is an Equal Opportunity provider and employer.

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October 3, 2022

SSFM 2021_043.000

TO: County of Hawai'i
Department of Water Supply
345 Kekuanao'a St., Suite 20
Hilo, Hawai'i 96720

Attention: Mr. Keith Okamoto, P.E., Manager-Chief Engineer

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Okamoto,

Thank you for your July 13, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands (DHHL) acknowledges the comments provided by the County of Hawai'i, Department of Water Supply (DWS). The DHHL acknowledges that further consultation and coordination with the DWS and State Department of Agriculture is required to determine the best possible solution to provide potable water to the project site.

In addition, reference to the DWS' comment and the proposed water system described in the 2015 Final Environmental Assessment - Finding of No Significant Impact (FEA-FONSI) for the Waimea Nui Regional Community Development Initiative (WNR-CDI) has been included in Section 3.12.1 of the Draft Environmental Assessment (Draft EA). In the 2015 FEA-FONSI, it was proposed that the WNR-CDI development use agriculture water from the Waimea Irrigation System, which is managed by the State Department of Agriculture (DOA), to be treated and distributed on-site for potable use. The system would be certified through the DOH as a public water system. As the Waimea Irrigation System experiences low pressure during peak flows, a tank farm was proposed to be constructed so that water from the system would fill on-site tanks during off-peak hours to meet potable and non-potable water demands without adversely affecting the irrigation system. As the KOKO Clinic would be relocated to the WNR-CDI's site, it is anticipated that it would be serviced by the same water system. It should be noted that the water system and proposed developments indicated in the 2015 FEA-FONSI have not been developed as of the date of this letter.

A copy of your July 13, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

Subject: IPaC generated official species list for the Pacific Islands Fish and Wildlife Office

Dear Action Agency or Applicant:

The Pacific Islands Fish and Wildlife Office (PIFWO) is transitioning to the Information for Planning and Consultation (IPaC) online portal, https://ipac.ecosphere.fws.gov/ for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species, designated critical habitat, and avoidance and minimization measures to consider in your general project design. IPaC has been used by continental USFWS offices to provide official species lists and avoidance and minimization guidance since 2017. Using IPaC expedites the process for species list distribution. Obtaining a species list in IPaC is relatively straightforward and takes minimal time to complete. Step by step instructions are included below.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list.

We hope this process provides efficiencies to our partners in obtaining a species list. For federal action agencies, it also opens additional IPaC functionality that the PIFWO office is still working on, such as the use of Determination Keys for informal section 7 programmatic consultations. We will let our agency partners know when that functionality becomes available.

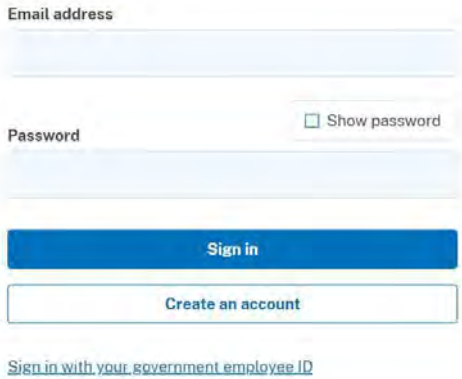
If you have questions about a species list obtained through the IPaC system or need assistance in completing an IPaC species list request, please contact the Service at 808-792-9400 or via email at pifwo_admin@fws.gov. We appreciate your efforts to conserve listed species across the Pacific Islands.

Instructions for Action Agencies and partners to obtain an official species list in IPaC

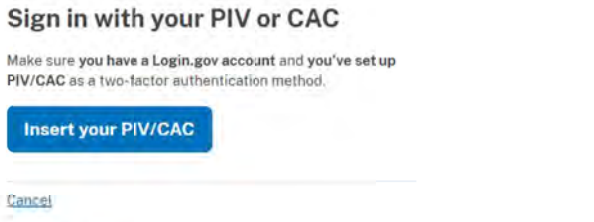
- Navigate to https://ipac.ecosphere.fws.gov/
- You can get an unofficial species list without logging in. However, if you want an official species list you will need to log in first using your Login.gov account. If you don't have an IPaC account, they are easy to create.



Select Log in with Login.gov and sign in using your email and password.



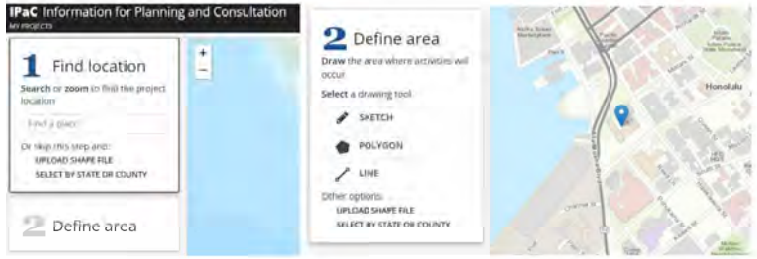
If you have a PIV or CAC card, you can sign in using that method as well.



- Once you log in, select "Get Started".

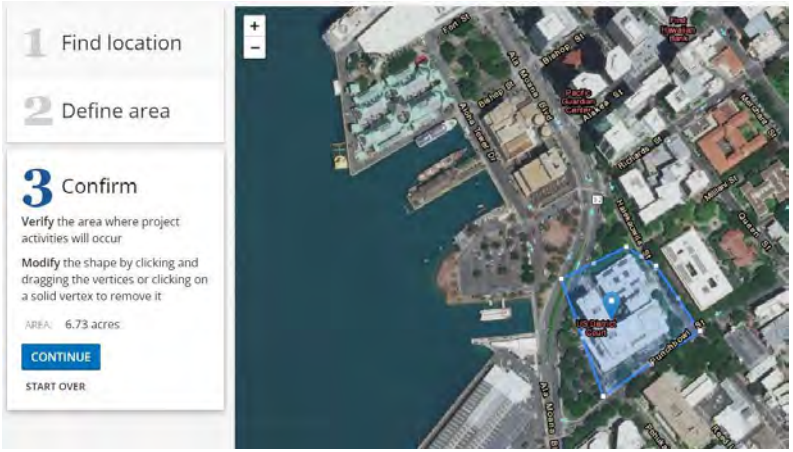


- Define the action area: Identify the location of the proposed action by uploading an existing shapefile or by entering an address or coordinates of the action area. Once identified on the map, you can manually draw the action area using the drawing tools.



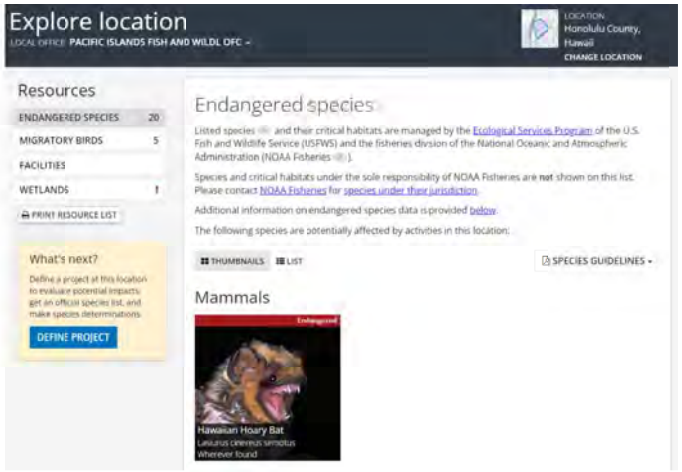


To help identify your action area you can choose between multiple base maps available.

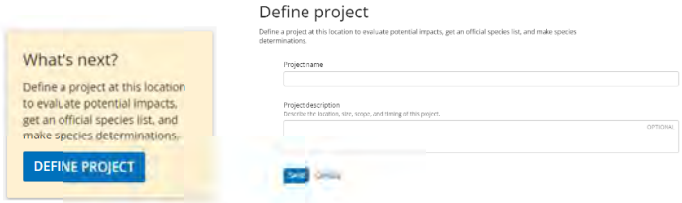


Press continue when you have finished drawing or uploading the action area location.

- The species information on the page that follows is not official. However, it identifies the project County, local Fish and Wildlife Field Office, species covered under NOAA Fisheries as well as Migratory Bird Treaty Act species. The list can be viewed in Thumbnail or List format.
- Once the species list populates you will see images of the species that may occur on, near, or transgress across your project. Click on SPECIES GUIDELINES on your top right to see Avoidance and Minimization measures to incorporate into your General Project Design Guidelines.

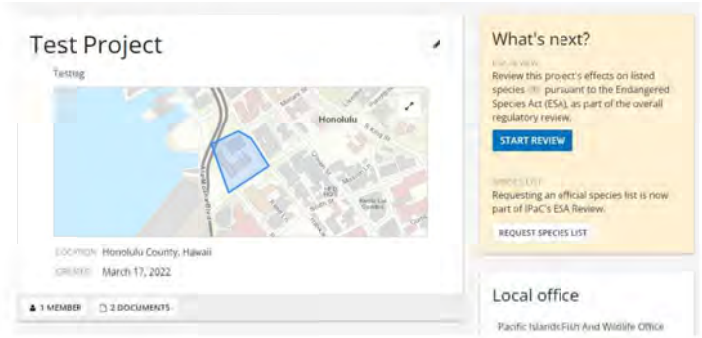


- Continue with the following steps to comply with the requirements of ESA section 7 to obtain an **official species list**.
- Select Define Project

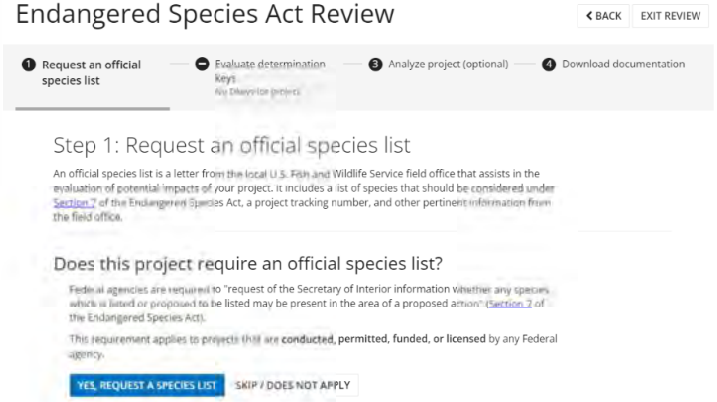


Enter the Project Name and a brief description of the project (a description is not mandatory, but recommended for future coordination with the Service). Click SAVE at bottom of page.

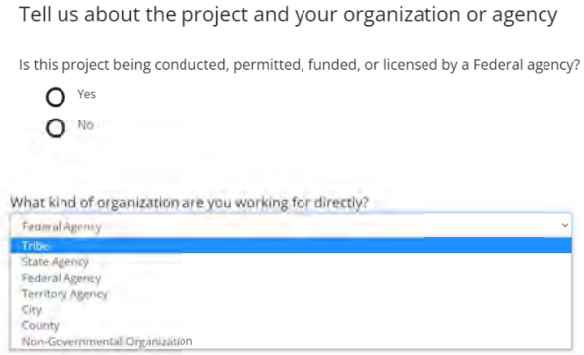
- At the bottom of the What's next box on the right, click Request Species List



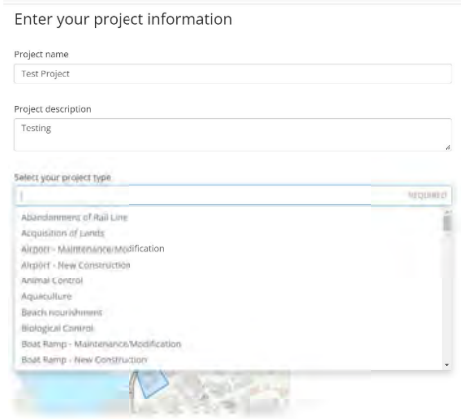
- on the following screen, click Yes, Request Species List



- Fill out the contact information for yourself or your agency. Contractors, state partners, and any other project proponents may request a species list and should be covered using the dropdown menus.



- From the pull-down menu for Classify Type of Project, select the project type that best fits the proposed action.

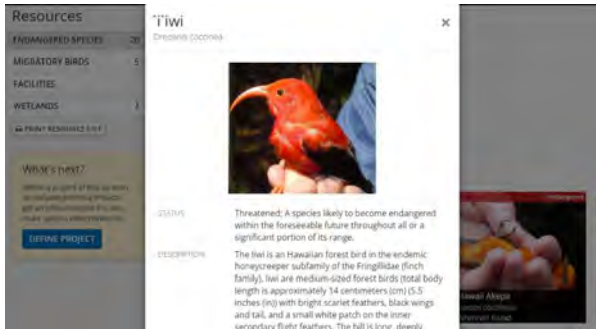


- Once all required sections are filled out, press SUBMIT OFFICIAL SPECIES LIST REQUEST



- An Official Species List should be generated and available for download in a couple of seconds.

- If you need additional information on a species, click on their name that is hot-linked to their species information page. A brief overview of the species' status, description and critical habitat will appear as well as a link to their ECOS species profile.



SSFM International
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October 3, 2022 SSFM 2021_043.000

TO: U.S. Department of Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

Attention: Ms. Lindsy Asman, Island Team Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Ms. Asman,

Thank you for your July 13, 2022 email commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands (DHHL) acknowledges the comment provided by the U.S. Fish and Wildlife Service regarding species list being available on the online Information for Planning and Consultation (IPaC) system. The species list for the proposed project area has been included in Section 3.6.2 of the Draft Environmental Assessment (Draft EA). The relevant minimization measures included in the "General Project Design Guidelines" have also been included in Section 3.6.2, and are included as Appendix B of the Draft EA.

A copy of your July 13, 2022 email, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group

501 Sumner Street | Suite 620 | Honolulu, Hawaii 96817 | Tel 808.531.1308 | Fax 855.329.7736 | www.ssfm.com
Planning | Project & Construction Management | Structural, Civil & Traffic Engineering

USDA
United States Department of Agriculture

July 14, 2022

VIA EMAIL ONLY: jchang@ssfm.com

Mr. Jared K. Chang, AICP
Senior Planner, SSFM International
501 Sumner Street
Honolulu, HI 96817

RE: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation for Draft Environmental Assessment

Aloha Mr. Chang,

This letter is in response to your pre-assessment consultation letter dated July 1, 2022, requesting comments, concerns, or regulatory requirements from the United States Department of Agricultural 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 at (808) 933-8304 or Lennie.Okano-Kendrick@usda.gov if you have any questions or need further information.

Mahalo,

LENNIE OKANO-KENDRICK
Digitally signed by LENNIE OKANO-KENDRICK
Date: 2022.07.14 10:30:06 -10'00'

Lennie Okano-Kendrick, P.E.
Engineer / Environmental Coordinator
Hawai'i, Western Pacific and American Samoa

Rural Development
154 Waianuenue Avenue, Rm 311, Hilo, Hawaii 96720
Voice (808) 933-8380 • Fax 1-855-878-2460

USDA is an equal opportunity provider, employer, and lender.

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.

SSFM International
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October 3, 2022 SSFM 2021_043.000

TO: U.S. Department of Agriculture
Rural Development Agency
154 Waiānuenue Avenue, Rm 311
Hilo, Hawai'i 96720

Attention: Ms. Lennie Okano-Kendrick, P.E., Engineer/Environmental Coordinator

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Ms. Okano-Kendrick,

Thank you for your July 14, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands (DHHL) acknowledges the U.S. Department of Agriculture (USDA), Rural Development Agency's comment regarding compliance with environmental requirements set forth in 7 CFR Part 1970 - Environmental Policies and Procedures should financial assistance from any of USDA's agency programs be applied for. The KOKO Clinic has received a Rural Business Development planning grant from the USDA for the design of the new clinic. Compliance with 7 CFR Part 1970 - Environmental Policies and Procedures has been listed in Table 1 of the Draft Environmental Assessment (Draft EA).

A copy of your July 14, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

Mitchell D. Roth
Mayor

Paul K. Ferreira
Police Chief

Kenneth Bugado Jr.
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 15, 2022

SSFM International, Inc.
RECEIVED
7.21.2022

Mr. Jared K. Chang, AICP
Senior Planner
SSFM International, Inc.
99 Aupuni Street, Suite 202
Hilo, HI 96720

SUBJECT: WAIMEA NUI REGIONAL COMMUNITY DEVELOPMENT INITIATIVE
KĪPUKA O KE OLA (KOKO) CLINIC RELOCATION
TAX MAP KEY: (3) 6-4-038:011 POR.
WAIMEA, SOUTH KOHALA DISTRICT, ISLAND OF HAWAI'I
PRE-ASSESSMENT CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT

Dear Mr. Chang:

In reference to your July 1, 2022 letter regarding the above subject, staff has reviewed your communication and reserves comment until completion and receipt of the Draft Environmental Assessment.

If you have any additional questions or concerns regarding this matter, please feel free to contact Captain Jeremie Evangelista, Commander of our South Kohala District, at (808) 887-3080 or via email at jeremie.evangelista@hawaiicounty.gov.

Sincerely,

PAUL K. FERREIRA
POLICE CHIEF

JCE/jaj
22HQ0782

"Hawai'i County is an Equal Opportunity Provider and Employer"

SSFM International
Innovate | Adapt | Sustain

October 3, 2022 SSFM 2021_043.000

TO: County of Hawai'i
Police Department
349 Kapi'olani St.
Hilo, Hawai'i 96720

Attention: Mr. Paul Ferreira, Police Chief

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Ferreira,

Thank you for your July 15, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the comment provided by the County of Hawai'i, Police Department to reserve comments until completion of the Draft Environmental Assessment (Draft EA).

A copy of your July 15, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Jul 29, 2022

SSFM International, Inc.
Attn: Mr. Jared Chang, Senior Planner
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

via email: jchang@ssfm.com

Dear Mr. Chang:

SUBJECT: Pre-Assessment Consultation for DEA for **Kipuka o ke Ola** (KOKO) Clinic Relocation located at Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por., on behalf of Waimea Nui Regional Community Development Initiative (WNR-CDI)

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.

At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division-Hawaii District on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

7/22/22

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Jul 8, 2022

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division (DLNR.ENGR@hawaii.gov)
X Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
__Div. of State Parks
X Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for DEA for **Kipuka o ke Ola** (KOKO) Clinic Relocation
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International on behalf of Waimea Nui Regional Community Development Initiative (WNR-CDI)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **July 29, 2022.**

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 Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
(✓) We have no comments.
( ) We have no additional comments.
( ) Comments are included/attached.

Signed: [signature]
Print Name: GORDON C. HEIT
Division: Land Division
Date: 7/22/22

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON

MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

July 25, 2022

REF: RFD.4130.8

TO: Mr. Jared Chang, AICP, Senior Planner
SSFM International, Inc.

FROM: M. Kaleo Manuel, Deputy Director
Commission on Water Resource Management

SUBJECT: Waimea Nui Regional Community Development Initiative

FILE NO.: RFD.4130.8
TMK NO.: (3) 6-4-038:011 por.

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 county's Water Use and Development Plan. 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 Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- [ ] 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- [X] 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development 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.
- [X] 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to 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/
- [X] 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.
- [X] 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

- [ ] 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 and the developer's 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 Hawaii 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.
- [ ] 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.
- [ ] 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 from our office, or whether there are potential impacts to water resources.

- [X] OTHER: Planning -

The Commission strongly encourages the implementation of water conservation measures, best management practices to mitigate storm water runoff, and the reuse of storm water and the use of other alternative non-potable sources where practicable.

If you have any questions, please contact Katie Roth of the Commission staff at (808) 587-0216.

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October 3, 2022 SSFM 2021_043.000

TO: State of Hawai'i
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawai'i 96809

Attention: Mr. M. Kaleo Manuel, Deputy Director

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Manuel,

Thank you for your July 25, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the State Commission on Water Resource Management's (CWRM) comments regarding water resources. The recommendations provided by the CWRM have been included in Section 3.12.1 of the Draft Environmental Assessment (Draft EA).

A copy of your July 25, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

501 Sumner Street | Suite 620 | Honolulu, Hawaii 96817 | Tel 808.531.1308 | Fax 855.329.7736 | www.ssfm.com
Planning | Project & Construction Management | Structural, Civil & Traffic Engineering

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Jul 8, 2022

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division (DLNR.ENGR@hawaii.gov)
X Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
__Div. of State Parks
X Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for DEA for **Kipuka o ke Ola** (KOKO) Clinic Relocation
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International on behalf of Waimea Nui Regional Community Development Initiative (WNR-CDI)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **July 29, 2022.**

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 Darlene Nakamura at darlene.k.nakamura@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: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Jul 27, 2022

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Pre-Assessment Consultation for DEA for Kipuka o ke Ola (KOKO) Clinic Relocation
Location: Waimea, South Kohala District, Island of Hawaii
TMK(s): (3) 6-4-038:011 por.
Applicant: SSFM International on behalf of Waimea Nui Regional Community Development Initiative (WNR-CDI)

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 to research 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) (http://gis.hawaiinfip.org/FHAT) 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: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: Jul 27, 2022

SSFM International
Innovate | Adapt | Sustain

October 3, 2022 SSFM 2021_043.000

TO: State of Hawai'i
Department of Land and Natural Resources
Engineering Division
1151 Punchbowl St., Room 221
Honolulu, Hawai'i 96813

Attention: Mr. Carty Chang, Chief Engineer

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Chang,

Thank you for your July 27, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the State Department of Land and Natural Resources, Engineering Division's comment regarding the rules and regulations of the National Flood Insurance Program. The proposed project site is within the Federal Emergency Management Agency's Flood Zone X, which is not a Special Flood Hazard Zone and does not have any regulations for development. This discussion is included in Section 3.5 of the Draft Environmental Assessment (Draft EA).

A copy of your July 27, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Jul 8, 2022

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division (DLNR.ENGR@hawaii.gov)
X Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
__Div. of State Parks
X Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands
X Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for DEA for **Kipuka o ke Ola** (KOKO) Clinic Relocation
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International on behalf of Waimea Nui Regional Community Development Initiative (WNR-CDI)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit comments by **July 29, 2022.**

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 Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Lainie Berry*
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Jul 27, 2022

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

July 27, 2022

MEMORANDUM *Log no. 3742*

TO: RUSSELL Y. TSUJI, Land Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: **Division of Forestry and Wildlife Comments for the Pre-Assessment Consultation for a Draft Environmental Assessment (DEA) for the Kīpuka o ke Ola (KOKO) Clinic Relocation on Hawai'i Island**

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your pre-assessment consultation request for a DEA regarding Waimea Nui Regional Community Development Initiative to relocate KOKO Native Hawaiian Rural Health Clinic to the Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, in the South Kola District, on the island of Hawai'i, TMK: (3) 6-4-038:011. The proposed project consists of relocating the KOKO Clinic to DHHL Homestead Lands on a 2.5-acre portion of the undeveloped 161-acre property leased by the Waimea Nui Community Development Corporation.

The State listed Hawaiian Hoary Bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided for any construction because bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used to be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15. This is the period when young seabirds take their maiden voyage to the open sea. Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated to protect seabird flyways and preserve the night sky. For illustrations and guidance related to seabird-friendly light styles that also protect seabirds and

the dark starry skies of Hawai'i please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

The State listed Hawaiian Goose or Nēnē (*Branta sandvicensis*) could potentially occur in the vicinity of the proposed project site. It is against State law to harm or harass these species. If any are present during construction, then all activities within 100 feet (30 meters) should cease, and the bird or birds should not be approached. Work may continue after the bird or birds leave the area of their own accord. If a nest is discovered at any point, please contact the Hawai'i Island Branch DOFAW Office at (808) 974-4221.

The State listed Hawaiian Hawk or 'Io (*Buteo solitarius*) may occur in the project vicinity. DOFAW recommends surveying the area to ensure no Hawaiian Hawk nests are present if trees are to be cut. 'Io nests may be present during the breeding season from March to September.

The project area is within the range of the State listed Blackburn's Sphinx Moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants that include tree tobacco (*Nicotiana glauca*), which grows in disturbed soil. We recommend contacting the Hawai'i Island Branch DOFAW office at (808) 974-4221 for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of plants preferred by BSM. DOFAW recommends removing plants less than one meter in height or during the dry time of the year to avoid harm to BSM. If you intend to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified biologist for the presence of BSM eggs and larvae.

DOFAW recommends using native plant species for landscaping that are appropriate for the area (i.e., climate conditions are suitable for the plants to thrive, historically occurred there, etc.). Please do not plant invasive species. DOFAW also recommends consulting the Hawai'i-Pacific Weed Risk Assessment website to determine the potential invasiveness of plants proposed for use in the project (https://sites.google.com/site/weedriskassessment/home). Please refer to www.plantpono.org for guidance on the selection and evaluation of landscaping plants.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetles), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the Big Island Invasive Species Committee (BIISC) at (808) 933-3340 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsability of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or paul.m.radley@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Widlife Program Manager

SSFM International
Innovate | Adapt | Sustain

October 3, 2022 SSFM 2021_043.000

TO: State of Hawai'i
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St., Room 325
Honolulu, Hawai'i 96813

Attention: Ms. Lainie Berry, Wildlife Program Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Ms. Berry,

Thank you for your July 27, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the State Department of Land and Natural Resources, Division of Forestry and Wildlife's (DOFAW) recommendations to minimize potential impacts to State listed Hawaiian Hoary Bat, Hawaiian Goose, Hawaiian Hawk, Blackburn's Sphinx Moth, and seabirds, as well as native plant species. The recommendations provided by DOFAW have been included in Section 3.6.2 of the Draft Environmental Assessment (Draft EA).

A copy of your July 27, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

DAVID Y. IGE
GOVERNOR

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF FACILITIES AND OPERATIONS

SSFM INTERNATIONAL, INC.
RECEIVED
AUG 01 2022
FILE COPY

July 28, 2022

Jared K. Chang, AICP
SSFM International
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

Re: Pre-Assessment Consultation for Draft Environmental Assessment for the Waimea Nui Regional Community Development Initiative, Kipuka o ke Ola Clinic Relocation, Waimea, South Kohala District, TMK (3)6-4-038:011

Dear. Mr. Chang:

Thank you for your letter that dated, July 1, 2022. Based on the information provided, the proposed project will not impact Hawaii State Department of Education facilities.

Thank you for the opportunity to comment. Should you have any questions, please contact Cori China of the Facilities Development Branch, Planning Section, at (808) 784-5095.

Sincerely,

Roy Ikeda
Interim Public Works Manager
Planning Section

RI:ctc

c: Facilities Development Branch

SSFM International
Innovate | Adapt | Sustain

October 3, 2022

SSFM 2021_043.000

TO: State of Hawai‘i
Department of Land and Natural Resources
Engineering Division
1151 Punchbowl St., Room 221
Honolulu, Hawai‘i 96813

Attention: Mr. Roy Ikeda, Interim Public Works Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai‘i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Ikeda,

Thank you for your July 28, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands acknowledges the State Department of Education's (DOE) comment that the proposed project will not impact any DOE facilities.

A copy of your July 28, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

Mitchell D. Roth
Mayor

Lee E. Lord
Managing 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 μi
PLANNING DEPARTMENT

Zendo Kern
Director

Jeffrey W. Darrow
Deputy Director

East Hawai‘i Office
101 Pauahi Street, Suite 3
Hilo, Hawai‘i 96720
Phone (808) 961-8288
Fax (808) 961-8742

August 30, 2022

Jared K. Chang
SSFM International
501 Sumner Street
Honolulu, HI 96817

Dear Mr. Chang:

SUBJECT: Early Consultation for Draft Environmental Assessment (PL-INT-2022-003133)
Landowner: Department of Hawaiian Homelands (DHHL)
Project: Waimea Nui Regional Community Development Initiative . ¯puka o ke Ola (KOKO) Clinic Relocation
Location: (3)6-4-038:011 por. Waimea, South Kohala District, Island of + D Z D L ‰ L

Thank you for including us in early consultation for this draft environmental assessment.

The State Land Use designation of the subject property is Agriculture. Hawai‘i Revised Statutes (H.R.S.), Section 205-4.5 allows for "public institutions and buildings that are necessary for agricultural practices" to be permitted uses in Agriculture State Land Use districts[1]. The Land Use Pattern Allocation Guide (LUPAG) Map from the 2005 General Plan designation is Important Agricultural Land[2]. In the face of competition from urban uses, "the protection of important agricultural lands has long been a policy of the County"[3]. The County Zoning of the property is also agriculture and noted as A-40a, which provides for agricultural and very low density agriculturally based residential use, encompassing rural areas of good to marginal agricultural and grazing land, forest land, game habitats, and areas where urbanization is not found to be appropriate[4].

The Planning Department herein references the Memorandum of Agreement between the County of Hawai‘i and the Department of Hawaiian Homelands (dated January 7, 2003): "County zoning cannot override the authority of the Hawaiian Homes Commission to control the uses of its

[1] H.R.S. §205-4.5(a)(5)
[2] "Important Agricultural Land: Important agricultural lands are those with better potential for sustained high agricultural yields because of soil type, climate, topography, or other factors".
[3] 2005 General Plan 2.1 (Agriculture)
[4] HCC Sec. 25-5-70. Purpose and Applicability

property". Please continue to inform the County of any changes in preferred zoning designation for the subject (DHHL) parcel; DHHL will choose from existing county zoning districts and the Planning Department will enter those on its maps.

Moreover, the Planning Department herein references the November 13, 2019 Attorney General Opinion which opines that under the Hawaiian Homes Commission Act, laws that would "significantly affect" DHHL's use of its lands cannot apply to Hawaiian Home Lands. You may reference the enclosed Attorney General's opinion in furtherance of resolving any State/County land use conflicts that may arise for the subject (DHHL) parcel. To wit: "To the extent that the LUC's classifications conflict with DHHL's uses of its lands for homesteading purposes, the HHCA will control and the LUC's classifications cannot be enforced".

We look forward to reviewing the Draft Environmental Assessment when available. If you have any questions regarding this correspondence, please contact Kevin Sullivan of this office at (808) 961-8135 or via email at kevin.sullivan@hawaiicounty.gov.

Sincerely,

Zendo Kern
Zendo Kern (Aug 30, 2022 09:48 HST)

ZENDO KERN
Planning Director

Attachments:
January 7, 2003 Memorandum No. 03-2: MOA between County of Hawai'i and the DHHL
November 13, 2019 Attorney General Opinion (The Honorable William J. Aila, Jr.)

KS:cc
\\coh01\planning\public\wpwin60\CH343\2022\08.30.2022_PL-INT-2022-003133_PreConsultDEA_WaimeaNuiRegionalCommDev.docx

Harry Kim
Mayor

Christopher J. Yuen
Director

Roy R. Takemoto
Deputy Director

County of Hawaii

PLANNING DEPARTMENT
25 Aupuni Street, Room 109 • Hilo, Hawaii 96720-4252
(808) 961-8288 • Fax (808) 961-8742

MEMORANDUM NO. 03-2

January 7, 2003

TO: STAFF

FROM: CHRISTOPHER J. YUEN
PLANNING DIRECTOR

SUBJECT: MEMORANDUM OF AGREEMENT BETWEEN THE COUNTY OF HAWAII AND THE DEPARTMENT OF HAWAIIAN HOME LANDS

The County of Hawaii and the Department of Hawaiian Home Lands have adopted a Memorandum of Agreement. A copy of the full MOA is attached to this memo. It covers various areas such as the payment of real property taxes and county maintenance of facilities on DHHL property. The purpose of this memo is to explain how the MOA affects our activities in the Planning Department.

The basic premise of the MOA is that County zoning cannot override the authority of the Hawaiian Homes Commission to control the uses of its property. However, County regulations that do not have the effect of controlling the ultimate use still apply. Much of what the Planning Department does—subdivision approval, plan approval, building permit review—happens after the determination of the basic use has been zoned. These Planning Department services are necessary for the orderly development of land in this county. They are a service both to the affected landowner and the general community.

Under the MOA, DHHL will determine the uses for its lands through its own planning system, and will follow land use plans adopted by the Hawaiian Homes Commission. Those plans are currently being formulated. The Planning Department will have input, but not any final authority. Generally speaking, DHHL must go through a Chap. 343 EIS process before beginning any new projects, because of the Hawaii Supreme Court's decision in Kepo'o v. Watson, 87 Haw. 91, 952 P.2d 379 (1998), so the public can comment on their plans during that process.

DHHL will let the County know its preferred zoning designation for its property and the Planning Department will enter those on its maps. DHHL will choose from the existing county zoning districts. For lands that are presently occupied, we will be writing to DHHL to suggest zoning designations that are consistent with the present uses. For example, the present Walmart Center site is zoned ML; the present uses would be more consistent with CG or possibly MCX.

We will have some formality in entering these zoning designations on the maps. I will be writing to DHHL to ask whether these zoning designations for existing uses should be decided by the Commission or by their staff. On our end, there will be a director's memo directing the change in the zoning maps after we get word from DHHL, and the map entry will reference the memo.

Thereafter, the Planning Department will administer permits and approvals on DHHL property in the same way as it would for other landowners (with slight differences as discussed in this memo.) The MOA says that "all normal land use controls will be applied by Hawaii County to DHHL property according to the zoning district selected by DHHL." This means that, for example, that if DHHL constructs a new residential subdivision in what they have designated as an RS-10 zone, they will apply for subdivision approval in the same manner as other subdividers, and will be held to the same standards for roads and other infrastructure (unless they obtain a variance or a PUD, again through normal procedures). DHHL lessees who wish to construct buildings in commercial districts will need Plan Approval. In reviewing building permits for homes on DHHL property, Planning Department staff will look for the same elements as in the applicable zoning district: setbacks, heights, etc. We will continue to waive subdivision fees for DHHL per prior agreement.

All permit applications will have to be accompanied by a written consent from DHHL. Unless you are instructed otherwise, a consent signed by a DHHL staff person will be adequate; this will not be done by the Commission. We will be writing DHHL to determine if there are categories of applications that will not need DHHL consent, such as building permits for minor home improvements.

Under the MOA, the county will also enforce land use violations on Hawaiian home lands. Because of some transitional issues, all complaints should be discussed with the director or deputy director before any action is taken. One of the main transitional issues is that some of the present zoning designations will have to be changed: we will not be citing Walmart and Borders as zoning code violations pending the change from ML. We

will also inform DHHL of any violation before we make a citation and give them the opportunity to correct it before we take any enforcement action. For the most part, zoning violations will also be violations of the DHHL lease. There are going to be some thorny issues with respect to violations because in some cases, people established businesses on DHHL property that are inconsistent with zoning after observing that the County was taking the position that it had no jurisdiction to control land uses on DHHL property.

DHHL lessees will have to apply (with DHHL consent) for special permits on ag land, and for use permits on residentially-zoned land, if they wish to commence uses that would need special permits or use permits in the zone in question. The MOA does contemplate that DHHL may implement its own special permit procedure at some point in the future.

For new developments, County zoning will not control the ultimate use; our only role will be to comment. The MOA does commit DHHL to build offsite infrastructure necessary for the new development (such as access roads to the property) to the same extent that would be expected of a private developer similarly situated.

This memo probably does not answer all questions that might arise in connection with DHHL property. Any questions should be brought to the director or deputy director. The MOA itself does not answer all questions. We are committed to working out unresolved issues with DHHL in a cooperative spirit. Staff should bring these issues to the director or deputy director so that we can discuss them with DHHL.

During the negotiation of the MOA we had questions about the overall legality of the agreement. There is definitely a legal "gray area" with respect to the county's authority over DHHL property. There is also a gray area with respect to state property in general. These jurisdictional disputes and gray areas have led to the government not doing its job of serving the public. "Roads in limbo" is a prime example. The DHHL MOA is the attempt of the County government and DHHL to get back on track in a positive way. The only ways to remove the legal ambiguities are (1) legislation enacted by the state legislature, and (2) litigation. Either of these routes often results in further ambiguity and uncertainty.

Turning to the legality of the present MOA, it is clear that, in general, the county has no zoning authority over DHHL property unless some state statute gives it that authority. It is also clear that the County has no authority to prohibit DHHL from taking the property

granted to it and leasing it to Native Hawaiians for residential, agricultural, and pastoral uses. The major gray area concerns the laws that permit DHHL to lease land for commercial and industrial uses. It is not clear whether these laws incorporate the same restriction as DLNR leases of commercial and industrial lands: that they be "consistent with county zoning requirements". See H.R.S. sec. 171-41(a) (which applies to DLNR leases), and which possibly applies to commercial and industrial leases on DHHL property because of sec. 204(a)(2) of the Hawaiian Homes Act.

From the County's point of view, we want our zoning control to cover all lands so that we can implement comprehensive planning. From DHHL's point of view, it could not accept county zoning control without clear legal authority, and the County had previously acceded to DHHL's position that its commercial leases were not subject to county zoning (most prominently in the case of Walmart Center.) We primarily based the ultimate compromise in the MOA on the Hawaii Supreme Court's statement in Kepo'o v. Watson that zoning restrictions would not apply on DHHL property because they had the ultimate effect of controlling the use. 87 Haw. at 101. Although this is not a binding statement of the law, because the case did not directly involve county zoning, it is the closest statement made by the court on the issue.

On the other hand, the court also said in Kepo'o that DHHL property could be subject to other governmental regulations enacted to promote the public health and safety, such as environmental laws, as long as they had only an incidental or indirect effect upon the use of the property. This, therefore, is the legal basis for applying other regulations such as the various standards of the zoning code (setbacks, required parking areas, etc.), the building code, the subdivision code, grading ordinance, flood control laws, etc.

We have a February 2002 corporation counsel opinion that says that the approach taken by the MOA is legal and superceding Corporation Counsel Opinion 98-02.

CJY:pak
Wpwin60\Chris\DHHL Staff on MOA.doc – No. 03-02

Attachment

cc: Mayor Harry Kim
Mr. Darrell C. Yagodich, DHHL via Planning Office

Memorandum of Agreement Between the County of Hawaii and the Department of Hawaiian Home Lands

I. Purpose

The purpose of this Memorandum of Agreement (MOA) is to clarify the respective roles, responsibilities, and obligations of the County of Hawaii (County) and the Department of Hawaiian Home Lands (DHHL) relating to land use planning, infrastructure maintenance, enforcement of laws, and collection of taxes and other fees on Hawaiian home lands.

II. Guiding Principles

The following general principles have guided the development of this MOA:

A. The Hawaiian Homes Commission is responsible for determining land use on Hawaiian home lands. The County may not use its land use and zoning powers to prevent the Hawaiian Homes Commission from controlling the use of Hawaiian home lands.

B. The County and DHHL share common goals in planning for the use of Hawaiian home lands: both support the orderly development of those lands for the benefit of native Hawaiians and both are committed to the integration of planning by DHHL and Hawaii County.

C. The County should manage and maintain all infrastructure built to County standards

D. The County is authorized to enforce criminal laws and applicable County ordinances and regulations on Hawaiian home lands.

E. Hawaiian homestead lessees are residents of the County of Hawaii and should be treated in a manner consistent with all other residents of the County.

F. Hawaiian homestead lessees should pay all taxes and fees required by law.

G. The County and DHHL acknowledge that there are areas where agreement will not be reached, and agree to continue to work together toward a mutually acceptable resolution of such issues.

III. Relating to Planning and Land Use

A. DHHL will implement its Planning System which includes plans with DHHL land use designations such as the Hawaii Island Plan, various Development and Subdivision Plans, and Homestead Community Plans. In the formulation, updating, and amendment of these plans, DHHL will consult with the relevant County departments, and shall give due consideration and weight to their

comments, and to the Hawaii County General Plan, and other officially adopted plans such as Community Development Plans. All land uses on DHHL property will be placed according to the applicable DHHL plans.

B. The County will consult with DHHL over the appropriate designations of DHHL property in the Hawaii County General Plan LUPAG maps, and shall give due weight and consideration to the comments of DHHL, and to officially adopted DHHL plans.

C. Based on its plans and DHHL land use designations, DHHL will determine the appropriate County zoning districts that shall apply to the property in question. DHHL will communicate these zoning districts to the County.

D. All normal land use controls will be applied by Hawaii County to DHHL property according to the zoning district selected by DHHL. Except as specifically provided in the Agreement, DHHL will follow all normal land use procedures, regulations, and standards applicable to the zoning district.

E. All land use permit applications on Hawaiian home lands must be accompanied by written consent from DHHL before the County can begin processing those applications.

F. The standards of the various zoning districts selected will apply to DHHL property. DHHL and its lessees will go through normal County administrative variance procedures if they seek exemptions from standards.

G. For uses allowed in the various zoning districts that require special permits or use permits, DHHL and its lessees will go through the applicable County permit procedures. At some time in the future, DHHL may implement its own use permit procedure for Hawaiian home lands. If DHHL grants use permits, it will be responsible for enforcing violations of those permits. The County will be notified when DHHL has formulated its use permit system.

H. The County will advise DHHL of all violations by its lessees. The County will enforce land use codes and regulations on Hawaiian home lands in the same manner as with other landowners. DHHL will cooperate with the County in enforcing the terms of its leases requiring conformity to applicable laws and regulations, if requested by the County. Ongoing violations and failure to comply will be referred to DHHL after the County has exhausted all remedies short of pursuing legal action to address the violation. DHHL may institute lease enforcement proceedings in advance of, or in lieu of, County enforcement actions.

IV. <u>Relating to Public Facilities and Infrastructure Serving Hawaiian Home Lands</u>

A. In the development of future projects, DHHL will construct public facilities in accordance with County standards. Where departures from County standards are desired, DHHL will pursue exemptions and other administrative variances from the appropriate County department, in accordance with procedures established for all property owners. Should DHHL choose not to construct infrastructure in accordance with County standards, the County may view such improvements as private facilities for repair and maintenance purposes.

B. The County will accept operation, repair, and maintenance of all future DHHL infrastructure constructed according to County standards.

C. Existing infrastructure shall be subject to County inspection prior to being accepted by the County for operation, repair, and maintenance. The County may require DHHL to repair any damage such as leaks, holes, sags, or deterioration affecting the operation of the existing infrastructure, identified as a result of the inspection.

D. In the case of existing infrastructure that is not constructed to County standards, the County and DHHL will work to establish minimum standards for residential, agricultural, and pastoral subdivisions. Existing projects will be evaluated based on these new standards. The County may require DHHL to upgrade the infrastructure to the minimum standard prior to being accepted by the County for operations, repair, and maintenance.

E. The County will maintain infrastructure according to its own standards, resources and schedules. Any decisions as to upgrades or rehabilitation will be at the County's discretion.

F. Should DHHL elect to convert its land to a more intensive land use, DHHL will be responsible for upgrading the onsite infrastructure to accommodate the new use, and will consult with the County regarding the need to upgrade offsite infrastructure. DHHL and the County shall negotiate the extent to which DHHL will be responsible for any such offsite improvements requested by the County. DHHL shall be responsible for project-related offsite improvements to the extent that these would be required of other developers with similar projects. If offsite improvements benefit other property, DHHL and the County shall cooperate so that DHHL bears only its fair share of these improvement costs.

G. The County will treat DHHL lessees in the same manner as other property owners with respect to conformity with laws, ordinances, and regulations. The County will advise DHHL of violations, and will refer cases of ongoing violation to DHHL after the County has exhausted all remedies short of pursuing legal action

to address the violation. DHHL reserves the right to institute lease enforcement proceedings in advance of, or in lieu of, County enforcement actions.

V. Relating to the Enforcement of Criminal Violations on Hawaiian Home Lands

A. The County is authorized to and will enforce violations of criminal law on Hawaiian home lands.

B. County law enforcement agencies and DHHL will work to establish procedures regarding sharing information and providing testimony relating to arrests made on Hawaiian home lands needed for contested case hearings and other administrative and/or judicial proceedings.

VI. Relating to Real Property Taxes

A. Homestead lessees on Hawaiian home lands are responsible for the payment of real property taxes in accordance with the Hawaiian Homes Commission Act, 1920, as amended, and applicable County ordinances.

B. The County agrees to waive the penalty and interest on all delinquent real property taxes owed by Hawaiian homestead lessees as of December 31, 2001. Such waiver will apply to payments made by February 20, 2002, or to payments advanced by DHHL pursuant to paragraph C.

C. For those homestead lessees with real property tax balances, excluding penalty and interest, of more than $500, if payment is not made by February 20, 2002, DHHL will advance full payment of all real property taxes, excluding penalty and interest, to bring those bills current, within 60 days of receipt of an updated real property tax listing. This date may be extended by mutual agreement of the parties.

D. It is understood that the County's waiver of interest and penalty charges on delinquent real property taxes owed by homestead lessees as of December 31, 2001, and DHHL's advance of full payment of real property taxes, excluding interest and penalty, in accordance with paragraph C, is a one-time only offer.

E. In order to alleviate or reduce further delinquencies, the County will notify DHHL on an annual basis of any delinquent property owners.

F. The parties will continue to meet on an annual basis to evaluate the extent of delinquencies by Hawaiian homestead lessees on the Island of Hawaii and take action, if necessary, to keep delinquencies from recurring.

G. The County and DHHL shall work to establish a customer trust fund by July 1, 2004 to collect real property tax payments as part of the mortgage/loan payments in order to make smaller, regular payments.

VII. Areas for Further Collaboration

The parties agree to work further on the following issues:

A. The creation of new County zoning districts for farming and pastoral activities.

B. The development of infrastructure standards for rural land uses such as agricultural and pastoral activities.

C. The establishment of procedures for sharing evidence, information, and testimony involving criminal violations on Hawaiian home lands.

D. The implementation of actions to prevent and/or address future real property tax delinquencies by Hawaiian homestead lessees.

VIII. Termination

To achieve the objectives of this MOA, either party may, by mutual agreement in writing, further clarify or waive any term or condition of this agreement, provided such action does not violate any statutes, ordinances, or binding rules or regulations. DHHL and the County reserve the right to terminate this MOA upon one hundred eighty (180) days notice in writing to the other party.

In agreement thereof, the parties have entered into this Memorandum of Agreement on this _____ day of _____, 2002.

COUNTY OF HAWAII

By _____
Harry Kim, Mayor

APPROVED AS TO FORM:

By _____
Corporation Counsel

DEPARTMENT OF HAWAIIAN HOME LANDS

By _____
Raynard C. Soon, Chairman
Hawaiian Homes Commission

By _____
Deputy Attorney General

DAVID Y. IGE
GOVERNOR

CLARE E. CONNORS
ATTORNEY GENERAL

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November 13, 2019

CONFIDENTIAL/
ATTORNEY-CLIENT PRIVILEGED

The Honorable William J. Aila, Jr.
Chairman, Hawaiian Homes Commission
Department of Hawaiian Home Lands
State of Hawai'i
91-5420 Kapolei Parkway
Kapolei, Hawai'i 96707

Dear Chairman Aila:

Re: Enforcement of Land Use Classifications
Over Certain Hawaiian Home Lands

This letter responds to your request for an opinion as to whether the land use classification powers of the Land Use Commission extend to lands controlled by the Department of Hawaiian Home Lands.

We understand that your request arises from an inquiry by the County of Hawai'i as to whether its zoning responsibilities under chapter 205, Hawaii Revised Statutes, are applicable to DHHL's proposed subsistence agricultural homestead development on its lands in Pana'ewa, Hawai'i.[1] [2]

[1] The terms "Hawaiian home lands," "DHHL lands," "lands controlled by DHHL," and "its lands" are used interchangeably throughout this opinion with the term "available lands," which consist of all the lands described in section 203 of the Hawaiian Homes Commission Act, 1920, Act of July 9, 1921, ch. 42, 42 Stat. 108, and all other lands later designated by statute to constitute "available lands." This includes lands acquired by DHHL after the enactment of the HHCA.

[2] Under chapter 205, HRS, the counties are responsible for zoning within the LUC's land classification districts and are tasked with enforcing the LUC's land classifications in most situations. See footnote 8 of this letter.

In addition to its concerns regarding DHHL's subsistence agriculture homestead development, the County also asked DHHL to address apparent conflicts between DHHL's existing homestead developments and County zoning, which is based on the LUC's land classifications. The following table summarizes the DHHL developments identified as problematic by the County:

DHHL Project	Zoning Change	LUC Classification
Pana'ewa Subsistence Agricultural Lots	A-5a/A-1a to RA-.5a	Agricultural
Kawaihae Residential Lots	A-40a to RS-22	Agricultural
Pana'ewa Residential Lots	RS-10/A-5a to RS-15	Agricultural
Pu'u Pulehu Residential Lots	A-40a to RS-10	Agricultural
Kauhale 'Ōiwi o Pu'ukapu Cultural and Community Educational Center	A-40a to CV-10	Agricultural, would require special use permit from LUC
Lālāmilo Residential Lots	A-5a to RS-10	Agricultural
Maku'u Farmers Market	A-5a to CV-38	Agricultural, would require special use permit from LUC

We address the issues raised by you and the County by answering the following question.

I. QUESTION PRESENTED

The only question presented by your request is whether the LUC's land classification powers, and the County's powers to enforce such classifications, extend to the developments identified by the County as conflicting with existing LUC classifications.[3]

II. SHORT ANSWER

No. Under the HHCA, laws that would "significantly affect" DHHL's use of its lands cannot apply to Hawaiian home lands. To the extent that the LUC's classifications conflict with DHHL's uses of its lands for homesteading purposes, the HHCA will control and the LUC's classifications cannot be enforced.[4]

[3] Because the land in question is being developed for homestead purposes under the HHCA, we do not answer whether the LUC's powers extend to Hawaiian home lands being leased to private entities for non-homestead development under chapter 171, HRS.

[4] Should the lands in question lose their status as Hawaiian home lands, such as through a

III. DISCUSSION

A. Laws Governing DHHL Lands And The LUC

1. Federal and State laws relating to DHHL lands

As a compact with the United States upon admission of Hawai'i as a state, Hawai'i accepted the responsibility to manage and dispose of the Hawaiian home lands under the terms of the HHCA, and adopted the HHCA as a provision of the Hawai'i Constitution.[5] See section 4 of the Admission Act.[6] The HHCA is made a part of the state constitution by article XII, sections 1 and 3, of the Hawai'i Constitution.

Section 204(a) of the HHCA provides that all "available lands" shall "immediately assume the status of Hawaiian home lands and be under the control of the department to be used and disposed of in accordance with the provisions of this Act. . . ."[7]

The HHCA contains several exceptions to DHHL's sole authority to manage Hawaiian home lands: (1) any available lands under a lease made by the Territory of Hawai'i are to be managed by the Board of Land and Natural Resources (BLNR) until the lease expires or the land is withdrawn from the lease by BLNR, at which time the lands will be returned to DHHL's control; (2) DHHL may return available lands to BLNR if they are not used for homesteading purposes, subject to DHHL's right to reclaim such lands if they are subsequently required for homesteading; and (3) available lands may be exchanged for other lands of equal value only with the approval of the Secretary of the Interior of the United States. See HHCA §§ 204(a)(1), (2), and (3), respectively; see also HHCA § 212.

---

land exchange under section 204 of the HHCA, the LUC's classifications can be enforced on those lands from that point forward.

[5] Generally, the HHCA requires DHHL to make its lands available to native Hawaiians for residential, agricultural, and pastoral homesteading. See HHCA § 207. Under the Act, "native Hawaiian" is defined as "any descendant of not less than one-half part of the blood of the races inhabiting the Hawaiian Islands previous to 1778." See HHCA § 201.

[6] Act of March 18, 1959, Pub. L. No. 86-3, § 4, 73 Stat. 4.

[7] The HHCA originally placed control of Hawaiian home lands with a body known as the Hawaiian Homes Commission. Shortly after statehood, the Legislature created DHHL as the state agency responsible for managing Hawaiian home lands. The Commission is now the executive body that controls DHHL. See HHCA § 202.

In addition, section 206 of the HHCA provides that the powers and duties of the Governor and the BLNR "in respect to the lands of the State, shall not extend to lands having the status of Hawaiian home lands" except as provided in the HHCA.

2. DHHL's authority to manage its lands is generally subject to the State's police power

Although the HHCA places control of Hawaiian home lands with DHHL, the Hawai'i Supreme Court has held that the State may exercise its general police power on DHHL lands. In State v. Jim, 80 Hawai'i 168, 907 P.2d 754 (1995), two individuals were convicted of criminal trespass on Hawaiian home lands. In upholding their convictions, the Hawai'i Supreme Court held that the government may enforce its criminal laws on Hawaiian home lands because the exercise of the State's inherent police power "does not necessarily conflict with the responsibility to manage and dispose of these trust lands." Id. at 171, 907 P.2d at 757.

Our office has also opined that the Hawai'i Endangered Species Act, codified as chapter 195D, HRS, applies to the taking of endangered species on Hawaiian home lands. See Attorney General Opinion No. 95-05. There, our office applied the reasoning of the Jim decision and opined that the criminal penalties imposed by chapter 195D, HRS, are an exercise of the State's inherent police power that "are not necessarily in conflict with the Commission's responsibility to manage and dispose of these trust lands." Id.

Following Jim, the Hawai'i Supreme Court placed a limitation on the State's exercise of its inherent police powers on Hawaiian home lands. In Kepo'o v. Watson, 87 Hawai'i 91, 100, 952 P.2d 379, 388 (1998), the Hawai'i Supreme Court held that the State's inherent police power cannot be exercised over Hawaiian home lands when such actions would "significantly affect" DHHL's use of the land. This limitation is discussed more fully in section III.B.2 of this letter.

3. Statutory provisions governing the LUC

Chapter 205, HRS, tasks the LUC with establishing and amending boundaries for four major types of land use districts: urban, rural, agricultural, and conservation. HRS §§ 205-2 and 205-3.1. The LUC must place "all lands in the State" into one of the four types of land use districts. HRS § 205-2.

Each land use district is limited to certain permissible uses. For example, section 205-2, HRS, limits uses in an agricultural district to activities commonly associated with farming, such as cultivation of crops, animal husbandry, and aquaculture. Permissible uses on lands in an agricultural district that have soil ratings of A or B are further limited by

section 205-4.5, HRS. Land uses in a district contrary to those permitted by chapter 205 are not allowed unless the LUC amends the relevant district boundary to reclassify the land in question. HRS §§ 205-3.1 and 205-17.

Section 205-12, HRS, provides that the counties have the authority to enforce the land use classification districts adopted by the LUC and punish violators.[8] [9] The initial penalty for violation of any provision of chapter 205 is no more than $1,000 (or no more than $5,000 for an initial violation of a provision relating to land in an agricultural district). HRS § 205-13. Subsequent violations may result in a fine of no more than $5,000. Id.

B. In the Event of a Conflict, The LUC's Land Use Designations and County Zoning Must Yield To DHHL's Authority to Manage Hawaiian Home Lands

In this case, there is an apparent conflict between section 204(a) of the HHCA, which provides that Hawaiian home lands are to "be under the control of [DHHL] to be used and disposed of in accordance with the provisions of this Act," and the land classifications designated by the LUC, as well as the zoning imposed by the County pursuant to those classifications. For the following reasons, we believe that the LUC's land classifications and County zoning must yield to DHHL's authority to determine the appropriate use of its lands in the event of a conflict.

1. The HHCA gives DHHL sole authority to manage its lands

Section 204(a) of the HHCA provides that all available lands are to be "under the control of [DHHL] to be used and disposed of in accordance with the provisions of this Act."

Other provisions of the HHCA support the position that DHHL is to be the sole entity authorized to manage Hawaiian home lands. For example, section 206 of the HHCA provides that the powers of the Governor and the BLNR, with respect to the lands of the State, shall not extend to Hawaiian home lands. Section 207 of the Act authorizes DHHL to issue residential, agricultural, and pastoral homestead leases to native Hawaiians, as well as

[8] The only exception to this is enforcement of violations within a conservation district. Enforcement of such violations rests with BLNR. See HRS § 205-15 and chapter 183C, HRS.

[9] The counties have other responsibilities under chapter 205. For example, section 205-3.1, HRS, authorizes counties to determine district boundary amendments when the land in question is less than 15 acres in size.

issue licenses for "railroads, telephone lines, electric power and light lines, and the like." Section 212 of the HHCA authorizes DHHL to return its lands to the BLNR is they are not needed for homesteading purposes, subject to DHHL's right to reclaim such lands if they are later needed for homesteads.

When a state constitutional provision conflicts with a state statute, the constitutional provision will control. See 16 C.J.S. Constitutional Law § 107 (2014). Here, to the extent that chapter 205, HRS, authorizes the LUC to regulate the permissible uses on the land on which the DHHL developments described herein are located, it conflicts with the HHCA's provision that requires all available lands to be "under the control of [DHHL] to be used and disposed of in accordance with the provisions of this Act." Since the HHCA is a constitutional provision under article XII, sections 1 and 3 of the Hawai'i Constitution, it will control over section 205, HRS.

This is consistent with the legislative history of the HHCA. On May 22, 1920, the following exchange occurred between Representatives Joseph Walsh of Massachusetts and Cassius Dowell of Iowa on the floor of the United States House of Representatives:

> Mr. Walsh. Will there be duties conflicting in any way, or has provision been made in this bill for any possible conflict between the duties to be performed by this commission and any other governmental agency either of the Territory of Hawaii or the government of the United States? As I understand, these are public lands, in a sense. Now, is there provision in the bill which will prevent any possibility of conflict?
>
> Mr. Dowell. I am very glad the gentleman has submitted that question. There is a public-land commissioner in Hawaii whose duty it is to have charge of the public lands. Under this bill certain specific lands are withdrawn from his jurisdiction and from the jurisdiction of every commission except the special one to have charge of these specific lands described in this bill, and these lands are exclusively by the terms of the bill under the control of this commission.
>
> Mr. Walsh. If the gentleman will permit, if I understand correctly, some of these lands are already under the jurisdiction of the existing land commissioner?
>
> Mr. Dowell. All of them are.
>
> Mr. Walsh. Now some of these restrictions end his jurisdiction, and power over them is vested in the new commission?

Mr. Dowell. That is correct.

59 Cong. Rec. 7,495 (1920) (emphasis added).

This exchange shows that Hawaiian home lands were placed under the jurisdiction of the Hawaiian Homes Commission "to prevent any possibility of conflict" that would prevent the Commission from performing its duties under the HHCA. Id.

Furthermore, in an act authorizing the Territory of Hawai'i to create a public authority to engage in "slum clearance," Congress provided that the "commissioner of public lands, the Hawaiian Homes Commissioners, and any other officers of the Territory having power to manage and dispose of its public lands" could choose to convey lands to the new public authority.[10] Congress's specific citation to the Commission shows that it was intended to be the sole entity charged with controlling Hawaiian home lands, to the exclusion of the public lands commissioner and other commissions authorized to manage public lands.

2. Laws that "significantly affect" DHHL's use of its lands do not apply to Hawaiian home lands

The authority of DHHL to manage and use its lands has been discussed by the Hawai'i Supreme Court in three cases since statehood.

In Ahuna v. Department of Hawaiian Home Lands, 64 Haw. 327, 640 P.2d 1161 (1982), the Hawai'i Supreme Court considered whether the Commission breached its duties to native Hawaiians when it withheld a 3.5-acre portion of an already-planned and established homestead lot from an eligible native Hawaiian for a "highly speculative" county highway extension.

In holding that the Commission owed fiduciary duties of loyalty and prudence to native Hawaiians, both collectively and individually, the Court considered the nature of the Act and DHHL's control over its lands:

> The Department of Hawaiian Home Lands, headed by the Hawaiian Homes Commission, received exclusive control of the Hawaiian home lands by section 204 of the HHCA. The HHCA further stated: "the powers and duties of the governor and the board of land and natural resources, in respect to the lands of the State, shall not extend to lands having the status of Hawaiian home lands, except as specifically provided in this title." We conclude from this history that the Hawaiian Homes Commission, which oversees the

[10] Act of July 10, 1937, Pub. L. No. 202, 50 Stat. 508.

> Department, is the specific state entity obliged to implement the fiduciary duty under the HHCA on behalf of eligible native Hawaiians.

Id. at 338, 640 P.2d at 1168 (internal citation omitted). The Court found that the Commission breached its duties in two ways. First, the Commission breached its duty of loyalty by valuing the interests of the citizens and taxpayers of the state in general over the interests of the beneficiaries, in deciding to withhold the 3.5 acres for the highway extension. Id. at 341-342, 640 P.2d at 1170-71. Second, the Commission failed to use reasonable skill and care in making trust property productive, by requiring nearly four acres of agricultural land to remain fallow for a "highly speculative" highway extension. Id. at 343, 640 P.2d at 1171. The Court thus held that DHHL was required to award the beneficiary a lease for the entire homestead lot. The lease could allow DHHL to withdraw a portion of the lot if needed for the highway, provided that DHHL relocate the lessee and pay him certain compensation. Id. at 343, 640 P.2d at 1171-72.

Building on Ahuna, the Court held in Jim, *supra*, that while "DHHL has had 'exclusive control' over the management and disposition of Hawaiian home lands since Hawai'i became a state," the State retains authority to exercise its "inherent police power" on DHHL lands. Id. at 171, 907 P.2d at 757. In Jim, the police power in question was State and county enforcement of criminal laws on Hawaiian home lands. The Hawai'i Supreme Court reasoned that the enforcement of criminal laws on Hawaiian home lands "does not necessarily conflict with the responsibility to manage and dispose of these trust lands." Id. at 172, 907 P.2d at 758.

Finally, in Kepo'o, *supra*, the Hawai'i Supreme Court considered whether chapter 343, HRS, Hawaii's environmental impact statement law, applies to Hawaiian home lands. In holding that chapter 343 applies to DHHL lands, the Court determined that requiring State agencies (including DHHL) to perform environmental assessments on its lands prior to development constitutes a valid exercise of the State's police powers:

> The present case, like Jim and Attorney General's Opinion No. 95-05, involves regulations enacted pursuant to the state's police power. The police power "extends to the public safety, health, and welfare." HRS ch. 343 involves EIS requirements and is therefore a type of environmental regulation. Clearly, environmental regulations are enacted for the purpose of protecting the public safety, health, and welfare. Consequently, the present case is similar to Jim in that HRS ch. 343, like the Hawai'i Penal Code, is a police power regulation.

Id. at 99, 952 P.2d at 387.

Although the Kepo'o Court ultimately held that chapter 343 applies to Hawaiian home lands, it distinguished between laws that "significantly affect" the land, and those that merely have an incidental effect on DHHL's use of Hawaiian home lands. In characterizing its previous decision in Jim, the Court stated that "under Jim, police powers apply to Hawaiian home lands....as long as these regulations do not significantly affect the land." Id. The Court went on to explain:

> Another aspect of this case that is similar to Jim is the fact that HRS ch. 343 does not significantly affect the land. HRS ch. 343 essentially requires decision makers to consider the potential impact of their projects on the environment and to prepare informational documents disclosing these effects....Thus, it is clear that HRS ch. 343 primarily establishes procedural and informational requirements.

Id. at 100, 952 P.2d at 388. The Court then discussed, in *dicta*, other laws that would fall within the inherent police powers of the State but would not apply to Hawaiian home lands because they significantly affect the land:

> The effect of HRS ch. 343 on the land is also incidental in that the statute does not affirmatively require DHHL to use the land for any particular purposes. Whereas application of other laws, such as zoning ordinances, would require DHHL to use Hawaiian home lands for specific purposes, HRS ch. 343 merely places a hold on particular DHHL projects until DHHL complies with the procedural and informational requirements of the statute.

Id. at 101, 952 P.2d at 389 (emphasis added). The Kepo'o Court also referred favorably to this office's past opinions regarding State and county powers over Hawaiian home lands:

> The incidental effect of HRS ch. 343 is even more obvious if the statute is compared to other government actions that have been the subject of Attorney General's opinions in the past. Attorney General's Opinion No. 75-3 dealt with the practice of setting aside lands for public use by executive order....Clearly, such set asides have a direct and significant effect on the land. Once set aside, the land cannot be used for homesteading purposes and is effectively removed from the Hawaiian home lands program. Similarly, Attorney General's Opinion No. 72-21 dealt with the applicability of county zoning ordinances to Hawaiian home lands. . . . Zoning laws affirmatively dictate how the land may be used and would therefore require DHHL to use Hawaiian home lands in a manner consistent with the relative zoning classification. This would also constitute a direct and significant effect on the land.

Id.

While the LUC's land classification authority is undoubtedly an exercise of the State's inherent police powers to protect public safety, health, and welfare, we must determine whether such authority significantly affects DHHL's lands.

Pursuant to Kepo'o and the line of cases that precede it, we believe that in this case, chapter 205, HRS, has more than incidental effect on DHHL's use of its lands. On the contrary, these land classification powers are akin to the county zoning ordinances discussed in Kepo'o. Such regulations "affirmatively dictate how the land may be used" and would require DHHL to use its lands in a manner consistent with the LUC's classifications and the zoning imposed by the County pursuant to those classifications. For example, the LUC's land classifications and County zoning over DHHL's Pana'ewa Subsistence Agricultural Lots development would not allow DHHL to create subsistence agricultural lots of 0.5 acres. Similarly, DHHL could not allow the Maku'u Farmers Market or the Kauhale 'Ōiwi o Pu'ukapu Cultural and Community Educational Center to operate on lands the LUC has designated as part of the Agricultural District without receiving a discretionary special use permit from the LUC.

These regulations give the LUC the authority to directly and significantly affect DHHL's management and use of its lands for homesteading and are inconsistent with section 204 of the HHCA. Under article XII, sections 1 and 3, of the Hawai'i Constitution, which make the HHCA a part of the state constitution, the LUC's land classifications, along with the County's zoning based on those classifications, must yield to DHHL's authority to determine the appropriate use of its lands.

IV. CONCLUSION

To the extent that DHHL's developments described in this letter conflict with the LUC's land classifications and County zoning, DHHL's authority to determine the appropriate use of its lands must control. Accordingly, neither the LUC nor the County may enforce its land use controls in those conflicting circumstances.

Very truly yours,

Matthew S. Dvonch
Deputy Attorney General

APPROVED:

Clare E. Connors
Attorney General

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October 3, 2022 SSFM 2021_043.000

TO: County of Hawai'i
Planning Department
West Hawai'i Office
74-5044 Ane Keohokalole Hwy
Kailua-Kona, Hawai'i 96740

Attention: Mr. Zendo Kern, Planning Director

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Pre-Assessment Consultation Comment Response Letter

Dear Mr. Kern,

Thank you for your August 30, 2022 letter commenting on the Pre-Assessment Consultation letter for the subject project. The State Department of Hawaiian Home Lands (DHHL) acknowledges the County of Hawai'i, Planning Department's comments regarding the existing State Land Use designation, Land Use Pattern Allocation Guide designation, and the County Zoning designation and the reference to the Memorandum of Agreement between the County of Hawai'i and the DHHL. The DHHL will continue to inform the County of any changes in preferred zoning designation for the subject DHHL parcel.

A copy of your August 30, 2022 letter, as well as this response letter, will be included in the Draft EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1242 or by email at jchang@ssfm.com.

SSFM INTERNATIONAL, INC.

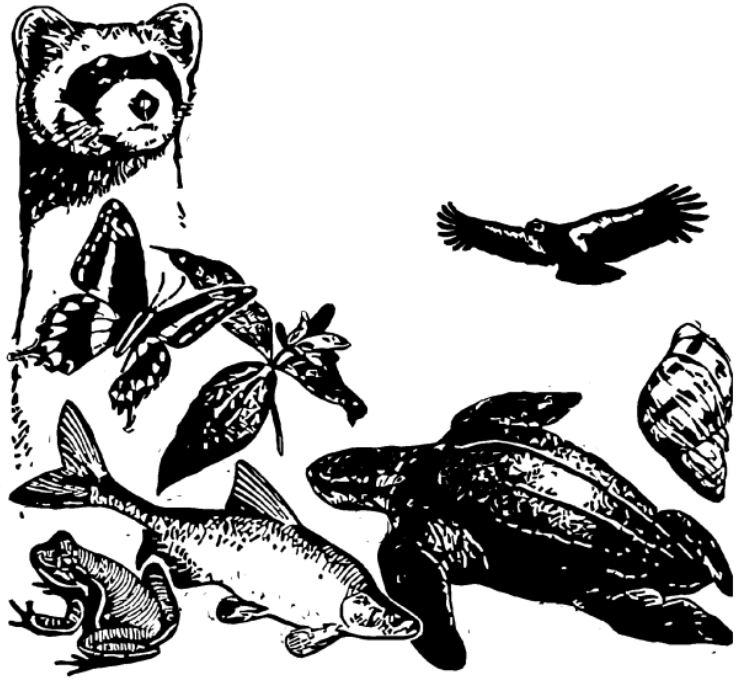
Jared K. Chang, AICP
Manager, Strategic Services Group
Email: jchang@ssfm.com

Appendix B – USFWS IPaC General Project Design Guidelines

U.S. Fish & Wildlife Service

General Project Design Guidelines (23 Species)

Generated August 18, 2022 01:33 AM UTC, IPaC v6.79.0-rc4



IPaC - Information for Planning and Consultation (https://ipac.ecosphere.fws.gov/): A project planning tool to help streamline the U.S. Fish and Wildlife Service environmental review process.

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Species Document Availability

Species with general design guidelines

- Band-rumped Storm-petrel Oceanodroma castro
- Blackburn's Sphinx Moth Manduca blackburni
- Green Sea Turtle Chelonia mydas
- Hala Pepe Pleomele hawaiiensis
- Hawaii Akepa Loxops coccineus
- Hawaiian (=koloa) Duck Anas wyvilliana
- Hawaiian Coot Fulica americana alai
- Hawaiian Goose Branta (=Nesochen) sandvicensis
- Hawaiian Hoary Bat Lasiurus cinereus semotus
- Hawaiian Petrel Pterodroma sandwichensis
- Hawaiian Stilt Himantopus mexicanus knudseni
- Holei Ochrosia kilaueaensis
- Holei Ochrosia haleakalae
- Honohono Haplostachys haplostachya
- Microlepia strigosa var. mauiensis
- Newell's Townsend's Shearwater Puffinus auricularis newelli
- Po`e Portulaca sclerocarpa
- Popolo Ku Mai Solanum incompletum
- Silene hawaiiensis
- Stenogyne angustifolia var. angustifolia
- Tetramolopium arenarium
- Uhi Uhi Mezoneuron kavaiense
- Vigna o-wahuensis

Species without general design guidelines available

- Ihi Portulaca villosa
- Nehe Lipochaeta venosa

General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: April 1, 2022 for the following species included in your project

- Popolo Ku Mai Solanum incompletum
- Hawaii Akepa Loxops coccineus
- Holei Ochrosia kilaueaensis
- Hawaiian (=koloa) Duck Anas wyvilliana
- Uhi Uhi Mezoneuron kavaiense
- Po`e Portulaca sclerocarpa
- Stenogyne angustifolia var. angustifolia
- Hawaiian Stilt Himantopus mexicanus knudseni
- Hawaiian Goose Branta (=Nesochen) sandvicensis
- Silene hawaiiensis
- Band-rumped Storm-petrel Oceanodroma castro
- Ihi Portulaca villosa
- Hawaiian Coot Fulica americana alai
- Tetramolopium arenarium
- Hawaiian Hoary Bat Lasiurus cinereus semotus
- Microlepia strigosa var. mauiensis
- Hawaiian Petrel Pterodroma sandwichensis
- Newell's Townsend's Shearwater Puffinus auricularis newelli
- Honohono Haplostachys haplostachya
- Hala Pepe Pleomele hawaiiensis
- Green Sea Turtle Chelonia mydas
- Nehe Lipochaeta venosa
- Holei Ochrosia haleakalae
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- Vigna o-wahuensis

Avoidance, Minimization, and Conservation Measures for listed plants in the Pacific Islands

Project activities may affect listed plant species by causing physical damage to plant parts (roots, stems, flowers, fruits, seeds, etc.) as well as impacts to other life requisite features of their habitat which may result in reduction of germination, growth and/or reproduction. Cutting and removal of vegetation surrounding listed plants has the potential to alter microsite conditions (e.g., light, moisture, temperature), damaging or destroying the listed plants and also increasing the risk of invasion by nonnative plants which can result in higher incidence or intensity of fire. Activities such as grazing, use of construction equipment and vehicles, and increased human traffic (i.e. trails, visitation, monitoring), can cause ground disturbance, erosion, and/or soil compaction which decrease absorption of water and nutrients and damage plant root systems and may result in reduced growth and/or mortality of listed plants. Soil disturbance or removal has the potential to negatively impact the soil seed bank of listed plant species if such species are present or historically occurred in the project area.

In order to avoid or minimize potential adverse effects to listed plants that may occur on the proposed project site, we recommend minimizing disturbance outside of existing developed or otherwise modified areas. When disturbance outside existing developed or modified sites is proposed, conduct a botanical survey for listed plant species within the project action area, defined as the area where direct and indirect effects are likely to occur. Surveys should be conducted by a knowledgeable botanist with documented experience in identifying native Hawaiian and Pacific Islands plants, including listed plant species. Botanical surveys should optimally be conducted during the wettest part of the year (typically October to April) when plants and identifying features are more likely to be visible, especially in drier areas. If surveys are conducted outside of the wet season, the Service may assume plant presence.

The boundary of the area occupied by listed plants should be marked with flagging by the surveyor. To avoid or minimize potential adverse effects to listed plants, we recommend adherence to buffer distances for the activities in the **Table below**. Where disturbed areas do not need to be maintained as an open area, restore disturbed areas using native plants as appropriate for the location. Whenever possible we recommend using native plants for landscaping purposes. The following websites are good resources to use when choosing landscaping plants: Landscape Industry Council of Hawai‘i Native Plant Poster (http://hawaiiscape.wpengine.com/publications/), Native Hawaiian Plants for Landscaping, Conservation, and Reforestation (https://www.ctahr.hawaii.edu/oc/freepubs/pdf/of-30.pdf), and Best Native Plants for Landscapes (https://www.ctahr.hawaii.edu/oc/freepubs/pdf/OF-40.pdf).

If listed plants occur in a project area, the avoidance buffers are recommended to reduce direct and indirect impacts to listed plants from project activities. However, where project activities will occur within the recommended buffer distances, additional consultation is required. The impacts to the plants of concern within the buffer area may be reduced by placing temporary fencing or other barriers at the boundary of the disturbance, as far from the affected plants as practicable.

The above guidelines apply to areas outside of designated critical habitat. If project activities occur within designated critical habitat unit boundaries, additional consultation is required.

All activities, including site surveys, risk introducing nonnative species into project areas. Specific attention needs to be made to ensure that all equipment, personnel and supplies are properly checked and are free of contamination (weed seeds, organic matter, or other contaminants) before entering project areas. Quarantines and or management activities occurring on specific priority invasive species proximal to project areas need to be considered or adequately addressed. This information can be acquired by contacting local experts such as those on local invasive species committees (Kauai: https://www.kauaiisc.org/; Oahu: https://www.oahuisc.org/; Maui Nui: https://mauiinvasive.org/; and Hawaii: https://www.biisc.org/

Table 1. Recommended buffer distances to minimize and avoid potential adverse impacts to listed plants from activities listed below.

Action	Buffer Distance (feet (meters)) - Keep Project Activity This Far Away from Listed Plant	
	Grasses/Herbs/Shrubs and Terrestrial Orchids	Trees and Arboreal Orchids
Walking, hiking, surveys	3 ft (1 m)	3 ft (1 m)
Cutting and Removing Vegetation By Hand or Hand Tools (e.g., weeding)	3 ft (1 m)	3 ft (1 m)
Mechanical Removal of Individual Plants or Woody Vegetation (e.g., chainsaw, weed eater)	3 ft up to height of removed vegetation (whichever greater)	3 ft up to height of removed vegetation (whichever greater)
Removal of Vegetation with Heavy Equipment (e.g., bulldozer, tractor, "bush hog")	2x width equipment + height of vegetation	820 ft (250 m)

Use of Approved Herbicides (following label)	**Ground-based Spray Application; hand application (no wand applicator; spot treatment)**	10 ft (3 m)	Crown diameter
	Ground-based Spray Application; manual pump with wand, backpack	50 ft (15 m)	Crown diameter
	Ground-based Spray Application; vehicle-mounted tank sprayer	50 ft (15 m)	Crown diameter
	Aerial Spray (ball applicator)	250 ft (76 m)	250 ft (76 m)
	Aerial Application – herbicide ballistic technology (individual plant treatment)	100 ft (30 m)	Crown diameter
	Aerial Spray (boom)	Further consultation required	Further consultation required
Use of Insecticides (pollinators, seed dispersers)		Further consultation required	Further consultation required
Ground/Soil Disturbance/Outplanting/Fencing (Hand tools, e.g. shovel, `ō`ō; Small mechanized tools, e.g., auger)		20 ft (6 m)	2x crown diameter
Ground/Soil Disturbance (Heavy Equipment)		328 ft (100 m)	820 ft (250 m)
Surface Hardening/Soil compaction	**Trails (e.g., human, ungulates)**	20 ft (6 m)	2x crown diameter
	Roads/Utility Corridors, Buildings/Structures	328 ft (100 m)	820 ft (250 m)
Prescribed Burns		Further consultation required	Further consultation required
Farming/Ranching/Silviculture		820 ft (250 m)	820 ft (250 m)

Definitions (Wagner *et al*. 1999)

Crown: The leafy top of a tree.
Herb: A plant, either annual, biennial, or perennial, with the non-woody stems dying back to the ground at the end of the growing season.
Shrub: A perennial woody plant with usually several to numerous primary stems arising from or relatively near the ground.
Tree: A woody perennial that usually has a single trunk

References Cited

USFWS. 2010. Endangered and threatened wildlife and plants; determination of endangered status for 48 species on Kauai and designation of critical habitat. Federal Register 75: 18960–19165.

. 2012. Endangered and threatened wildlife and plants; endangered status for 23 species on Oahu and designation of critical habitat for 124 species; final rule. Federal Register 77: 57648–57862.

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. 2016. USFWS Rare plant database. Unpublished.

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General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

- Popolo Ku Mai Solanum incompletum
- Hawaii Akepa Loxops coccineus
- Holei Ochrosia kilaueaensis
- Hawaiian (=koloa) Duck Anas wyvilliana
- Uhi Uhi Mezoneuron kavaiense
- Po`e Portulaca sclerocarpa
- Stenogyne angustifolia var. angustifolia
- Hawaiian Stilt Himantopus mexicanus knudseni
- Hawaiian Goose Branta (=Nesochen) sandvicensis
- Silene hawaiiensis
- Band-rumped Storm-petrel Oceanodroma castro
- Ihi Portulaca villosa
- Hawaiian Coot Fulica americana alai
- Tetramolopium arenarium
- Hawaiian Hoary Bat Lasiurus cinereus semotus
- Microlepia strigosa var. mauiensis
- Hawaiian Petrel Pterodroma sandwichensis
- Newell's Townsend's Shearwater Puffinus auricularis newelli
- Honohono Haplostachys haplostachya
- Hala Pepe Pleomele hawaiiensis
- Green Sea Turtle Chelonia mydas
- Nehe Lipochaeta venosa
- Holei Ochrosia haleakalae
- Blackburn's Sphinx Moth Manduca blackburni
- Vigna o-wahuensis

Hawaiian forest birds (OAHU: Oahu elepaio, *Chasiempis ibidis*; Iiwi, *Drepanis coccinea*; KAUAI: Puaiohi, *Myadestes palmeri*; Akikiki, *Oreomystis bairdi*; Akekee, *Loxops caeruleirostris*; Iiwi, *Drepanis coccinea;* HAWAII: Akiapolaau, *Hemignathus wilsonsi*; Hawaii creeper, *Oreomystis mana*; Hawaii akepa, *Loxops coccineus*; Palila, *Loxioides bailleui*; Iiwi, *Drepanis coccinea;* MAUI: Maui parrotbill, *Pseudonestor xanthophrys*; Akohekohe, *Palmeria dolei*; Iiwi, *Drepanis coccinea;* MOLOKAI: Iiwi, *Drepanis coccinea*

Hawaiian forest birds' current ranges are predominately restricted to montane forests above 3,500 feet in elevation. Hawaiian forest bird habitat has been lost due to development, agriculture, grazing, wildfire, and spread of invasive habitat-altering species. Forest birds are also affected by mosquito-borne diseases. Mosquitoes are not native to Hawaii; their occurrence increases in areas where ungulate presence results in small pools of standing water. Actions such as road construction and development increase human access and result in increased wildfire and invasive species threats. Grazing results in reductions in woody vegetation and increased grass cover, which reduces forest habitat quality and results in increased wildfire risk on the landscape.

Recommended avoidance and minimization measures when conducting activities within forest bird habitat include:

- Preventing the spread or survival of non-native or invasive species.
- Decrease mosquito populations by removing or preventing stagnant water habitat.
- Reducing wildfire threat to montane forest habitats.
- Restrict the removal of tree cover during the peak breeding season between January 1 and June 30.

General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: April 1, 2022 for the following species included in your project

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Avoidance, Minimization, and Conservation Measures for listed plants in the Pacific Islands

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The boundary of the area occupied by listed plants should be marked with flagging by the surveyor. To avoid or minimize potential adverse effects to listed plants, we recommend adherence to buffer distances for the activities in the **Table below**. Where disturbed areas do not need to be maintained as an open area, restore disturbed areas using native plants as appropriate for the location. Whenever possible we recommend using native plants for landscaping purposes. The following websites are good resources to use when choosing landscaping plants: Landscape Industry Council of Hawai‘i Native Plant Poster (http://hawaiiscape.wpengine.com/publications/), Native Hawaiian Plants for Landscaping, Conservation, and Reforestation (https://www.ctahr.hawaii.edu/oc/freepubs/pdf/of-30.pdf), and Best Native Plants for Landscapes (https://www.ctahr.hawaii.edu/oc/freepubs/pdf/OF-40.pdf).

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General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

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- Uhi Uhi Mezoneuron kavaiense
- Po`e Portulaca sclerocarpa
- Stenogyne angustifolia var. angustifolia
- Hawaiian Stilt Himantopus mexicanus knudseni
- Hawaiian Goose Branta (=Nesochen) sandvicensis
- Silene hawaiiensis
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- Green Sea Turtle Chelonia mydas
- Nehe Lipochaeta venosa
- Holei Ochrosia haleakalae
- Blackburn's Sphinx Moth Manduca blackburni
- Vigna o-wahuensis

Hawaiian waterbirds (Hawaiian stilt, *Himantopus mexicanus knudseni*; Hawaiian coot, *Fulica alai*; Hawaiian common gallinule, *Gallinula galeata sandvicensis*; Hawaiian duck, *Anas wyvilliana*):
Listed Hawaiian waterbirds are found in fresh and brackish-water marshes and natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation. Hawaiian ducks are also subject to threats from hybridization with introduced mallards.

The creation of standing or open water may result in the attraction of Hawaiian waterbirds to a site (creative nuisance or habitat sink). In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water), 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. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following applicable measures into your project description:

- In areas where waterbirds are known to be present, post and enforce reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- Incorporate the Service's Best Management Practices for 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 48 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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Holei Ochrosia haleakalae
Blackburn's Sphinx Moth Manduca blackburni
Vigna o-wahuensis

Hawaiian goose (nene), (*Branta (Nesochen) sandvicensis*): Nene are found on the islands of Hawaii, Maui, Molokai, and Kauai. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to nene we recommend you incorporate the following measures into your project description:

- Do not approach, feed, or disturb nene.
- If nene are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with nene nesting behavior survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).
- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed project, or a previously undiscovered nest is found within the 150-foot radius after work begins.
- In areas where nene 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.

nene 4(d) rule: A 4(d) rule was established at the time the nene was downlisted to threatened status. Under the 4(d) rule, the following actions are not prohibited under the Act, provided the additional measures described in the downlisting rule are adhered to:

- Take by landowners, or their agents, conducting intentional harassment in the form of hazing or other deterrent measures not likely to cause direct injury or mortality, or nene surveys.
- Take that is incidental to conducting lawful control of introduced predators or habitat management activities for nene.
- Take by authorized law enforcement officers for the purpose of aiding or euthanizing sick, injured, or orphaned nene; disposing of dead specimens; and salvaging a dead specimen that may be used for scientific study.

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Endangered Hawaiian petrel (*Pterodroma sandwichensis*), Threatened Newell's shearwater (*Puffinus auricularis newelli*), and Endangered Hawaii Distinct Population Segment of the band-rumped storm-petrel (*Oceanodroma castro*):
Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following measures into your project description:

- 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.

Listed seabirds have been documented colliding with communication towers, particularly in areas of high seabird passage rate. In general, self-supporting monopoles are the least likely to result in collisions, whereas lattice towers, particularly those that rely on guy-wires, have a greater risk.

To avoid and minimize the likelihood that towers will result in collisions by listed seabirds we recommend you incorporate the following measures into your project description:

- The profile of the tower should be as small as possible, minimize the extent of the tower that protrudes above the surrounding vegetation layer, and avoid the use of guywires.
- If the top of the tower must be lit to comply with Federal Aviation Administration regulations, use a flashing red light verses a steady-beam red or white light.
- If possible, co-locate with existing towers or facilities.

Seabirds have been known to collide with fences, powerlines, and other structures near nesting colonies. To avoid and minimize the likelihood of collision we recommend you incorporate the following measures into your project description:

- Where fences extend above vegetation, integrate three strands of polytape into the fence to increase visibility.
- For powerlines, guywires and other cables, minimize exposure above vegetation height and vertical profile.

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Blackburn's Sphinx Moth Manduca blackburni
Vigna o-wahuensis

Hawaiian hoary bat (*Lasiurus cinereus semotus*): The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

Popolo Ku Mai Solanum incompletum
Hawaii Akepa Loxops coccineus
Holei Ochrosia kilaueaensis
Hawaiian (=koloa) Duck Anas wyvilliana
Uhi Uhi Mezoneuron kavaiense
Po`e Portulaca sclerocarpa
Stenogyne angustifolia var. angustifolia
Hawaiian Stilt Himantopus mexicanus knudseni
Hawaiian Goose Branta (=Nesochen) sandvicensis
Silene hawaiiensis
Band-rumped Storm-petrel Oceanodroma castro
Ihi Portulaca villosa
Hawaiian Coot Fulica americana alai
Tetramolopium arenarium
Hawaiian Hoary Bat Lasiurus cinereus semotus
Microlepia strigosa var. mauiensis
Hawaiian Petrel Pterodroma sandwichensis
Newell's Townsend's Shearwater Puffinus auricularis newelli
Honohono Haplostachys haplostachya
Hala Pepe Pleomele hawaiiensis
Green Sea Turtle Chelonia mydas
Nehe Lipochaeta venosa
Holei Ochrosia haleakalae
Blackburn's Sphinx Moth Manduca blackburni
Vigna o-wahuensis

Pacific sea turtles: Green sea turtles (*Chelonia mydas*) (Central North Pacific DPS - Hawaii and Johnston Atoll), (Central West Pacific DPS - Mariana Archipelago and Wake NWR) and (Central South Pacific DPS - American Samoa, Palmyra, Kingman, Howland, Baker and Jarvis NWR), and Hawksbill sea turtle (*Eretmochelys imbricata*):
The Service consults on sea turtles and their use of terrestrial habitats (beaches where nesting and/or basking is known to occur), whereas the National Marine Fisheries Service (NMFS) consults on sea turtles and their use of off-shore and open ocean habitats. We recommend that you consult with NMFS regarding the potential impacts from the proposed project to sea turtles in off-shore and open ocean habitats.

Green sea turtles may nest on any sandy beach area in the Pacific Islands. Hawksbill sea turtles exhibit a wide tolerance for nesting substrate (ranging from sandy beach to crushed coral) with nests typically placed under vegetation. Both species exhibit strong nesting site fidelity. Nesting occurs on Hawaiian beaches from May through September, peaking in June and July, with hatchlings emerging through November and December. Sea turtle nesting in the Western Pacific, Marianas, and South Pacific Islands can occur year-round; peaking in April and July. Nesting in American Samoa is from October to March).

Construction on, or in the vicinity of, beaches can result in sand and sediment compaction, sea turtle nest destruction, beach erosion, contaminant and nutrient runoff, and an increase in direct and ambient light pollution which may disorient hatchlings or deter nesting females. Off-road vehicle traffic may result in direct impacts to sea turtles and nests, and also contributes to habitat degradation through erosion and compaction.

Projects that alter the natural beach profile, such as nourishment and hardening, including the placement of seawalls, jetties, sandbags, and other structures, are known to reduce the suitability of on-shore habitat for sea turtles. These types of projects often result in sand compaction, erosion, and additional sedimentation in nearshore habitats, resulting in adverse effects to the ecological community and future sea turtle nests. The hardening of a shoreline increases the potential for erosion in adjacent areas, resulting in subsequent requests to install stabilization structures or conduct beach nourishment in adjacent areas. Given projected sea level rise estimates, the likelihood of increase in storm surge intensity, and other factors associated with climate change, we anticipate that beach erosion will continue and likely increase.

Whenever possible, projects should consider alternatives that avoid the modification or hardening of coastlines. Beach nourishment or beach hardening projects should evaluate the long-term effect to sea turtle nesting habitat and consider the cumulative effects.

To avoid and minimize project impacts to sea turtles and their nests we recommend you incorporate the following applicable measures into your project description:

- No vehicle use on, or modification of, the beach/dune environment during the sea turtle nesting or hatching season, or on beaches where sea turtles are known to bask.
- Do not remove or destroy native dune vegetation.
- Incorporate applicable Best Management Practices for Work in Aquatic Environments into the project design.

- Have a biologist familiar with sea turtles conduct a visual survey of the project site to ensure no basking sea turtles are present.
    - If a basking sea turtle is found within the project area, cease all mechanical or construction activities within 100 feet until the animal voluntarily leaves the area.
    - Cease all activities between the basking turtle and the ocean.
- Remove any project-related debris, trash, or equipment from the beach or dune if not actively being used.
- Do not stockpile project-related materials in the intertidal zone, reef flats, or stream channels.

Lighting: Optimal nesting habitat is a dark beach free of barriers that restrict sea turtle movement. Nesting turtles may be deterred from approaching or laying successful nests on lighted or disturbed beaches. They may become disoriented by artificial lighting, leading to exhaustion and placement of a nest in an inappropriate location (such as at or below the high tide line). Hatchlings that emerge from nests may also be disoriented by artificial lighting. Inland areas visible from the beach should be sufficiently dark to allow for successful navigation to the ocean.

To avoid and minimize project impacts to sea turtles from lighting we recommend incorporating the following applicable measures into your project description:

- Avoid nighttime work during the nesting and hatching season.
- Minimize the use of lighting and shield all project-related lights so the light is not visible from any beach.
    - If lights can't be fully shielded or if headlights must be used, fully enclose the light source with light filtering tape or filters.
- Incorporate design measures into the construction or operation of buildings adjacent to the beach to reduce ambient outdoor lighting such as:
    - tinting or using automatic window shades for exterior windows that face the beach;
    - reducing the height of exterior lighting to below 3 feet and pointed downward or away from the beach; and
    - minimize light intensity to the lowest level feasible and, when possible, include timers and motion sensors.

General Project Design Guidelines - Popolo Ku Mai and 24 more species

Published by Pacific Islands Fish And Wildlife Office - Publication Date: February 1, 2022 for the following species included in your project

Popolo Ku Mai Solanum incompletum
Hawaii Akepa Loxops coccineus
Holei Ochrosia kilaueaensis
Hawaiian (=koloa) Duck Anas wyvilliana
Uhi Uhi Mezoneuron kavaiense
Po`e Portulaca sclerocarpa
Stenogyne angustifolia var. angustifolia
Hawaiian Stilt Himantopus mexicanus knudseni
Hawaiian Goose Branta (=Nesochen) sandvicensis
Silene hawaiiensis
Band-rumped Storm-petrel Oceanodroma castro
Ihi Portulaca villosa
Hawaiian Coot Fulica americana alai
Tetramolopium arenarium
Hawaiian Hoary Bat Lasiurus cinereus semotus
Microlepia strigosa var. mauiensis
Hawaiian Petrel Pterodroma sandwichensis
Newell's Townsend's Shearwater Puffinus auricularis newelli
Honohono Haplostachys haplostachya
Hala Pepe Pleomele hawaiiensis
Green Sea Turtle Chelonia mydas
Nehe Lipochaeta venosa
Holei Ochrosia haleakalae
Blackburn's Sphinx Moth Manduca blackburni
Vigna o-wahuensis

Blackburn's sphinx moth (*Manduca blackburni*):
Adult Blackburn's sphinx moths feed on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), and maiapilo (*Capparis sandwichiana*); larvae feed upon non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum* sp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for a year or more before emerging from the soil. Soil disturbance can result in death of the pupae.

We offer the following survey recommendations to assess whether the Blackburn's sphinx moth is within the project area:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plants prior to work initiation.
    - Surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
    - Surveys should include searches for eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).
    - If native aiea or tree tobacco over 3 feet tall, or adult Blackburn's sphinx moths are found during surveys, do not disturb them and contact the Service for additional guidance to avoid take.

If no Blackburn's sphinx moth, aiea, or tree tobacco are found during surveys, it is imperative that measures be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than 3 feet tall in approximately 6 weeks. If it grows over 3 feet after surveys have been completed, the plants may become a host plant for Blackburn's sphinx moth larvae. We therefore recommend that you:

- Remove any tree tobacco less than 3 feet tall.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during, and after the proposed ground-disturbing activity. This monitoring for can be completed by any staff, such as groundskeeper or regular maintenance crew, if they are provided with picture placards of tree tobacco at different life stages.

Appendix C – 2022 Traffic Impact Analysis Report

WAIMEA NUI – KOKO Health Clinic

TMK (3) 6-4-038:011 (PORTION)

Traffic Impact Analysis Report

WAIMEA, Island of Hawaii

December 2022

Prepared for

Waimea Nui Regional Community Development Corporation

Prepared by

SSFM INTERNATIONAL

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I. PROJECT DESCRIPTION

The Waimea Hawaiian Homesteaders' Association subsidiary organization, Waimea Nui Community Development Corporation (WNCDC), previously proposed the development of the Waimea Nui Regional Community Development Initiative (WNR-CDI) in the *2015 WNR-CDI Traffic Impact Analysis Report* (TIAR) (Traffic Management Consultant, revised March 2015). In 2015, a Final Environmental Assessment - Finding of No Significant Impact (FEA-FONSI) was prepared for the WNR-CDI, located within approximately 114-acres of Department of Hawaiian Home Lands (DHHL) Homestead Land in a portion of Tax Map Key (TMK) (3) 6-4-038:011. Since then, no construction of WNR-CDI has started, and the proposed site remains vacant. The WNCDC is now pursuing the relocation and upgrade of the existing Kipuka O Ke Ola (KOKO) Health Clinic from its current site within Uilani Plaza on Mamalahoa Highway to within the WNR-CDI. Details and surrounding area context of the future WNR-CDI are shown in the project location map in Figure 1.

The *2015 WNR-CDI TIAR* studied the development that included a cemetery, agriculture park, golf facility, equestrian center, and farmers' market (see Figure 2). The proposed relocated KOKO Health Clinic will be 9,600 square feet (SF) gross floor area (GFA) and proposes to offer many of the same services that it currently offers, including primary care, psychiatry, psychology, women's health, laau lapaau, lomilomi, and acupuncture services. The KOKO Health Clinic site plan, including clinic and parking lot, is shown in Figure 3. The primary access to the relocated KOKO Health Clinic will be off of the future "New Road", originating at Hiiaka Street. The future "New Road", first proposed in the previous *2015 WNR-CDI TIAR*, has yet to be constructed, but is planned to provide primary access to all land uses proposed in Phase 1. Alternatively, a temporary access through Poliahu Alanui Road, west of the intersection with Uakikoni Alanui, will provide access to the relocated KOKO Health Clinic until the access from Hiiaka Street at future "New Road" is constructed. The temporary access will become the secondary access after the main access is built. The land uses included in the *2015 WNR-CDI TIAR*, in addition to the KOKO Health Clinic, constitute Phase 1 of the WNR-CDI. An additional Phase 2 of the WNR-CDI will include additional developments that are not yet planned, and therefore not analyzed as a part of this TIAR.

This TIAR will supplement the previous *2015 WNR-CDI TIAR* and only assess the impact of the proposed relocated KOKO Health Clinic on Future With Project analysis. As a part of this TIAR, the Future Without Project analysis will include the project-related trips from the previous *2015 WNR-CDI TIAR* using updated background growth rates and intersection turning movement counts taken in September 2021. Hawaii County Code Chapter 25, Section 25-2-46, "Concurrency Requirements," indicates that traffic impacts of projects be identified and analyzed within a future five-year, ten-year, and 20-year timeline from the existing year of analysis, which for this project is 2021, and thus future analysis will be completed for the years 2026, 2031, and 2041.

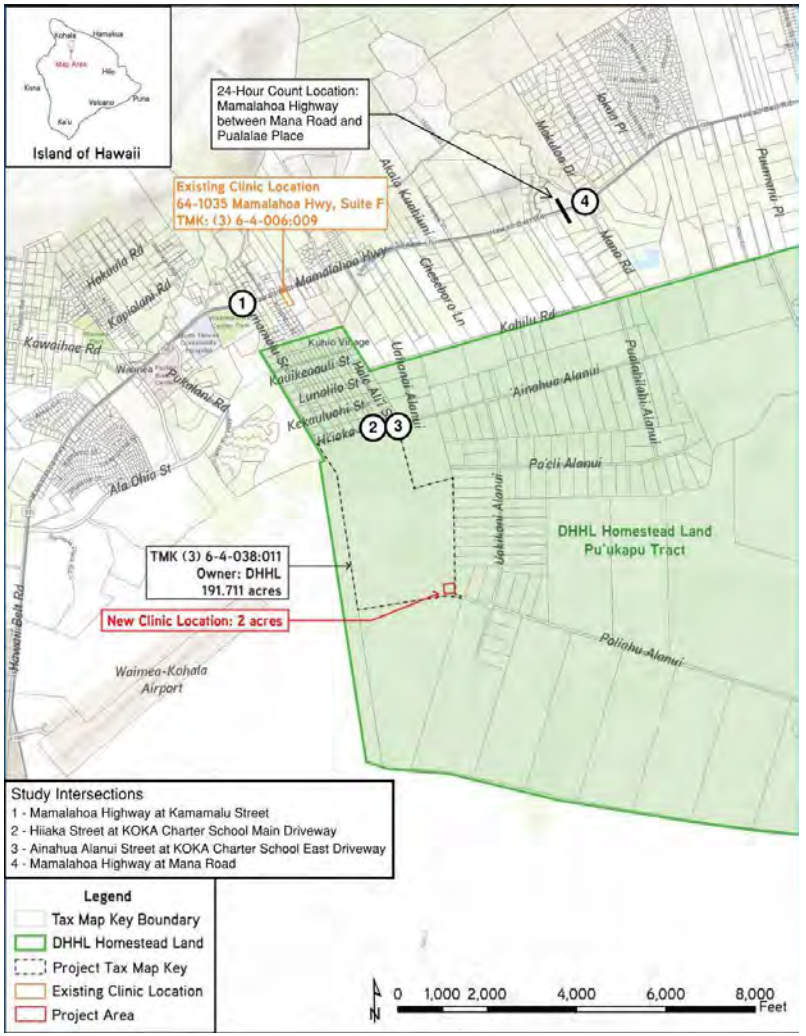

Figure 1: Project Location Map

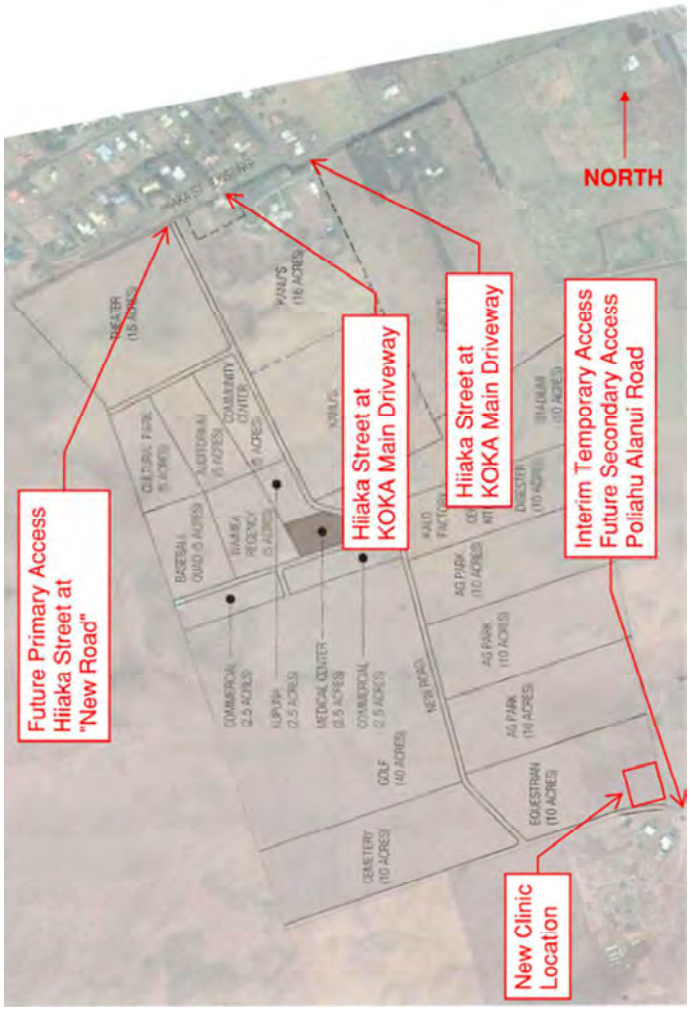

Figure 2: Phase I WNR-CDI Project Area

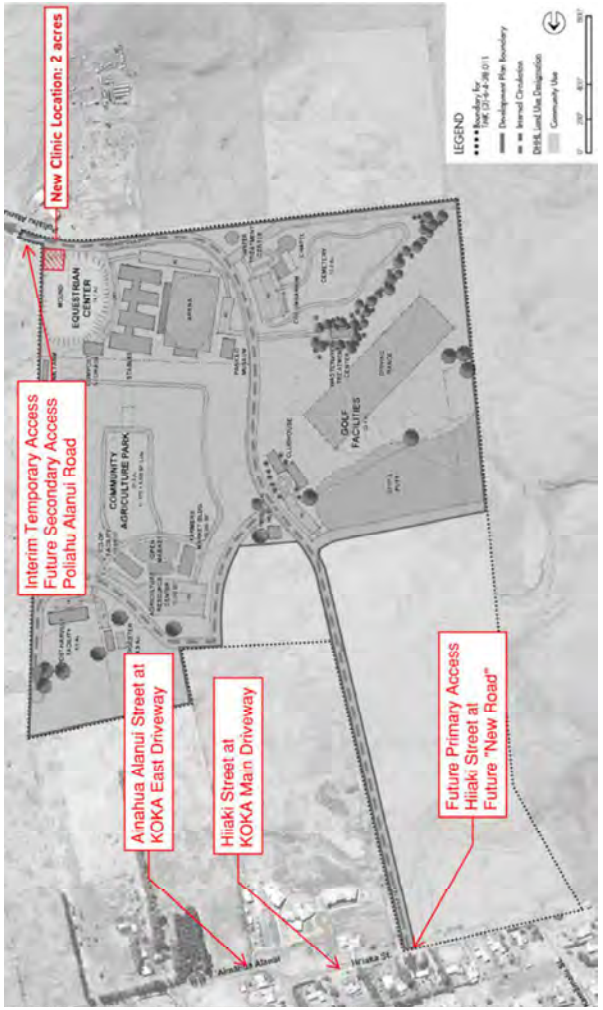

Figure 3: Phase I WNR-CDI, Conceptual KOKO Health Clinic Site Plan (Source: G70)

II. EXISTING CONDITIONS

The proposed relocated KOKO Health Clinic project site is a part of the WNR-CDI and located in Waimea in the South Kohala District of Hawaii (see Figure 1). The current land uses around the project area are primarily residential.

A. Study Roadways

1. Mamalahoa Highway

Mamalahoa Highway changes jurisdictions along its entirety, however, within the project vicinity between Kamamalu Street and Mana Road, it falls under County of Hawaii (COH) jurisdiction. The COH jurisdiction area falls between State segments starting from west of Kahawai Street (MP 57.800), continuing west, and Kipuupuu Street (MP 52.090), continuing east. Mamalahoa Highway has additional names in the study area, including Hawaii Belt Road and Hawaii Route 19. However, the name "Mamalahoa Highway" will be used throughout this report to avoid confusion.

In Waimea Town, from Iona Court to Lindsey Road, Mamalahoa Highway is a two-way, four-lane arterial highway. East of Waimea Town, where the study area is located, the highway transitions into a two-way, two-lane, undivided arterial highway. There are paved and unpaved shoulders of varying widths along the corridor. The majority of the study area along Mamalahoa Highway has no paved sidewalks or marked bike lanes. Access to numerous commercial, municipal, and healthcare buildings is provided through various paved and unpaved driveways along the corridor. The posted speed limit is 30 MPH in the study area.

2. Kamamalu Street

Kamamalu Street is a COH-owned, two-lane, two-way, minor collector in the study area. Sections of the road north of Kamanawa Street have shoulders of varying widths; however, no shoulders are provided south of this intersection. There are no paved sidewalks or marked bike lanes along the corridor. The roadway has a north-south orientation up until its southern terminus, at which point the roadway turns into Hiiaka Street and becomes an east-west roadway. The posted speed limit is 25 MPH.

3. Hiiaka Street

Hiiaka Street is a COH-owned, two-lane, two-way local street in the study area. There are no paved shoulders, sidewalks, or marked bike lanes along the corridor. At the Hale Alii Street intersection, Hiiaka Street turns into Ainahua Alanui Street. The posted speed limit is 25 MPH.

4. Ainahua Alanui Street

Ainahua Alanui Street is a COH-owned, two-lane, two-way local street in the study area. There are no paved shoulders, sidewalks, or marked bike lanes along the corridor. The posted speed limit is 25 MPH.

5. Mana Road

Mana Road is a COH-owned, two-lane, two-way minor collector in the study area. There are no paved shoulders, sidewalks, or marked bike lanes along the corridor. As previously noted, a dedicated westbound left-turn lane exists at the intersection of Mana Road and Mamalahoa Highway. Additionally, a median acceleration lane exists on the west leg of the intersection along Mamalahoa Highway to assist

left-turning movement from Mana Road. Mana Road is stop-controlled at Mamalahoa Highway. The posted speed limit is 35 MPH.

6. Uakikoni Alanui

Uakikoni Alanui is a DHHL-owned, two-lane, two-way, rural local street. There are no paved shoulders, sidewalks, or marked bike lanes along the corridor. The posted speed limit is 25 MPH. Uakikoni Alanui is stop-controlled at the intersection with Ainahua Alanui Street. Uakikoni Alanui runs in a north-south direction to the east of the project. The future secondary access will come off of Ainahua Alanui Road, west of the intersection with Uakikoni Alanui.

7. Poliahu Alanui Road

East of Uakikoni Alanui, Poliahu Alanui Road is a COH-maintained, two-lane, two-way local street. There are no paved shoulders, sidewalks, or marked bike lanes along the corridor. Poliahu Alanui Road is stop-controlled at the intersection with Uakikoni Alanui. The west end of Poliahu Alanui Road will serve as the temporary access point to the KOKO Health Clinic until the completion of "New Road", when the access off Poliahu Alanui Road will become the secondary access.

B. Study Intersections

Four existing study intersections were identified and analyzed to consider the impact resulting from the proposed development. The existing lane configurations and surrounding areas are shown in Figure 4.

1. Mamalahoa Highway at Kamamalu Street (State Route 19 MP 56.187)

Mamalahoa Highway at Kamamalu Street is a three-leg, signalized intersection. The eastbound direction has two through lanes, with the southern-most lane being a shared through-right lane. There is a shared left-through lane for the westbound lanes on Mamalahoa Highway, which operates with a leading protected-permitted phase. An additional right turn pocket opens up along Kamamalu Street for the northbound lanes, approximately 85-feet before the intersection. There is a private driveway to the north of the intersection that leads to single-family residences and Kamuela Medical Associates, but it is not controlled by the traffic signal. Although there are no curb ramps or sidewalks, marked crosswalks are provided at the eastern and southern legs.

2. Hiiaka Street at KOKA Charter School Main Driveway

Hiiaka Street at the Kanu O Kaaina (KOKA) Charter School Main Driveway is a three-leg, two-way stop-controlled (TWSC) intersection, with a stop sign for the KOKA Main Driveway approach. There are no marked crosswalks, curb ramps, or sidewalks at this intersection.

3. Ainahua Alanui Street at KOKA Charter School Eastern Driveway

The Ainahua Alanui Street and KOKA Charter School Eastern Driveway is a three-leg, TWSC intersection, with a stop sign for the KOKA Eastern Driveway approach. The driveway is a secondary access point to the KOKA Charter School. There are no marked crosswalks, curb ramps, or sidewalks at this intersection.

4. Mamalahoa Highway at Mana Road (State Route 19 MP 52.090)

Mamalahoa Highway and Mana Road is a three-leg, TWSC intersection, with a stop sign for the Mana Road approach. Mana Road is 23-feet wide, with 11.5-foot marked lanes in each direction. There are no marked

crosswalks, curb ramps, or sidewalks at this intersection. Intersection improvements that have been incorporated since the *2015 WNR-CDI TIAR*, include:

- Widening Mamalahoa Highway at Mana Road to provide an exclusive westbound left turn lane.
- Widening Mamalahoa Highway at Mana Road to provide an acceleration lane for northbound left turns from Mana Road onto Mamalahoa Highway.
- Widening Mana Road to provide separate left and right turn lanes at Mamalahoa Highway.

C. Vehicle Volumes

1. 24-Hour Volume

Historic Hawaii Department of Transportation (HDOT) Annual Average Daily Traffic (AADT) counts in the study area along Mamalahoa Highway between Mana Road and Pualalea Place were available from 2013 to 2020. 24-hour tube counts were also collected on Thursday, September 30, 2021, at the same location. The historic HDOT and recent 2021 counts are shown in Table 1. 2020 data was not used to analyze the growth rate due to the impacts of Covid-19. Discussion of the pandemic impacts will be discussed in a later section. Appendix A includes the raw historical HDOT traffic data and the 2021 24-hour hour counts.

Table 1. 2013 - 2021 AADT along Mamalahoa Highway between Mana Road and Pualalea Place

Year	AADT or 24-Hour Average
2013	15,500
2014	14,200
2015	14,700
2016	15,100
2017	16,000
2018	15,400
2019	16,100
2020 ~	13,100
2021*	15,143

~2020 counts may be impacted by Covid-19

*2021 counts represent a single-day 24-hour count

The 2021 AM and PM commuter peak hours along Mamalahoa Highway were found to occur between 7:15 to 8:15 AM and 4:15 to 5:15 PM, respectively (see Figure 5). As seen in Figure 5, westbound traffic is generally heavier in the AM peak hour, while eastbound traffic is generally heavier in the PM peak hour, with more balanced traffic during the off-peaks and midday. Figure 6 shows the daily 2018-2020 HDOT volumes and the 2021 24-hour volume on Mamalahoa Highway between Mana Road and Pualalea Place.

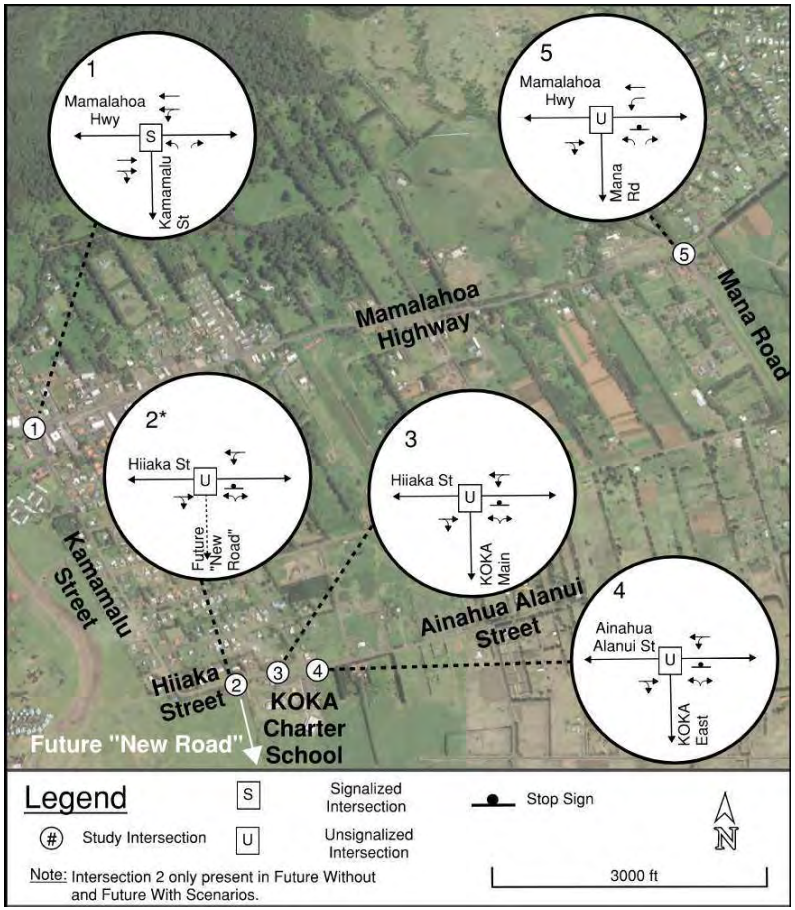

Figure 4: Existing Lane Configuration

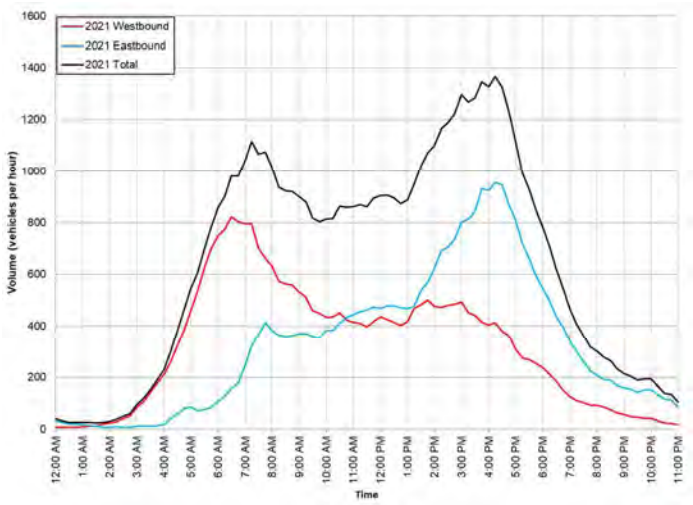

Figure 5: 2021 24-Hour Volumes along Mamalahoa Hwy. Between Mana Rd. and Pualalea Pl.

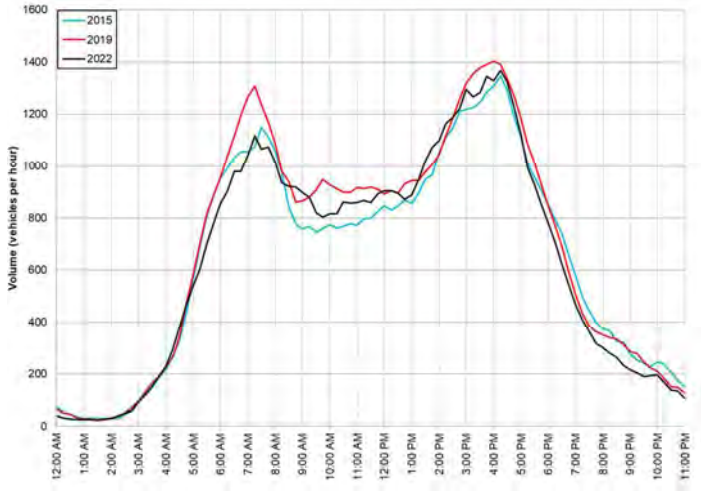

Figure 6: 24-Hour Volume Distribution on Mamalahoa Hwy. Between Mana Rd. and Pualalea Pl.

a) Covid-19 Traffic Impacts

The Covid-19 pandemic led to a mandatory 14-day quarantine for incoming travelers and the closure of non-essential businesses in the State of Hawaii beginning in March 2020. Covid-19 restrictions resulted in a significant drop in traffic volumes across most roadways. Near the end of 2020, businesses began reopening, and non-essential employees started going back to work. Additionally, tourism slowly began to return to Hawaii. Furthermore, at the beginning of the 2021-2022 school year, Hawaii public schools reinstated in-person learning.

HDOT periodically collected traffic counts throughout the pandemic at various stations to analyze traffic volumes and how they compared to pre-pandemic. This included counts at the station along Mamalahoa Highway, west of Mana Road. Since the 2021 24-hour count was comparable to the 2013-2019 HDOT historical counts (Table 1), the 2021 data was assumed to be representative of typical travel patterns. At the count station along Mamalahoa Highway, the 2019 AM peak hour was noted to be higher than 2015 and 2021. The PM peak hour volumes were comparable across the years 2015, 2019, and 2021. With this, no Covid-related adjustments are deemed necessary for applying to 2021 data.

Table 2. Covid Impact - Peak Hour Comparison on Mamalahoa Highway West of Mana Road

Peak Hour	Time	Eastbound			Westbound			Total		
		2015 HDOT	2019 HDOT	2021 Count	2015 HDOT	2019 HDOT	2021 Count	2015 HDOT	2019 HDOT	2021 Count
AM Peak	7:15-8:15AM	380	352	321	697	957	796	1,077	1,309	1,117
PM Peak	4:30-5:30PM	876	931	945	418	407	380	1,294	1,338	1,325

2. Intersection Peak Turning Movement Counts

Turning movement counts were taken at the four existing study intersections on Thursday, September 30, 2021, from 6:30 to 9:00 AM and 3:00 to 6:00 PM. The AM and PM peak hours on Mamalahoa Highway occurred between 7:15 to 8:15 AM and 4:15 to 5:15 PM, respectively. Figure 7 shows the AM and PM peak hour volumes at the study intersections. Appendix A includes traffic count data at the study intersections.

3. Transit Facilities

The Hawaii County transit system (Hele-On Bus) has one bus route in the project area. Bus route #301 is called "Waimea Circulator" and operates as a "flex route" along Mamalahoa Highway with no designated stops close to the project site. A "flex route" can serve up to 1 mile off route if reservations are made ahead of time. In addition, this route can be flagged by passengers along its route where a bus can safely pull over. The closest designated stops are approximately 0.8 miles north of KOKA Main Driveway, near the Waimea Civic Center on Kamamalu Street. See Figure 8 for the route within the WNR-CDI area. Appendix B includes the detailed bus route schedule and map for this route.

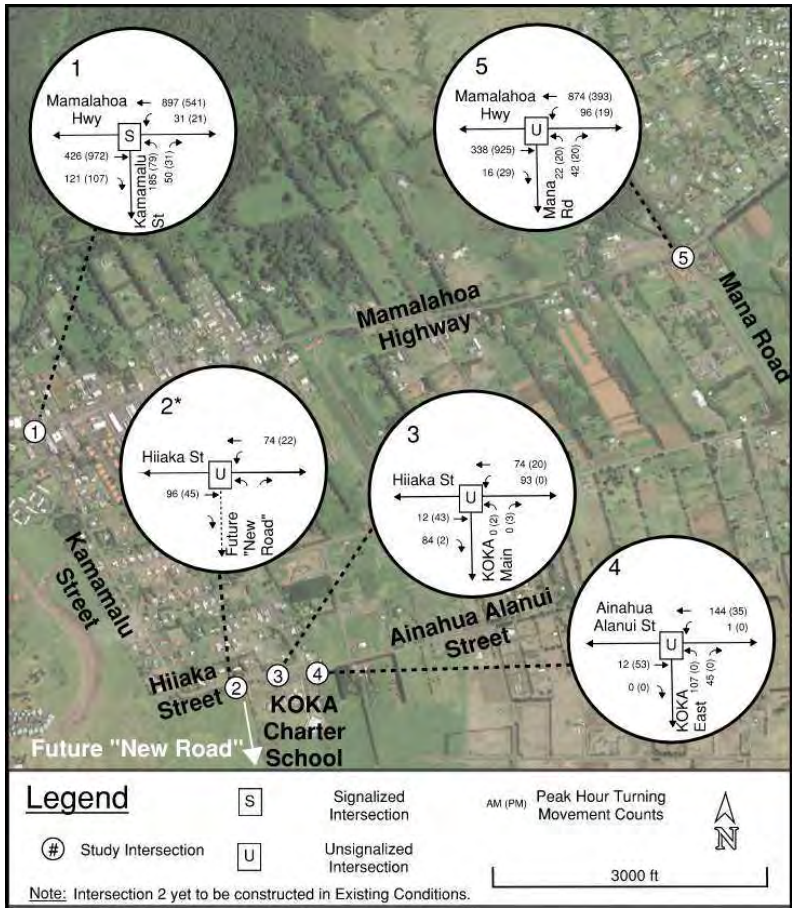

Figure 7: 2021 Peak Hour Volumes

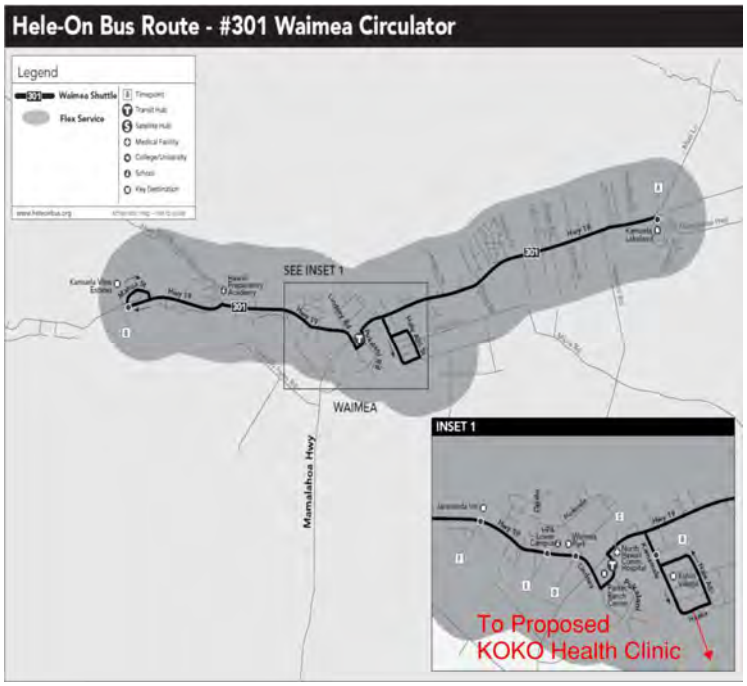

Figure 8: Hele-On Bus Route #301

4. Pedestrian and Bicycle Volumes

Peak hour intersection pedestrian and bicycle volumes were also collected at the existing study intersections on Thursday, September 30, 2021, from 6:30 to 9:00 AM and 3:00 to 6:00 PM. Bike volumes include those that travel through the intersection and pedestrian volumes include those that cross along any leg of the intersection. Pedestrian volumes were higher in the PM peak hour at the Mamalahoa Highway and Kamamalu Street intersection. Bicycle volumes were low or non-existent in the AM and PM peak hours. Table 3 summarizes the pedestrian and bicycle counts during the vehicular peak hours.

Table 3: Peak Hour Pedestrian and Bicycle Volumes

Intersection	Pedestrian		Bicycle	
	AM Peak	PM Peak	AM Peak	PM Peak
Mamalahoa Hwy at Kamamalu St	8	15	1	1
Hiiaka St at KOKA Main Dwy	2	0	0	0
Ainahua Alanui St at KOKA Eastern Dwy	0	2	0	0
Mamalahoa Hwy at Mana Rd	0	0	0	1

D. Existing Level of Service

1. Methodology

Level of service (LOS) is a rating system used in traffic engineering to measure the effectiveness of roadway operating conditions. There are six LOS ranging from A to F. LOS A is defined as being the least interrupted flow conditions with little or no delays, whereas LOS F is defined as conditions where extreme delays exist. Guidelines state that LOS D or better is appropriate for studying intersections and movements. Intersection LOS and delay were determined for the AM and PM peak hours using Synchro Version 10.0 traffic analysis software.

As stated in the *Highway Capacity Manual 6th Edition* (*HCM6*) (TRB, 2016), LOS at a TWSC intersection is determined by the measured control delay (see Table 4). Delay at a TWSC intersection is defined by each minor movement and not for the major movements or intersection. The delay is defined this way because vehicles traveling along the major, free-flow road of a TWSC intersection proceed through with minimal delay. The vehicles approaching the intersection along the minor movement (side-street) are controlled by a stop sign and thus experience delay attributable to the volume of vehicles passing along the free-flow road and the gaps available. As Synchro is unable to analyze the impacts of an acceleration lane, when analyzing the northbound left turning movements at Mamalahoa Highway and Mana Road, westbound through volumes were omitted, as to only analyze the ability for northbound left turning vehicles to find gaps in the eastbound traffic and westbound left turning movements. With an acceleration lane, turning vehicles can complete their turn without conflicting with the westbound through movement.

Table 4: LOS Criteria for Unsignalized Intersections

Average Control Delay (s/veh)	LOS by v/c Ratio	
	<=1.0	>1.0
≤ 10.0	A	F
>10 and ≤15	B	F
>15 and ≤25	C	F
>25 and ≤35	D	F
>35 and ≤50	E	F
>50	F	F

Source: *HCM6* (TRB, 2016)

The LOS analysis for signalized intersections is determined by the average total vehicle delay based on the methodologies of the *HCM6* (TRB, 2016), shown in Table 5. *HCM6* doesn't support the protected-permitted phasing from a shared lane, which is the case at Mamalahoa Highway and Kamamalu Street for the westbound approach. For this intersection, methodologies from the *Highway Capacity Manual* (*HCM*) (TRB, 2000) are used. High numbers of vehicles passing through the intersection, long cycle lengths, inappropriate signal phasing, or poor signal progression can result in long delays and poor LOS.

Table 5: LOS Criteria for Signalized Intersections

Average Control Delay (s/veh)	LOS
≤ 10.0	A
>10 and ≤20	B
>20 and ≤35	C
>35 and ≤55	D
>55 and ≤80	E
>80	F

Source: *HCM* (TRB, 2000)

Another measure of intersection operation is the volume to capacity (v/c) ratio. The v/c is the ratio of the volume of traffic utilizing the intersection compared to the maximum volume of vehicles that the intersection can accommodate during a specific period. A v/c ratio under 0.85 means the intersection is operating under capacity, and excessive delays are not experienced. An intersection operates near its capacity when v/c ratios range from 0.85 to 0.95. Unstable flows are expected when the v/c ratio is between 0.95 and 1.0. LOS based on *HCM 2000* does not use v/c ratio as a traffic operation measure. A traffic movement can have a poor LOS but low v/c, which suggests that the traffic volumes along that movement are low but have to wait a long time to make the intended movement. Poor LOS and low v/c are common for low volume protected turn movements or minor street movements that have to wait through a long cycle length for their phase to come up.

2. Existing Intersections LOS Results

Existing intersection and movement LOS and delay (in seconds per vehicle) were determined for the AM and PM peak hours using Synchro 10 traffic analysis software. All movements at this intersection were analyzed with volumes as shown in Figure 7. The results are shown in Table 6 and Appendix C.

Table 6: Existing (2021) Intersection LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**11.4**	**0.69**	**B**	**7.9**	**0.66**	**A**
Mamalahoa EB Through-Right	12.9	0.57	B	8.6	0.66	A
Mamalahoa WB Left-Through	8.9	0.60	A	3.1	0.29	A
Kamamalu NB Left	17.9	0.60	B	23.6	0.60	C
Kamamalu NB Right	11.5	0.04	B	16.3	0.07	B
Hiiaka St at KOKA Main Dwy	**2.8**	**Unsignalized**		**0.7**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	0.0	0.00	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	8.8	0.01	A
Ainahua Alanui St at KOKA East Dwy	**6.2**	**Unsignalized**		**0.0**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	1.00	A	0.0	0.00	A
KOKA East Dwy NB Left-Right	11.9	0.35	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**3.5**	**Unsignalized**		**1.1**	**Unsignalized**	
Mamalahoa WB Left	8.7	0.10	A	10.4	0.04	B
Mana NB Left	16.1	0.13	C	21.2	0.10	C
Mana NB Right	12.0	0.15	B	18.1	0.08	C

a) Mamalahoa Highway at Kamamalu Street

All movements at the intersection of Mamalahoa Highway at Kamamalu Street operate at a LOS C or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

c) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

d) Mamalahoa Highway at Mana Road

All movements at the intersection of Mamalahoa Highway at Mana Road operate at a LOS C or better and v/c < 1.0 during both peak hours.

3. Recommendations for Existing Condition

All intersections and movements operate at an acceptable LOS and thus no traffic mitigation is recommended at this time.

III. FUTURE WITHOUT PROJECT CONDITIONS

Regional traffic growth, trip generation from any upcoming planned projects, and future surrounding area development's traffic, including the project-related trips from the *2015 WNR-CDI TIAR*, were added to the roadway network and analyzed for periods of five (5), ten (10), and twenty (20) years into the future corresponding to 2026, 2031, and 2041, respectively.

A. Upcoming Planned Projects

Surrounding area planned developments were researched to assess their potential impacts in adding additional traffic within the surrounding roadway network.

1. STIP

Information on future projects was compiled on August 26, 2021, at the *Statewide Transportation Improvements Program* (STIP) FY 2019-2022 website. The STIP is a four-year forecast identifying state and county transportation projects funded with Federal Highway and Federal Transit funds. There were no roadway construction or improvement projects listed in the STIP (2019-2022) that would impact the project area.

2. ERP

Information on future projects was compiled on August 26, 2021, using the State of Hawaii *Environmental Review Program* (ERP) website. The ERP website provides Environmental Impact Statement (EIS) and Environmental Assessments (EA) available to the public. Projects from the ERP website in the surrounding area from between 2016 and 2021 were reviewed.

a) Waimea Middle School New Eight Classroom Building

The *Waimea Middle School Eight Classroom Building EA* (Wilson Okamoto, 2015) proposes to replace existing science and computer classrooms with new modern laboratories. Waimea Middle School expects to accommodate the current and anticipated student enrollment with no increase from the new building. The construction of this project finished in 2016 and as such, any traffic impacts would have been captured by the September 30, 2021 traffic count.

b) Waimea Town Center Infrastructure Improvements

The *Waimea Town Center Infrastructure Improvements* (PBR, 2017) project includes the development of 761 residential units, 176,000 SF commercial use, and 100,000 SF of medical-related land use. Traffic projections for the development are:

- Residential traffic - projected to have 10% of trips coming east via Mamalahoa Highway.
- Commercial traffic - projected to have 19% coming east via Mamalahoa Highway and 6% from Kamamalu Street.
- Medical traffic - projected 16% coming east via Mamalahoa Highway and 5% from Kamamalu Street.

The full build-out of the improvements were estimated to be complete by 2035. Ala Ohia Road will be extended east from Pukalani Road to connect with Church Road during full build-out. This extension will be signalized and referred to as Ala Ohia Road East. The EA was withdrawn in 2018, and there are no immediate plans at the current time. As such, Project Generated traffic was not added to future background traffic for this analysis.

c) Waimea Roadway Improvement Project

The *Waimea Roadway Improvement Project EA* (SSFM, 2021) was anticipated to start in 2022, with no date of when all the improvements will be completed. These improvements included:

- Adding a roundabout at Kawaihae Road and Lindsey Road
- Adding mid-block left turn restrictions along Mamalahoa Highway between Lindsey Road and Pukalani Road
- Adding landscaped medians, crosswalks, sidewalks, and additional landscaping along Mamalahoa Highway between Kaomoloa Road and Lindsey Road.

As of this report, the project had not started, however it is not anticipated to add additional traffic.

3. 2015 WNR-CDI TIAR

The *2015 WNR-CDI TIAR* analyzed the traffic impact of constructing the WNR-CDI development in Waimea by 2024. The primary access to the development will be off Hiiaka Street through the future "New Road". The following land uses were included in the proposed development:

1. Cemetery
2. Agriculture Park
3. Golf Facility
4. Equestrian Center
5. Farmers' Market

The *2015 WNR-CDI TIAR* analyzed Existing (2014) conditions and Future (2024) With Project conditions that assumed a full buildout. The project generated trips are shown in Figure 9. As a part of Future (2024) With Project, the following traffic mitigation measures were recommended*:*

- Conducting a signal warrant at Mamalahoa Highway and Mana Road after the buildout of the proposed project.
- Widening Hiiaka Street, Ainahua Alanui, Pualahilahi Alanui, Kahilu Road, and Mana Road to provide a minimum 20-foot-wide paved travel way.

As of this report, the project had not started, however the project generated trips were added to Future Without Project volumes starting in 2026.

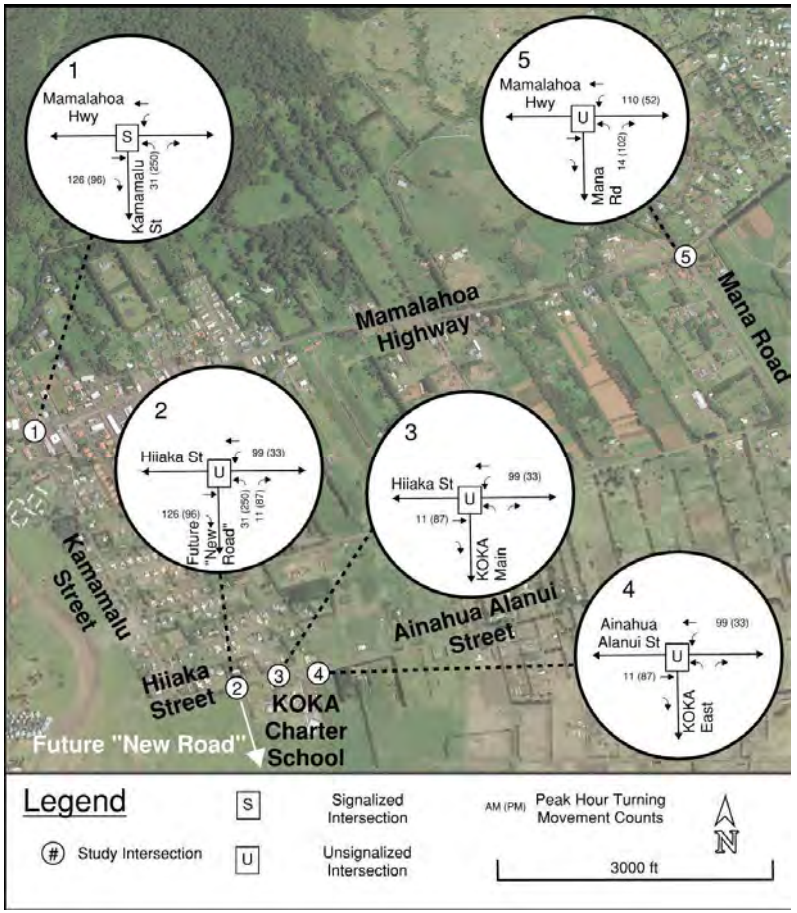

Figure 9. *2015 WNR-CDI TIAR* Project Related Trips

B. Volumes

1. Background Growth

Historical traffic volumes (see Table 1) along Mamalahoa Highway between Mana Street and Pualalea Place from 2013 (15,000 AADT) to 2019 (16,100 AADT) showed a 1.19% growth rate. However, AADT varied from year to year and the most recent 2021 volumes were lower than those taken in 2019.

The *Federal-Aid Highways 2035 Transportation Plan for the District of Hawaii* (CH2M Hill, 2014) forecasted a compounded annual increase of 1.73% in South Kohala from 2020 to 2035 (see Table 7).

Table 7: Traffic Forecast – Daily Vehicle Trips in South Kohala

Year	Daily Vehicle Trips	Growth Rate
2020	79,890	1.73%
2035	103,340	

Source: *Federal-Aid Highways 2035 Transportation Plan for the District of Hawaii* (CH2M Hill, 2014)

The 1.73% annual growth rate from the Long-Range Transportation Plan was greater than the 1.19% calculated growth. Therefore, the 1.73% growth was considered conservative and used in this analysis by applying to through movement traffic along Mamalahoa Highway. Other projects not identified in the STIP and ERP are assumed to be included in the 1.73% annual growth rate.

Future Without Project volumes, including background growth and WNR_CDI Phase 1 traffic volumes, forecasted for 2026, 2031, and 2041 are shown in Figures 10 through 12, respectively. The primary access at Hiiaka Street and "New Road" is expected to be completed.

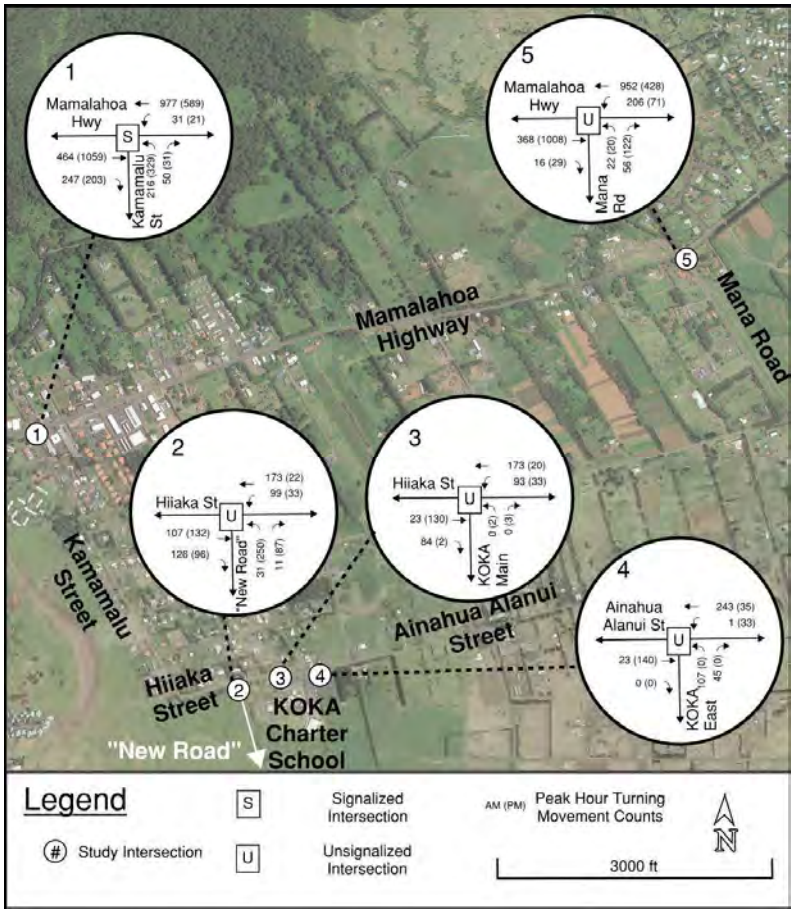

Figure 10. Future (2026) Without Project Peak Hour Volumes

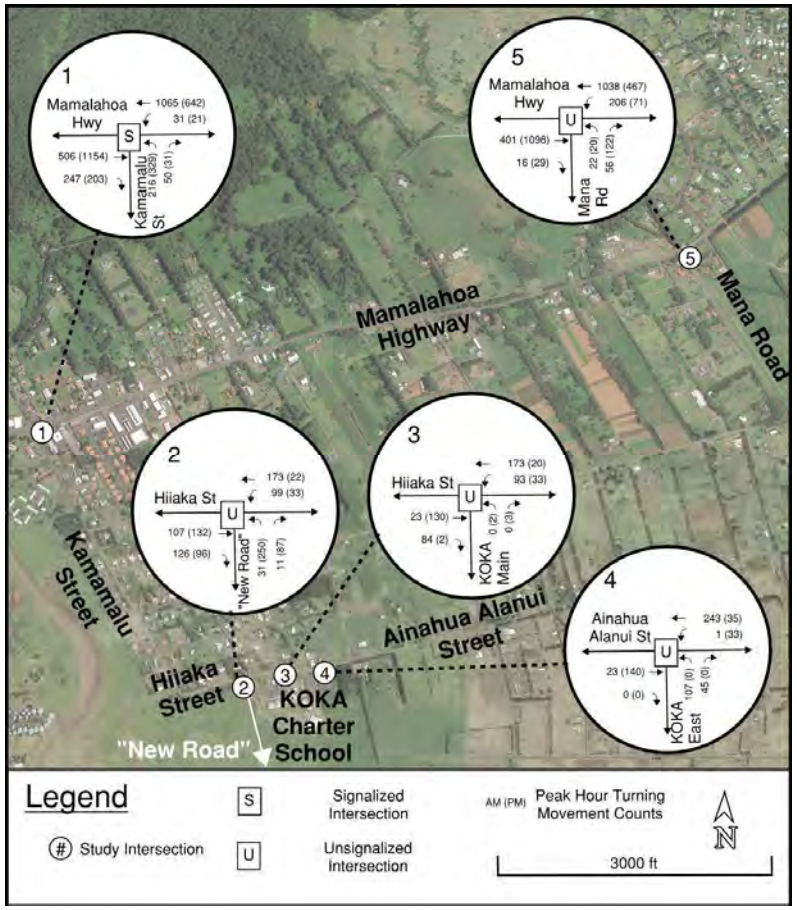

Figure 11. Future (2031) Without Project Peak Hour Volumes

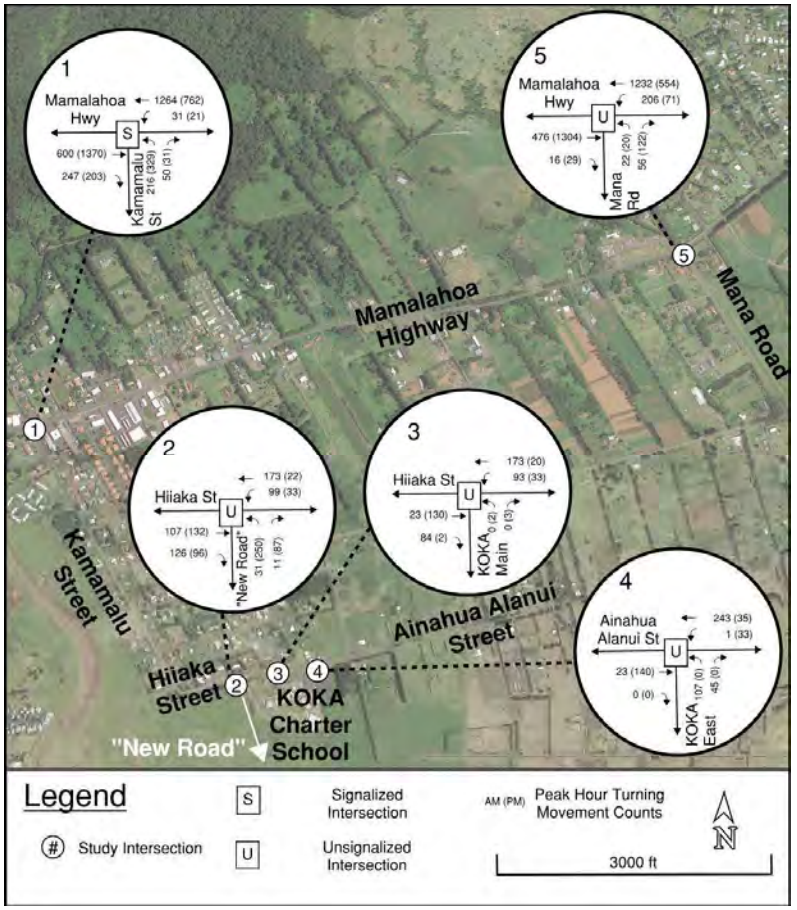

Figure 12. Future (2041) Without Project Peak Hour Volumes

C. Future (2026) Without Project Level of Service

1. Future (2026) Without Project Conditions

Future (2026) Without Project intersection and movement LOS and delay (in seconds per vehicle) were determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 8. Synchro reports are included in Appendix D. For analysis, the cycle length and splits at Mamalahoa Highway and Kamamalu Street were optimized.

Table 8. Future (2026) Without Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**13.5**	**0.76**	**B**	**23.4**	**0.89**	**C**
Mamalahoa EB Through-Right	15.0	0.69	B	25.3	0.91	C
Mamalahoa WB Left-Through	10.1	0.68	B	8.6	0.42	A
Kamamalu NB Left	20.8	0.68	C	40.3	0.89	D
Kamamalu NB Right	12.1	0.04	B	15.1	0.04	B
Hiiaka St at "New Road"	**2.4**	**Unsignalized**		**8.7**	**Unsignalized**	
Hiiaka WB Left-Through	8.0	0.08	A	7.8	0.03	A
"New Road" NB Left-Right	13.0	0.09	B	15.2	0.51	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.6**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.7	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.2**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.4	0.42	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**9.1**	**Unsignalized**		**4.1**	**Unsignalized**	
Mamalahoa WB Left	9.4	0.23	A	11.6	0.14	B
Mana NB Left	26.6	0.22	D	31.3	0.15	D
Mana NB Right	12.9	0.21	B	34.1	0.55	D

a) Mamalahoa Highway at Kamamalu Street

All movements at the intersection of Mamalahoa Highway at Kamamalu Street operate at a LOS D or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

All movements at the intersection of Mamalahoa Highway at Mana Road operate at a LOS D or better and v/c < 1.0 during both peak hours.

D. Future (2031) Without Project Level of Service

1. Future (2031) Without Project Conditions

Future (2031) Without Project intersection and movement, LOS and delay (in seconds per vehicle) were determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 9 and the Synchro reports are included in Appendix D. For analysis, the cycle length and splits at Mamalahoa Highway and Kamamalu Street were optimized. Movements that operated at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 9. Future (2031) Without Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**14.1**	**0.80**	**B**	**24.3**	**0.90**	**C**
Mamalahoa EB Through-Right	15.5	0.72	B	25.6	0.90	C
Mamalahoa WB Left-Through	10.9	0.73	B	9.1	0.44	A
Kamamalu NB Left	22.2	0.69	C	45.0	0.90	D
Kamamalu NB Right	12.2	0.06	B	17.6	0.04	B
Hiiaka St at "New Road"	**2.4**	**Unsignalized**		**8.7**	**Unsignalized**	
Hiiaka WB Left-Through	8.0	0.08	A	7.8	0.03	A
"New Road" NB Left-Right	13.0	0.09	B	15.2	0.51	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.6**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.7	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.2**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.4	0.42	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**11.8**	**Unsignalized**		**4.8**	**Unsignalized**	
Mamalahoa WB Left	9.6	0.24	A	12.3	0.16	B
Mana NB Left	28.7	0.24	D	36.3	0.17	E
Mana NB Right	13.6	0.23	B	43.2	0.63	E

a) Mamalahoa Highway at Kamamalu Street

All movements at the intersection of Mamalahoa Highway at Kamamalu Street operate at a LOS D or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

During the PM Peak hour, the northbound Mana Road left turn lane will operate poorly at LOS E (v/c ratio of 0.17) during the PM Peak Hour, as will the northbound Mana Road right turn lane at LOS E (v/c ratio of 0.63). All other movements at the intersection of Mamalahoa Highway at Mana Road will operate at LOS D or better and v/c < 1.0 during both peak hours.

2. Future (2031) Without Project Mitigation

The northbound approaches at Mamalahoa Highway and Mana Road will operate at LOS E during the PM peak hour. Therefore, a traffic signal warrant analysis was done for Mamalahoa Highway at Mana Road. Traffic signal Warrant 3, Peak Hour Warrant, from the *MUTCD* (FHWA, 2009), was analyzed for the Future (2031) Without Project conditions. Table 10 shows the volumes used for the peak hour analysis. Figure 13 shows the Future (2031) Without Project conditions Peak Hour Warrant Analysis. The "2 or more Lanes & 1 Lane" curve was used for analysis.

Table 10: Future (2031) Without Project Volumes at Mamalahoa Highway and Mana Road

Movement	AM Peak	PM Peak
Mamalahoa Hwy. EBT	401	1,098
Mamalahoa Hwy. WBT	1,038	467
Mamalahoa Hwy. WBL	206	71
Mana St. NBL	22	20
Mana St. NBR	56	122
Major*	1,645	1,636
Minor	78	142

*Eastbound right turns were excluded from the major volume calculation

The Mamalahoa Highway at Mana Road intersection will pass the Peak Hour Warrant in the PM Peak hour. The signalization of a TWSC intersection can allow motorists approaching from the minor streets to make protected movements instead of waiting for a gap in the major street traffic, improving delay on the minor streets, but adding a delay to the major street.

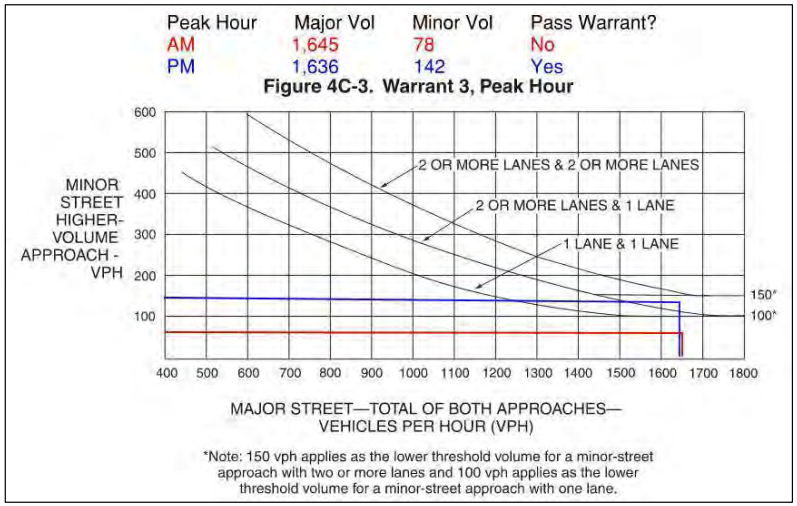

Figure 13: Future (2031) Without Project Peak Hour Warrant

Nearby signalized intersections have protected-permitted left turns from Mamalahoa Highway and permitted-overlap phasing for the minor street right turn. For consistency, the westbound left turn at this intersection was also analyzed with a leading protected-permitted left turn, and the northbound right turn was analyzed with a permitted-overlap phase. The cycle length and splits at the intersection were optimized. Table 11 shows an operational comparison of a TWSC intersection and a signalized intersection. Movements that operated at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 11: Future (2031) Without Project Intersection Comparison – Mamalahoa Highway and Mana Road

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Mana Rd (TWSC)	**11.8**	**Unsignalized**		**4.8**	**Unsignalized**	
Mamalahoa WB Left	9.6	0.24	A	12.3	0.16	B
Mana NB Left	28.7	0.24	D	36.3	0.17	E
Mana NB Right	13.6	0.23	B	43.2	0.63	E
Mamalahoa Hwy at Mana Rd (signal)	**10.4**	**-**	**B**	**21.3**	**-**	**C**
Mamalahoa EB Through-Right	8.5	0.52	A	28.1	0.95	C
Mamalahoa WB Left	5.8	0.40	A	23.9	0.43	C
Mamalahoa WB Through	10.3	0.89	B	3.5	0.42	A
Mana NB Left	26.4	0.27	C	35.6	0.12	D
Mana NB Right	22.9	0.41	C	36.2	0.58	D

The signalization of the intersection will result in an acceptable overall LOS, and an improvement for the northbound approach; however, it will introduce added delay for mainline movements along Mamalahoa Highway that is currently not present in TWSC conditions. The eastbound approach will experience a significant increase in delay, with the eastbound approach nearing capacity (v/c = 1.00). A roundabout was not considered feasible at this location due to the limited right-of-way as a result of the concrete culvert located adjacent to the intersection.

E. Future (2041) Without Project Level of Service

1. Future (2041) Without Project Conditions

Future (2041) Without Project intersection and movement, LOS and delay (in seconds per vehicle) were determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 12 and the Synchro reports are included in Appendix D. For analysis, the cycle length and phasing at Mamalahoa Highway and Kamamalu Street were optimized. Movements that operate at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 12. Future (2041) Without Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**15.8**	**0.89**	**B**	**29.9**	**0.95**	**C**
Mamalahoa EB Through-Right	15.9	0.76	B	32.3	0.96	C
Mamalahoa WB Left-Through	13.3	0.82	B	10.0	0.53	A
Kamamalu NB Left	26.6	0.74	C	59.5	0.95	E
Kamamalu NB Right	14.6	0.07	B	21.6	0.05	B
Hiiaka St at "New Road"	**2.4**	**Unsignalized**		**8.7**	**Unsignalized**	
Hiiaka WB Left-Through	8.0	0.08	A	7.8	0.03	A
"New Road" NB Left-Right	13.0	0.09	B	15.2	0.51	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.6**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.7	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.2**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.4	0.42	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**19.1**	**Unsignalized**		**8.1**	**Unsignalized**	
Mamalahoa WB Left	10.2	0.26	A	14.1	0.19	B
Mana NB Left	34.5	0.28	D	53.3	0.25	F
Mana NB Right	15.1	0.26	C	84.8	0.84	F

a) Mamalahoa Highway at Kamamalu Street

The northbound left turn will operate at LOS E, with a v/c of 0.95 during the PM peak hour. All other movements will operate at a LOS C or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

During the PM Peak hour, the northbound Mana Road left turn and right turn lanes will operate at LOS F (v/c of 0.25 and 0.84, respectively). All other movements at the intersection of Mamalahoa Highway at Mana Road will operate at LOS D or better and v/c < 1.0 during both peak hours.

2. Future (2041) Without Project Mitigation

a) Mamalahoa Highway at Kamamalu Street

The northbound left turn at Mamalahoa Highway and Kamamalu Street will operate at LOS E during the PM peak hour, with a v/c of 0.95. The eastbound and westbound mainline approaches along Mamalahoa Highway operate at LOS C and LOS A in the PM peak hour, respectively. There is an opportunity at this intersection for the signal to provide more green time from the eastbound and westbound approaches to the northbound left turn if needed.

The northbound left turn volume in the PM peak hour is 329 vehicles per hour, or about 5.5 vehicles per minute. With an estimated cycle length of 90 seconds, the northbound left turn would need to process approximately nine vehicles per cycle. Field observations and video recordings confirmed that this signal is actuated, and green time is provided to approaches that have heavier traffic. It was observed that the northbound left turn was able to process more than nine vehicles in a traffic cycle. It is recommended that the phasing and actuated signal operation at this intersection remain as is.

b) Mamalahoa Highway at Mana Road

During the PM Peak hour, as a TCSC intersection the northbound Mana Road left and right turn lanes will worsen to LOS F (v/c of 0.25 and 0.84, respectively). Similar to the Future (2031) Without Project Traffic Signal Warrant Analysis, the Peak Hour Warrant will pass in the PM peak hour. Table 13 shows an operational comparison of a TWSC intersection and a signalized intersection. Movements that operated at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 13: Future (2041) Without Project Intersection Comparison – Mamalahoa Highway and Mana Road

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Mana Rd (TWSC)	**19.1**	**Unsignalized**		**8.1**	**Unsignalized**	
Mamalahoa WB Left	10.2	0.26	A	14.1	0.19	B
Mana NB Left	34.5	0.28	D	53.3	0.25	F
Mana NB Right	15.1	0.26	C	84.8	0.84	F
Mamalahoa Hwy at Mana Rd (signal)	**17.3**	-	**B**	**31.2**	-	**C**
Mamalahoa EB Through-Right	7.1	0.49	A	38.6	0.99	D
Mamalahoa WB Left	5.6	0.40	A	70.9	0.77	E
Mamalahoa WB Through	20.6	0.95	C	3.7	0.46	A
Mana NB Left	45.3	0.29	D	59.7	0.13	E
Mana NB Right	42.8	0.52	D	65.9	0.68	E

With the addition of a signal and optimized signal timing, the northbound approaches will still operate at LOS E during the PM peak hour. However, with this, the WB left also operates at LOS E and the EB approach approaches capacity (v/c = 1.0). The delay is primarily due to the extremely high through volumes along Mamalahoa Highway which are a result of the forecasted regional growth in the area. A single-lane roundabout was analyzed, however it resulted in over-capacity conditions. For this scenario, assuming the widening of Mamalahoa Highway is not feasible, the TWSC intersection may be preferred as it prioritizes the highest volume approaches.

IV. FUTURE WITH PROJECT CONDITIONS

The proposed relocation of the KOKO Health Clinic will be part of the WNR-CDI Phase 1. The primary access at the future "New Road" is expected to be completed as a part of the WNR-CDI Phase 1 development, intersecting with Hiiaka Street as a TWSC intersection with a shared left-right turn exit lane controlled by a stop sign. Trips resulting from the proposed relocation of the KOKO Health Clinic were included in the Future (2026), (2031), and (2041) With Project analysis. "New Road" will extend to a secondary access, which exists through the west end of Poliahu Alanui Road, west of the intersection with Uakikoni Alanui. This will provide sole access to the KOKO Health Clinic until the construction of the future "New Road". These are mainly rural roads with low volumes and TWSC intersections.

A. Future With Project Generated Volumes

1. Project Related Volumes

The anticipated project-related trips from the proposed relocation of the KOKO Health Clinic were determined using the following four-step methodology: trip generation, trip distribution, modal choice, and route assignment.

a) Trip Generation

The trip generation methodology is based upon generally accepted techniques and rates developed by the Institute of Transportation Engineers (ITE) and published in the *Trip Generation Manual, 11th Edition* (ITE, 2021). The ITE trip rates are developed by correlating the total vehicle trip generation data with various activity/land use characteristics.

Trip generation was calculated for the proposed 9,600 SF gross floor area (SF GFA) KOKO Health Clinic. Project-related trips for the peak hour of the adjacent street were calculated based on the associated ITE formulas (see Table 14) and are shown in Table 15.

Table 14: Project Related Trip Generation Rates

ITE Land Use	AM Peak Hour of Adjacent Street			PM Peak Hour of Adjacent Street		
	Equation	In%	Out %	Equation	In %	Out %
Clinic	T=2.19(X)+8.68	81	19	T=3.53(X)+2.98	30	70

Table 15: Project Related Development Phasing and Trips Generated

ITE Code	ITE Land Use	Independent Variable Value	AM Peak Hour (vph)			PM Peak Hour (vph)		
			Enter	Exit	Total	Enter	Exit	Total
630	Clinic	9,600 SF GFA	24	6	30	11	26	37

The KOKO Health Clinic is expected to generate 30 and 37 trips in the AM and PM peak hours, respectively. These low number of trips are not expected to have a significant impact on the surrounding roadway network. As a result, a separate analysis analyzing the secondary access was not done. Instead, the KOKO Health Clinic volumes were considered as a part of the other trips from Phase 1 through the future "New Road."

b) Trip Distribution/Assignment

The relocated KOKO Health Clinic related trips were distributed based on historical traffic data. Figure 14 shows the forecasted distribution of project-related trips at the study intersections during the AM and PM peak hours. The relocated clinic is expected to provide many of the same services, therefore, the trips generated by the proposed KOKO Health Clinic were redistributed from the existing KOKO Health Clinic on Mamalahoa Highway (shown in red in Figure 14) to the new project site (shown in black in Figure 14). There will be no net change in traffic volume to the west of Kamamalu Street and to the east of Mana Road, resulting in no net change to the traffic volume of the State-owned portion of Route 19.

c) Modal Choice

All project-related external trips were assumed to be by private vehicle only due to the surrounding land use, rural context, and lack of alternative transportation options. This reflects the worst-case traffic condition with all trips occurring by private vehicle.

d) Future With Project Volumes

Future with Project conditions was calculated through the following methods:

- Future (2026) With Project (see Figure 15) is a sum of the Future (2026) Without Project (Figure 10) and the KOKO Health Clinic Project Related Trips (Figure 14).
- Future (2031) With Project (see Figure 16) is a sum of the Future (2031) Without Project (Figure 11) and the KOKO Health Clinic Project Related Trips (Figure 14).
- Future (2041) With Project (see Figure 17) is a sum of the Future (2041) Without Project (Figure 12) and the KOKO Health Clinic Project Related Trips (Figure 14).

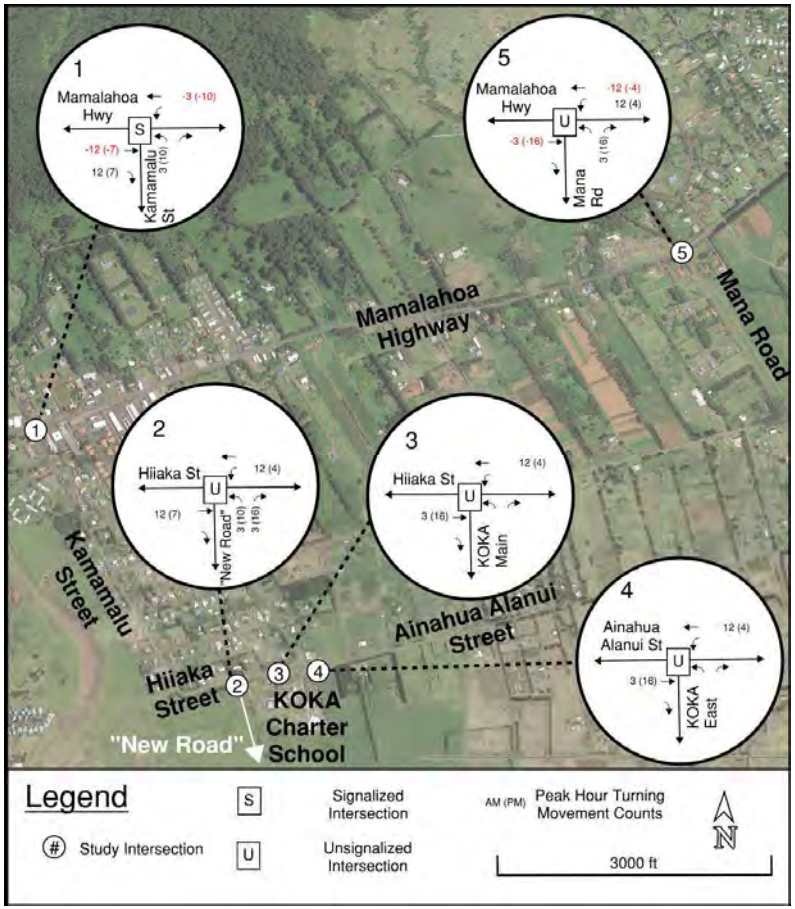

Figure 14. KOKO Health Clinic Project Related Trips

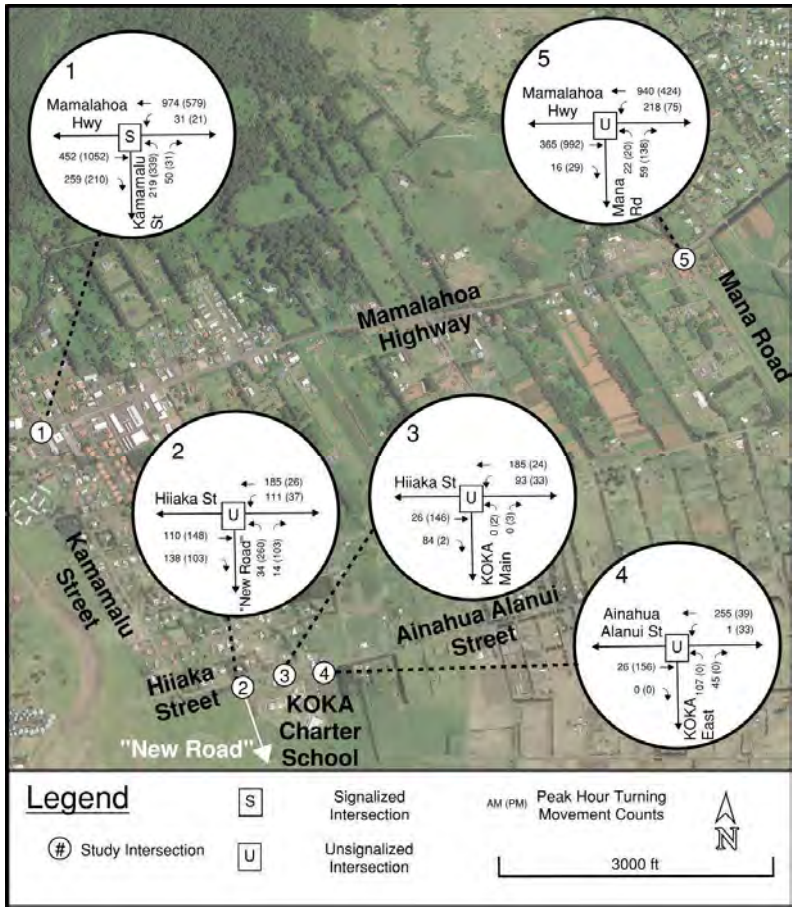

Figure 15. Future (2026) With Project Peak Hour Volumes

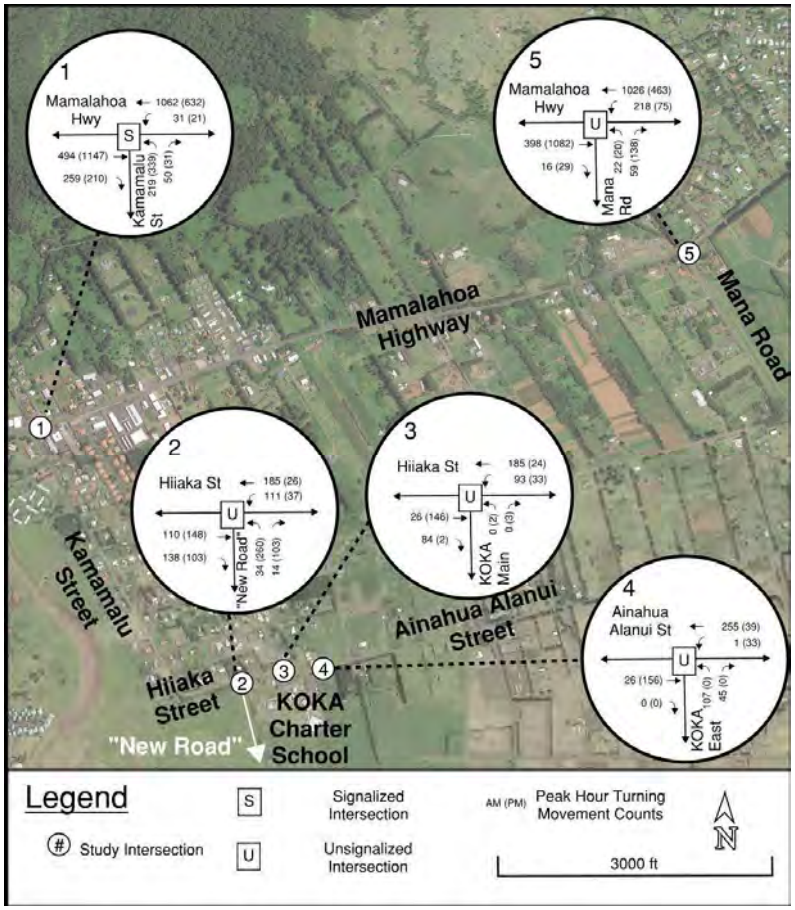

Figure 16. Future (2031) With Project Peak Hour Volumes

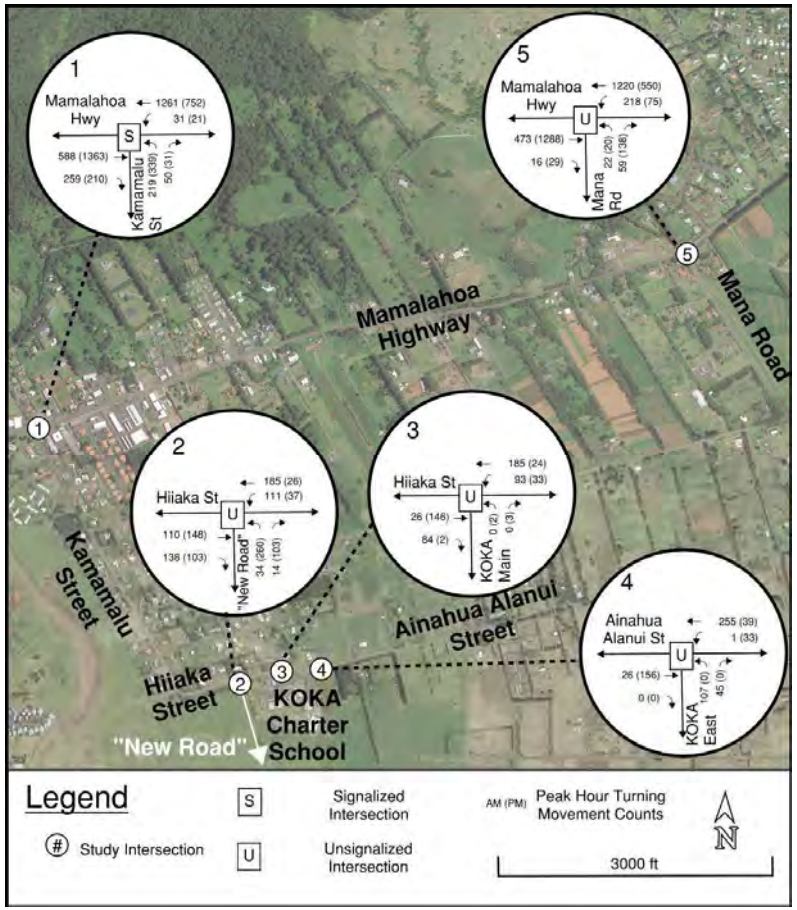

Figure 17. Future (2041) With Project Peak Hour Volumes

B. Future (2026) With Project Level of Service

1. Future (2026) With Project Conditions

Future (2026) With Project intersection and movement LOS and delay (in seconds per vehicle) was determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 16 and reports can be found in Appendix E. For analysis, the cycle length and phasing at Mamalahoa Highway and Kamamalu Street were optimized. Movements that operate at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 16. Future (2026) With Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**13.3**	**0.76**	**B**	**24.3**	**0.90**	**C**
Mamalahoa EB Through-Right	14.5	0.67	B	25.6	0.91	C
Mamalahoa WB Left-Through	9.9	0.67	A	8.7	0.41	A
Kamamalu NB Left	21.6	0.70	C	40.8	0.91	D
Kamamalu NB Right	12.3	0.04	B	15.1	0.04	B
Hiiaka St at "New Road"	**2.6**	**Unsignalized**		**9.5**	**Unsignalized**	
Hiiaka WB Left-Through	8.1	0.09	A	7.9	0.03	A
"New Road" NB Left-Right	13.7	0.11	B	17.0	0.57	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.5**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.7	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.1**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.9	0.43	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**9.5**	**Unsignalized**		**4.7**	**Unsignalized**	
Mamalahoa WB Left	9.5	0.24	A	11.5	0.15	B
Mana NB Left	28.1	0.24	D	31.1	0.15	D
Mana NB Right	13.0	0.22	B	37.0	0.61	E

a) Mamalahoa Highway at Kamamalu Street

All movements at the intersection of Mamalahoa Highway at Kamamalu Street operated at a LOS D or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

During the PM Peak hour, the northbound Mana Road right turn will worsen from LOS D in Future (2026) Without Project to LOS E (v/c of 0.61). All other movements at the intersection of Mamalahoa Highway at Mana Road will operate at LOS D or better and v/c < 1.0 during both peak hours.

2. Future (2026) With Project Mitigation

The northbound right turn at the intersection of Mamalahoa Highway and Mana Road will operate at LOS E during the PM peak hour.

MUTCD Traffic Signal Warrant 3, Peak Hour Warrant was analyzed for the Future (2026) With Project conditions. Table 17 shows the volumes used for the peak hour analysis. For this, the eastbound right turns were not included in the major volume calculation. Figure 18 shows the Future (2026) With Project Peak Hour Warrant Analysis. The Future (2026) With Project AM and PM peak hour volumes are shown as red and blue lines, respectively. The "2 or more Lanes & 1 Lane" curve was used for analysis.

Table 17: Future (2026) Volumes at Mamalahoa Highway and Mana Road

Movement	AM Peak	PM Peak
Mamalahoa Hwy EBT	365	992
Mamalahoa Hwy WBT	940	424
Mamalahoa Hwy WBL	218	75
Mana St NBL	22	20
Mana St NBR	59	138
Major*	1,523	1,491
Minor	81	158

*Eastbound right turns were excluded from the major volume calculation

The Mamalahoa Highway and Mana Road intersection satisfies the Peak Hour Warrant in the PM peak hour. The satisfaction of the Peak Hour Warrant does not indicate that a signal must be installed but can be considered. The v/c ratios for the northbound Mana Road movements indicate that they are not yet approaching capacity, and instead are a result of the difficulty a driver may have in finding a gap in within the mainline traffic. The TWSC condition was compared to the signalized intersection at Mamalahoa Highway and Mana Road for the AM and PM peak hours (see Table 18). The cycle length and splits at the intersection were optimized. Nearby signalized intersections have protected-permitted left turns from Mamalahoa Highway and permitted-overlap phasing for the minor street right turn. For consistency, the westbound left turn at this intersection was also analyzed with a leading protected-permitted left turn, and the northbound right turn was analyzed with a permitted-overlap phase.

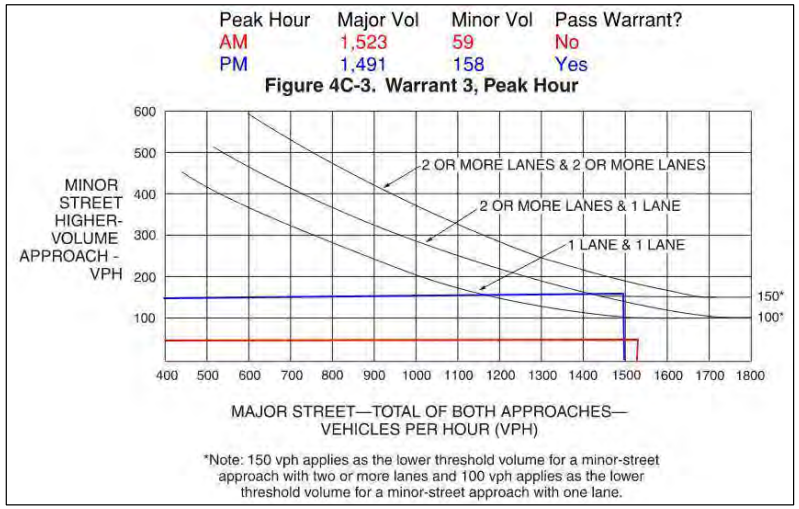

Figure 18: Future (2026) With Project Peak Hour Warrant

Table 18. Future (2026) Without Project Intersection Comparison – Mamalahoa Highway and Mana Road

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Mana Rd (TWSC)	**9.5**	**Unsignalized**		**4.7**	**Unsignalized**	
Mamalahoa WB Left	9.5	0.24	A	11.5	0.15	B
Mana NB Left	28.1	0.24	D	31.1	0.15	D
Mana NB Right	13.0	0.22	B	37.0	0.61	E
Mamalahoa Hwy at Mana Rd (signal)	**9.2**	**-**	**A**	**18.8**	**-**	**B**
Mamalahoa EB Through-Right	9.6	0.56	A	24.5	0.93	C
Mamalahoa WB Left	6.3	0.43	A	18.3	0.39	B
Mamalahoa WB Through	8.3	0.85	A	3.8	0.40	A
Mana NB Left	21.1	0.25	C	29.7	0.11	C
Mana NB Right	17.4	0.38	B	30.2	0.58	C

The addition of the traffic signal at Mamalahoa Highway and Mana Road improved the resulting delay of the northbound right turn; however, it will introduce added delay for mainline movements along Mamalahoa Highway that is currently not present in TWSC conditions, with the eastbound approach nearing a v/c of 1.00. It is recommended that this intersection be studied as a part of the future buildout in collaboration with HDOT to assess the need for a traffic signal.

C. Future (2031) With Project Level of Service

1. Future (2031) With Project Conditions

Future (2031) With Project intersection and movement, LOS and delay (in seconds per vehicle) was determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 19 and reports can be found in Appendix E. The cycle length and phasing at Mamalahoa Highway and Kamamalu Street was optimized. Movements that operate at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 19. Future (2031) With Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**14.2**	**0.80**	**B**	**25.2**	**0.90**	**C**
Mamalahoa EB Through-Right	15.5	0.72	B	26.4	0.91	C
Mamalahoa WB Left-Through	11.0	0.73	B	9.4	0.44	A
Kamamalu NB Left	22.2	0.70	C	46.6	0.91	D
Kamamalu NB Right	12.7	0.05	B	17.5	0.04	B
Hiiaka St at "New Road"	**2.6**	**Unsignalized**		**9.5**	**Unsignalized**	
Hiiaka WB Left-Through	8.1	0.09	A	7.9	0.03	A
"New Road" NB Left-Right	13.7	0.11	B	17.0	0.57	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.5**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.9	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.1**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.9	0.43	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**11.9**	**Unsignalized**		**5.7**	**Unsignalized**	
Mamalahoa WB Left	9.7	0.25	A	12.2	0.16	B
Mana NB Left	30.2	0.25	D	36.3	0.17	E
Mana NB Right	13.6	0.24	B	48.1	0.69	E

a) Mamalahoa Highway at Kamamalu Street

All movements at the intersection of Mamalahoa Highway at Kamamalu Street operate at a LOS D or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

During the PM peak hour, the northbound Mana Road left and right turn lanes will operate at LOS E (v/c of 0.17 and 0.69, respectively). All other movements at the intersection of Mamalahoa Highway at Mana Road will operate at a LOS D or better and v/c < 1.0 during both peak hours.

2. Future (2031) With Project Mitigation

During the PM peak hour, the northbound Mana Road left and right turn lanes will operate at LOS E (v/c of 0.17 and 0.69, respectively). Similar to the Future (2026) With Project Traffic Signal Warrant Analysis, the Peak Hour Warrant will pass in the PM peak hour. Table 20 shows a comparison of a TWSC intersection and a signalized intersection. Movements that operated at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 20: Future (2031) With Project Intersection Comparison

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Mana Rd (TWSC)	**11.9**	**Unsignalized**		**5.7**	**Unsignalized**	
Mamalahoa WB Left	9.7	0.25	A	12.2	0.16	B
Mana NB Left	30.2	0.25	D	36.3	0.17	E
Mana NB Right	13.6	0.24	B	48.1	0.69	E
Mamalahoa Hwy at Mana Rd (signal)	**10.4**	**-**	**B**	**26.1**	**-**	**C**
Mamalahoa EB Through-Right	8.8	0.53	A	36.8	0.99	D
Mamalahoa WB Left	6.1	0.42	A	23.1	0.49	C
Mamalahoa WB Through	10.1	0.88	B	3.8	0.43	A
Mana NB Left	25.8	0.26	C	32.0	0.11	C
Mana NB Right	22.2	0.41	C	32.7	0.59	C

With the addition of a signal, the Mana Road approach and all other movements will operate at an acceptable LOS for both peak hours; however, it will introduce added delay for mainline movements along Mamalahoa Highway that is currently not present in TWSC conditions, with the eastbound approach nearing a v/c of 1.00. It is recommended that this intersection continue to be studied as a part of the future buildout in collaboration with HDOT to assess the need for a traffic signal or other appropriate mitigation.

D. Future (2041) With Project Level of Service

1. Future (2041) With Project Conditions

Future (2041) With Project intersection and movement, LOS and delay (in seconds per vehicle) was determined for the AM and PM peak hours using *Synchro 10* traffic analysis software and are shown in Table 21 and reports can be found in Appendix E. The cycle length and phasing at Mamalahoa Highway and Kamamalu Street was optimized. Movements that operate at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 21. Future (2041) With Project LOS

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Kamamalu St	**15.9**	**0.89**	**B**	**31.2**	**0.96**	**C**
Mamalahoa EB Through-Right	16.0	0.76	B	32.5	0.96	C
Mamalahoa WB Left-Through	13.3	0.83	B	10.0	0.52	A
Kamamalu NB Left	27.0	0.75	C	66.0	0.98	E
Kamamalu NB Right	14.5	0.07	B	21.6	0.05	B
Hiiaka St at "New Road"	**2.6**	**Unsignalized**		**9.5**	**Unsignalized**	
Hiiaka WB Left-Through	8.1	0.09	A	7.9	0.03	A
"New Road" NB Left-Right	13.7	0.11	B	17.0	0.57	C
Hiiaka St at KOKA Main Dwy	**2.0**	**Unsignalized**		**1.5**	**Unsignalized**	
Hiiaka WB Left-Through	7.9	0.12	A	7.7	0.03	A
KOKA Main Dwy NB Left-Right	0.0	0.00	A	9.7	0.01	A
Ainahua Alanui St at KOKA East Dwy	**5.5**	**Unsignalized**		**1.1**	**Unsignalized**	
Ainahua Alanui WB Left-Through	7.3	0.01	A	7.6	0.02	A
KOKA East Dwy NB Left-Right	14.9	0.43	B	0.0	0.00	A
Mamalahoa Hwy at Mana Rd	**21.6**	**Unsignalized**		**10.0**	**Unsignalized**	
Mamalahoa WB Left	10.2	0.27	A	14.1	0.20	B
Mana NB Left	36.5	0.30	E	53.3	0.25	F
Mana NB Right	15.2	0.27	C	102.2	0.93	F

a) Mamalahoa Highway at Kamamalu Street

The northbound left turn will operate at LOS E, with a v/c of 0.98 during the PM peak hour. All other movements will operate at a LOS C or better and v/c < 1.0 during both peak hours.

b) Hiiaka Street at "New Road"

All movements at the intersection of Hiiaka Street at "New Road" operate at a LOS C or better and v/c < 1.0 during both peak hours.

c) Hiiaka Street at KOKA Main Driveway

All movements at the intersection of Hiiaka Street at KOKA Main Driveway operate at a LOS A and v/c < 1.0 during both peak hours.

d) Ainahua Alanui Street at KOKA Eastern Driveway

All movements at the intersection of Ainahua Alanui Street at KOKA Eastern Driveway operate at a LOS B or better and v/c < 1.0 during both peak hours.

e) Mamalahoa Highway at Mana Road

During the PM peak hour, the northbound Mana Road left and right turn lanes will operate at LOS E (v/c of 0.25 and 0.93, respectively). Additionally, the northbound Mana Road left turn lane will operate at LOS E (v/c ratio of 0.30) during the AM peak hour. All other movements at the intersection of Mamalahoa Highway at Mana Road will operate at a LOS C or better and v/c < 1.0 during both peak hours.

2. Future (2041) With Project Mitigation

a) Mamalahoa Highway at Kamamalu Street

The northbound left turn at the intersection of Mamalahoa Highway and Kamamalu Street will operate at LOS E, with a v/c of 0.98 during the PM peak hour. The eastbound and westbound approaches along Mamalahoa Highway operate at LOS C and LOS A, respectively. There is an opportunity at this intersection for the signal to provide more green time from the eastbound and westbound approaches to the northbound left turn if needed.

The northbound left turn volume in the PM peak hour is 339 vehicles per hour, or about 5.5 vehicles per minute. With an estimated cycle length of about 90 seconds, the northbound left turn would need to process approximately nine vehicles per cycle. Field observations and video recordings confirmed that this signal is actuated, and green time is provided to approaches that have heavier traffic. The northbound left turn was able to process more than nine vehicles in a traffic cycle. It is recommended that the phasing and actuated signal operation at this intersection remain as is.

b) Mamalahoa Highway at Mana Road

During the AM Peak hour, the northbound left turn lane operates at LOS E (v/c of 0.30). During the PM Peak hour, the northbound Mana Road left and right turn lanes will operate at LOS F (v/c of 0.25 and 0.93, respectively). Similar to the Future (2031) With Project Traffic Signal Warrant Analysis, the Peak Hour Warrant will pass in the PM peak hour. Table 22 shows a comparison of a TWSC intersection and a signalized intersection. Movements that operated at LOS E or worse or v/c > 1.0 are highlighted in yellow.

Table 22: Future (2041) With Project Intersection Comparison

Approach and Movement	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Mamalahoa Hwy at Mana Rd (TWSC)	**21.6**	**Unsignalized**		**10.0**	**Unsignalized**	
Mamalahoa WB Left	10.2	0.27	A	14.1	0.20	B
Mana NB Left	36.5	0.30	E	53.3	0.25	F
Mana NB Right	15.2	0.27	C	102.2	0.93	F
Mamalahoa Hwy at Mana Rd (signal)	**18.0**	**-**	**B**	**33.6**	**-**	**C**
Mamalahoa EB Through-Right	7.7	0.50	A	41.4	1.00	D
Mamalahoa WB Left	6.0	0.43	A	78.7	0.81	E
Mamalahoa WB Through	22.1	0.96	C	4.1	0.47	A
Mana NB Left	41.6	0.28	D	58.8	0.12	E
Mana NB Right	38.8	0.50	D	67.1	0.70	E

With the addition of a signal, the eastbound approach, northbound left turn, and northbound right turn will operate at LOS E (v/c of 0.81, 0.12, and 0.70, respectively) during the PM peak hour. The delay is due to the cycle length, and not due to the difficulty of northbound left turn vehicles to clear the intersection. The eastbound approach will experience a significant increase in delay, with the eastbound approach nearing a v/c of 1.00. It is recommended that this intersection continue to be studied as a part of the future buildout in collaboration with HDOT to assess the need for a traffic signal or other appropriate mitigation.

V. SUMMARY AND RECOMMENDATIONS

WNCDC plans to develop the WNR-CDI on an existing vacant lot (TMK (3) 6-4-038:011) in Waimea, on the Island of Hawaii. Previously, the *2015 WNR-CDI TIAR* analyzed the WNR-CDI with proposed land uses including a cemetery, agriculture park, golf facility, equestrian center, and farmers' market. These have yet to be constructed. The WNCDC is now pursuing the relocation and upgrade of the existing KOKO Health Clinic from its current site within Uilani Plaza on Mamalahoa Highway to within the WNR-CDI. The primary access to the relocated KOKO Health Clinic will be off of the future "New Road" at Hiiaka Street. An access exists through the west end of Poliahu Alanui Road, west of the intersection with Uakikoni Alanui and will be used in the interim as a temporary access. This will provide sole access to the KOKO Health Clinic until the construction of the future "New Road", when it will become the secondary access. The KOKO Health Clinic is expected to generate 30 and 37 trips in the AM and PM peak hours, respectively. These low number of trips are not expected to have a significant impact on the surrounding roadway network. As a result, a separate analysis of the secondary access was not done. Both the previously proposed land uses, and the additional relocation of the KOKO Health Clinic constitute Phase 1 of the WNR-CDI development. An additional Phase 2 of construction on the WNR-CDI will include other future developments that are not yet planned, and therefore was analyzed as a part of this TIAR.

This TIAR will supplement the previous *2015 WNR-CDI TIAR* and only assess the impact of the proposed relocated KOKO Health Clinic on Future With Project analysis. As a part of this TIAR, the Future Without Project analysis will include the project-related trips from the *2015 WNR-CDI TIAR* using updated background growth rates and intersection turning movement counts taken in September 2021. The overall size and traffic impact of the KOKO Health Clinic compared to the other land uses proposed in the *2015 WNR-CDI TIAR* Phase 1 is minimal.

At Mamalahoa Highway and Mana Road, the northbound right approach will worsen to LOS E in Future (2026) With Project and LOS F in Future (2041) With Project in the PM peak hour. The northbound left turn also operates at LOS E during the Future (2041) With Project in the AM peak hour, and LOS E during the Future (2021) With Project in the PM peak hour. This intersection satisfied the Peak Hour Traffic Signal Warrant for Future (2026) With Project. With a traffic signal, the eastbound approach in the PM peak hour nears capacity (v/c = 1.00) in 2041 for conditions with and without the project which is likely due to the large through volumes along Mamalahoa Highway resulting from the forecasted regional growth. It is recommended that this intersection be studied as a part of the future buildout in collaboration with HDOT to assess the need for a traffic signal.

The northbound left turn during the PM peak hour at Mamalahoa Highway and Kamamalu Street worsens to LOS E in Future (2041) Without Project and Future (2041) With Project conditions. Future project volumes suggest that up to nine vehicles per cycle would be queued at this approach to the intersection. Video recordings and field observations show that the northbound left turn will be able to process the queue every cycle. The signal timing at this intersection should be monitored and adjusted if needed.

VI. REFERENCES

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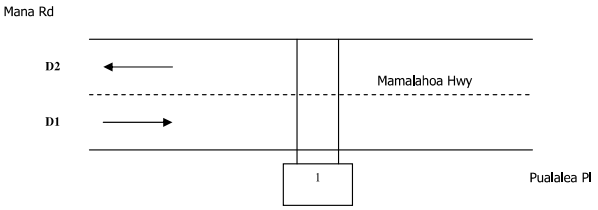
Appendix A
Historical and 2021 Traffic Data

Traffic Data Service
Traffic Station Sketch

N

Island: Hawaii
Area: Waimea

Section ID/Station #: B71001905469



Meter #	File Name	GPS
1. bz92	D0807003_B71001905469 D0807004_B71001905469	20.02833, -155.6476

Station Description:
Mamalahoa Hwy: Mana Rd to Pualalea Pl

Survey Beginning Date/Time:		Survey Ending Date/Time:
8/7/13 @ 0000		8/8/13 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:			

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Mamalahoa Hwy		14		19	

D1= Direction to End — D1: Pualalea Pl / Palani Rd (Rte 190)
D2= Direction to Begin — D2: Mana Rd / entrance to Kuhio Wharf

Run Date: 2014/05/29

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2013 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15500
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/08/2013															
12:00-12:15	7	33	40	06:00-06:15	142	29	171	12:00-12:15	97	117	214	06:00-06:15	103	160	263
12:15-12:30	3	14	17	06:15-06:30	214	32	246	12:15-12:30	116	125	241	06:15-06:30	91	129	220
12:30-12:45	5	14	19	06:30-06:45	170	56	226	12:30-12:45	112	123	235	06:30-06:45	86	126	212
12:45-01:00	1	11	12	06:45-07:00	205	43	248	12:45-01:00	102	116	218	06:45-07:00	71	127	198
01:00-01:15	1	6	7	07:00-07:15	209	58	267	01:00-01:15	124	119	243	07:00-07:15	66	120	186
01:15-01:30	1	10	11	07:15-07:30	198	100	298	01:15-01:30	115	125	240	07:15-07:30	48	103	151
01:30-01:45	4	6	10	07:30-07:45	249	94	343	01:30-01:45	128	123	251	07:30-07:45	58	83	141
01:45-02:00	2	2	4	07:45-08:00	207	108	315	01:45-02:00	130	137	267	07:45-08:00	64	85	149
02:00-02:15	3	3	6	08:00-08:15	172	105	277	02:00-02:15	155	132	287	08:00-08:15	39	98	137
02:15-02:30	3	4	7	08:15-08:30	157	101	258	02:15-02:30	120	146	266	08:15-08:30	28	77	105
02:30-02:45	2	5	7	08:30-08:45	116	79	195	02:30-02:45	110	170	280	08:30-08:45	30	62	92
02:45-03:00	12	0	12	08:45-09:00	151	108	259	02:45-03:00	136	158	294	08:45-09:00	32	62	94
03:00-03:15	13	5	18	09:00-09:15	108	90	198	03:00-03:15	131	173	304	09:00-09:15	31	55	86
03:15-03:30	14	3	17	09:15-09:30	125	83	208	03:15-03:30	117	187	304	09:15-09:30	22	58	80
03:30-03:45	20	2	22	09:30-09:45	136	92	228	03:30-03:45	137	212	349	09:30-09:45	25	47	72
03:45-04:00	30	3	33	09:45-10:00	125	96	221	03:45-04:00	135	191	326	09:45-10:00	16	52	68
04:00-04:15	38	5	43	10:00-10:15	129	92	221	04:00-04:15	114	228	342	10:00-10:15	19	47	66
04:15-04:30	42	7	49	10:15-10:30	102	95	197	04:15-04:30	111	209	320	10:15-10:30	15	46	61
04:30-04:45	42	3	45	10:30-10:45	105	104	209	04:30-04:45	99	235	334	10:30-10:45	7	63	70
04:45-05:00	62	4	66	10:45-11:00	112	99	211	04:45-05:00	141	209	350	10:45-11:00	10	42	52
05:00-05:15	69	11	80	11:00-11:15	103	102	205	05:00-05:15	128	211	339	11:00-11:15	9	43	52
05:15-05:30	95	31	126	11:15-11:30	109	129	238	05:15-05:30	76	215	291	11:15-11:30	8	48	56
05:30-05:45	139	33	172	11:30-11:45	90	98	188	05:30-05:45	81	180	261	11:30-11:45	7	47	54
05:45-06:00	143	20	163	11:45-12:00	93	115	208	05:45-06:00	107	178	285	11:45-12:00	5	18	23

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	826	407	1233	PM - PEAK HR VOLUME	465	881	1346
AM - K FACTOR (%)			7.63	PM - K FACTOR (%)			8.33
AM - D (%)	66.99	33.01	100.00	PM - D (%)	34.55	65.45	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	863	408		PM - PEAK HR VOLUME	520	881	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	826	407	1233	PM - PEAK HR VOLUME	465	881	1346
AM - K FACTOR (%)			7.63	PM - K FACTOR (%)			8.33
AM - D (%)	66.99	33.01	100.00	PM - D (%)	34.55	65.45	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,527	2,108	5,635
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,278	2,343	6,621
PEAK HR VOLUME	521	606	1127	PM 6-HR PERIOD (12:00-18:00)	2,822	4,019	6,841
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,712	5,817	9,529
PEAK HR TIME	01:30 PM to 02:30 PM	02:00 PM to 03:00 PM		24 HOUR PERIOD	7,990	8,160	16,150
PEAK HR VOLUME	533	606		D (%)	49.47	50.53	100.00

Run Date: 2014/05/29

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2013 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15500
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/07/2013															
12:00-12:15	5	18	23	06:00-06:15	160	29	189	12:00-12:15	123	138	261	06:00-06:15	97	154	251
12:15-12:30	2	11	13	06:15-06:30	168	39	207	12:15-12:30	117	130	247	06:15-06:30	116	123	239
12:30-12:45	10	12	22	06:30-06:45	213	44	257	12:30-12:45	130	131	261	06:30-06:45	81	120	201
12:45-01:00	1	10	11	06:45-07:00	170	51	221	12:45-01:00	128	134	262	06:45-07:00	90	119	209
01:00-01:15	3	7	10	07:00-07:15	193	51	244	01:00-01:15	169	130	299	07:00-07:15	73	82	155
01:15-01:30	2	7	9	07:15-07:30	186	85	271	01:15-01:30	110	147	257	07:15-07:30	64	115	179
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01:45-02:00	0	6	6	07:45-08:00	215	125	340	01:45-02:00	106	145	251	07:45-08:00	30	83	113
02:00-02:15	6	0	6	08:00-08:15	165	109	274	02:00-02:15	121	126	247	08:00-08:15	43	103	146
02:15-02:30	3	4	7	08:15-08:30	139	107	246	02:15-02:30	110	129	239	08:15-08:30	40	77	117
02:30-02:45	6	9	15	08:30-08:45	142	84	226	02:30-02:45	109	155	264	08:30-08:45	26	75	101
02:45-03:00	10	2	12	08:45-09:00	182	100	282	02:45-03:00	118	150	268	08:45-09:00	35	58	93
03:00-03:15	13	2	15	09:00-09:15	105	119	224	03:00-03:15	124	173	297	09:00-09:15	29	52	81
03:15-03:30	16	6	22	09:15-09:30	149	121	270	03:15-03:30	138	175	313	09:15-09:30	21	45	66
03:30-03:45	19	3	22	09:30-09:45	141	117	258	03:30-03:45	125	188	313	09:30-09:45	35	64	99
03:45-04:00	30	4	34	09:45-10:00	129	101	230	03:45-04:00	138	185	323	09:45-10:00	33	43	76
04:00-04:15	33	3	36	10:00-10:15	105	139	244	04:00-04:15	120	202	322	10:00-10:15	28	43	71
04:15-04:30	49	5	54	10:15-10:30	115	106	221	04:15-04:30	127	199	326	10:15-10:30	27	43	70
04:30-04:45	39	3	42	10:30-10:45	103	114	217	04:30-04:45	121	258	379	10:30-10:45	20	58	78
04:45-05:00	59	5	64	10:45-11:00	124	102	226	04:45-05:00	114	245	359	10:45-11:00	11	52	63
05:00-05:15	85	11	96	11:00-11:15	131	128	259	05:00-05:15	122	192	314	11:00-11:15	7	38	45
05:15-05:30	92	25	117	11:15-11:30	104	165	269	05:15-05:30	120	195	315	11:15-11:30	12	37	49
05:30-05:45	122	36	158	11:30-11:45	140	119	259	05:30-05:45	104	200	304	11:30-11:45	4	38	42
05:45-06:00	148	29	177	11:45-12:00	107	116	223	05:45-06:00	108	150	258	11:45-12:00	8	22	30

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	813	407	1220	PM - PEAK HR VOLUME	482	904	1386
AM - K FACTOR (%)			7.33	PM - K FACTOR (%)			8.32
AM - D (%)	66.64	33.36	100.00	PM - D (%)	34.78	65.22	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	841	429		PM - PEAK HR VOLUME	525	904	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	813	407	1220	PM - PEAK HR VOLUME	482	904	1386
AM - K FACTOR (%)			7.33	PM - K FACTOR (%)			8.32
AM - D (%)	66.64	33.36	100.00	PM - D (%)	34.78	65.22	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,633	2,359	5,992
PEAK HR TIME	12:45 PM to 01:45 PM			AM 12-HR PERIOD (00:00-12:00)	4,390	2,583	6,973
PEAK HR VOLUME	511	592	1103	PM 6-HR PERIOD (12:00-18:00)	2,906	4,058	6,964
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,881	5,800	9,681
PEAK HR TIME	12:15 PM to 01:15 PM	01:00 PM to 02:00 PM		24 HOUR PERIOD	8,271	8,383	16,654
PEAK HR VOLUME	544	603		D (%)	49.66	50.34	100.00

Run Date: 2015/03/09

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2014 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 14200
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/05/2014															
12:00-12:15	6	22	28	06:00-06:15	171	28	199	12:00-12:15	101	116	217	06:00-06:15	87	158	245
12:15-12:30	3	7	10	06:15-06:30	189	26	215	12:15-12:30	116	132	248	06:15-06:30	92	158	250
12:30-12:45	0	7	7	06:30-06:45	178	39	217	12:30-12:45	115	116	231	06:30-06:45	86	135	221
12:45-01:00	3	13	16	06:45-07:00	207	40	247	12:45-01:00	123	100	223	06:45-07:00	74	140	214
01:00-01:15	3	8	11	07:00-07:15	194	54	248	01:00-01:15	120	126	246	07:00-07:15	56	138	194
01:15-01:30	0	3	3	07:15-07:30	238	81	319	01:15-01:30	92	144	236	07:15-07:30	49	99	148
01:30-01:45	3	6	9	07:30-07:45	256	98	354	01:30-01:45	110	121	231	07:30-07:45	44	86	130
01:45-02:00	2	1	3	07:45-08:00	233	84	317	01:45-02:00	103	133	236	07:45-08:00	41	98	139
02:00-02:15	3	3	6	08:00-08:15	166	123	289	02:00-02:15	119	120	239	08:00-08:15	34	80	114
02:15-02:30	4	0	4	08:15-08:30	126	95	221	02:15-02:30	111	144	255	08:15-08:30	44	84	128
02:30-02:45	5	2	7	08:30-08:45	117	90	207	02:30-02:45	134	144	278	08:30-08:45	49	81	130
02:45-03:00	13	0	13	08:45-09:00	131	76	207	02:45-03:00	129	160	289	08:45-09:00	38	71	109
03:00-03:15	7	4	11	09:00-09:15	116	86	202	03:00-03:15	153	159	312	09:00-09:15	33	62	95
03:15-03:30	13	1	14	09:15-09:30	138	66	204	03:15-03:30	128	160	288	09:15-09:30	29	52	81
03:30-03:45	17	0	17	09:30-09:45	114	100	214	03:30-03:45	134	200	334	09:30-09:45	24	57	81
03:45-04:00	29	3	32	09:45-10:00	125	105	230	03:45-04:00	141	191	332	09:45-10:00	27	54	81
04:00-04:15	32	2	34	10:00-10:15	107	103	210	04:00-04:15	156	200	356	10:00-10:15	14	45	59
04:15-04:30	45	3	48	10:15-10:30	128	94	222	04:15-04:30	137	227	364	10:15-10:30	28	61	89
04:30-04:45	46	3	49	10:30-10:45	124	79	203	04:30-04:45	105	247	352	10:30-10:45	7	56	63
04:45-05:00	63	13	76	10:45-11:00	100	98	198	04:45-05:00	109	240	349	10:45-11:00	10	34	44
05:00-05:15	82	13	95	11:00-11:15	115	89	204	05:00-05:15	117	239	356	11:00-11:15	7	36	43
05:15-05:30	96	12	108	11:15-11:30	95	117	212	05:15-05:30	114	203	317	11:15-11:30	8	27	35
05:30-05:45	113	39	152	11:30-11:45	120	106	226	05:30-05:45	85	191	276	11:30-11:45	2	34	36
05:45-06:00	138	23	161	11:45-12:00	113	84	197	05:45-06:00	89	161	250	11:45-12:00	4	23	27

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	893	386	1279	PM - PEAK HR VOLUME	507	914	1421
AM - K FACTOR (%)			7.97	PM - K FACTOR (%)			8.86
AM - D (%)	69.82	30.18	100.00	PM - D (%)	35.68	64.32	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	03:30 PM to 04:30 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	921	400		PM - PEAK HR VOLUME	568	953	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	893	386	1279	PM - PEAK HR VOLUME	507	914	1421
AM - K FACTOR (%)			7.97	PM - K FACTOR (%)			8.86
AM - D (%)	69.82	30.18	100.00	PM - D (%)	35.68	64.32	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,601	1,961	5,562
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,327	2,149	6,476
PEAK HR VOLUME	493	568	1061	PM 6-HR PERIOD (12:00-18:00)	2,841	3,974	6,815
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,728	5,843	9,571
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	8,055	7,992	16,047
PEAK HR VOLUME	493	568		D (%)	50.20	49.80	100.00

Run Date: 2014/05/29

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section
Vehicle Classification Data Summary
2013

Site ID: B71001905469 **Route No:** 19 **Date From:** 2013/08/07 0:00
Town: Hawaii **Direction:** +MP **Date To:** 2013/08/08 23:45
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER
REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES	
LIGHT VEHICLE TOTALS	31934	97.35%	63868	
Cycles	118	0.36%	236	
PC	23208	70.75%	46416	
2A-4T	8608	26.24%	17216	
HEAVY VEHICLES				
Bus	159	0.48%	398	
SINGLE UNIT TRUCK				
2A-6T	163	0.50%	326	
3A-SU	112	0.34%	336	
4A-SU	4	0.01%	16	
SINGLE-TRAILER TRUCKS				
4A-ST	45	0.14%	180	
5A-ST	344	1.05%	1720	
6A-ST	12	0.04%	72	
MULTI-TRAILER TRUCKS				
5A-MT	9	0.03%	45	
6A-MT	2	0.01%	12	
7A-MT	21	0.06%	147	
HEAVY VEHICLE TOTALS	871	2.66%	3252	
CLASSIFIED VEHICLES TOTALS	32805 (A)	100.00%	67120 (B)	
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%		

AXLE CORRECTION FACTOR (A/C) = 0.978

ROADTUBE EQUIVALENT(B/2) = 33560 (C)

PEAK HOUR VOLUME : 1386 2013/08/07 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	20	(65A-1) 1.44%	219	15500	(65A-2) 1.41%	8.94%
COMBINATION (TYPE 8-13)	8	(65B-1) 0.58%	216		(65B-2) 1.39%	8.94%

Run Date: 2015/03/19

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID: B71001905469 **Route No:** 19 **Date From:** 2014/03/05 0:00

Town: Hawaii **Direction:** +MP **Date To:** 2014/03/06 23:45

Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	161	0.50%	321
PC	25721	80.10%	51442
2A-4T	5268	16.40%	10536
LIGHT VEHICLE TOTALS	31150	97.00%	62299
HEAVY VEHICLES			
Bus	117	0.36%	292
SINGLE UNIT TRUCK			
2A-6T	161	0.50%	322
3A-SU	152	0.47%	456
4A-SU	5	0.02%	20
SINGLE-TRAILER TRUCKS			
4A-ST	43	0.13%	172
5A-ST	423	1.32%	2115
6A-ST	20	0.06%	120
MULTI-TRAILER TRUCKS			
5A-MT	5	0.02%	25
6A-MT	1	0.00%	6
7A-MT	37	0.12%	259
HEAVY VEHICLE TOTALS	964	3.00%	3787
CLASSIFIED VEHICLES TOTALS	32114 (A)	100.00%	66087 (B)
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.972

ROADTUBE EQUIVALENT(B/2) = 33043 (C)

PEAK HOUR VOLUME : 1421 2014/03/05 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	11	(65A-1) 0.77%	217	14200	(65A-2) 1.53%	10.01%
COMBINATION (TYPE 8-13)	9	(65B-1) 0.63%	264		(65B-2) 1.86%	10.01%

Run Date: 2015/03/09

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

2014 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:**+MP **DIR 2:**-MP **Final AADT:** 14200

Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19

Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/06/2014															
12:00-12:15	3	25	28	06:00-06:15	178	32	210	12:00-12:15	99	99	198	06:00-06:15	103	163	266
12:15-12:30	1	16	17	06:15-06:30	183	44	227	12:15-12:30	108	116	224	06:15-06:30	97	147	244
12:30-12:45	5	10	15	06:30-06:45	165	38	203	12:30-12:45	100	120	220	06:30-06:45	64	129	193
12:45-01:00	4	13	17	06:45-07:00	199	46	245	12:45-01:00	106	117	223	06:45-07:00	56	147	203
01:00-01:15	2	7	9	07:00-07:15	188	59	247	01:00-01:15	103	115	218	07:00-07:15	62	132	194
01:15-01:30	3	5	8	07:15-07:30	217	70	287	01:15-01:30	114	140	254	07:15-07:30	57	126	183
01:30-01:45	3	4	7	07:30-07:45	279	79	358	01:30-01:45	117	114	231	07:30-07:45	38	117	155
01:45-02:00	2	0	2	07:45-08:00	240	73	313	01:45-02:00	144	146	290	07:45-08:00	42	90	132
02:00-02:15	1	4	5	08:00-08:15	140	141	281	02:00-02:15	113	123	236	08:00-08:15	43	81	124
02:15-02:30	7	2	9	08:15-08:30	167	96	263	02:15-02:30	128	133	261	08:15-08:30	38	65	103
02:30-02:45	3	6	9	08:30-08:45	164	91	255	02:30-02:45	119	168	287	08:30-08:45	31	65	96
02:45-03:00	8	4	12	08:45-09:00	160	84	244	02:45-03:00	162	138	300	08:45-09:00	30	56	86
03:00-03:15	6	3	9	09:00-09:15	117	84	201	03:00-03:15	124	178	302	09:00-09:15	28	49	77
03:15-03:30	16	2	18	09:15-09:30	111	105	216	03:15-03:30	124	182	306	09:15-09:30	25	59	84
03:30-03:45	21	3	24	09:30-09:45	119	87	206	03:30-03:45	131	199	330	09:30-09:45	21	59	80
03:45-04:00	35	0	35	09:45-10:00	111	101	212	03:45-04:00	141	206	347	09:45-10:00	30	52	82
04:00-04:15	34	1	35	10:00-10:15	116	101	217	04:00-04:15	110	218	328	10:00-10:15	11	50	61
04:15-04:30	47	3	50	10:15-10:30	139	102	241	04:15-04:30	139	204	343	10:15-10:30	21	42	63
04:30-04:45	41	5	46	10:30-10:45	96	103	199	04:30-04:45	121	230	351	10:30-10:45	8	46	54
04:45-05:00	64	8	72	10:45-11:00	116	97	213	04:45-05:00	119	217	336	10:45-11:00	10	46	56
05:00-05:15	72	15	87	11:00-11:15	88	99	187	05:00-05:15	118	209	327	11:00-11:15	8	41	49
05:15-05:30	99	10	109	11:15-11:30	121	96	217	05:15-05:30	100	211	311	11:15-11:30	5	33	38
05:30-05:45	117	41	158	11:30-11:45	107	105	212	05:30-05:45	87	195	282	11:30-11:45	6	25	31
05:45-06:00	137	34	171	11:45-12:00	114	90	204	05:45-06:00	102	166	268	11:45-12:00	6	23	29
AM COMMUTER PERIOD (05:00-09:00)			DIR 1		DIR 2			PM COMMUTER PERIOD (15:00-19:00)			DIR 1		DIR 2		
TWO DIRECTIONAL PEAK								TWO DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:15 AM to 08:15 AM					PM - PEAK HR TIME			03:45 PM to 04:45 PM				
AM - PEAK HR VOLUME			876		363		1239	PM - PEAK HR VOLUME			511		858		1369
AM - K FACTOR (%)			7.71				7.71	PM - K FACTOR (%)					8.52		8.52
AM - D (%)			70.70		29.30		100.00	PM - D (%)			37.33		62.67		100.00
DIRECTIONAL PEAK								DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:00 AM to 08:00 AM					PM - PEAK HR TIME			03:30 PM to 04:30 PM				
AM - PEAK HR VOLUME			924		412			PM - PEAK HR VOLUME			521		869		
AM PERIOD (00:00-12:00)								PM PERIOD (12:00-24:00)							
TWO DIRECTIONAL PEAK								TWO DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:15 AM to 08:15 AM					PM - PEAK HR TIME			03:45 PM to 04:45 PM				
AM - PEAK HR VOLUME			876		363		1239	PM - PEAK HR VOLUME			511		858		1369
AM - K FACTOR (%)			7.71				7.71	PM - K FACTOR (%)					8.52		8.52
AM - D (%)			70.70		29.30		100.00	PM - D (%)			37.33		62.67		100.00
NON-COMMUTER PERIOD (09:00-15:00)								6-HR, 12-HR, 24-HR PERIODS			DIR 1		DIR 2		Total
TWO DIRECTIONAL PEAK								AM 6-HR PERIOD (06:00-12:00)			3,635		2,023		5,658
PEAK HR TIME			02:00 PM to 03:00 PM					AM 12-HR PERIOD (00:00-12:00)			4,366		2,244		6,610
PEAK HR VOLUME			522		562		1084	PM 6-HR PERIOD (12:00-18:00)			2,829		3,944		6,773
DIRECTIONAL PEAK								PM 12-HR PERIOD (12:00-24:00)			3,669		5,787		9,456
PEAK HR TIME			02:00 PM to 03:00 PM		01:45 PM to 02:45 PM			24 HOUR PERIOD			8,035		8,031		16,066
PEAK HR VOLUME			522		570			D (%)			50.01		49.99		100.00

Run Date: 2015/07/22

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2014 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 14200
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/08/2014															
12:00-12:15	2	8	10	06:00-06:15	183	32	215	12:00-12:15	109	101	210	06:00-06:15	42	85	127
12:15-12:30	3	5	8	06:15-06:30	214	55	269	12:15-12:30	100	109	209	06:15-06:30	34	88	122
12:30-12:45	5	1	6	06:30-06:45	251	51	302	12:30-12:45	79	114	193	06:30-06:45	28	85	113
12:45-01:00	5	1	6	06:45-07:00	203	48	251	12:45-01:00	99	115	214	06:45-07:00	27	75	102
01:00-01:15	4	1	5	07:00-07:15	172	69	241	01:00-01:15	112	103	215	07:00-07:15	23	69	92
01:15-01:30	6	3	9	07:15-07:30	136	84	220	01:15-01:30	85	133	218	07:15-07:30	21	62	83
01:30-01:45	10	1	11	07:30-07:45	128	94	222	01:30-01:45	114	87	201	07:30-07:45	26	56	82
01:45-02:00	8	1	9	07:45-08:00	119	73	192	01:45-02:00	102	110	212	07:45-08:00	26	55	81
02:00-02:15	10	1	11	08:00-08:15	123	92	215	02:00-02:15	97	149	246	08:00-08:15	33	60	93
02:15-02:30	12	2	14	08:15-08:30	115	66	181	02:15-02:30	100	130	230	08:15-08:30	25	62	87
02:30-02:45	15	1	16	08:30-08:45	107	82	189	02:30-02:45	93	164	257	08:30-08:45	19	53	72
02:45-03:00	28	3	31	08:45-09:00	115	80	195	02:45-03:00	87	175	262	08:45-09:00	21	47	68
03:00-03:15	29	2	31	09:00-09:15	105	88	193	03:00-03:15	95	191	286	09:00-09:15	19	53	72
03:15-03:30	36	1	37	09:15-09:30	110	84	194	03:15-03:30	77	184	261	09:15-09:30	11	43	54
03:30-03:45	46	9	55	09:30-09:45	80	108	188	03:30-03:45	89	174	263	09:30-09:45	10	54	64
03:45-04:00	60	4	64	09:45-10:00	101	73	174	03:45-04:00	79	211	290	09:45-10:00	4	40	44
04:00-04:15	67	15	82	10:00-10:15	94	81	175	04:00-04:15	91	179	270	10:00-10:15	10	32	42
04:15-04:30	87	17	104	10:15-10:30	73	84	157	04:15-04:30	76	183	259	10:15-10:30	9	23	32
04:30-04:45	108	23	131	10:30-10:45	92	91	183	04:30-04:45	72	167	239	10:30-10:45	2	49	51
04:45-05:00	132	34	166	10:45-11:00	100	85	185	04:45-05:00	76	149	225	10:45-11:00	5	23	28
05:00-05:15	147	19	166	11:00-11:15	84	106	190	05:00-05:15	56	151	207	11:00-11:15	5	23	28
05:15-05:30	178	30	208	11:15-11:30	86	84	170	05:15-05:30	87	129	216	11:15-11:30	2	10	12
05:30-05:45	171	25	196	11:30-11:45	78	95	173	05:30-05:45	61	135	196	11:30-11:45	2	11	13
05:45-06:00	179	39	218	11:45-12:00	96	95	191	05:45-06:00	55	125	180	11:45-12:00	0	12	12

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM			PM - PEAK HR TIME	03:00 PM to 04:00 PM		
AM - PEAK HR VOLUME	840	223	1063	PM - PEAK HR VOLUME	340	760	1100
AM - K FACTOR (%)			7.82	PM - K FACTOR (%)			8.09
AM - D (%)	79.02	20.98	100.00	PM - D (%)	30.91	69.09	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:00 AM to 07:00 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	03:00 PM to 04:00 PM	
AM - PEAK HR VOLUME	851	343		PM - PEAK HR VOLUME	340	760	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM			PM - PEAK HR TIME	03:00 PM to 04:00 PM		
AM - PEAK HR VOLUME	840	223	1063	PM - PEAK HR VOLUME	340	760	1100
AM - K FACTOR (%)			7.82	PM - K FACTOR (%)			8.09
AM - D (%)	79.02	20.98	100.00	PM - D (%)	30.91	69.09	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	2,965	1,900	4,865
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,313	2,146	6,459
PEAK HR VOLUME	377	618	995	PM 6-HR PERIOD (12:00-18:00)	2,091	3,468	5,559
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	2,495	4,638	7,133
PEAK HR TIME	01:00 PM to 02:00 PM	02:00 PM to 03:00 PM		24 HOUR PERIOD	6,808	6,784	13,592
PEAK HR VOLUME	413	618		D (%)	50.09	49.91	100.00

Run Date: 2015/07/22

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2014 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 14200
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/07/2014															
12:00-12:15	7	9	16	06:00-06:15	179	50	229	12:00-12:15	65	100	165	06:00-06:15	48	106	154
12:15-12:30	3	4	7	06:15-06:30	172	51	223	12:15-12:30	103	113	216	06:15-06:30	33	110	143
12:30-12:45	4	4	8	06:30-06:45	227	62	289	12:30-12:45	94	125	219	06:30-06:45	38	94	132
12:45-01:00	6	0	6	06:45-07:00	190	64	254	12:45-01:00	121	104	225	06:45-07:00	30	85	115
01:00-01:15	4	7	11	07:00-07:15	183	66	249	01:00-01:15	127	112	239	07:00-07:15	26	71	97
01:15-01:30	5	1	6	07:15-07:30	147	85	232	01:15-01:30	108	96	204	07:15-07:30	21	63	84
01:30-01:45	9	4	13	07:30-07:45	133	55	188	01:30-01:45	123	129	252	07:30-07:45	31	61	92
01:45-02:00	3	7	10	07:45-08:00	123	60	183	01:45-02:00	118	127	245	07:45-08:00	16	49	65
02:00-02:15	9	3	12	08:00-08:15	117	80	197	02:00-02:15	113	124	237	08:00-08:15	24	57	81
02:15-02:30	17	2	19	08:15-08:30	135	75	210	02:15-02:30	98	165	263	08:15-08:30	21	65	86
02:30-02:45	16	2	18	08:30-08:45	94	91	185	02:30-02:45	101	173	274	08:30-08:45	19	34	53
02:45-03:00	32	3	35	08:45-09:00	123	78	201	02:45-03:00	92	173	265	08:45-09:00	24	45	69
03:00-03:15	32	3	35	09:00-09:15	106	87	193	03:00-03:15	84	159	243	09:00-09:15	19	40	59
03:15-03:30	42	5	47	09:15-09:30	81	98	179	03:15-03:30	83	170	253	09:15-09:30	13	31	44
03:30-03:45	52	5	57	09:30-09:45	75	85	160	03:30-03:45	76	179	255	09:30-09:45	8	47	55
03:45-04:00	60	8	68	09:45-10:00	86	91	177	03:45-04:00	64	224	288	09:45-10:00	3	37	40
04:00-04:15	60	9	69	10:00-10:15	104	88	192	04:00-04:15	91	179	270	10:00-10:15	8	35	43
04:15-04:30	87	9	96	10:15-10:30	103	75	178	04:15-04:30	78	183	261	10:15-10:30	4	42	46
04:30-04:45	107	20	127	10:30-10:45	98	86	184	04:30-04:45	70	167	237	10:30-10:45	1	36	37
04:45-05:00	120	35	155	10:45-11:00	96	99	195	04:45-05:00	64	168	232	10:45-11:00	3	23	26
05:00-05:15	169	26	195	11:00-11:15	76	109	185	05:00-05:15	58	160	218	11:00-11:15	3	17	20
05:15-05:30	184	29	213	11:15-11:30	84	98	182	05:15-05:30	77	136	213	11:15-11:30	1	7	8
05:30-05:45	161	27	188	11:30-11:45	77	98	175	05:30-05:45	44	119	163	11:30-11:45	4	7	11
05:45-06:00	182	36	218	11:45-12:00	78	119	197	05:45-06:00	61	95	156	11:45-12:00	0	11	11

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM			PM - PEAK HR TIME	03:30 PM to 04:30 PM		
AM - PEAK HR VOLUME	747	277	1024	PM - PEAK HR VOLUME	309	765	1074
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			7.88
AM - D (%)	72.95	27.05	100.00	PM - D (%)	28.77	71.23	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:30 PM to 04:30 PM	
AM - PEAK HR VOLUME	772	324		PM - PEAK HR VOLUME	314	765	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM			PM - PEAK HR TIME	03:30 PM to 04:30 PM		
AM - PEAK HR VOLUME	747	277	1024	PM - PEAK HR VOLUME	309	765	1074
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			7.88
AM - D (%)	72.95	27.05	100.00	PM - D (%)	28.77	71.23	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	2,887	1,950	4,837
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,258	2,208	6,466
PEAK HR VOLUME	404	635	1039	PM 6-HR PERIOD (12:00-18:00)	2,113	3,480	5,593
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	2,511	4,653	7,164
PEAK HR TIME	12:45 PM to 01:45 PM	02:00 PM to 03:00 PM		24 HOUR PERIOD	6,769	6,861	13,630
PEAK HR VOLUME	479	635		D (%)	49.66	50.34	100.00

Run Date: 2016/05/18

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2015 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 14700
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/27/2015															
12:00-12:15	7	19	26	06:00-06:15	184	24	208	12:00-12:15	90	113	203	06:00-06:15	76	158	234
12:15-12:30	1	14	15	06:15-06:30	205	27	232	12:15-12:30	80	122	202	06:15-06:30	74	143	217
12:30-12:45	4	16	20	06:30-06:45	193	53	246	12:30-12:45	114	104	218	06:30-06:45	68	139	207
12:45-01:00	4	8	12	06:45-07:00	221	48	269	12:45-01:00	87	136	223	06:45-07:00	77	117	194
01:00-01:15	1	5	6	07:00-07:15	190	54	244	01:00-01:15	92	95	187	07:00-07:15	73	102	175
01:15-01:30	2	6	8	07:15-07:30	195	78	273	01:15-01:30	106	113	219	07:15-07:30	51	112	163
01:30-01:45	4	5	9	07:30-07:45	173	97	270	01:30-01:45	118	123	241	07:30-07:45	41	87	128
01:45-02:00	4	2	6	07:45-08:00	168	101	269	01:45-02:00	103	104	207	07:45-08:00	37	77	114
02:00-02:15	6	3	9	08:00-08:15	161	104	265	02:00-02:15	123	107	230	08:00-08:15	26	65	91
02:15-02:30	5	3	8	08:15-08:30	271	74	345	02:15-02:30	132	138	270	08:15-08:30	37	75	112
02:30-02:45	5	2	7	08:30-08:45	166	69	235	02:30-02:45	101	159	260	08:30-08:45	31	52	83
02:45-03:00	6	2	8	08:45-09:00	131	81	212	02:45-03:00	125	169	294	08:45-09:00	29	57	86
03:00-03:15	4	1	5	09:00-09:15	118	65	183	03:00-03:15	115	172	287	09:00-09:15	24	61	85
03:15-03:30	20	5	25	09:15-09:30	114	99	213	03:15-03:30	103	203	306	09:15-09:30	20	52	72
03:30-03:45	16	4	20	09:30-09:45	74	97	171	03:30-03:45	117	207	324	09:30-09:45	26	52	78
03:45-04:00	34	5	39	09:45-10:00	116	75	191	03:45-04:00	104	198	302	09:45-10:00	11	32	43
04:00-04:15	29	5	34	10:00-10:15	113	79	192	04:00-04:15	105	189	294	10:00-10:15	13	47	60
04:15-04:30	54	3	57	10:15-10:30	106	85	191	04:15-04:30	116	209	325	10:15-10:30	12	47	59
04:30-04:45	52	3	55	10:30-10:45	93	93	186	04:30-04:45	100	264	364	10:30-10:45	11	52	63
04:45-05:00	61	9	70	10:45-11:00	112	93	205	04:45-05:00	130	194	324	10:45-11:00	9	53	62
05:00-05:15	79	8	87	11:00-11:15	94	86	180	05:00-05:15	98	237	335	11:00-11:15	17	36	53
05:15-05:30	106	9	115	11:15-11:30	89	109	198	05:15-05:30	90	181	271	11:15-11:30	3	24	27
05:30-05:45	126	38	164	11:30-11:45	94	101	195	05:30-05:45	83	177	260	11:30-11:45	10	22	32
05:45-06:00	180	24	204	11:45-12:00	96	104	200	05:45-06:00	75	171	246	11:45-12:00	4	31	35

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	773	376	1149	PM - PEAK HR VOLUME	444	904	1348
AM - K FACTOR (%)			7.54	PM - K FACTOR (%)			8.84
AM - D (%)	67.28	32.72	100.00	PM - D (%)	32.94	67.06	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:15 AM to 07:15 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	809	380		PM - PEAK HR VOLUME	451	904	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	773	376	1149	PM - PEAK HR VOLUME	444	904	1348
AM - K FACTOR (%)			7.54	PM - K FACTOR (%)			8.84
AM - D (%)	67.28	32.72	100.00	PM - D (%)	32.94	67.06	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,477	1,896	5,373
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,287	2,095	6,382
PEAK HR VOLUME	481	573	1054	PM 6-HR PERIOD (12:00-18:00)	2,507	3,885	6,392
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,287	5,578	8,865
PEAK HR TIME	02:00 PM to 03:00 PM	02:00 PM to 03:00 PM		24 HOUR PERIOD	7,574	7,673	15,247
PEAK HR VOLUME	481	573		D (%)	49.68	50.32	100.00

Run Date: 2015/07/22

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section
Vehicle Classification Data Summary
2014

Site ID: B71001905469 **Route No:** 19 **Date From:** 2014/05/07 0:00
Town: Hawaii **Direction:** +MP **Date To:** 2014/05/08 23:45
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER
REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES	
LIGHT VEHICLE TOTALS	24242	89.05%	48483	
Cycles	191	0.70%	381	
PC	19157	70.37%	38314	
2A-4T	4894	17.98%	9788	
HEAVY VEHICLES				
Bus	843	3.10%	2108	
SINGLE UNIT TRUCK				
2A-6T	1469	5.40%	2938	
3A-SU	95	0.35%	285	
4A-SU	1	0.00%	4	
SINGLE-TRAILER TRUCKS				
4A-ST	250	0.92%	1000	
5A-ST	276	1.01%	1380	
6A-ST	4	0.01%	24	
MULTI-TRAILER TRUCKS	41	0.15%	205	
5A-MT	1	0.00%	6	
6A-MT	1	0.00%	7	
7A-MT				
HEAVY VEHICLE TOTALS	2981	10.95%	7957	
CLASSIFIED VEHICLES TOTALS	27223 (A)	100.00%	56440 (B)	
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%		
AXLE CORRECTION FACTOR (A/C) = 0.965			**ROADTUBE EQUIVALENT(B/2) =** 28220 (C)	

	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
PEAK HOUR VOLUME : 1100		(65A-1)			(65A-2)	
2014/05/08 15:00						
SINGLE UNIT TRUCKS (TYPE 4-7)	95	8.64%	1204	14200	8.48%	7.75%
COMBINATION (TYPE 8-13)	11	(65B-1) 1.00%	286		(65B-2) 2.01%	7.75%

Run Date: 2016/05/18

Hawaii Department of Transportation
Highways Division
2015 Program Count - Summary
Highways Planning Survey Section

Site ID: B71001905469
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Town: Hawaii
Count Type: CLASS

DIR 1 : +MP
Counter Type: Tube

DIR 2 : -MP

Final AADT: 14700
Route No: 19

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 08/28/2015															
12:00-12:15	4	27	31	06:00-06:15	155	28	183	12:00-12:15	105	103	208	06:00-06:15	118	160	278
12:15-12:30	6	16	22	06:15-06:30	184	40	224	12:15-12:30	65	125	190	06:15-06:30	94	135	229
12:30-12:45	10	9	19	06:30-06:45	197	42	239	12:30-12:45	101	122	223	06:30-06:45	93	150	243
12:45-01:00	1	14	15	06:45-07:00	201	44	245	12:45-01:00	63	69	132	06:45-07:00	93	121	214
01:00-01:15	6	8	14	07:00-07:15	179	41	220	01:00-01:15	0	0	0	07:00-07:15	63	126	189
01:15-01:30	6	10	16	07:15-07:30	238	58	296	01:15-01:30	0	0	0	07:15-07:30	60	120	180
01:30-01:45	4	4	8	07:30-07:45	231	81	312	01:30-01:45	79	97	176	07:30-07:45	55	92	147
01:45-02:00	7	5	12	07:45-08:00	238	112	350	01:45-02:00	132	128	260	07:45-08:00	51	95	146
02:00-02:15	6	4	10	08:00-08:15	157	95	252	02:00-02:15	150	118	268	08:00-08:15	38	84	122
02:15-02:30	2	3	5	08:15-08:30	133	88	221	02:15-02:30	109	144	253	08:15-08:30	41	81	122
02:30-02:45	2	1	3	08:30-08:45	131	72	203	02:30-02:45	101	198	299	08:30-08:45	28	83	111
02:45-03:00	8	3	11	08:45-09:00	134	81	215	02:45-03:00	133	134	267	08:45-09:00	29	78	107
03:00-03:15	5	2	7	09:00-09:15	136	99	235	03:00-03:15	120	174	294	09:00-09:15	22	80	102
03:15-03:30	18	3	21	09:15-09:30	137	98	235	03:15-03:30	128	156	284	09:15-09:30	30	43	73
03:30-03:45	21	5	26	09:30-09:45	100	77	177	03:30-03:45	111	197	308	09:30-09:45	35	79	114
03:45-04:00	33	4	37	09:45-10:00	143	93	236	03:45-04:00	119	187	306	09:45-10:00	34	74	108
04:00-04:15	31	2	33	10:00-10:15	131	96	227	04:00-04:15	133	209	342	10:00-10:15	24	73	97
04:15-04:30	45	5	50	10:15-10:30	105	94	199	04:15-04:30	119	184	303	10:15-10:30	17	81	98
04:30-04:45	64	9	73	10:30-10:45	135	92	227	04:30-04:45	95	227	322	10:30-10:45	24	67	91
04:45-05:00	56	5	61	10:45-11:00	116	112	228	04:45-05:00	112	201	313	10:45-11:00	8	47	55
05:00-05:15	75	12	87	11:00-11:15	112	108	220	05:00-05:15	131	211	342	11:00-11:15	7	44	51
05:15-05:30	90	7	97	11:15-11:30	83	108	191	05:15-05:30	90	182	272	11:15-11:30	11	49	60
05:30-05:45	124	19	143	11:30-11:45	102	104	206	05:30-05:45	90	171	261	11:30-11:45	7	48	55
05:45-06:00	143	9	152	11:45-12:00	97	121	218	05:45-06:00	95	151	246	11:45-12:00	12	30	42
AM COMMUTER PERIOD (05:00-09:00)			DIR 1		DIR 2			PM COMMUTER PERIOD (15:00-19:00)			DIR 1		DIR 2		
TWO DIRECTIONAL PEAK								TWO DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:15 AM to 08:15 AM					PM - PEAK HR TIME				04:00 PM to 05:00 PM			
AM - PEAK HR VOLUME			864		346		1210	PM - PEAK HR VOLUME			459		821		1280
AM - K FACTOR (%)			7.85					PM - K FACTOR (%)							8.30
AM - D (%)			71.40		28.60		100.00	PM - D (%)			35.86		64.14		100.00
DIRECTIONAL PEAK								DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:00 AM to 08:00 AM				07:30 AM to 08:30 AM	PM - PEAK HR TIME			03:15 PM to 04:15 PM				04:15 PM to 05:15 PM
AM - PEAK HR VOLUME			886		376			PM - PEAK HR VOLUME			491		823		
AM PERIOD (00:00-12:00)								PM PERIOD (12:00-24:00)							
TWO DIRECTIONAL PEAK								TWO DIRECTIONAL PEAK							
AM - PEAK HR TIME			07:15 AM to 08:15 AM					PM - PEAK HR TIME				04:00 PM to 05:00 PM			
AM - PEAK HR VOLUME			864		346		1210	PM - PEAK HR VOLUME			459		821		1280
AM - K FACTOR (%)			7.85					PM - K FACTOR (%)							8.30
AM - D (%)			71.40		28.60		100.00	PM - D (%)			35.86		64.14		100.00
NON-COMMUTER PERIOD (09:00-15:00)								6-HR, 12-HR, 24-HR PERIODS					DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK								AM 6-HR PERIOD (06:00-12:00)					3,575	1,984	5,559
PEAK HR TIME			02:00 PM to 03:00 PM					AM 12-HR PERIOD (00:00-12:00)					4,342	2,170	6,512
PEAK HR VOLUME			493		594		1087	PM 6-HR PERIOD (12:00-18:00)					2,381	3,488	5,869
DIRECTIONAL PEAK								PM 12-HR PERIOD (12:00-24:00)					3,375	5,528	8,903
PEAK HR TIME			09:00 AM to 10:00 AM				02:00 PM to 03:00 PM	24 HOUR PERIOD					7,717	7,698	15,415
PEAK HR VOLUME			516		594			D (%)					50.06	49.94	100.00

Run Date: 2016/05/19

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2015

Site ID: B71001905469 **Route No:** 19 **Date From:** 2015/08/27 0:00
Town: Hawaii **Direction:** +MP **Date To:** 2015/08/28 23:45
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	83	0.27%	166
PC	23257	75.85%	46514
2A-4T	6485	21.15%	12970
LIGHT VEHICLE TOTALS	29825	97.27%	59650
HEAVY VEHICLES			
Bus	150	0.49%	375
SINGLE UNIT TRUCK			
2A-6T	309	1.01%	618
3A-SU	113	0.37%	339
4A-SU	2	0.01%	8
SINGLE-TRAILER TRUCKS			
4A-ST	169	0.55%	676
5A-ST	57	0.19%	285
6A-ST	5	0.02%	30
MULTI-TRAILER TRUCKS			
5A-MT	21	0.07%	105
6A-MT	11	0.04%	66
7A-MT	1	0.00%	7
HEAVY VEHICLE TOTALS	838	2.73%	2509
CLASSIFIED VEHICLES TOTALS	30663 (A)	100.00%	62159 (B)
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.987

ROADTUBE EQUIVALENT(B/2) = 31079 (C)

PEAK HOUR VOLUME : 1307 2015/08/27 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	19	(65A-1) 1.45%	287	14700	(65A-2) 1.95%	8.89%
COMBINATION (TYPE 8-13)	3	(65B-1) 0.23%	132		(65B-2) 0.90%	8.89%

Run Date: 2017/07/26

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/20/2016															
12:00-12:15	4	14	18	06:00-06:15	178	28	206	12:00-12:15	96	139	235	06:00-06:15	64	146	210
12:15-12:30	3	12	15	06:15-06:30	208	37	245	12:15-12:30	106	117	223	06:15-06:30	90	113	203
12:30-12:45	0	8	8	06:30-06:45	192	34	226	12:30-12:45	109	111	220	06:30-06:45	78	176	254
12:45-01:00	1	7	8	06:45-07:00	188	52	240	12:45-01:00	121	109	230	06:45-07:00	79	137	216
01:00-01:15	1	1	2	07:00-07:15	222	59	281	01:00-01:15	117	96	213	07:00-07:15	53	115	168
01:15-01:30	1	7	8	07:15-07:30	243	62	305	01:15-01:30	104	127	231	07:15-07:30	40	101	141
01:30-01:45	1	3	4	07:30-07:45	259	81	340	01:30-01:45	111	160	271	07:30-07:45	41	85	126
01:45-02:00	4	1	5	07:45-08:00	259	81	340	01:45-02:00	121	146	267	07:45-08:00	46	75	121
02:00-02:15	4	5	9	08:00-08:15	177	123	300	02:00-02:15	140	119	259	08:00-08:15	28	70	98
02:15-02:30	7	3	10	08:15-08:30	177	87	264	02:15-02:30	126	129	255	08:15-08:30	34	79	113
02:30-02:45	7	3	10	08:30-08:45	149	76	225	02:30-02:45	129	146	275	08:30-08:45	42	81	123
02:45-03:00	8	0	8	08:45-09:00	161	82	243	02:45-03:00	113	146	259	08:45-09:00	25	69	94
03:00-03:15	13	0	13	09:00-09:15	122	77	199	03:00-03:15	129	170	299	09:00-09:15	15	69	84
03:15-03:30	13	2	15	09:15-09:30	152	109	261	03:15-03:30	124	177	301	09:15-09:30	15	61	76
03:30-03:45	25	1	26	09:30-09:45	113	116	229	03:30-03:45	133	207	340	09:30-09:45	12	51	63
03:45-04:00	30	4	34	09:45-10:00	120	93	213	03:45-04:00	118	215	333	09:45-10:00	20	45	65
04:00-04:15	38	4	42	10:00-10:15	111	105	216	04:00-04:15	89	222	311	10:00-10:15	13	49	62
04:15-04:30	54	5	59	10:15-10:30	124	90	214	04:15-04:30	144	214	358	10:15-10:30	10	40	50
04:30-04:45	43	1	44	10:30-10:45	109	105	214	04:30-04:45	104	293	397	10:30-10:45	12	62	74
04:45-05:00	58	4	62	10:45-11:00	106	90	196	04:45-05:00	138	253	391	10:45-11:00	6	44	50
05:00-05:15	102	15	117	11:00-11:15	117	124	241	05:00-05:15	95	237	332	11:00-11:15	4	30	34
05:15-05:30	91	14	105	11:15-11:30	89	117	206	05:15-05:30	104	200	304	11:15-11:30	6	29	35
05:30-05:45	141	25	166	11:30-11:45	95	121	216	05:30-05:45	84	196	280	11:30-11:45	8	35	43
05:45-06:00	187	34	221	11:45-12:00	116	123	239	05:45-06:00	80	149	229	11:45-12:00	8	26	34

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	938	347	1285	PM - PEAK HR VOLUME	481	997	1478
AM - K FACTOR (%)			7.92	PM - K FACTOR (%)			9.11
AM - D (%)	73.00	27.00	100.00	PM - D (%)	32.54	67.46	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	983	372		PM - PEAK HR VOLUME	504	997	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	938	347	1285	PM - PEAK HR VOLUME	481	997	1478
AM - K FACTOR (%)			7.92	PM - K FACTOR (%)			9.11
AM - D (%)	73.00	27.00	100.00	PM - D (%)	32.54	67.46	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,787	2,072	5,859
PEAK HR TIME	01:45 PM to 02:45 PM			AM 12-HR PERIOD (00:00-12:00)	4,623	2,245	6,868
PEAK HR VOLUME	516	540	1056	PM 6-HR PERIOD (12:00-18:00)	2,735	4,078	6,813
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,484	5,866	9,350
PEAK HR TIME	01:45 PM to 02:45 PM	01:30 PM to 02:30 PM		24 HOUR PERIOD	8,107	8,111	16,218
PEAK HR VOLUME	516	554		D (%)	49.99	50.01	100.00

Run Date: 2017/07/26

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/19/2016															
12:00-12:15	3	21	24	06:00-06:15	186	21	207	12:00-12:15	114	124	238	06:00-06:15	72	170	242
12:15-12:30	5	10	15	06:15-06:30	215	25	240	12:15-12:30	125	124	249	06:15-06:30	79	131	210
12:30-12:45	2	10	12	06:30-06:45	185	53	238	12:30-12:45	118	113	231	06:30-06:45	71	121	192
12:45-01:00	2	7	9	06:45-07:00	217	40	257	12:45-01:00	98	97	195	06:45-07:00	67	107	174
01:00-01:15	5	3	8	07:00-07:15	201	56	257	01:00-01:15	116	111	227	07:00-07:15	59	121	180
01:15-01:30	0	7	7	07:15-07:30	232	58	290	01:15-01:30	98	109	207	07:15-07:30	45	108	153
01:30-01:45	6	6	12	07:30-07:45	286	76	362	01:30-01:45	113	108	221	07:30-07:45	35	101	136
01:45-02:00	2	2	4	07:45-08:00	238	88	326	01:45-02:00	124	128	252	07:45-08:00	29	56	85
02:00-02:15	5	4	9	08:00-08:15	149	123	272	02:00-02:15	132	143	275	08:00-08:15	33	56	89
02:15-02:30	10	1	11	08:15-08:30	145	92	237	02:15-02:30	143	150	293	08:15-08:30	27	75	102
02:30-02:45	4	2	6	08:30-08:45	150	78	228	02:30-02:45	105	173	278	08:30-08:45	24	57	81
02:45-03:00	4	2	6	08:45-09:00	159	91	250	02:45-03:00	110	163	273	08:45-09:00	25	69	94
03:00-03:15	9	4	13	09:00-09:15	127	80	207	03:00-03:15	121	186	307	09:00-09:15	19	49	68
03:15-03:30	13	2	15	09:15-09:30	148	87	235	03:15-03:30	126	161	287	09:15-09:30	14	55	69
03:30-03:45	22	2	24	09:30-09:45	111	91	202	03:30-03:45	102	216	318	09:30-09:45	14	62	76
03:45-04:00	34	1	35	09:45-10:00	128	106	234	03:45-04:00	122	217	339	09:45-10:00	15	48	63
04:00-04:15	42	5	47	10:00-10:15	109	102	211	04:00-04:15	100	259	359	10:00-10:15	17	47	64
04:15-04:30	70	4	74	10:15-10:30	108	81	189	04:15-04:30	107	247	354	10:15-10:30	13	39	52
04:30-04:45	53	2	55	10:30-10:45	118	105	223	04:30-04:45	118	264	382	10:30-10:45	10	49	59
04:45-05:00	59	4	63	10:45-11:00	115	105	220	04:45-05:00	98	264	362	10:45-11:00	10	34	44
05:00-05:15	89	6	95	11:00-11:15	90	113	203	05:00-05:15	95	241	336	11:00-11:15	6	33	39
05:15-05:30	104	16	120	11:15-11:30	112	104	216	05:15-05:30	89	238	327	11:15-11:30	4	24	28
05:30-05:45	151	27	178	11:30-11:45	107	101	208	05:30-05:45	85	232	317	11:30-11:45	2	32	34
05:45-06:00	165	33	198	11:45-12:00	98	99	197	05:45-06:00	84	165	249	11:45-12:00	9	21	30

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	905	345	1250	PM - PEAK HR VOLUME	423	1034	1457
AM - K FACTOR (%)			7.82	PM - K FACTOR (%)			9.11
AM - D (%)	72.40	27.60	100.00	PM - D (%)	29.03	70.97	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	957	384		PM - PEAK HR VOLUME	471	1034	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	905	345	1250	PM - PEAK HR VOLUME	423	1034	1457
AM - K FACTOR (%)			7.82	PM - K FACTOR (%)			9.11
AM - D (%)	72.40	27.60	100.00	PM - D (%)	29.03	70.97	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,734	1,975	5,709
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,593	2,156	6,749
PEAK HR VOLUME	490	629	1119	PM 6-HR PERIOD (12:00-18:00)	2,643	4,233	6,876
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,342	5,898	9,240
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	7,935	8,054	15,989
PEAK HR VOLUME	514	629		D (%)	49.63	50.37	100.00

Run Date: 2017/07/26

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2016

Site ID: B71001905469 **Route No:** 19 **Date From:** 2016/04/19 0:00
Town: Hawaii **Direction:** +MP **Date To:** 2016/04/20 23:45
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER
REPORT TOTALS - 48 HOURS RECORDED

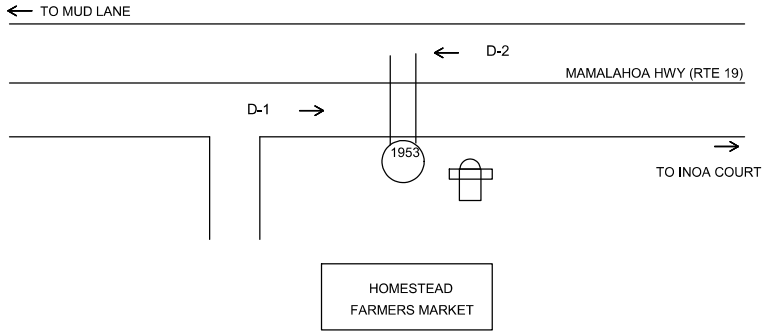
	VOLUME	%	NUMBER OF AXLES
Cycles	68	0.21%	135
PC	20876	64.82%	41752
2A-4T	10476	32.53%	20952
LIGHT VEHICLE TOTALS	31420	97.56%	62839
HEAVY VEHICLES			
Bus	149	0.46%	372
SINGLE UNIT TRUCK			
2A-6T	205	0.64%	410
3A-SU	97	0.30%	291
4A-SU	16	0.05%	64
SINGLE-TRAILER TRUCKS			
4A-ST	28	0.09%	112
5A-ST	255	0.79%	1275
6A-ST	13	0.04%	78
MULTI-TRAILER TRUCKS			
5A-MT	2	0.01%	10
6A-MT	1	0.00%	6
7A-MT	21	0.07%	147
HEAVY VEHICLE TOTALS	787	2.44%	2765
CLASSIFIED VEHICLES TOTALS	32207 (A)	100.00%	65605 (B)
UNCLASSIFIED VEHICLES TOTALS	0	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.982

ROADTUBE EQUIVALENT(B/2) = 32802 (C)

PEAK HOUR VOLUME : 1457 2016/04/20 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	11	(65A-1) 0.75%	233	15100	(65A-2) 1.54%	9.65%
COMBINATION (TYPE 8-13)	5	(65B-1) 0.34%	160		(65B-2) 1.06%	9.65%

ISLAND: HAWAII
AREA: WAIMEA



Station No:	B71 0019 05469

Station Location:			
Mamalahoa Highway between Mana Road and Pualalea Place			
Station Mileage:	55.25	GPS Coord (Latitude):	20.02833
		GPS Coord (Longitude):	155.64760
Begin Survey (Date/Time):	4-26-16 0000	End Survey (Date/Time):	4-29-16 0000
Survey Method: LOOP **HOSE** OTHER		Survey Type: VOL **CLASS** SPEED OTHER	
Survey Crew:	FIELD CREW	Module No.:	

HPMS DATA

Segment Description:

MAMALAHOA HIGHWAY - MUD LANE TO INOA COURT

Segment Begin LRS	54.69	Segment End LRS	55.27	Length	0.58

Facility Name	Juris	Func Class	Area Type	Route No.	Route Mile	D-1 = Direction to End of Route / D-2 = Direction to Beginning of Route	
MAMALAHOA HIGHWAY	S	14	2	19	55.25	D-1	TO PALANI ROAD
						D-2	TO KUHIO WHARF (HILO)

Sketch By: RG Date: 3/21/2016 SLD: 2003

Run Date: 2017/07/06

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/28/2016															
12:00-12:15	3	15	18	06:00-06:15	169	25	194	12:00-12:15	95	106	201	06:00-06:15	74	138	212
12:15-12:30	6	19	25	06:15-06:30	185	18	203	12:15-12:30	100	111	211	06:15-06:30	76	129	205
12:30-12:45	1	16	17	06:30-06:45	201	38	239	12:30-12:45	83	101	184	06:30-06:45	66	123	189
12:45-01:00	3	6	9	06:45-07:00	203	41	244	12:45-01:00	99	108	207	06:45-07:00	55	98	153
01:00-01:15	2	11	13	07:00-07:15	188	40	228	01:00-01:15	91	87	178	07:00-07:15	37	107	144
01:15-01:30	6	5	11	07:15-07:30	244	49	293	01:15-01:30	98	96	194	07:15-07:30	59	91	150
01:30-01:45	3	5	8	07:30-07:45	245	65	310	01:30-01:45	83	139	222	07:30-07:45	47	91	138
01:45-02:00	3	2	5	07:45-08:00	209	66	275	01:45-02:00	96	121	217	07:45-08:00	49	77	126
02:00-02:15	5	3	8	08:00-08:15	158	90	248	02:00-02:15	111	109	220	08:00-08:15	22	86	108
02:15-02:30	2	3	5	08:15-08:30	127	101	228	02:15-02:30	74	138	212	08:15-08:30	25	86	111
02:30-02:45	8	1	9	08:30-08:45	113	69	182	02:30-02:45	78	134	212	08:30-08:45	31	82	113
02:45-03:00	7	9	16	08:45-09:00	138	80	218	02:45-03:00	122	131	253	08:45-09:00	27	56	83
03:00-03:15	14	2	16	09:00-09:15	122	73	195	03:00-03:15	92	142	234	09:00-09:15	25	67	92
03:15-03:30	14	1	15	09:15-09:30	109	83	192	03:15-03:30	99	153	252	09:15-09:30	24	59	83
03:30-03:45	20	3	23	09:30-09:45	105	83	188	03:30-03:45	106	165	271	09:30-09:45	18	58	76
03:45-04:00	30	2	32	09:45-10:00	111	93	204	03:45-04:00	109	191	300	09:45-10:00	20	48	68
04:00-04:15	26	2	28	10:00-10:15	109	85	194	04:00-04:15	94	215	309	10:00-10:15	24	44	68
04:15-04:30	68	5	73	10:15-10:30	90	89	179	04:15-04:30	93	203	296	10:15-10:30	12	52	64
04:30-04:45	47	5	52	10:30-10:45	87	116	203	04:30-04:45	71	217	288	10:30-10:45	17	49	66
04:45-05:00	65	7	72	10:45-11:00	109	80	189	04:45-05:00	73	203	276	10:45-11:00	7	37	44
05:00-05:15	93	4	97	11:00-11:15	103	96	199	05:00-05:15	67	221	288	11:00-11:15	6	21	27
05:15-05:30	110	16	126	11:15-11:30	105	83	188	05:15-05:30	62	180	242	11:15-11:30	7	34	41
05:30-05:45	144	27	171	11:30-11:45	88	102	190	05:30-05:45	82	182	264	11:30-11:45	8	37	45
05:45-06:00	165	25	190	11:45-12:00	97	104	201	05:45-06:00	95	152	247	11:45-12:00	5	24	29

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	856	270	1126	PM - PEAK HR VOLUME	367	826	1193
AM - K FACTOR (%)			7.80	PM - K FACTOR (%)			8.26
AM - D (%)	76.02	23.98	100.00	PM - D (%)	30.76	69.24	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	886	340		PM - PEAK HR VOLUME	408	844	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	856	270	1126	PM - PEAK HR VOLUME	367	826	1193
AM - K FACTOR (%)			7.80	PM - K FACTOR (%)			8.26
AM - D (%)	76.02	23.98	100.00	PM - D (%)	30.76	69.24	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,415	1,769	5,184
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,260	1,963	6,223
PEAK HR VOLUME	385	512	897	PM 6-HR PERIOD (12:00-18:00)	2,173	3,605	5,778
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	2,914	5,299	8,213
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	7,174	7,262	14,436
PEAK HR VOLUME	447	512		D (%)	49.70	50.30	100.00

Run Date: 2017/07/06

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 15100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/27/2016															
12:00-12:15	1	25	26	06:00-06:15	184	21	205	12:00-12:15	89	111	200	06:00-06:15	84	150	234
12:15-12:30	5	17	22	06:15-06:30	182	31	213	12:15-12:30	109	88	197	06:15-06:30	81	140	221
12:30-12:45	2	3	5	06:30-06:45	181	31	212	12:30-12:45	100	121	221	06:30-06:45	67	129	196
12:45-01:00	2	9	11	06:45-07:00	206	39	245	12:45-01:00	60	103	163	06:45-07:00	41	111	152
01:00-01:15	3	6	9	07:00-07:15	201	48	249	01:00-01:15	91	95	186	07:00-07:15	51	99	150
01:15-01:30	4	7	11	07:15-07:30	215	39	254	01:15-01:30	74	102	176	07:15-07:30	46	99	145
01:30-01:45	2	6	8	07:30-07:45	222	47	269	01:30-01:45	82	107	189	07:30-07:45	31	87	118
01:45-02:00	3	6	9	07:45-08:00	234	55	289	01:45-02:00	108	109	217	07:45-08:00	33	83	116
02:00-02:15	6	4	10	08:00-08:15	186	80	266	02:00-02:15	111	108	219	08:00-08:15	26	66	92
02:15-02:30	4	6	10	08:15-08:30	146	91	237	02:15-02:30	129	120	249	08:15-08:30	32	62	94
02:30-02:45	8	3	11	08:30-08:45	130	69	199	02:30-02:45	69	158	227	08:30-08:45	21	76	97
02:45-03:00	9	7	16	08:45-09:00	130	76	206	02:45-03:00	106	166	272	08:45-09:00	25	77	102
03:00-03:15	13	0	13	09:00-09:15	114	68	182	03:00-03:15	98	150	248	09:00-09:15	13	63	76
03:15-03:30	12	3	15	09:15-09:30	130	87	217	03:15-03:30	118	148	266	09:15-09:30	18	54	72
03:30-03:45	17	0	17	09:30-09:45	126	65	191	03:30-03:45	83	146	229	09:30-09:45	19	51	70
03:45-04:00	30	3	33	09:45-10:00	123	93	216	03:45-04:00	101	182	283	09:45-10:00	21	48	69
04:00-04:15	26	6	32	10:00-10:15	95	97	192	04:00-04:15	103	174	277	10:00-10:15	19	34	53
04:15-04:30	58	3	61	10:15-10:30	108	88	196	04:15-04:30	101	185	286	10:15-10:30	14	55	69
04:30-04:45	54	3	57	10:30-10:45	105	88	193	04:30-04:45	85	217	302	10:30-10:45	10	47	57
04:45-05:00	69	10	79	10:45-11:00	111	87	198	04:45-05:00	87	245	332	10:45-11:00	4	36	40
05:00-05:15	100	9	109	11:00-11:15	82	96	178	05:00-05:15	74	205	279	11:00-11:15	4	20	24
05:15-05:30	92	14	106	11:15-11:30	94	93	187	05:15-05:30	76	207	283	11:15-11:30	8	24	32
05:30-05:45	127	30	157	11:30-11:45	86	96	182	05:30-05:45	78	199	277	11:30-11:45	5	34	39
05:45-06:00	172	20	192	11:45-12:00	79	108	187	05:45-06:00	73	171	244	11:45-12:00	7	28	35

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	857	221	1078	PM - PEAK HR VOLUME	347	852	1199
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			8.35
AM - D (%)	79.50	20.50	100.00	PM - D (%)	28.94	71.06	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	872	316		PM - PEAK HR VOLUME	405	874	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	857	221	1078	PM - PEAK HR VOLUME	347	852	1199
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			8.35
AM - D (%)	79.50	20.50	100.00	PM - D (%)	28.94	71.06	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,470	1,693	5,163
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,289	1,893	6,182
PEAK HR VOLUME	415	552	967	PM 6-HR PERIOD (12:00-18:00)	2,205	3,617	5,822
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	2,885	5,290	8,175
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	7,174	7,183	14,357
PEAK HR VOLUME	493	552		D (%)	49.97	50.03	100.00

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Run Date: 01-DEC-21

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16000
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE:** 01-AUG-17

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	4:45 PM to 5:45 PM		
AM - PEAK HR VOLUME	818	248	1,066	PM - PEAK HR VOLUME	516	926	1,442
AM - K FACTOR(%)			6.29	PM - K FACTOR(%)			8.51
AM - D(%)	76.74	23.26	100	PM -D(%)	35.78	64.22	100
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	4:15 PM to 5:15 PM	4:45 PM to 5:45 PM	
AM - PEAK HR VOLUME	818	248		PM - PEAK HR VOLUME	525	926	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL	PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:15 AM to 09:15 AM			PM - PEAK HR TIME	4:45 PM to 5:45 PM		
AM - PEAK HR VOLUME	818	818	1,087	PM - PEAK HR VOLUME	516	525	1,442
AM - K FACTOR(%)			6.41	PM - K FACTOR(%)			8.51
AM - D(%)	76.74	23.26	100	PM -D(%)	35.78	64.22	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,897	1,630	5,527
PEAK HR TIME	1:00 PM to 2:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,294	1,885	6,179
PEAK HR VOLUME	506	543	1,049	PM 6-HR PERIOD (12:00-18:00)	2,878	3,907	6,785
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	4,166	6,600	10,766
PEAK HR TIME	09:00 AM to 10:00 AM	0:30 PM to 1:30 PM		24-HR PERIOD (12:00-24:00)	8,460	8,485	16,945
PEAK HR VOLUME	689	551		D%	49.93	50.07	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	10	47	57

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	84	6	90

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	118	111	229

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	92	220	312

Run Date: 2017/07/06

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section
Vehicle Classification Data Summary
2016

Site ID: B71001905469 **Route No:** 19 **Date From:** 2016/04/27 0:00
Town: Hawaii **Direction:** +MP **Date To:** 2016/04/28 23:45
Location: Mamalahoa Hwy - Mana Rd to Pualalea Pl

Functional Classification: 14 URBAN:PRINCIPAL ARTERIAL - OTHER
REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
LIGHT VEHICLE TOTALS	25939	90.09%	51879
Cycles	253	0.88%	507
PC	20615	71.60%	41230
2A-4T	5071	17.61%	10142
HEAVY VEHICLES			
Bus	1025	3.56%	2563
SINGLE UNIT TRUCK			
2A-6T	1115	3.87%	2230
3A-SU	125	0.43%	375
4A-SU	4	0.01%	16
SINGLE-TRAILER TRUCKS			
4A-ST	238	0.83%	952
5A-ST	277	0.96%	1385
6A-ST	5	0.02%	30
MULTI-TRAILER TRUCKS			
5A-MT	58	0.20%	290
6A-MT	3	0.01%	18
7A-MT	5	0.02%	35
HEAVY VEHICLE TOTALS	2855	9.92%	7894
CLASSIFIED VEHICLES TOTALS	28794 (A)	100.00%	59772 (B)
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.963 **ROADTUBE EQUIVALENT(B/2) =** 29886 (C)

	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
PEAK HOUR VOLUME : 1197		(65A-1)			(65A-2)	
2016/04/27 16:00		11.70%	1134	15100	7.51%	7.93%
SINGLE UNIT TRUCKS (TYPE 4-7)	140					
		(65B-1)			(65B-2)	
COMBINATION (TYPE 8-13)	23	1.92%	293		1.94%	7.93%

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

03:45 - 04:00	12	3	15	09:45 - 10:00	159	104	263	03:45 - 04:00	108	179	287	09:45 - 10:00	28	74	102
04:00 - 04:15	6	2	8	10:00 - 10:15	158	105	263	04:00 - 04:15	110	183	293	10:00 - 10:15	28	72	100
04:15 - 04:30	8	1	9	10:15 - 10:30	144	86	230	04:15 - 04:30	131	177	308	10:15 - 10:30	26	79	105
04:30 - 04:45	23	0	23	10:30 - 10:45	135	103	238	04:30 - 04:45	142	214	356	10:30 - 10:45	19	57	76
04:45 - 05:00	40	2	42	10:45 - 11:00	127	117	244	04:45 - 05:00	123	211	334	10:45 - 11:00	19	60	79
05:00 - 05:15	39	2	41	11:00 - 11:15	116	115	231	05:00 - 05:15	129	250	379	11:00 - 11:15	20	58	78
05:15 - 05:30	53	3	56	11:15 - 11:30	131	102	233	05:15 - 05:30	129	235	364	11:15 - 11:30	19	51	70
05:30 - 05:45	55	2	57	11:30 - 11:45	122	109	231	05:30 - 05:45	135	230	365	11:30 - 11:45	16	50	66
05:45 - 06:00	76	3	79	11:45 - 12:00	147	101	248	05:45 - 06:00	94	206	300	11:45 - 12:00	11	53	64

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

12:15 - 12:30	6	30	36	06:15 - 06:30	100	12	112	12:15 - 12:30	120	130	250	06:15 - 06:30	126	234	360
12:30 - 12:45	2	34	36	06:30 - 06:45	130	18	148	12:30 - 12:45	112	136	248	06:30 - 06:45	99	206	305
12:45 - 01:00	7	21	28	06:45 - 07:00	191	24	215	12:45 - 01:00	116	133	249	06:45 - 07:00	110	153	263
01:00 - 01:15	8	22	30	07:00 - 07:15	184	22	206	01:00 - 01:15	115	147	262	07:00 - 07:15	85	189	274
01:15 - 01:30	3	21	24	07:15 - 07:30	213	36	249	01:15 - 01:30	117	135	252	07:15 - 07:30	92	163	255
01:30 - 01:45	3	13	16	07:30 - 07:45	198	35	233	01:30 - 01:45	129	121	250	07:30 - 07:45	84	160	244
01:45 - 02:00	5	13	18	07:45 - 08:00	210	39	249	01:45 - 02:00	145	140	285	07:45 - 08:00	70	109	179
02:00 - 02:15	1	5	6	08:00 - 08:15	183	54	237	02:00 - 02:15	106	131	237	08:00 - 08:15	75	111	186
02:15 - 02:30	6	9	15	08:15 - 08:30	218	58	276	02:15 - 02:30	130	127	257	08:15 - 08:30	46	110	156
02:30 - 02:45	4	7	11	08:30 - 08:45	198	65	263	02:30 - 02:45	96	132	228	08:30 - 08:45	54	101	155
02:45 - 03:00	4	5	9	08:45 - 09:00	219	71	290	02:45 - 03:00	128	137	265	08:45 - 09:00	43	133	176
03:00 - 03:15	4	2	6	09:00 - 09:15	183	75	258	03:00 - 03:15	116	131	247	09:00 - 09:15	46	98	144
03:15 - 03:30	12	4	16	09:15 - 09:30	180	77	257	03:15 - 03:30	103	157	260	09:15 - 09:30	47	70	117
03:30 - 03:45	10	4	14	09:30 - 09:45	167	96	263	03:30 - 03:45	126	154	280	09:30 - 09:45	33	82	115

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:15 - 12:30	7	36	43	06:15 - 06:30	94	12	106	12:15 - 12:30	127	108	235	06:15 - 06:30	88	200	288
12:30 - 12:45	10	43	53	06:30 - 06:45	136	17	153	12:30 - 12:45	113	113	226	06:30 - 06:45	114	176	290
12:45 - 01:00	7	24	31	06:45 - 07:00	172	23	195	12:45 - 01:00	128	150	278	06:45 - 07:00	89	164	253
01:00 - 01:15	3	20	23	07:00 - 07:15	201	32	233	01:00 - 01:15	116	123	239	07:00 - 07:15	94	152	246
01:15 - 01:30	3	24	27	07:15 - 07:30	197	34	231	01:15 - 01:30	99	154	253	07:15 - 07:30	87	169	256
01:30 - 01:45	7	17	24	07:30 - 07:45	212	41	253	01:30 - 01:45	125	122	247	07:30 - 07:45	84	142	226
01:45 - 02:00	4	13	17	07:45 - 08:00	225	35	260	01:45 - 02:00	120	128	248	07:45 - 08:00	87	133	220
02:00 - 02:15	0	10	10	08:00 - 08:15	176	43	219	02:00 - 02:15	113	123	236	08:00 - 08:15	71	118	189
02:15 - 02:30	3	9	12	08:15 - 08:30	193	63	256	02:15 - 02:30	116	116	232	08:15 - 08:30	50	121	171
02:30 - 02:45	2	4	6	08:30 - 08:45	227	62	289	02:30 - 02:45	118	168	286	08:30 - 08:45	68	83	151
02:45 - 03:00	5	3	8	08:45 - 09:00	201	76	277	02:45 - 03:00	108	158	266	08:45 - 09:00	50	106	156
03:00 - 03:15	10	5	15	09:00 - 09:15	171	82	253	03:00 - 03:15	109	141	250	09:00 - 09:15	31	89	120
03:15 - 03:30	7	5	12	09:15 - 09:30	167	102	269	03:15 - 03:30	127	139	266	09:15 - 09:30	37	85	122
03:30 - 03:45	3	2	5	09:30 - 09:45	142	97	239	03:30 - 03:45	124	156	280	09:30 - 09:45	29	69	98

Run Date: 01-DEC-21

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16000
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 02-AUG-17**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	797	244	1,041
AM - K FACTOR(%)			6.19
AM - D(%)	76.56	23.44	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	835	244	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	5:00 PM to 6:00 PM		
PM - PEAK HR VOLUME	465	948	1,413
PM - K FACTOR(%)			8.4
PM -D(%)	32.91	67.09	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:00 PM to 5:00 PM	5:00 PM to 6:00 PM	
PM - PEAK HR VOLUME	543	948	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	766	835	1,088
AM - K FACTOR(%)			6.47
AM - D(%)	76.56	23.44	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	5:00 PM to 6:00 PM		
PM - PEAK HR VOLUME	465	543	1,413
PM - K FACTOR(%)			8.4
PM -D(%)	32.91	67.09	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:15 AM to 10:15 AM		
PEAK HR VOLUME	646	398	1,044
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	2:00 PM to 3:00 PM	
PEAK HR VOLUME	657	565	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	3,813	1,737	5,550
AM 12-HR PERIOD (00:00-12:00)	4,187	2,040	6,227
PM 6-HR PERIOD (12:00-18:00)	2,915	3,879	6,794
PM 12-HR PERIOD (12:00-24:00)	4,154	6,443	10,597
24-HR PERIOD (12:00-24:00)	8,341	8,483	16,824
D%	49.58	50.42	100

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	3	59	62	06:00 - 06:15	76	6	82	12:00 - 12:15	129	112	241	06:00 - 06:15	108	237	345

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

Run Date: 01-DEC-21

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 15400
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 02-OCT-18**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	863	233	1,096
AM - K FACTOR(%)			7.42
AM - D(%)	78.74	21.26	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	877	329	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:15 PM to 5:15 PM		
PM - PEAK HR VOLUME	352	859	1,211
PM - K FACTOR(%)			8.2
PM -D(%)	29.07	70.93	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	3:15 PM to 4:15 PM	4:30 PM to 5:30 PM	
PM - PEAK HR VOLUME	408	876	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	863	877	1,096
AM - K FACTOR(%)			7.42
AM - D(%)	78.74	21.26	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:15 PM to 5:15 PM		
PM - PEAK HR VOLUME	352	444	1,211
PM - K FACTOR(%)			8.2
PM -D(%)	29.07	70.93	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	2:00 PM to 3:00 PM		
PEAK HR VOLUME	428	557	985
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 112:00 AM	2:00 PM to 3:00 PM	
PEAK HR VOLUME	510	557	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	3,533	1,780	5,313
AM 12-HR PERIOD (00:00-12:00)	4,391	2,016	6,407
PM 6-HR PERIOD (12:00-18:00)	2,265	3,663	5,928
PM 12-HR PERIOD (12:00-24:00)	2,993	5,368	8,361
24-HR PERIOD (12:00-24:00)	7,384	7,384	14,768
D%	50	50	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	3	26	29

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	187	22	209

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	94	112	206

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	84	150	234

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

TIME - AM	DIR1	DIR 2	TOTAL
03:45 - 04:00	7	2	9
04:00 - 04:15	6	5	11
04:15 - 04:30	13	3	16
04:30 - 04:45	20	3	23
04:45 - 05:00	35	0	35
05:00 - 05:15	46	4	50
05:15 - 05:30	45	4	49
05:30 - 05:45	64	2	66
05:45 - 06:00	64	6	70

TIME - AM	DIR1	DIR 2	TOTAL
09:45 - 10:00	177	98	275
10:00 - 10:15	160	101	261
10:15 - 10:30	114	105	219
10:30 - 10:45	137	101	238
10:45 - 11:00	125	114	239
11:00 - 11:15	132	123	255
11:15 - 11:30	134	128	262
11:30 - 11:45	129	126	255
11:45 - 12:00	115	116	231

TIME - PM	DIR1	DIR 2	TOTAL
03:45 - 04:00	135	143	278
04:00 - 04:15	153	181	334
04:15 - 04:30	115	190	305
04:30 - 04:45	134	199	333
04:45 - 05:00	141	207	348
05:00 - 05:15	111	253	364
05:15 - 05:30	120	227	347
05:30 - 05:45	106	234	340
05:45 - 06:00	128	234	362

TIME - PM	DIR1	DIR 2	TOTAL
09:45 - 10:00	22	75	97
10:00 - 10:15	20	64	84
10:15 - 10:30	18	67	85
10:30 - 10:45	22	54	76
10:45 - 11:00	19	53	72
11:00 - 11:15	17	51	68
11:15 - 11:30	17	51	68
11:30 - 11:45	10	59	69
11:45 - 12:00	7	46	53

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

03:45 - 04:00	31	5	36	09:45 - 10:00	129	95	224	03:45 - 04:00	103	185	288	09:45 - 10:00	24	49	73
04:00 - 04:15	28	8	36	10:00 - 10:15	100	106	206	04:00 - 04:15	103	174	277	10:00 - 10:15	20	37	57
04:15 - 04:30	59	4	63	10:15 - 10:30	109	91	200	04:15 - 04:30	105	190	295	10:15 - 10:30	15	56	71
04:30 - 04:45	55	5	60	10:30 - 10:45	108	93	201	04:30 - 04:45	85	217	302	10:30 - 10:45	12	51	63
04:45 - 05:00	70	11	81	10:45 - 11:00	114	89	203	04:45 - 05:00	88	247	335	10:45 - 11:00	5	38	43
05:00 - 05:15	102	12	114	11:00 - 11:15	84	99	183	05:00 - 05:15	74	205	279	11:00 - 11:15	5	21	26
05:15 - 05:30	94	17	111	11:15 - 11:30	99	99	198	05:15 - 05:30	77	207	284	11:15 - 11:30	9	25	34
05:30 - 05:45	136	33	169	11:30 - 11:45	90	100	190	05:30 - 05:45	80	200	280	11:30 - 11:45	6	35	41
05:45 - 06:00	173	22	195	11:45 - 12:00	80	109	189	05:45 - 06:00	74	172	246	11:45 - 12:00	10	29	39

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

12:15 - 12:30	6	19	25	06:15 - 06:30	184	33	217	12:15 - 12:30	112	90	202	06:15 - 06:30	82	140	222
12:30 - 12:45	3	5	8	06:30 - 06:45	182	33	215	12:30 - 12:45	104	123	227	06:30 - 06:45	70	130	200
12:45 - 01:00	3	11	14	06:45 - 07:00	207	41	248	12:45 - 01:00	62	105	167	06:45 - 07:00	43	115	158
01:00 - 01:15	5	7	12	07:00 - 07:15	202	51	253	01:00 - 01:15	93	101	194	07:00 - 07:15	54	99	153
01:15 - 01:30	6	8	14	07:15 - 07:30	217	45	262	01:15 - 01:30	80	106	186	07:15 - 07:30	48	102	150
01:30 - 01:45	3	7	10	07:30 - 07:45	223	50	273	01:30 - 01:45	88	108	196	07:30 - 07:45	37	87	124
01:45 - 02:00	4	7	11	07:45 - 08:00	235	56	291	01:45 - 02:00	113	111	224	07:45 - 08:00	36	85	121
02:00 - 02:15	7	5	12	08:00 - 08:15	188	82	270	02:00 - 02:15	113	110	223	08:00 - 08:15	29	68	97
02:15 - 02:30	5	6	11	08:15 - 08:30	148	93	241	02:15 - 02:30	130	121	251	08:15 - 08:30	33	63	96
02:30 - 02:45	9	4	13	08:30 - 08:45	135	72	207	02:30 - 02:45	78	159	237	08:30 - 08:45	25	76	101
02:45 - 03:00	10	8	18	08:45 - 09:00	131	82	213	02:45 - 03:00	107	167	274	08:45 - 09:00	28	78	106
03:00 - 03:15	14	1	15	09:00 - 09:15	119	72	191	03:00 - 03:15	100	149	249	09:00 - 09:15	14	63	77
03:15 - 03:30	14	4	18	09:15 - 09:30	132	91	223	03:15 - 03:30	118	151	269	09:15 - 09:30	18	56	74
03:30 - 03:45	18	1	19	09:30 - 09:45	130	76	206	03:30 - 03:45	84	153	237	09:30 - 09:45	21	52	73

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:15 - 12:30	7	21	28	06:15 - 06:30	187	22	209	12:15 - 12:30	108	111	219	06:15 - 06:30	83	129	212
12:30 - 12:45	2	18	20	06:30 - 06:45	202	40	242	12:30 - 12:45	83	101	184	06:30 - 06:45	73	123	196
12:45 - 01:00	5	7	12	06:45 - 07:00	204	42	246	12:45 - 01:00	103	110	213	06:45 - 07:00	58	117	175
01:00 - 01:15	3	12	15	07:00 - 07:15	190	45	235	01:00 - 01:15	97	89	186	07:00 - 07:15	43	114	157
01:15 - 01:30	8	6	14	07:15 - 07:30	245	50	295	01:15 - 01:30	98	101	199	07:15 - 07:30	60	92	152
01:30 - 01:45	4	6	10	07:30 - 07:45	246	68	314	01:30 - 01:45	87	139	226	07:30 - 07:45	50	91	141
01:45 - 02:00	5	4	9	07:45 - 08:00	210	67	277	01:45 - 02:00	98	123	221	07:45 - 08:00	54	78	132
02:00 - 02:15	7	4	11	08:00 - 08:15	160	92	252	02:00 - 02:15	111	112	223	08:00 - 08:15	24	90	114
02:15 - 02:30	3	5	8	08:15 - 08:30	130	104	234	02:15 - 02:30	78	138	216	08:15 - 08:30	25	86	111
02:30 - 02:45	9	3	12	08:30 - 08:45	115	73	188	02:30 - 02:45	78	136	214	08:30 - 08:45	32	84	116
02:45 - 03:00	8	10	18	08:45 - 09:00	141	82	223	02:45 - 03:00	124	136	260	08:45 - 09:00	30	58	88
03:00 - 03:15	15	3	18	09:00 - 09:15	126	78	204	03:00 - 03:15	100	142	242	09:00 - 09:15	26	74	100
03:15 - 03:30	16	2	18	09:15 - 09:30	112	85	197	03:15 - 03:30	100	153	253	09:15 - 09:30	24	62	86
03:30 - 03:45	22	4	26	09:30 - 09:45	109	86	195	03:30 - 03:45	108	166	274	09:30 - 09:45	18	58	76

Run Date: 01-DEC-21

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 15400
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 03-OCT-18**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	3:45 PM to 4:45 PM		
AM - PEAK HR VOLUME	861	277	1,138	PM - PEAK HR VOLUME	370	830	1,200
AM - K FACTOR(%)			7.67	PM - K FACTOR(%)			8.09
AM - D(%)	75.66	24.34	100	PM -D(%)	30.83	69.17	100
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	3:00 PM to 4:00 PM	4:15 PM to 5:15 PM	
AM - PEAK HR VOLUME	891	351		PM - PEAK HR VOLUME	418	845	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL	PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	3:45 PM to 4:45 PM		
AM - PEAK HR VOLUME	861	891	1,138	PM - PEAK HR VOLUME	370	432	1,200
AM - K FACTOR(%)			7.67	PM - K FACTOR(%)			8.09
AM - D(%)	75.66	24.34	100	PM -D(%)	30.83	69.17	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,476	1,822	5,298
PEAK HR TIME	2:00 PM to 3:00 PM			AM 12-HR PERIOD (00:00-12:00)	4,356	2,054	6,410
PEAK HR VOLUME	391	522	913	PM 6-HR PERIOD (12:00-18:00)	2,231	3,634	5,865
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,033	5,397	8,430
PEAK HR TIME	09:00 AM to 112:00 AM	2:00 PM to 3:00 PM		24-HR PERIOD (12:00-24:00)	7,389	7,451	14,840
PEAK HR VOLUME	464	522		D%	49.79	50.21	100

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	5	16	21	06:00 - 06:15	173	26	199	12:00 - 12:15	100	106	206	06:00 - 06:15	77	138	215

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Run Date: 01-DEC-21

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 22-OCT-19**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	940	370	1,310
AM - K FACTOR(%)			8.16
AM - D(%)	71.76	28.24	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM	07:45 to 08:45 AM	
AM - PEAK HR VOLUME	940	411	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	496	968	1,464
PM - K FACTOR(%)			9.12
PM -D(%)	33.88	66.12	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 to 04:00 PM	04:00 to 05:00 PM	
PM - PEAK HR VOLUME	541	980	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	940	940	1,310
AM - K FACTOR(%)			8.16
AM - D(%)	71.76	28.24	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	496	541	1,464
PM - K FACTOR(%)			9.12
PM -D(%)	33.88	66.12	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	525	709	1,234
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	02:45 to 03:45 PM	
PEAK HR VOLUME	525	709	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	3,853	2,104	5,957
AM 12-HR PERIOD (00:00-12:00)	4,685	2,281	6,966
PM 6-HR PERIOD (12:00-18:00)	2,666	4,075	6,741
PM 12-HR PERIOD (12:00-24:00)	3,310	5,774	9,084
24-HR PERIOD (12:00-24:00)	7,995	8,055	16,050
D%	49.81	50.19	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	2	21	23
12:15 - 12:30	2	14	16

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	179	29	208
06:15 - 06:30	216	27	243

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	107	123	230
12:15 - 12:30	113	108	221

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	78	150	228
06:15 - 06:30	64	162	226

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

TIME - AM	DIR1	DIR 2	TOTAL
03:45 - 04:00	32	3	35
04:00 - 04:15	27	3	30
04:15 - 04:30	69	7	76
04:30 - 04:45	48	7	55
04:45 - 05:00	66	9	75
05:00 - 05:15	96	8	104
05:15 - 05:30	112	17	129
05:30 - 05:45	145	29	174
05:45 - 06:00	166	28	194

TIME - AM	DIR1	DIR 2	TOTAL
09:45 - 10:00	117	97	214
10:00 - 10:15	109	87	196
10:15 - 10:30	92	91	183
10:30 - 10:45	89	116	205
10:45 - 11:00	111	82	193
11:00 - 11:15	105	98	203
11:15 - 11:30	110	84	194
11:30 - 11:45	90	102	192
11:45 - 12:00	103	105	208

TIME - PM	DIR1	DIR 2	TOTAL
03:45 - 04:00	110	194	304
04:00 - 04:15	94	216	310
04:15 - 04:30	95	203	298
04:30 - 04:45	71	217	288
04:45 - 05:00	75	204	279
05:00 - 05:15	67	221	288
05:15 - 05:30	67	180	247
05:30 - 05:45	83	182	265
05:45 - 06:00	96	154	250

TIME - PM	DIR1	DIR 2	TOTAL
09:45 - 10:00	23	51	74
10:00 - 10:15	25	47	72
10:15 - 10:30	16	53	69
10:30 - 10:45	17	50	67
10:45 - 11:00	10	39	49
11:00 - 11:15	7	23	30
11:15 - 11:30	9	41	50
11:30 - 11:45	11	39	50
11:45 - 12:00	7	26	33

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

04:00 - 04:15	46	5	51	10:00 - 10:15	134	104	238	04:00 - 04:15	109	236	345	10:00 - 10:15	11	47	58
04:15 - 04:30	45	4	49	10:15 - 10:30	115	105	220	04:15 - 04:30	121	261	382	10:15 - 10:30	17	41	58
04:30 - 04:45	43	3	46	10:30 - 10:45	99	119	218	04:30 - 04:45	133	247	380	10:30 - 10:45	7	46	53
04:45 - 05:00	64	2	66	10:45 - 11:00	106	92	198	04:45 - 05:00	105	236	341	10:45 - 11:00	6	39	45
05:00 - 05:15	78	6	84	11:00 - 11:15	122	93	215	05:00 - 05:15	82	234	316	11:00 - 11:15	5	25	30
05:15 - 05:30	111	18	129	11:15 - 11:30	115	112	227	05:15 - 05:30	79	216	295	11:15 - 11:30	4	19	23
05:30 - 05:45	146	30	176	11:30 - 11:45	109	115	224	05:30 - 05:45	108	190	298	11:30 - 11:45	5	41	46
05:45 - 06:00	170	21	191	11:45 - 12:00	103	138	241	05:45 - 06:00	85	190	275	11:45 - 12:00	2	18	20

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

12:30 - 12:45	5	9	14	06:30 - 06:45	189	54	243	12:30 - 12:45	93	110	203	06:30 - 06:45	77	136	213
12:45 - 01:00	1	3	4	06:45 - 07:00	214	41	255	12:45 - 01:00	104	119	223	06:45 - 07:00	55	127	182
01:00 - 01:15	2	4	6	07:00 - 07:15	244	49	293	01:00 - 01:15	99	107	206	07:00 - 07:15	31	112	143
01:15 - 01:30	3	8	11	07:15 - 07:30	228	74	302	01:15 - 01:30	98	116	214	07:15 - 07:30	34	97	131
01:30 - 01:45	1	6	7	07:30 - 07:45	251	89	340	01:30 - 01:45	129	104	233	07:30 - 07:45	28	88	116
01:45 - 02:00	5	1	6	07:45 - 08:00	215	93	308	01:45 - 02:00	112	127	239	07:45 - 08:00	34	75	109
02:00 - 02:15	4	1	5	08:00 - 08:15	246	114	360	02:00 - 02:15	102	121	223	08:00 - 08:15	23	59	82
02:15 - 02:30	3	5	8	08:15 - 08:30	171	108	279	02:15 - 02:30	107	134	241	08:15 - 08:30	24	74	98
02:30 - 02:45	9	0	9	08:30 - 08:45	160	96	256	02:30 - 02:45	122	163	285	08:30 - 08:45	25	65	90
02:45 - 03:00	6	4	10	08:45 - 09:00	136	90	226	02:45 - 03:00	117	169	286	08:45 - 09:00	32	51	83
03:00 - 03:15	14	4	18	09:00 - 09:15	131	89	220	03:00 - 03:15	115	158	273	09:00 - 09:15	17	54	71
03:15 - 03:30	13	2	15	09:15 - 09:30	123	95	218	03:15 - 03:30	153	167	320	09:15 - 09:30	26	73	99
03:30 - 03:45	24	2	26	09:30 - 09:45	106	74	180	03:30 - 03:45	140	215	355	09:30 - 09:45	19	66	85
03:45 - 04:00	35	4	39	09:45 - 10:00	141	104	245	03:45 - 04:00	133	224	357	09:45 - 10:00	20	34	54

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:30 - 12:45	4	22	26	06:30 - 06:45	211	47	258	12:30 - 12:45	104	123	227	06:30 - 06:45	65	145	210
12:45 - 01:00	4	7	11	06:45 - 07:00	198	48	246	12:45 - 01:00	111	114	225	06:45 - 07:00	64	121	185
01:00 - 01:15	3	6	9	07:00 - 07:15	243	45	288	01:00 - 01:15	136	120	256	07:00 - 07:15	39	123	162
01:15 - 01:30	1	8	9	07:15 - 07:30	281	62	343	01:15 - 01:30	115	123	238	07:15 - 07:30	34	117	151
01:30 - 01:45	3	2	5	07:30 - 07:45	249	75	324	01:30 - 01:45	106	160	266	07:30 - 07:45	26	93	119
01:45 - 02:00	3	3	6	07:45 - 08:00	234	100	334	01:45 - 02:00	106	126	232	07:45 - 08:00	21	60	81
02:00 - 02:15	4	3	7	08:00 - 08:15	208	96	304	02:00 - 02:15	105	135	240	08:00 - 08:15	21	52	73
02:15 - 02:30	1	2	3	08:15 - 08:30	135	90	225	02:15 - 02:30	144	131	275	08:15 - 08:30	25	66	91
02:30 - 02:45	5	0	5	08:30 - 08:45	172	100	272	02:30 - 02:45	129	143	272	08:30 - 08:45	22	77	99
02:45 - 03:00	12	1	13	08:45 - 09:00	153	97	250	02:45 - 03:00	128	138	266	08:45 - 09:00	25	55	80
03:00 - 03:15	8	3	11	09:00 - 09:15	140	90	230	03:00 - 03:15	127	204	331	09:00 - 09:15	14	49	63
03:15 - 03:30	15	3	18	09:15 - 09:30	122	85	207	03:15 - 03:30	126	205	331	09:15 - 09:30	27	51	78
03:30 - 03:45	24	2	26	09:30 - 09:45	99	90	189	03:30 - 03:45	140	212	352	09:30 - 09:45	17	45	62
03:45 - 04:00	28	3	31	09:45 - 10:00	133	106	239	03:45 - 04:00	114	200	314	09:45 - 10:00	11	47	58

Run Date: 01-DEC-21

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 23-OCT-19**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	972	333	1,305
AM - K FACTOR(%)			8.04
AM - D(%)	74.48	25.52	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 to 08:00 AM	07:45 to 08:45 AM	
AM - PEAK HR VOLUME	1,007	386	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 to 05:15 PM		
PM - PEAK HR VOLUME	427	931	1,358
PM - K FACTOR(%)			8.37
PM -D(%)	31.44	68.56	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 to 04:15 PM	04:15 to 05:15 PM	
PM - PEAK HR VOLUME	511	931	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	972	1,007	1,305
AM - K FACTOR(%)			8.04
AM - D(%)	74.48	25.52	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 to 05:15 PM		
PM - PEAK HR VOLUME	427	528	1,358
PM - K FACTOR(%)			8.37
PM -D(%)	31.44	68.56	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	521	759	1,280
DIRECTIONAL PEAK			
PEAK HR TIME	02:15 to 03:15 PM	02:45 to 03:45 PM	
PEAK HR VOLUME	528	759	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	3,915	2,152	6,067
AM 12-HR PERIOD (00:00-12:00)	4,767	2,345	7,112
PM 6-HR PERIOD (12:00-18:00)	2,718	4,098	6,816
PM 12-HR PERIOD (12:00-24:00)	3,343	5,771	9,114
24-HR PERIOD (12:00-24:00)	8,110	8,116	16,226
D%	49.98	50.02	100

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	4	16	20	06:00 - 06:15	167	36	203	12:00 - 12:15	90	117	207	06:00 - 06:15	83	149	232
12:15 - 12:30	2	9	11	06:15 - 06:30	209	40	249	12:15 - 12:30	123	126	249	06:15 - 06:30	72	148	220

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Run Date: 01-DEC-21

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 13100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 14-DEC-20**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	788	275	1,063
AM - K FACTOR(%)			7.56
AM - D(%)	74.13	25.87	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM	07:45 to 08:45 AM	
AM - PEAK HR VOLUME	788	310	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 to 04:15 PM		
PM - PEAK HR VOLUME	445	886	1,331
PM - K FACTOR(%)			9.46
PM -D(%)	33.43	66.57	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 to 04:00 PM	04:00 to 05:00 PM	
PM - PEAK HR VOLUME	448	905	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	788	275	1,063
AM - K FACTOR(%)			7.56
AM - D(%)	74.13	25.87	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 to 04:15 PM		
PM - PEAK HR VOLUME	445	886	1,331
PM - K FACTOR(%)			9.46
PM -D(%)	33.43	66.57	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	432	764	1,196
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 to 10:00 AM	02:45 to 03:45 PM	
PEAK HR VOLUME	488	764	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	3,412	1,732	5,144
AM 12-HR PERIOD (00:00-12:00)	4,080	1,858	5,938
PM 6-HR PERIOD (12:00-18:00)	2,446	3,932	6,378
PM 12-HR PERIOD (12:00-24:00)	2,949	5,183	8,132
24-HR PERIOD (12:00-24:00)	7,029	7,041	14,070
D%	49.96	50.04	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	2	8	10
12:15 - 12:30	7	11	18

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	149	21	170
06:15 - 06:30	149	35	184

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	94	132	226
12:15 - 12:30	120	97	217

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	56	154	210
06:15 - 06:30	54	142	196

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

TIME - AM	DIR1	DIR 2	TOTAL
04:00 - 04:15	48	5	53
04:15 - 04:30	53	5	58
04:30 - 04:45	44	4	48
04:45 - 05:00	74	8	82
05:00 - 05:15	88	9	97
05:15 - 05:30	120	11	131
05:30 - 05:45	146	36	182
05:45 - 06:00	158	25	183

TIME - AM	DIR1	DIR 2	TOTAL
10:00 - 10:15	144	95	239
10:15 - 10:30	134	129	263
10:30 - 10:45	113	117	230
10:45 - 11:00	135	113	248
11:00 - 11:15	105	127	232
11:15 - 11:30	123	106	229
11:30 - 11:45	92	132	224
11:45 - 12:00	115	126	241

TIME - PM	DIR1	DIR 2	TOTAL
04:00 - 04:15	131	204	335
04:15 - 04:30	102	213	315
04:30 - 04:45	108	241	349
04:45 - 05:00	109	248	357
05:00 - 05:15	108	229	337
05:15 - 05:30	88	209	297
05:30 - 05:45	103	197	300
05:45 - 06:00	65	180	245

TIME - PM	DIR1	DIR 2	TOTAL
10:00 - 10:15	11	49	60
10:15 - 10:30	12	42	54
10:30 - 10:45	11	36	47
10:45 - 11:00	8	34	42
11:00 - 11:15	6	26	32
11:15 - 11:30	3	24	27
11:30 - 11:45	5	42	47
11:45 - 12:00	3	22	25

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

04:00 - 04:15	19	6	25	10:00 - 10:15	122	96	218	04:00 - 04:15	99	242	341	10:00 - 10:15	7	23	30
04:15 - 04:30	32	6	38	10:15 - 10:30	106	83	189	04:15 - 04:30	93	205	298	10:15 - 10:30	8	25	33
04:30 - 04:45	42	2	44	10:30 - 10:45	106	95	201	04:30 - 04:45	75	242	317	10:30 - 10:45	4	24	28
04:45 - 05:00	62	5	67	10:45 - 11:00	110	90	200	04:45 - 05:00	92	216	308	10:45 - 11:00	3	19	22
05:00 - 05:15	70	4	74	11:00 - 11:15	119	101	220	05:00 - 05:15	90	225	315	11:00 - 11:15	5	18	23
05:15 - 05:30	108	10	118	11:15 - 11:30	109	98	207	05:15 - 05:30	88	195	283	11:15 - 11:30	0	13	13
05:30 - 05:45	101	11	112	11:30 - 11:45	102	109	211	05:30 - 05:45	72	177	249	11:30 - 11:45	3	18	21
05:45 - 06:00	132	11	143	11:45 - 12:00	109	104	213	05:45 - 06:00	75	145	220	11:45 - 12:00	3	9	12

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

12:30 - 12:45	5	4	9	06:30 - 06:45	176	36	212	12:30 - 12:45	95	117	212	06:30 - 06:45	54	111	165
12:45 - 01:00	1	5	6	06:45 - 07:00	183	29	212	12:45 - 01:00	118	98	216	06:45 - 07:00	48	120	168
01:00 - 01:15	3	6	9	07:00 - 07:15	162	52	214	01:00 - 01:15	110	118	228	07:00 - 07:15	33	91	124
01:15 - 01:30	3	6	9	07:15 - 07:30	214	45	259	01:15 - 01:30	97	107	204	07:15 - 07:30	32	72	104
01:30 - 01:45	3	9	12	07:30 - 07:45	227	77	304	01:30 - 01:45	99	132	231	07:30 - 07:45	26	63	89
01:45 - 02:00	3	3	6	07:45 - 08:00	184	78	262	01:45 - 02:00	106	110	216	07:45 - 08:00	26	48	74
02:00 - 02:15	3	4	7	08:00 - 08:15	163	75	238	02:00 - 02:15	118	139	257	08:00 - 08:15	23	59	82
02:15 - 02:30	5	3	8	08:15 - 08:30	156	77	233	02:15 - 02:30	121	129	250	08:15 - 08:30	22	68	90
02:30 - 02:45	3	1	4	08:30 - 08:45	141	80	221	02:30 - 02:45	122	137	259	08:30 - 08:45	15	28	43
02:45 - 03:00	8	2	10	08:45 - 09:00	137	59	196	02:45 - 03:00	114	152	266	08:45 - 09:00	20	38	58
03:00 - 03:15	7	2	9	09:00 - 09:15	133	65	198	03:00 - 03:15	102	173	275	09:00 - 09:15	18	26	44
03:15 - 03:30	3	5	8	09:15 - 09:30	129	76	205	03:15 - 03:30	112	209	321	09:15 - 09:30	24	32	56
03:30 - 03:45	19	1	20	09:30 - 09:45	115	73	188	03:30 - 03:45	104	230	334	09:30 - 09:45	9	30	39
03:45 - 04:00	27	1	28	09:45 - 10:00	111	78	189	03:45 - 04:00	130	205	335	09:45 - 10:00	10	20	30

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

TIME - AM	DIR1	DIR 2	TOTAL	TIME - AM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL	TIME - PM	DIR1	DIR 2	TOTAL
12:30 - 12:45	3	3	6	06:30 - 06:45	159	38	197	12:30 - 12:45	131	114	245	06:30 - 06:45	53	128	181
12:45 - 01:00	3	0	3	06:45 - 07:00	229	45	274	12:45 - 01:00	112	115	227	06:45 - 07:00	45	106	151
01:00 - 01:15	3	6	9	07:00 - 07:15	173	34	207	01:00 - 01:15	109	125	234	07:00 - 07:15	47	102	149
01:15 - 01:30	2	3	5	07:15 - 07:30	199	44	243	01:15 - 01:30	116	138	254	07:15 - 07:30	42	86	128
01:30 - 01:45	1	4	5	07:30 - 07:45	225	56	281	01:30 - 01:45	91	113	204	07:30 - 07:45	29	85	114
01:45 - 02:00	5	7	12	07:45 - 08:00	216	69	285	01:45 - 02:00	118	148	266	07:45 - 08:00	29	61	90
02:00 - 02:15	3	2	5	08:00 - 08:15	176	96	272	02:00 - 02:15	97	153	250	08:00 - 08:15	25	68	93
02:15 - 02:30	4	1	5	08:15 - 08:30	147	85	232	02:15 - 02:30	112	157	269	08:15 - 08:30	22	54	76
02:30 - 02:45	3	1	4	08:30 - 08:45	165	70	235	02:30 - 02:45	106	166	272	08:30 - 08:45	24	51	75
02:45 - 03:00	8	2	10	08:45 - 09:00	153	72	225	02:45 - 03:00	120	160	280	08:45 - 09:00	21	46	67
03:00 - 03:15	14	4	18	09:00 - 09:15	146	89	235	03:00 - 03:15	124	176	300	09:00 - 09:15	20	40	60
03:15 - 03:30	7	0	7	09:15 - 09:30	96	74	170	03:15 - 03:30	107	157	264	09:15 - 09:30	18	33	51
03:30 - 03:45	14	3	17	09:30 - 09:45	143	86	229	03:30 - 03:45	111	190	301	09:30 - 09:45	4	40	44
03:45 - 04:00	32	0	32	09:45 - 10:00	137	96	233	03:45 - 04:00	90	213	303	09:45 - 10:00	10	30	40

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

Run Date: 01-DEC-21

State of Hawaii, Department of Transportation, Highways Division
15 Minute Volume Report

Site ID: B71001905469 **Town:** Hawaii **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 13100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 19
Location: **DATE: 15-DEC-20**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM			PM - PEAK HR TIME	03:45 to 04:45 PM		
AM - PEAK HR VOLUME	816	265	1,081	PM - PEAK HR VOLUME	382	919	1,301
AM - K FACTOR(%)			7.22	PM - K FACTOR(%)			8.69
AM - D(%)	75.49	24.51	100	PM -D(%)	29.36	70.64	100
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 to 07:45 AM	08:00 to 09:00 AM		PM - PEAK HR TIME	03:00 to 04:00 PM	03:45 to 04:45 PM	
AM - PEAK HR VOLUME	826	323		PM - PEAK HR VOLUME	432	919	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL	PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM			PM - PEAK HR TIME	03:45 to 04:45 PM		
AM - PEAK HR VOLUME	816	265	1,081	PM - PEAK HR VOLUME	382	919	1,301
AM - K FACTOR(%)			7.22	PM - K FACTOR(%)			8.69
AM - D(%)	75.49	24.51	100	PM -D(%)	29.36	70.64	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	3,658	1,807	5,465
PEAK HR TIME	02:45 to 03:45 PM			AM 12-HR PERIOD (00:00-12:00)	4,380	1,930	6,310
PEAK HR VOLUME	462	683	1,145	PM 6-HR PERIOD (12:00-18:00)	2,577	4,034	6,611
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	3,156	5,508	8,664
PEAK HR TIME	11:45 to 12:45 PM	02:45 to 03:45 PM		24-HR PERIOD (12:00-24:00)	7,536	7,438	14,974
PEAK HR VOLUME	548	683		D%	50.33	49.67	100

Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Kamamalu St -- Mamalahoa Hwy
CITY/STATE: Waimea, HI

QC JOB #: 15566401
DATE: Thu, Sep 30 2021

Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:45 AM – 8:00 AM

15-Min Count Period Beginning At	Kamamalu St (Northbound)				Kamamalu St (Southbound)				Mamalahoa Hwy (Eastbound)				Mamalahoa Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	10	0	4	0	0	0	0	0	0	30	7	0	4	194	0	0	249	
6:45 AM	16	0	5	0	0	0	0	0	0	40	4	0	4	210	0	0	279	
7:00 AM	18	0	5	0	0	0	0	0	0	37	10	0	8	186	0	0	264	
7:15 AM	24	0	4	0	0	0	0	0	2	55	10	0	8	194	0	0	297	1089
7:30 AM	43	0	5	0	0	2	1	0	0	76	39	0	3	239	0	0	408	1248
7:45 AM	68	0	23	0	0	0	0	0	0	146	48	0	10	250	0	0	545	1514
8:00 AM	50	0	18	0	0	0	0	0	0	149	24	0	10	214	2	0	467	1717
8:15 AM	18	0	5	0	1	0	1	0	1	146	12	0	7	199	2	0	392	1812
8:30 AM	24	0	6	0	0	0	0	0	0	122	14	0	4	166	0	0	336	1740
8:45 AM	24	0	9	0	0	0	0	0	0	96	15	0	9	158	0	0	311	1506
9:00 AM	29	0	7	0	1	0	0	0	1	105	12	0	4	145	1	0	305	1344
9:15 AM	11	0	8	0	0	0	1	0	1	107	17	0	3	154	0	0	302	1254

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	272	0	92	0	0	0	0	0	0	584	192	0	40	1000	0	0	2180
Heavy Trucks	4	0	0		0	0	0		0	24	0		8	48	0		84
Buses																	
Pedestrians		4				8				0				4			16
Bicycles	4	0	0		0	0	0		0	0	0		0	0	0		4
Scooters																	

Comments:

Report generated on 10/6/2021 12:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

HDOT RMS Traffic Station Analyzer (v47)

15 Minute Report

Log Out

Print

RS

04:00 - 04:15	29	4	33	10:00 - 10:15	122	92	214	04:00 - 04:15	91	208	299	10:00 - 10:15	11	38	49
04:15 - 04:30	31	6	37	10:15 - 10:30	123	88	211	04:15 - 04:30	109	240	349	10:15 - 10:30	13	40	53
04:30 - 04:45	53	4	57	10:30 - 10:45	108	90	198	04:30 - 04:45	92	258	350	10:30 - 10:45	9	42	51
04:45 - 05:00	65	3	68	10:45 - 11:00	114	98	212	04:45 - 05:00	93	210	303	10:45 - 11:00	5	35	40
05:00 - 05:15	80	7	87	11:00 - 11:15	133	113	246	05:00 - 05:15	91	195	286	11:00 - 11:15	2	26	28
05:15 - 05:30	101	8	109	11:15 - 11:30	97	105	202	05:15 - 05:30	93	206	299	11:15 - 11:30	4	14	18
05:30 - 05:45	111	18	129	11:30 - 11:45	125	115	240	05:30 - 05:45	97	173	270	11:30 - 11:45	3	13	16
05:45 - 06:00	142	15	157	11:45 - 12:00	142	104	246	05:45 - 06:00	92	155	247	11:45 - 12:00	1	13	14

hwyptdc07:8080/ords/f?p=101:8:6778511449429::NO:RP:P8_COUNT_NUMBER,P8_SURVEY_DAY:44630,15

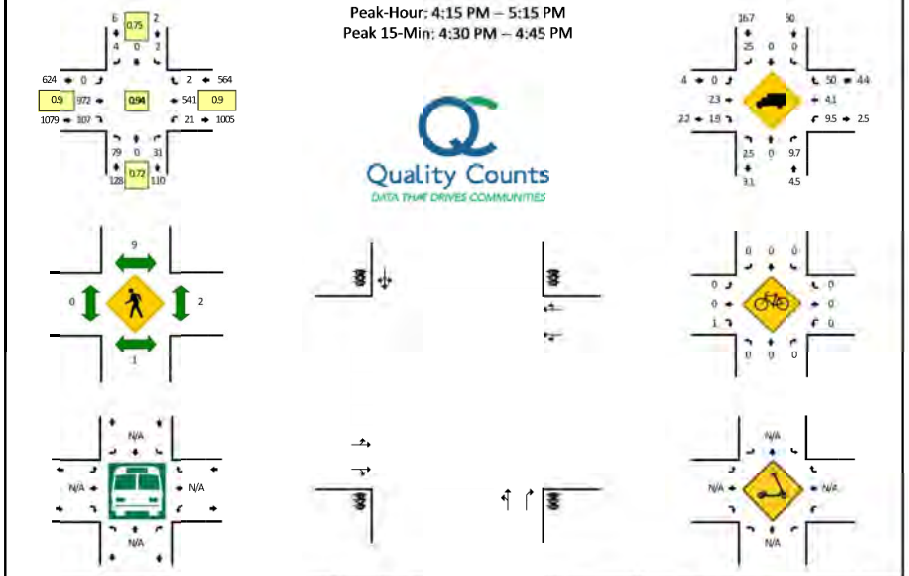
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Kamamalu St -- Mamalahoa Hwy
CITY/STATE: Waimea, HI

QC JOB #: 15566402
DATE: Thu, Sep 30 2021

Peak-Hour: 4:15 PM – 5:15 PM
Peak 15-Min: 4:30 PM – 4:45 PM



15-Min Count Period Beginning At	Kamamalu St (Northbound)				Kamamalu St (Southbound)				Mamalahoa Hwy (Eastbound)				Mamalahoa Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	46	1	28	0	0	0	0	0	0	195	28	0	11	154	0	0	463	
3:15 PM	54	3	10	0	0	0	1	0	0	225	17	1	6	152	0	0	469	
3:30 PM	26	0	9	0	0	0	1	0	1	211	26	0	4	140	1	0	419	
3:45 PM	18	0	10	0	0	0	2	0	0	248	36	0	9	149	0	0	472	1823
4:00 PM	24	0	7	0	0	0	2	0	1	239	34	0	4	152	0	0	463	1823
4:15 PM	13	0	9	0	0	0	1	0	0	238	27	0	3	147	0	0	438	1792
4:30 PM	26	0	12	0	1	0	1	0	0	263	38	0	3	126	0	0	470	1843
4:45 PM	23	0	4	0	0	0	1	0	0	244	26	0	7	122	0	0	427	1798
5:00 PM	17	0	6	0	1	0	1	0	0	227	16	0	8	146	2	0	424	1759
5:15 PM	10	0	8	0	0	0	1	0	2	224	23	0	10	111	0	0	389	1710
5:30 PM	14	0	12	0	0	0	0	0	1	202	23	0	7	106	0	0	365	1605
5:45 PM	5	0	5	0	0	0	0	0	0	182	16	0	4	86	0	0	298	1476

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	104	0	48	0	4	0	4	0	0	1052	152	0	12	504	0	0	1880
Heavy Trucks	4	0	4		0	0	0		0	12	4		0	28	0		52
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	4		0	0	0		4
Scooters																	

Comments:

Report generated on 6/20/2022 7:46 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

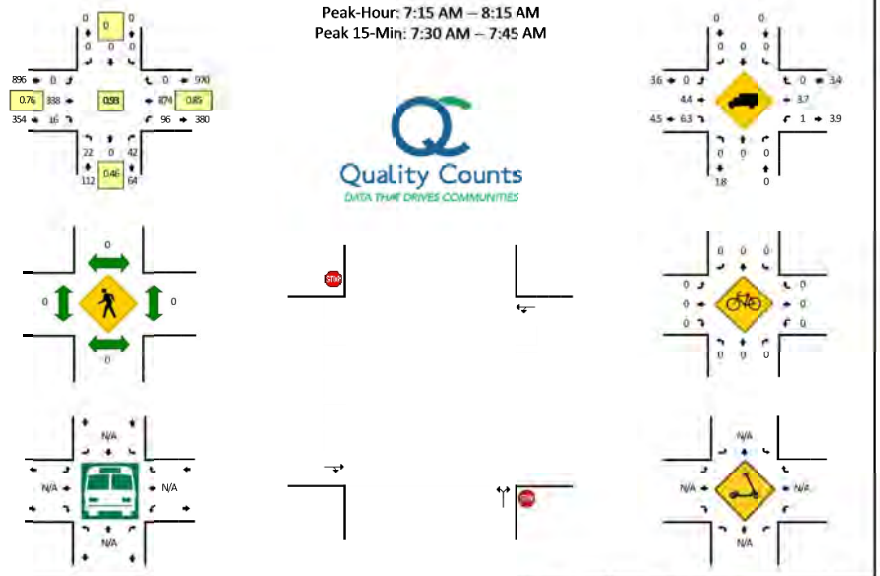
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Mana Rd -- Mamalahoa Hwy
CITY/STATE: Waimea, HI

QC JOB #: 15566403
DATE: Thu, Sep 30 2021

Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:30 AM – 7:45 AM



15-Min Count Period Beginning At	Mana Rd (Northbound)				Mana Rd (Southbound)				Mamalahoa Hwy (Eastbound)				Mamalahoa Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	6	0	3	0	0	0	0	0	0	25	3	0	5	203	0	0	245	
6:45 AM	3	0	3	0	0	0	0	0	0	27	4	0	5	196	0	0	238	
7:00 AM	9	0	4	0	0	0	0	0	0	34	2	0	5	167	0	0	221	
7:15 AM	6	0	5	0	0	0	0	0	0	48	1	0	29	254	0	0	343	1047
7:30 AM	4	0	11	0	0	0	0	0	0	68	4	0	44	242	0	0	373	1175
7:45 AM	11	0	24	0	0	0	0	0	0	109	7	0	17	201	0	0	369	1306
8:00 AM	1	0	2	0	0	0	0	0	0	113	4	0	6	177	0	0	303	1388
8:15 AM	5	0	5	0	0	0	0	0	0	95	8	0	6	138	0	0	257	1302
8:30 AM	6	0	5	0	0	0	0	0	0	92	7	0	6	154	0	0	270	1199
8:45 AM	6	0	5	0	0	0	0	0	0	74	3	0	3	152	0	0	243	1073
9:00 AM	6	0	3	0	0	0	0	0	0	87	7	0	2	122	0	0	227	997
9:15 AM	6	0	1	0	0	0	0	0	0	87	5	0	5	141	0	0	245	985

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	16	0	44	0	0	0	0	0	0	272	16	0	176	968	0	0	1492
Heavy Trucks	0	0	0		0	0	0		0	12	0		4	24	0		40
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/6/2021 12:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

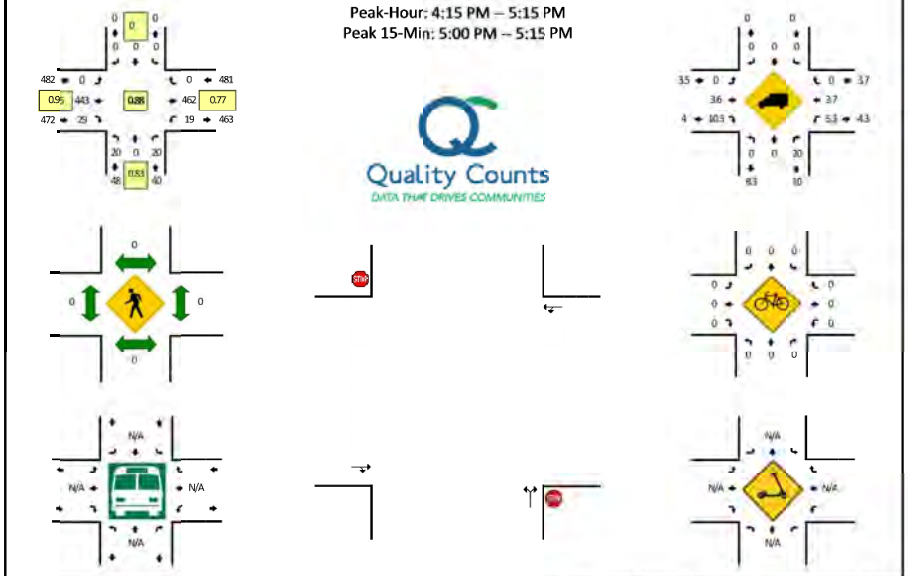
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: Mana Rd -- Mamalahoa Hwy
CITY/STATE: Waimea, HI

QC JOB #: 15566404
DATE: Thu, Sep 30 2021

Peak-Hour: 4:15 PM – 5:15 PM
Peak 15-Min: 5:00 PM – 5:15 PM



15-Min Count Period Beginning At	Mana Rd (Northbound)				Mana Rd (Southbound)				Mamalahoa Hwy (Eastbound)				Mamalahoa Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	7	0	3	0	0	0	0	0	0	109	8	0	3	91	0	0	221	
3:15 PM	5	0	4	0	0	0	0	0	0	112	5	0	4	90	0	0	220	
3:30 PM	5	0	5	0	0	0	0	0	0	117	13	0	3	110	0	0	253	
3:45 PM	7	0	5	0	0	0	0	0	0	109	4	0	2	117	0	0	244	938
4:00 PM	4	0	12	0	0	0	0	0	0	113	5	0	5	85	0	0	224	941
4:15 PM	2	0	7	0	0	0	0	0	0	119	5	0	5	83	0	0	221	942
4:30 PM	6	0	6	0	0	0	0	0	0	108	4	0	2	95	0	0	221	910
4:45 PM	5	0	5	0	0	0	0	0	0	110	8	0	4	136	0	0	268	934
5:00 PM	7	0	2	0	0	0	0	0	0	106	12	0	8	148	0	0	283	993
5:15 PM	10	0	7	0	0	0	0	0	0	167	7	0	9	97	0	0	297	1069
5:30 PM	5	0	7	0	0	0	0	0	0	152	10	0	14	112	0	0	300	1148
5:45 PM	8	0	14	0	0	0	0	0	0	150	12	0	19	111	0	0	314	1194

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	28	0	8	0	0	0	0	0	0	424	48	0	32	592	0	0	1132
Heavy Trucks	0	0	0		0	0	0		0	8	4		4	40	0		56
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/20/2022 7:47 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

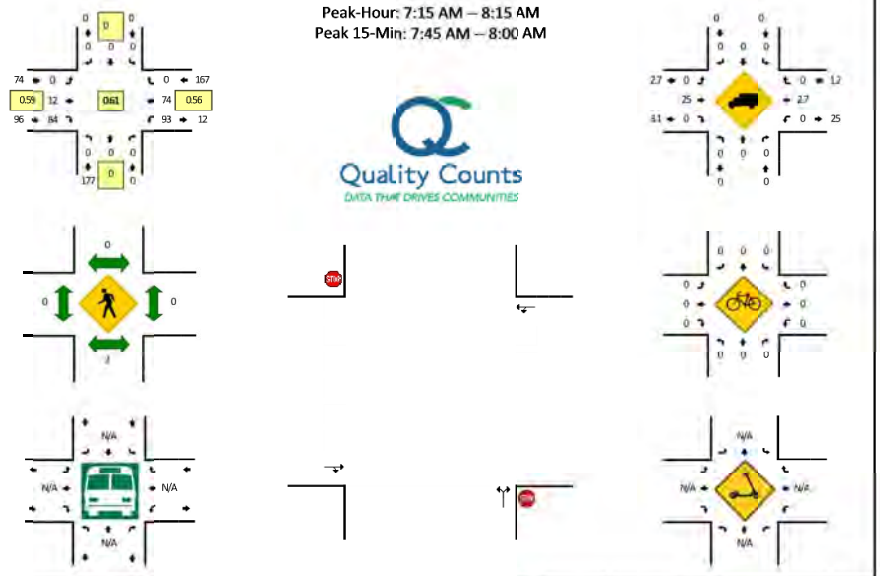
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: KOKA Main Dwy -- Hiiaka St
CITY/STATE: Waimea, HI

QC JOB #: 15566405
DATE: Thu, Sep 30 2021

Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:45 AM – 8:00 AM



15-Min Count Period Beginning At	KOKA Main Dwy (Northbound)				KOKA Main Dwy (Southbound)				Hiiaka St (Eastbound)				Hiiaka St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	3	
6:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	5	0	0	6	
7:00 AM	0	0	0	0	0	0	0	0	0	3	5	0	1	6	0	0	15	
7:15 AM	0	0	0	0	0	0	0	0	0	1	13	0	6	9	0	0	29	53
7:30 AM	0	0	0	0	0	0	0	0	0	1	40	0	39	23	0	0	103	153
7:45 AM	0	0	0	0	0	0	0	0	0	4	29	0	42	32	0	0	107	254
8:00 AM	0	0	0	0	0	0	0	0	0	6	2	0	6	10	0	0	24	263
8:15 AM	0	0	0	0	0	0	0	0	0	7	3	0	3	8	0	0	21	255
8:30 AM	1	0	1	0	0	0	0	0	0	6	1	0	1	9	0	0	19	171
8:45 AM	1	0	0	0	0	0	0	0	0	5	1	0	0	5	0	0	12	76
9:00 AM	0	0	0	0	0	0	0	0	0	5	0	0	0	4	0	0	9	61
9:15 AM	1	0	0	0	0	0	0	0	0	7	0	0	1	4	0	0	13	53

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	16	116	0	168	128	0	0	428
Heavy Trucks	0	0	0		0	0	0		0	8	0		0	4	0		12
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/6/2021 12:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

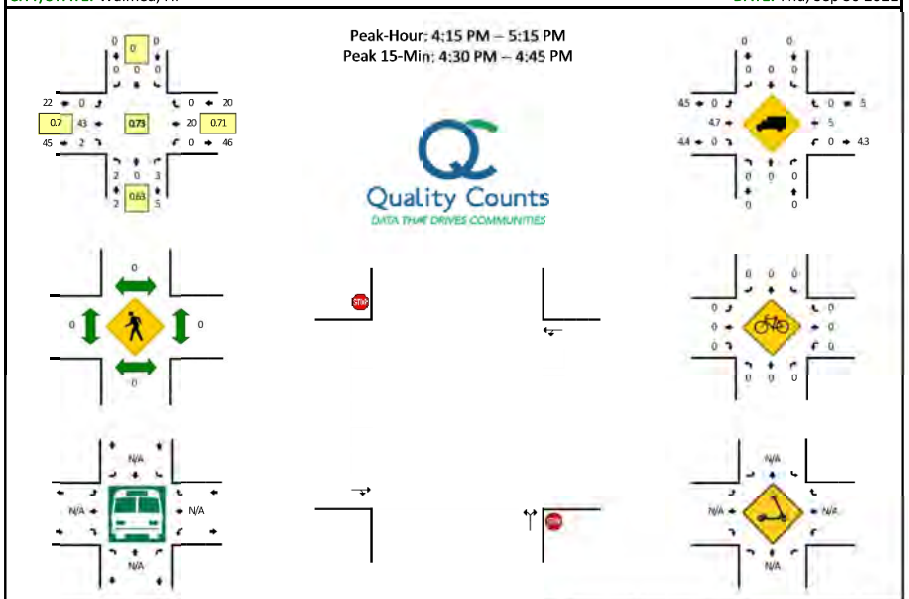
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: KOKA Main Dwy -- Hiiaka St
CITY/STATE: Waimea, HI

QC JOB #: 15566406
DATE: Thu, Sep 30 2021

Peak-Hour: 4:15 PM – 5:15 PM
Peak 15-Min: 4:30 PM – 4:45 PM



15-Min Count Period Beginning At	KOKA Main Dwy (Northbound)				KOKA Main Dwy (Southbound)				Hiiaka St (Eastbound)				Hiiaka St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	1	0	0	0	0	0	0	0	0	6	19	0	13	35	0	0	74	
3:15 PM	3	0	0	0	0	0	0	0	0	2	3	0	1	5	0	0	14	
3:30 PM	4	0	1	0	0	0	0	0	0	4	9	0	0	2	0	0	20	
3:45 PM	0	0	1	0	0	0	0	0	0	8	0	0	1	3	0	0	13	121
4:00 PM	0	0	0	0	0	0	0	0	0	8	0	0	0	0	0	0	8	55
4:15 PM	0	0	1	0	0	0	0	0	0	9	1	0	0	4	0	0	15	56
4:30 PM	0	0	2	0	0	0	0	0	0	15	1	0	0	6	0	0	24	60
4:45 PM	1	0	0	0	0	0	0	0	0	11	0	0	0	7	0	0	19	66
5:00 PM	1	0	0	0	0	0	0	0	0	8	0	0	0	3	0	0	12	70
5:15 PM	1	0	2	0	0	0	0	0	0	14	1	0	0	2	0	0	20	75
5:30 PM	0	0	0	0	0	0	0	0	0	9	0	0	0	9	0	0	18	69
5:45 PM	0	0	0	0	0	0	0	0	0	11	0	0	0	3	0	0	14	64

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	8	0	0	0	0	0	0	60	4	0	0	24	0	0	96
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/20/2022 7:47 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

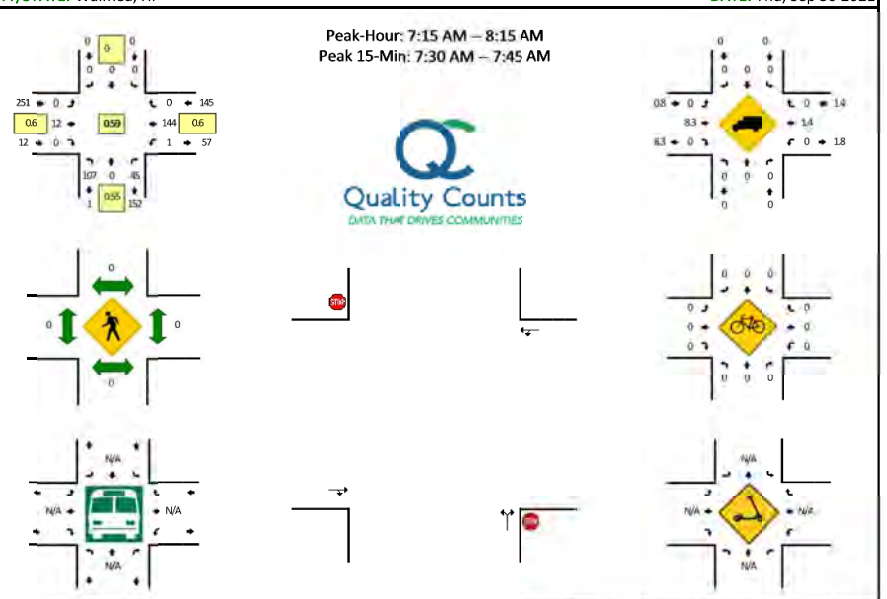
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: KOKA East Dwy -- Ainahua Alanui St
CITY/STATE: Waimea, HI

QC JOB #: 15566407
DATE: Thu, Sep 30 2021

Peak-Hour: 7:15 AM – 8:15 AM
Peak 15-Min: 7:30 AM – 7:45 AM



15-Min Count Period Beginning At	KOKA East Dwy (Northbound)				KOKA East Dwy (Southbound)				Ainahua Alanui St (Eastbound)				Ainahua Alanui St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
6:30 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	5	0	0	11	
6:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	5	0	0	7	
7:00 AM	0	0	0	0	0	0	0	0	0	3	0	0	1	7	0	0	11	
7:15 AM	9	0	3	0	0	0	0	0	0	1	0	0	0	24	0	0	37	66
7:30 AM	52	0	17	0	0	0	0	0	0	3	0	0	0	60	0	0	132	187
7:45 AM	42	0	24	0	0	0	0	0	0	3	0	0	0	42	0	0	111	291
8:00 AM	4	0	1	0	0	0	0	0	0	5	0	0	1	18	0	0	29	309
8:15 AM	4	0	1	0	0	0	0	0	0	9	0	0	0	11	0	0	25	297
8:30 AM	0	0	1	0	0	0	0	0	0	6	0	0	0	10	0	0	17	182
8:45 AM	0	0	0	0	0	0	0	0	0	6	0	0	0	9	0	0	15	86
9:00 AM	0	0	0	0	0	0	0	0	0	4	0	0	1	5	0	0	10	67
9:15 AM	1	0	0	0	0	0	0	0	0	7	0	0	0	5	0	0	13	55

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	208	0	68	0	0	0	0	0	0	12	0	0	0	240	0	0	528
Heavy Trucks	0	0	0		0	0	0		0	4	0		0	0	0		4
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 10/6/2021 12:05 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

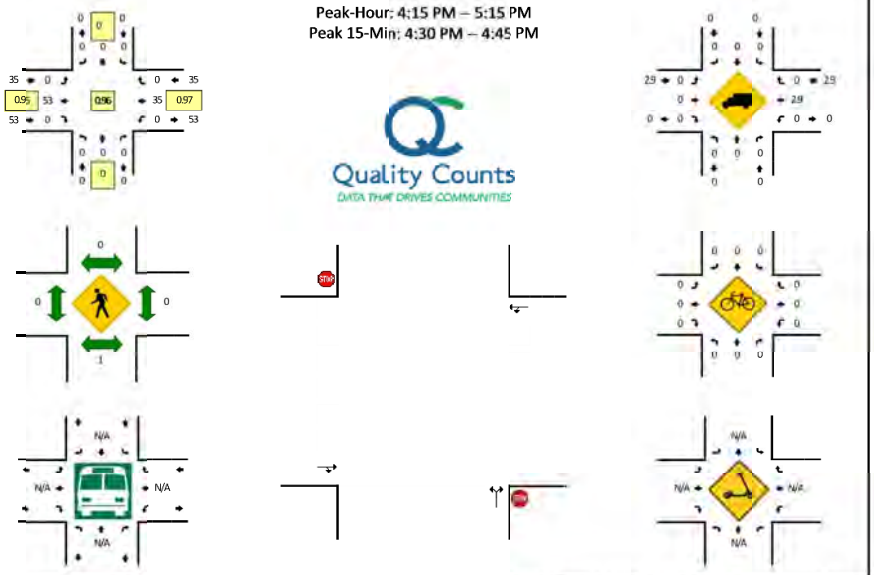
Type of peak hour being reported: User-Defined

Method for determining peak hour: Total Entering Volume

LOCATION: KOKA East Dwy -- Ainahua Alanui St
CITY/STATE: Waimea, HI

QC JOB #: 15566408
DATE: Thu, Sep 30 2021

Peak-Hour: 4:15 PM – 5:15 PM
Peak 15-Min: 4:30 PM – 4:45 PM



15-Min Count Period Beginning At	KOKA East Dwy (Northbound)				KOKA East Dwy (Southbound)				Ainahua Alanui St (Eastbound)				Ainahua Alanui St (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	45	0	24	0	0	0	0	0	0	7	0	0	0	10	0	0	86	
3:15 PM	5	0	2	0	0	0	0	0	0	5	0	0	0	4	0	0	16	
3:30 PM	0	0	6	0	0	0	0	0	0	16	0	0	1	5	0	0	28	
3:45 PM	1	0	1	0	0	0	0	0	0	11	0	0	0	4	0	0	17	147
4:00 PM	2	0	0	0	0	0	0	0	0	7	0	0	0	5	0	0	14	75
4:15 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	9	0	0	22	81
4:30 PM	0	0	0	0	0	0	0	0	0	14	0	0	0	9	0	0	23	76
4:45 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	9	0	0	22	81
5:00 PM	0	0	0	0	0	0	0	0	0	13	0	0	0	8	0	0	21	88
5:15 PM	0	0	0	0	0	0	0	0	0	16	0	0	0	6	0	0	22	88
5:30 PM	0	0	0	0	0	0	0	0	0	6	0	0	0	8	0	0	14	79
5:45 PM	0	0	0	0	0	0	0	0	0	12	0	0	0	3	0	0	15	72

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	0	0	0	0	0	0	0	0	0	56	0	0	0	36	0	0	92
Heavy Trucks	0	0	0		0	0	0		0	0	0		0	0	0		0
Buses																	
Pedestrians		0				0				0				0			0
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Scooters																	

Comments:

Report generated on 6/20/2022 7:47 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

Type of report: Tube Count - Volume Data

LOCATION: Mamalahoa Hwy West of Mana Rd
SPECIFIC LOCATION:
CITY/STATE: Waimea, HI

QC JOB #: 15566409
DIRECTION: EB, WB
DATE: Sep 30 2021 - Sep 30 2021

Start Time	Mon	Tue	Wed	Thu	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
				30 Sep 21						
12:00 AM				14		14			14	
12:15 AM				14		14			14	
12:30 AM				7		7			7	
12:45 AM				5		5			5	
01:00 AM				6		6			6	
01:15 AM				9		9			9	
01:30 AM				6		6			6	
01:45 AM				5		5			5	
02:00 AM				6		6			6	
02:15 AM				7		7			7	
02:30 AM				9		9			9	
02:45 AM				8		8			8	
03:00 AM				14		14			14	
03:15 AM				20		20			20	
03:30 AM				17		17			17	
03:45 AM				43		43			43	
04:00 AM				40		40			40	
04:15 AM				51		51			51	
04:30 AM				56		56			56	
04:45 AM				81		81			81	
05:00 AM				109		109			109	
05:15 AM				134		134			134	
05:30 AM				143		143			143	
05:45 AM				157		157			157	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 10/6/2021 11:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Mamalahoa Hwy West of Mana Rd
QC JOB #: 15566409
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimea, HI
DATE: Sep 30 2021 - Sep 30 2021

Start Time	Mon	Tue	Wed	Thu 30 Sep 21	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM				205		205			205	
12:15 PM				218		218			218	
12:30 PM				244		244			244	
12:45 PM				237		237			237	
01:00 PM				206		206			206	
01:15 PM				207		207			207	
01:30 PM				222		222			222	
01:45 PM				252		252			252	
02:00 PM				266		266			266	
02:15 PM				279		279			279	
02:30 PM				275		275			275	
02:45 PM				280		280			280	
03:00 PM				329		329			329	
03:15 PM				305		305			305	
03:30 PM				307		307			307	
03:45 PM				355		355			355	
04:00 PM				300		300			300	
04:15 PM				322		322			322	
04:30 PM				**369**		**369**			**369**	
04:45 PM				337		337			337	
05:00 PM				339		339			339	
05:15 PM				280		280			280	
05:30 PM				272		272			272	
05:45 PM				228		228			228	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 10/6/2021 11:54 AM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Mamalahoa Hwy West of Mana Rd
QC JOB #: 15566409
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimea, HI
DATE: Sep 30 2021 - Sep 30 2021

Start Time	Mon	Tue	Wed	Thu 30 Sep 21	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM				171		171			171	
06:15 AM				230		230			230	
06:30 AM				224		224			224	
06:45 AM				230		230			230	
07:00 AM				218		218			218	
07:15 AM				**307**		**307**			**307**	
07:30 AM				225		225			225	
07:45 AM				292		292			292	
08:00 AM				293		293			293	
08:15 AM				256		256			256	
08:30 AM				233		233			233	
08:45 AM				232		232			232	
09:00 AM				215		215			215	
09:15 AM				241		241			241	
09:30 AM				231		231			231	
09:45 AM				212		212			212	
10:00 AM				195		195			195	
10:15 AM				181		181			181	
10:30 AM				216		216			216	
10:45 AM				223		223			223	
11:00 AM				196		196			196	
11:15 AM				227		227			227	
11:30 AM				211		211			211	
11:45 AM				225		225			225	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 10/6/2021 11:54 AM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Appendix B
Hele-on Bus Information

Type of report: Tube Count - Volume Data

LOCATION: Mamalahoa Hwy West of Mana Rd
QC JOB #: 15566409
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimea, HI
DATE: Sep 30 2021 - Sep 30 2021

Start Time	Mon	Tue	Wed	Thu 30 Sep 21	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM				213		213			213	
06:15 PM				214		214			214	
06:30 PM				194		194			194	
06:45 PM				162		162			162	
07:00 PM				137		137			137	
07:15 PM				129		129			129	
07:30 PM				118		118			118	
07:45 PM				83		83			83	
08:00 PM				79		79			79	
08:15 PM				84		84			84	
08:30 PM				71		71			71	
08:45 PM				67		67			67	
09:00 PM				57		57			57	
09:15 PM				69		69			69	
09:30 PM				39		39			39	
09:45 PM				50		50			50	
10:00 PM				45		45			45	
10:15 PM				55		55			55	
10:30 PM				43		43			43	
10:45 PM				51		51			51	
11:00 PM				18		18			18	
11:15 PM				26		26			26	
11:30 PM				38		38			38	
11:45 PM				22		22			22	
Day Total				15143		15143			15143	
% Weekday Average				100%						
% Week Average				100%		100%				
AM Peak 15-min Vol				7:15 AM 307		7:15 AM 307			7:15 AM 307	
PM Peak 15-min Vol				4:30 PM 369		4:30 PM 369			4:30 PM 369	

Comments:

Report generated on 10/6/2021 11:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
DATA THAT DRIVES COMMUNITIES

Appendix C
Existing Intersection Analysis Worksheets

Route 301 Waimea Circulator
Effective September 05, 2021
Westbound to Kamuela View Estates

Lokelani	Waimea					Kamuela View Estates
A	B	C	D	E	F	G
Highway 19 @ Mud Lane and Puu Puehu Loop	Kamamalu Street @ Highway 19 (Waimea Civic Center)	Highway 19 @ Pukalani Rd (Ace Hardware/Parker Ranch Shopping Center)	Highway 19 @ beside of Hardware Road (Waimea Park, East section)	Highway 19 @ Opelo Road	Highway 19 @ Lucaranda Inn	Olina Street @ Mahua Street
TBA	TBA	422	410	TBA	TBA	TBA
6:30 AM	6:40 AM	6:45 AM	6:47 AM	6:50 AM	6:55 AM	7:00 AM
7:30 AM	7:40 AM	7:45 AM	7:47 AM	7:50 AM	7:55 AM	8:00 AM
8:30 AM	8:40 AM	8:45 AM	8:47 AM	8:50 AM	8:55 AM	9:00 AM
9:30 AM	9:40 AM	9:45 AM	9:47 AM	9:50 AM	9:55 AM	10:00 AM
10:30 AM	10:40 AM	10:45 AM	10:47 AM	10:50 AM	10:55 AM	11:00 AM
11:30 AM	11:40 AM	11:45 AM	11:47 AM	11:50 AM	11:55 AM	12:00 PM
12:30 PM	12:40 PM	12:45 PM	12:47 PM	12:50 PM	12:55 PM	1:00 PM
1:30 PM	1:40 PM	1:45 PM	1:47 PM	1:50 PM	1:55 PM	2:00 PM
2:30 PM	2:40 PM	2:45 PM	2:47 PM	2:50 PM	2:55 PM	3:00 PM
3:30 PM	3:40 PM	3:45 PM	3:47 PM	3:50 PM	3:55 PM	4:00 PM
4:30 PM	4:40 PM	4:45 PM	4:47 PM	4:50 PM	4:55 PM	5:00 PM

— Bus does not serve timepoint. This trip continues to Hilo. Monday-Friday only. Everyday service.

Route 301 Waimea Circulator
Effective September 05, 2021
Eastbound to Lokelani

Kamuela View Estates	Waimea					Lokelani
G	F	E	D	C	B	A
Olina Street @ Mahua Street	Highway 19 @ Across from Kamuela Inn	Highway 19 @ Opelo Road	Highway 19 @ Across from Waimea Park	Highway 19 @ Pukalani Rd (Ace Hardware/Parker Ranch Shopping Center)	Kamamalu Street @ Highway 19 (Waimea Civic Center)	Highway 19 @ Mud Lane and Puu Puehu Loop
TBA	TBA	TBA	42!	422	TBA	TBA
7:00 AM	7:05 AM	7:10 AM	7:13 AM	7:15 AM	7:20 AM	7:25 AM
8:00 AM	8:05 AM	8:10 AM	8:13 AM	8:15 AM	8:20 AM	8:25 AM
9:00 AM	9:05 AM	9:10 AM	9:13 AM	9:15 AM	9:20 AM	9:25 AM
10:00 AM	10:05 AM	10:10 AM	10:13 AM	10:15 AM	10:20 AM	10:25 AM
11:00 AM	11:05 AM	11:10 AM	11:13 AM	See Route 60 to Hilo		
11:00 AM	11:05 AM	11:10 AM	11:13 AM	11:15 AM	11:20 AM	11:25 AM
12:00 PM	12:05 PM	12:10 PM	12:13 PM	12:15 PM	12:20 PM	12:25 PM
1:00 PM	1:05 PM	1:10 PM	1:13 PM	1:15 PM	1:20 PM	1:25 PM
2:00 PM	2:05 PM	2:10 PM	2:13 PM	2:15 PM	2:20 PM	2:25 PM
3:00 PM	3:05 PM	3:10 PM	3:13 PM	3:15 PM	3:20 PM	3:25 PM
4:00 PM	4:05 PM	4:10 PM	4:13 PM	4:15 PM	4:20 PM	4:25 PM
5:00 PM	5:05 PM	5:10 PM	5:13 PM	See Route 60 to Hilo		

To read the timetable, read from left to right to follow the course of the route and then read down for the times that the bus operates. Schedules are subject to change without notice. Times are approximate and may vary depending on traffic conditions, weather and other conditions.

Flex Service

Hele-On offers flex route service on Route 301 – Waimea Shuttle for everyone! This flexible type services combine ADA paratransit and general public transit into one service providing additional mobility in the Waimea area if you cannot get to the bus route. The bus can flex up to 1 mile off route and you are required to make a reservation at least one hour in advance. To schedule a flex trip, call (808) 961-8744, option 1. TDD/TTY: 711 through the Relay Service.

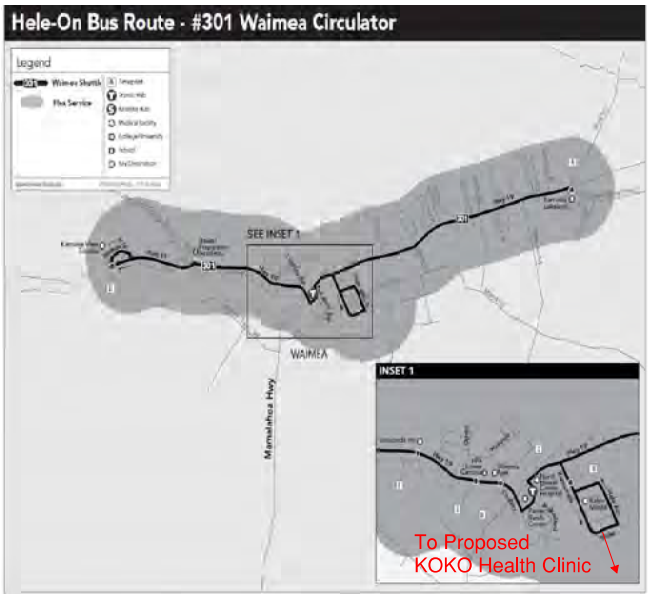
The fare for flex service is $4.00 for all passengers.

Not all Hele-On bus stops are shown. Please flag the bus along its route at safe intersections where the bus can safely pull over or board at a bus shelter, a Kona Trolley Stop sign, a Hele-On Bus Stop or a red/white or blue Bus Stop sign.

- - - means timepoint is not served.

AM times are shown in lightface type. **PM times are in boldface type.**

Please recycle. Share this bus schedule with someone else if you do not need it.



Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	426	121	31	897	185	50
Future Volume (vph)	426	121	31	897	185	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.97			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3405			3533	1770	1565
Flt Permitted	1.00			0.92	0.95	1.00
Satd. Flow (perm)	3405			3246	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	600	170	35	1008	285	77
RTOR Reduction (vph)	41	0	0	0	0	52
Lane Group Flow (vph)	729	0	0	1043	285	25
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	18.4			26.0	13.2	15.8
Effective Green, g (s)	18.4			26.0	13.2	15.8
Actuated g/C Ratio	0.37			0.53	0.27	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1273			1730	474	661
v/s Ratio Prot	0.21			c0.03	c0.16	0.00
v/s Ratio Perm				c0.29		0.01
v/c Ratio	0.57			0.60	0.60	0.04
Uniform Delay, d1	12.3			8.0	15.7	11.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.6			0.6	2.2	0.0
Delay (s)	12.9			8.6	17.9	11.5
Level of Service	B			A	B	B
Approach Delay (s)	12.9			8.6	16.5	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	11.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	49.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	84	93	74	0	0
Future Vol, veh/h	12	84	93	74	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	20	142	166	132	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	164	0	557	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	464	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1427	-	495	970
Stage 1	-	-	-	-	936	-
Stage 2	-	-	-	-	637	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	432	968
Mov Cap-2 Maneuver	-	-	-	-	432	-
Stage 1	-	-	-	-	934	-
Stage 2	-	-	-	-	557	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.4	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1424	-
HCM Lane V/C Ratio	-	-	-	0.117	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	12	0	1	144	107	45
Future Vol, veh/h	12	0	1	144	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	20	0	2	240	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	20	0	264	20
Stage 1	-	-	-	-	20	-
Stage 2	-	-	-	-	244	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1596	-	725	1058
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	797	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1596	-	724	1058
Mov Cap-2 Maneuver	-	-	-	-	724	-
Stage 1	-	-	-	-	1003	-
Stage 2	-	-	-	-	796	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	799	-	-	1596	-
HCM Lane V/C Ratio	0.346	-	-	0.001	-
HCM Control Delay (s)	11.9	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.6	-	-	0	-

Intersection	
Int Delay, s/veh	3.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	338	16	96	874	22	42
Future Vol, veh/h	338	16	96	874	22	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	445	21	113	1028	48	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	466	0	1710	456
Stage 1	-	-	-	-	456	-
Stage 2	-	-	-	-	1254	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1095	-	100	604
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	269	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1095	-	90	604
Mov Cap-2 Maneuver	-	-	-	-	90	-
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	241	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	36.5
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	90	604	-	-	1095	-
HCM Lane V/C Ratio	0.531	0.151	-	-	0.103	-
HCM Control Delay (s)	83.4	12	-	-	8.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	2.4	0.5	-	-	0.3	-

Intersection	
Int Delay, s/veh	4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	338	16	96	0	22	42
Future Vol, veh/h	338	16	96	0	22	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	445	21	113	0	48	91

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	466	0	682	456
Stage 1	-	-	-	-	456	-
Stage 2	-	-	-	-	226	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1095	-	415	604
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	812	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1095	-	372	604
Mov Cap-2 Maneuver	-	-	-	-	372	-
Stage 1	-	-	-	-	638	-
Stage 2	-	-	-	-	728	-

Approach	EB	WB	NB
HCM Control Delay, s	0	8.7	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	372	604	-	-	1095	-
HCM Lane V/C Ratio	0.129	0.151	-	-	0.103	-
HCM Control Delay (s)	16.1	12	-	-	8.7	-
HCM Lane LOS	C	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	972	107	21	541	79	31
Future Volume (vph)	972	107	21	541	79	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.99			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3479			3533	1770	1567
Flt Permitted	1.00			0.90	0.95	1.00
Satd. Flow (perm)	3479			3193	1770	1567
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1080	119	23	601	110	43
RTOR Reduction (vph)	11	0	0	0	0	17
Lane Group Flow (vph)	1188	0	0	624	110	26
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	22.3			28.7	4.5	5.9
Effective Green, g (s)	22.3			28.7	4.5	5.9
Actuated g/C Ratio	0.52			0.66	0.10	0.14
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1795			2132	184	395
v/s Ratio Prot	c0.34			c0.01	c0.06	0.00
v/s Ratio Perm				0.18		0.01
v/c Ratio	0.66			0.29	0.60	0.07
Uniform Delay, d1	7.7			3.0	18.5	16.2
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	0.9			0.1	5.1	0.1
Delay (s)	8.6			3.1	23.6	16.3
Level of Service	A			A	C	B
Approach Delay (s)	8.6			3.1	21.6	
Approach LOS	A			A	C	

Intersection Summary			
HCM 2000 Control Delay	7.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.66		
Actuated Cycle Length (s)	43.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	43.7%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	43	2	0	20	2	3
Future Vol, veh/h	43	2	0	20	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	61	3	0	28	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	91	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	28	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1551	-	914	1007
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	1000	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1551	-	914	1007
Mov Cap-2 Maneuver	-	-	-	-	914	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	1000	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	968	-	-	1551	-
HCM Lane V/C Ratio	0.008	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0	-	-	0	-

Intersection	
Int Delay, s/veh	0

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	0	0	35	0	0
Future Vol, veh/h	53	0	0	35	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	56	0	0	36	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	57	0	93	57
Stage 1	-	-	-	-	57	-
Stage 2	-	-	-	-	36	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1547	-	907	1009
Stage 1	-	-	-	-	966	-
Stage 2	-	-	-	-	986	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1546	-	906	1008
Mov Cap-2 Maneuver	-	-	-	-	906	-
Stage 1	-	-	-	-	965	-
Stage 2	-	-	-	-	986	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1546	-
HCM Lane V/C Ratio	-	-	-	-	-
HCM Control Delay (s)	0	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	-	-	-	0	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	925	29	19	393	20	20
Future Vol, veh/h	925	29	19	393	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	974	31	25	510	24	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1005	0	1550	990
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	560	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	689	-	125	299
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	689	-	121	299
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	551	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	30.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	121	299	-	-	689	-
HCM Lane V/C Ratio	0.199	0.081	-	-	0.036	-
HCM Control Delay (s)	42	18.1	-	-	10.4	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	0.7	0.3	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	925	29	19	0	20	20
Future Vol, veh/h	925	29	19	0	20	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	974	31	25	0	24	24

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1005	0	1040	990
Stage 1	-	-	-	-	990	-
Stage 2	-	-	-	-	50	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	689	-	255	299
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	972	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	689	-	246	299
Mov Cap-2 Maneuver	-	-	-	-	246	-
Stage 1	-	-	-	-	360	-
Stage 2	-	-	-	-	937	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10.4	19.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	246	299	-	-	689	-
HCM Lane V/C Ratio	0.098	0.081	-	-	0.036	-
HCM Control Delay (s)	21.2	18.1	-	-	10.4	-
HCM Lane LOS	C	C	-	-	B	-
HCM 95th %tile Q(veh)	0.3	0.3	-	-	0.1	-

Appendix D

Future Without Project Intersection Analysis Worksheets

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	126	99	173	31	11
Future Vol, veh/h	107	126	99	173	31	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	137	108	188	34	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	589	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1312	-	471	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1312	-	428	857
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	493	-	-	1312	-
HCM Lane V/C Ratio	0.093	-	-	0.082	-
HCM Control Delay (s)	13	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	464	247	31	977	216	50
Future Volume (vph)	464	247	31	977	216	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3328			3534	1770	1565
Flt Permitted	1.00			0.87	0.95	1.00
Satd. Flow (perm)	3328			3088	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	654	348	35	1098	332	77
RTOR Reduction (vph)	107	0	0	0	0	52
Lane Group Flow (vph)	895	0	0	1133	332	25
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	20.4			28.0	14.5	17.1
Effective Green, g (s)	20.4			28.0	14.5	17.1
Actuated g/C Ratio	0.39			0.53	0.28	0.33
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1293			1669	488	658
v/s Ratio Prot	0.27			c0.03	c0.19	0.00
v/s Ratio Perm				c0.33		0.01
v/c Ratio	0.69			0.68	0.68	0.04
Uniform Delay, d1	13.4			9.0	16.9	12.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.6			1.1	3.9	0.0
Delay (s)	15.0			10.1	20.8	12.1
Level of Service	B			B	C	B
Approach Delay (s)	15.0			10.1	19.2	
Approach LOS	B			B	B	

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	52.5	Sum of lost time (s)	15.0
Intersection Capacity Utilization	69.9%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	84	93	173	0	0
Future Vol, veh/h	23	84	93	173	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	142	166	309	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	183	0	753	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1404	-	380	947
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	325	945
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1401	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	1	243	107	45
Future Vol, veh/h	23	0	1	243	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	2	405	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	447	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1572	-	569	1034
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	568	1034
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1572	-
HCM Lane V/C Ratio	0.422	-	-	0.001	-
HCM Control Delay (s)	14.4	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.1	-	-	0	-

Intersection	
Int Delay, s/veh	9.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	368	16	206	952	22	56
Future Vol, veh/h	368	16	206	952	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	21	242	1120	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	505	0	2099	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	1604	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1060	-	57	575
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	181	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1060	-	~ 44	575
Mov Cap-2 Maneuver	-	-	-	-	~ 44	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	140	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	44	575	-	-	1060	-
HCM Lane V/C Ratio	1.087	0.212	-	-	0.229	-
HCM Control Delay (s)	$ 307.4	12.9	-	-	9.4	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.5	0.8	-	-	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	368	16	206	0	22	56
Future Vol, veh/h	368	16	206	0	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	21	242	0	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	505	0	979	495
Stage 1	-	-	-	-	495	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1060	-	277	575
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1060	-	214	575
Mov Cap-2 Maneuver	-	-	-	-	214	-
Stage 1	-	-	-	-	613	-
Stage 2	-	-	-	-	479	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.4	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	214	575	-	-	1060	-
HCM Lane V/C Ratio	0.223	0.212	-	-	0.229	-
HCM Control Delay (s)	26.6	12.9	-	-	9.4	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.8	0.8	-	-	0.9	-

Intersection	
Int Delay, s/veh	8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	96	33	22	250	87
Future Vol, veh/h	132	96	33	22	250	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	104	36	24	272	95

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	247	0	291	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1319	-	700	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	680	846
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1319	-
HCM Lane V/C Ratio	0.512	-	-	0.027	-
HCM Control Delay (s)	15.2	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.9	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1059	203	21	589	329	31
Future Volume (vph)	1059	203	21	589	329	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3441			3533	1770	1564
Flt Permitted	1.00			0.81	0.95	1.00
Satd. Flow (perm)	3441			2858	1770	1564
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1177	226	23	654	457	43
RTOR Reduction (vph)	22	0	0	0	0	17
Lane Group Flow (vph)	1381	0	0	677	457	26
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	29.5			37.3	19.3	22.1
Effective Green, g (s)	29.5			37.3	19.3	22.1
Actuated g/C Ratio	0.44			0.56	0.29	0.33
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1524			1629	512	636
v/s Ratio Prot	c0.40			c0.02	c0.26	0.00
v/s Ratio Perm				0.22		0.01
v/c Ratio	0.91			0.42	0.89	0.04
Uniform Delay, d1	17.3			8.4	22.7	15.1
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	8.0			0.2	17.6	0.0
Delay (s)	25.3			8.6	40.3	15.1
Level of Service	C			A	D	B
Approach Delay (s)	25.3			8.6	38.1	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	23.4	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	66.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.3%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	2	33	20	2	3
Future Vol, veh/h	130	2	33	20	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	186	3	46	28	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	189	0	308	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1397	-	688	859
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	665	859
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1397	-
HCM Lane V/C Ratio	0.01	-	-	0.033	-
HCM Control Delay (s)	9.7	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	0	33	35	0	0
Future Vol, veh/h	140	0	33	35	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	0	34	36	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	252	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	104	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1434	-	737	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1433	-	719	898
Mov Cap-2 Maneuver	-	-	-	-	719	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1433	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1008	29	71	428	20	122
Future Vol, veh/h	1008	29	71	428	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1061	31	92	556	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1092	0	1817	1077
Stage 1	-	-	-	-	1077	-
Stage 2	-	-	-	-	740	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	639	-	86	266
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	472	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	639	-	74	266
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	404	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	39.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	266	-	-	639	-
HCM Lane V/C Ratio	0.326	0.553	-	-	0.144	-
HCM Control Delay (s)	75.6	34.1	-	-	11.6	-
HCM Lane LOS	F	D	-	-	B	-
HCM 95th %tile Q(veh)	1.2	3.1	-	-	0.5	-

Intersection	
Int Delay, s/veh	5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1008	29	71	0	20	122
Future Vol, veh/h	1008	29	71	0	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1061	31	92	0	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1092	0	1261	1077
Stage 1	-	-	-	-	1077	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	639	-	188	266
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	639	-	161	266
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	327	-
Stage 2	-	-	-	-	726	-

Approach	EB	WB	NB
HCM Control Delay, s	0	11.6	33.7
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	161	266	-	-	639	-
HCM Lane V/C Ratio	0.15	0.553	-	-	0.144	-
HCM Control Delay (s)	31.3	34.1	-	-	11.6	-
HCM Lane LOS	D	D	-	-	B	-
HCM 95th %tile Q(veh)	0.5	3.1	-	-	0.5	-

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	126	99	173	31	11
Future Vol, veh/h	107	126	99	173	31	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	137	108	188	34	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	589	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1312	-	471	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1312	-	428	857
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	493	-	-	1312	-
HCM Lane V/C Ratio	0.093	-	-	0.082	-
HCM Control Delay (s)	13	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	506	247	31	1065	216	50
Future Volume (vph)	506	247	31	1065	216	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3340			3534	1770	1565
Flt Permitted	1.00			0.87	0.95	1.00
Satd. Flow (perm)	3340			3065	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	713	348	35	1197	332	77
RTOR Reduction (vph)	89	0	0	0	0	41
Lane Group Flow (vph)	972	0	0	1232	332	36
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	22.0			29.7	14.7	17.4
Effective Green, g (s)	22.0			29.7	14.7	17.4
Actuated g/C Ratio	0.40			0.55	0.27	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1350			1696	478	644
v/s Ratio Prot	0.29			c0.04	c0.19	0.00
v/s Ratio Perm				c0.36		0.02
v/c Ratio	0.72			0.73	0.69	0.06
Uniform Delay, d1	13.6			9.3	17.8	12.8
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.9			1.6	4.3	0.0
Delay (s)	15.5			10.9	22.2	12.8
Level of Service	B			B	C	B
Approach Delay (s)	15.5			10.9	20.4	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	14.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	54.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.3%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	84	93	173	0	0
Future Vol, veh/h	23	84	93	173	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	142	166	309	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	183	0	753	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1404	-	380	947
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	325	945
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1401	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	1	243	107	45
Future Vol, veh/h	23	0	1	243	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	2	405	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	447	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1572	-	569	1034
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	568	1034
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1572	-
HCM Lane V/C Ratio	0.422	-	-	0.001	-
HCM Control Delay (s)	14.4	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.1	-	-	0	-

Intersection	
Int Delay, s/veh	11.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	16	206	1038	22	56
Future Vol, veh/h	401	16	206	1038	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	528	21	242	1221	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	549	0	2244	539
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	1705	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1021	-	~ 46	542
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	161	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1021	-	~ 35	542
Mov Cap-2 Maneuver	-	-	-	-	~ 35	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	123	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	138.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	35	542	-	-	1021	-
HCM Lane V/C Ratio	1.366	0.225	-	-	0.237	-
HCM Control Delay (s)	$ 455	13.6	-	-	9.6	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	5.1	0.9	-	-	0.9	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	401	16	206	0	22	56
Future Vol, veh/h	401	16	206	0	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	528	21	242	0	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	549	0	1023	539
Stage 1	-	-	-	-	539	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1021	-	261	542
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1021	-	199	542
Mov Cap-2 Maneuver	-	-	-	-	199	-
Stage 1	-	-	-	-	585	-
Stage 2	-	-	-	-	473	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.6	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	199	542	-	-	1021	-
HCM Lane V/C Ratio	0.24	0.225	-	-	0.237	-
HCM Control Delay (s)	28.7	13.6	-	-	9.6	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.9	-	-	0.9	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	401	16	206	1038	22	56
Future Volume (veh/h)	401	16	206	1038	22	56
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	528	21	242	1221	48	122
Peak Hour Factor	0.76	0.76	0.85	0.85	0.46	0.46
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1017	40	604	1378	179	296
Arrive On Green	0.57	0.57	0.09	0.74	0.10	0.10
Sat Flow, veh/h	1787	71	1781	1870	1781	1585
Grp Volume(v), veh/h	0	549	242	1221	48	122
Grp Sat Flow(s),veh/h/ln	0	1858	1781	1870	1781	1585
Q Serve(g_s), s	0.0	11.1	3.0	30.4	1.5	4.2
Cycle Q Clear(g_c), s	0.0	11.1	3.0	30.4	1.5	4.2
Prop In Lane		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1058	604	1378	179	296
V/C Ratio(X)	0.00	0.52	0.40	0.89	0.27	0.41
Avail Cap(c_a), veh/h	0	1360	799	1887	522	601
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.1	5.4	6.1	25.6	22.0
Incr Delay (d2), s/veh	0.0	0.4	0.4	4.2	0.8	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.6	4.9	0.6	1.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.5	5.8	10.3	26.4	22.9
LnGrp LOS	A	A	A	B	C	C
Approach Vol, veh/h	549			1463	170	
Approach Delay, s/veh	8.5			9.6	23.9	
Approach LOS	A			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		11.2	10.3	40.0		50.3
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		18.0	12.0	45.0		62.0
Max Q Clear Time (g_c+I1), s		6.2	5.0	13.1		32.4
Green Ext Time (p_c), s		0.4	0.4	3.5		12.9

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	96	33	22	250	87
Future Vol, veh/h	132	96	33	22	250	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	104	36	24	272	95

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	247	0	291	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1319	-	700	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	680	846
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1319	-
HCM Lane V/C Ratio	0.512	-	-	0.027	-
HCM Control Delay (s)	15.2	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.9	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1154	203	21	642	329	31
Future Volume (vph)	1154	203	21	642	329	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3448			3534	1770	1563
Flt Permitted	1.00			0.80	0.95	1.00
Satd. Flow (perm)	3448			2815	1770	1563
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1282	226	23	713	457	43
RTOR Reduction (vph)	17	0	0	0	0	17
Lane Group Flow (vph)	1491	0	0	736	457	26
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	36.2			44.0	21.7	24.5
Effective Green, g (s)	36.2			44.0	21.7	24.5
Actuated g/C Ratio	0.48			0.58	0.29	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1648			1662	507	609
v/s Ratio Prot	c0.43			c0.02	c0.26	0.00
v/s Ratio Perm				0.24		0.02
v/c Ratio	0.90			0.44	0.90	0.04
Uniform Delay, d1	18.2			8.9	26.0	17.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	7.4			0.2	19.1	0.0
Delay (s)	25.6			9.1	45.0	17.6
Level of Service	C			A	D	B
Approach Delay (s)	25.6			9.1	42.7	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	75.7	Sum of lost time (s)	15.0
Intersection Capacity Utilization	64.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	2	33	20	2	3
Future Vol, veh/h	130	2	33	20	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	186	3	46	28	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	189	0	308	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1397	-	688	859
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	665	859
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1397	-
HCM Lane V/C Ratio	0.01	-	-	0.033	-
HCM Control Delay (s)	9.7	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	0	33	35	0	0
Future Vol, veh/h	140	0	33	35	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	0	34	36	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	252	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	104	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1434	-	737	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1433	-	719	898
Mov Cap-2 Maneuver	-	-	-	-	719	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1433	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1098	29	71	467	20	122
Future Vol, veh/h	1098	29	71	467	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1156	31	92	606	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1187	0	1962	1172
Stage 1	-	-	-	-	1172	-
Stage 2	-	-	-	-	790	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	588	-	70	234
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	447	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	588	-	59	234
Mov Cap-2 Maneuver	-	-	-	-	59	-
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	377	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	51.6
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	59	234	-	-	588	-
HCM Lane V/C Ratio	0.408	0.628	-	-	0.157	-
HCM Control Delay (s)	103	43.2	-	-	12.3	-
HCM Lane LOS	F	E	-	-	B	-
HCM 95th %tile Q(veh)	1.5	3.8	-	-	0.6	-

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1098	29	71	0	20	122
Future Vol, veh/h	1098	29	71	0	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1156	31	92	0	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1187	0	1356	1172
Stage 1	-	-	-	-	1172	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	588	-	165	234
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	588	-	139	234
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	294	-
Stage 2	-	-	-	-	716	-

Approach	EB	WB	NB
HCM Control Delay, s	0	12.3	42.2
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	139	234	-	-	588	-
HCM Lane V/C Ratio	0.173	0.628	-	-	0.157	-
HCM Control Delay (s)	36.3	43.2	-	-	12.3	-
HCM Lane LOS	E	E	-	-	B	-
HCM 95th %tile Q(veh)	0.6	3.8	-	-	0.6	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1098	29	71	467	20	122
Future Volume (veh/h)	1098	29	71	467	20	122
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1156	31	92	606	24	147
Peak Hour Factor	0.95	0.95	0.77	0.77	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1212	33	213	1452	196	255
Arrive On Green	0.67	0.67	0.05	0.78	0.11	0.11
Sat Flow, veh/h	1813	49	1781	1870	1781	1585
Grp Volume(v), veh/h	0	1187	92	606	24	147
Grp Sat Flow(s),veh/h/ln	0	1862	1781	1870	1781	1585
Q Serve(g_s), s	0.0	51.3	1.2	9.4	1.1	7.6
Cycle Q Clear(g_c), s	0.0	51.3	1.2	9.4	1.1	7.6
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1245	213	1452	196	255
V/C Ratio(X)	0.00	0.95	0.43	0.42	0.12	0.58
Avail Cap(c_a), veh/h	0	1310	223	1529	364	404
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	13.3	22.5	3.3	35.3	34.2
Incr Delay (d2), s/veh	0.0	14.8	1.4	0.2	0.3	2.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	20.0	1.3	1.8	0.5	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	28.1	23.9	3.5	35.6	36.2
LnGrp LOS	A	C	C	A	D	D
Approach Vol, veh/h	1187			698	171	
Approach Delay, s/veh	28.1			6.1	36.1	
Approach LOS	C			A	D	

Timer - Assigned Phs		2	3	4			8
Phs Duration (G+Y+Rc), s		14.7	9.5	63.9			73.4
Change Period (Y+Rc), s		5.0	5.0	5.0			5.0
Max Green Setting (Gmax), s		18.0	5.0	62.0			72.0
Max Q Clear Time (g_c+I1), s		9.6	3.2	53.3			11.4
Green Ext Time (p_c), s		0.3	0.0	5.6			4.1

Intersection Summary			
HCM 6th Ctrl Delay		21.3	
HCM 6th LOS		C	

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	107	126	99	173	31	11
Future Vol, veh/h	107	126	99	173	31	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	116	137	108	188	34	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	253	0	589	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	404	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1312	-	471	857
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	674	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1312	-	428	857
Mov Cap-2 Maneuver	-	-	-	-	428	-
Stage 1	-	-	-	-	847	-
Stage 2	-	-	-	-	612	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	13
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	493	-	-	1312	-
HCM Lane V/C Ratio	0.093	-	-	0.082	-
HCM Control Delay (s)	13	-	-	8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	600	247	31	1264	216	50
Future Volume (vph)	600	247	31	1264	216	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.96			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3361			3535	1770	1565
Flt Permitted	1.00			0.85	0.95	1.00
Satd. Flow (perm)	3361			3022	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	845	348	35	1420	332	77
RTOR Reduction (vph)	66	0	0	0	0	34
Lane Group Flow (vph)	1127	0	0	1455	332	43
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	25.7			33.5	14.7	17.5
Effective Green, g (s)	25.7			33.5	14.7	17.5
Actuated g/C Ratio	0.44			0.58	0.25	0.30
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1484			1764	447	605
v/s Ratio Prot	0.34			c0.04	c0.19	0.00
v/s Ratio Perm				c0.44		0.02
v/c Ratio	0.76			0.82	0.74	0.07
Uniform Delay, d1	13.7			10.0	20.0	14.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	2.3			3.3	6.6	0.0
Delay (s)	15.9			13.3	26.6	14.6
Level of Service	B			B	C	B
Approach Delay (s)	15.9			13.3	24.3	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	58.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	84	93	173	0	0
Future Vol, veh/h	23	84	93	173	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	39	142	166	309	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	183	0	753	112
Stage 1	-	-	-	-	112	-
Stage 2	-	-	-	-	641	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1404	-	380	947
Stage 1	-	-	-	-	918	-
Stage 2	-	-	-	-	528	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1401	-	325	945
Mov Cap-2 Maneuver	-	-	-	-	325	-
Stage 1	-	-	-	-	916	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.8	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1401	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	23	0	1	243	107	45
Future Vol, veh/h	23	0	1	243	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	38	0	2	405	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	38	0	447	38
Stage 1	-	-	-	-	38	-
Stage 2	-	-	-	-	409	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1572	-	569	1034
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	671	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1572	-	568	1034
Mov Cap-2 Maneuver	-	-	-	-	568	-
Stage 1	-	-	-	-	984	-
Stage 2	-	-	-	-	670	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1572	-
HCM Lane V/C Ratio	0.422	-	-	0.001	-
HCM Control Delay (s)	14.4	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.1	-	-	0	-

Intersection	
Int Delay, s/veh	19.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	476	16	206	1232	22	56
Future Vol, veh/h	476	16	206	1232	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	21	242	1449	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	647	0	2570	637
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	1933	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	939	-	~ 29	477
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	124	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	939	-	~ 22	477
Mov Cap-2 Maneuver	-	-	-	-	~ 22	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	92	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	268.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	22	477	-	-	939	-
HCM Lane V/C Ratio	2.174	0.255	-	-	0.258	-
HCM Control Delay (s)	$ 912.2	15.1	-	-	10.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6.1	1	-	-	1	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	5.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	476	16	206	0	22	56
Future Vol, veh/h	476	16	206	0	22	56
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	626	21	242	0	48	122

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	647	0	1121	637
Stage 1	-	-	-	-	637	-
Stage 2	-	-	-	-	484	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	939	-	228	477
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	620	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	939	-	169	477
Mov Cap-2 Maneuver	-	-	-	-	169	-
Stage 1	-	-	-	-	527	-
Stage 2	-	-	-	-	460	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10.2	20.6
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	169	477	-	-	939	-
HCM Lane V/C Ratio	0.283	0.255	-	-	0.258	-
HCM Control Delay (s)	34.5	15.1	-	-	10.2	-
HCM Lane LOS	D	C	-	-	B	-
HCM 95th %tile Q(veh)	1.1	1	-	-	1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	476	16	206	1232	22	56
Future Volume (veh/h)	476	16	206	1232	22	56
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	626	21	242	1449	48	122
Peak Hour Factor	0.76	0.76	0.85	0.85	0.46	0.46
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1274	43	602	1519	164	236
Arrive On Green	0.71	0.71	0.06	0.81	0.09	0.09
Sat Flow, veh/h	1799	60	1781	1870	1781	1585
Grp Volume(v), veh/h	0	647	242	1449	48	122
Grp Sat Flow(s),veh/h/ln	0	1859	1781	1870	1781	1585
Q Serve(g_s), s	0.0	16.3	3.6	67.6	2.6	7.4
Cycle Q Clear(g_c), s	0.0	16.3	3.6	67.6	2.6	7.4
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1316	602	1519	164	236
V/C Ratio(X)	0.00	0.49	0.40	0.95	0.29	0.52
Avail Cap(c_a), veh/h	0	1333	706	1645	306	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	6.8	5.2	8.2	44.3	41.1
Incr Delay (d2), s/veh	0.0	0.3	0.4	12.5	1.0	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	0.8	17.5	1.2	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.1	5.6	20.6	45.3	42.8
LnGrp LOS	A	A	A	C	D	D
Approach Vol, veh/h	647			1691	170	
Approach Delay, s/veh	7.1			18.5	43.5	
Approach LOS	A			B	D	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.7	10.9	79.1		90.0
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		18.0	12.0	75.0		92.0
Max Q Clear Time (g_c+I1), s		9.4	5.6	18.3		69.6
Green Ext Time (p_c), s		0.3	0.4	4.5		15.4

Intersection Summary	
HCM 6th Ctrl Delay	17.3
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	8.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	132	96	33	22	250	87
Future Vol, veh/h	132	96	33	22	250	87
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	143	104	36	24	272	95

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	247	0	291	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	96	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1319	-	700	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	928	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1319	-	680	846
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	902	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.7	15.2
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	716	-	-	1319	-
HCM Lane V/C Ratio	0.512	-	-	0.027	-
HCM Control Delay (s)	15.2	-	-	7.8	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	2.9	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1370	203	21	762	329	31
Future Volume (vph)	1370	203	21	762	329	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3460			3535	1770	1562
Flt Permitted	1.00			0.75	0.95	1.00
Satd. Flow (perm)	3460			2649	1770	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1522	226	23	847	457	43
RTOR Reduction (vph)	13	0	0	0	0	13
Lane Group Flow (vph)	1735	0	0	870	457	30
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	46.2			54.1	24.0	26.9
Effective Green, g (s)	46.2			54.1	24.0	26.9
Actuated g/C Ratio	0.52			0.61	0.27	0.31
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1814			1655	482	565
v/s Ratio Prot	c0.50			c0.02	c0.26	0.00
v/s Ratio Perm				0.31		0.02
v/c Ratio	0.96			0.53	0.95	0.05
Uniform Delay, d1	20.0			9.7	31.4	21.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	12.3			0.3	28.0	0.0
Delay (s)	32.3			10.0	59.5	21.6
Level of Service	C			A	E	C
Approach Delay (s)	32.3			10.0	56.2	
Approach LOS	C			A	E	

Intersection Summary			
HCM 2000 Control Delay	29.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.95		
Actuated Cycle Length (s)	88.1	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.9%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	2	33	20	2	3
Future Vol, veh/h	130	2	33	20	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	186	3	46	28	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	189	0	308	188
Stage 1	-	-	-	-	188	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1397	-	688	859
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	910	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1397	-	665	859
Mov Cap-2 Maneuver	-	-	-	-	665	-
Stage 1	-	-	-	-	849	-
Stage 2	-	-	-	-	880	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.8	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1397	-
HCM Lane V/C Ratio	0.01	-	-	0.033	-
HCM Control Delay (s)	9.7	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	140	0	33	35	0	0
Future Vol, veh/h	140	0	33	35	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	0	34	36	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	148	0	252	148
Stage 1	-	-	-	-	148	-
Stage 2	-	-	-	-	104	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1434	-	737	899
Stage 1	-	-	-	-	880	-
Stage 2	-	-	-	-	920	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1433	-	719	898
Mov Cap-2 Maneuver	-	-	-	-	719	-
Stage 1	-	-	-	-	879	-
Stage 2	-	-	-	-	898	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1433	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	8.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1304	29	71	554	20	122
Future Vol, veh/h	1304	29	71	554	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1373	31	92	719	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1404	0	2292	1389
Stage 1	-	-	-	-	1389	-
Stage 2	-	-	-	-	903	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	486	-	43	175
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	396	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	486	-	35	175
Mov Cap-2 Maneuver	-	-	-	-	35	-
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	321	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	105.2
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	35	175	-	-	486	-
HCM Lane V/C Ratio	0.688	0.84	-	-	0.19	-
HCM Control Delay (s)	229.5	84.8	-	-	14.1	-
HCM Lane LOS	F	F	-	-	B	-
HCM 95th %tile Q(veh)	2.4	5.9	-	-	0.7	-

Intersection	
Int Delay, s/veh	9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1304	29	71	0	20	122
Future Vol, veh/h	1304	29	71	0	20	122
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1373	31	92	0	24	147

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1404	0	1573	1389
Stage 1	-	-	-	-	1389	-
Stage 2	-	-	-	-	184	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	486	-	121	175
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	848	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	486	-	98	175
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	231	-
Stage 2	-	-	-	-	688	-

Approach	EB	WB	NB
HCM Control Delay, s	0	14.1	80.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	98	175	-	-	486	-
HCM Lane V/C Ratio	0.246	0.84	-	-	0.19	-
HCM Control Delay (s)	53.3	84.8	-	-	14.1	-
HCM Lane LOS	F	F	-	-	B	-
HCM 95th %tile Q(veh)	0.9	5.9	-	-	0.7	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1304	29	71	554	20	122
Future Volume (veh/h)	1304	29	71	554	20	122
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1373	31	92	719	24	147
Peak Hour Factor	0.95	0.95	0.77	0.77	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1386	31	120	1549	183	216
Arrive On Green	0.76	0.76	0.03	0.83	0.10	0.10
Sat Flow, veh/h	1822	41	1781	1870	1781	1585
Grp Volume(v), veh/h	0	1404	92	719	24	147
Grp Sat Flow(s),veh/h/ln	0	1863	1781	1870	1781	1585
Q Serve(g_s), s	0.0	106.6	2.5	15.6	1.8	12.8
Cycle Q Clear(g_c), s	0.0	106.6	2.5	15.6	1.8	12.8
Prop In Lane		0.02	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1417	120	1549	183	216
V/C Ratio(X)	0.00	0.99	0.77	0.46	0.13	0.68
Avail Cap(c_a), veh/h	0	1421	134	1568	220	249
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	16.9	49.8	3.5	59.4	59.8
Incr Delay (d2), s/veh	0.0	21.6	21.1	0.2	0.3	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	43.5	4.0	4.0	0.8	5.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	38.6	70.9	3.7	59.7	65.9
LnGrp LOS	A	D	E	A	E	E
Approach Vol, veh/h	1404			811	171	
Approach Delay, s/veh	38.6			11.3	65.0	
Approach LOS	D			B	E	

Timer - Assigned Phs		2	3	4			8
Phs Duration (G+Y+Rc), s		20.0	9.9	115.7			125.5
Change Period (Y+Rc), s		5.0	5.0	5.0			5.0
Max Green Setting (Gmax), s		18.0	6.0	111.0			122.0
Max Q Clear Time (g_c+I1), s		14.8	4.5	108.6			17.6
Green Ext Time (p_c), s		0.1	0.0	2.1			5.3

Intersection Summary			
HCM 6th Ctrl Delay		31.2	
HCM 6th LOS		C	

Appendix E

Future With Project Intersection Analysis Worksheets

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	138	111	185	34	14
Future Vol, veh/h	110	138	111	185	34	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	150	121	201	37	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	270	0	638	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1293	-	441	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	395	846
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	579	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	468	-	-	1293	-
HCM Lane V/C Ratio	0.111	-	-	0.093	-
HCM Control Delay (s)	13.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	452	259	31	974	219	50
Future Volume (vph)	452	259	31	974	219	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3318			3534	1770	1565
Flt Permitted	1.00			0.88	0.95	1.00
Satd. Flow (perm)	3318			3102	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	637	365	35	1094	337	77
RTOR Reduction (vph)	126	0	0	0	0	52
Lane Group Flow (vph)	876	0	0	1129	337	25
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	20.9			28.5	14.5	17.1
Effective Green, g (s)	20.9			28.5	14.5	17.1
Actuated g/C Ratio	0.39			0.54	0.27	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1308			1689	484	652
v/s Ratio Prot	0.26			c0.03	c0.19	0.00
v/s Ratio Perm				c0.33		0.01
v/c Ratio	0.67			0.67	0.70	0.04
Uniform Delay, d1	13.2			8.8	17.3	12.3
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.3			1.0	4.3	0.0
Delay (s)	14.5			9.9	21.6	12.3
Level of Service	B			A	C	B
Approach Delay (s)	14.5			9.9	19.9	
Approach LOS	B			A	B	

Intersection Summary			
HCM 2000 Control Delay	13.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.76		
Actuated Cycle Length (s)	53.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	70.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	84	93	185	0	0
Future Vol, veh/h	26	84	93	185	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	142	166	330	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	188	0	779	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1398	-	367	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1395	-	313	939
Mov Cap-2 Maneuver	-	-	-	-	313	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	442	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1395	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	1	255	107	45
Future Vol, veh/h	26	0	1	255	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	2	425	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	472	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	551	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	550	1027
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1566	-
HCM Lane V/C Ratio	0.433	-	-	0.001	-
HCM Control Delay (s)	14.9	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0	-

Intersection	
Int Delay, s/veh	9.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	365	16	218	940	22	59
Future Vol, veh/h	365	16	218	940	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	21	256	1106	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	501	0	2109	491
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	1618	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1063	-	56	578
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	178	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1063	-	~ 43	578
Mov Cap-2 Maneuver	-	-	-	-	~ 43	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	135	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	96.4
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	43	578	-	-	1063	-
HCM Lane V/C Ratio	1.112	0.222	-	-	0.241	-
HCM Control Delay (s)	$ 320.2	13	-	-	9.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.5	0.8	-	-	0.9	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	365	16	218	0	22	59
Future Vol, veh/h	365	16	218	0	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	480	21	256	0	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	501	0	1003	491
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1063	-	268	578
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1063	-	203	578
Mov Cap-2 Maneuver	-	-	-	-	203	-
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	457	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.5	17.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	203	578	-	-	1063	-
HCM Lane V/C Ratio	0.236	0.222	-	-	0.241	-
HCM Control Delay (s)	28.1	13	-	-	9.5	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	0.8	-	-	0.9	-

HCM 6th Signalized Intersection Summary
40: Mana Rd & Mamalahoa Hwy

2026 With Project AM
06/22/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	365	16	218	940	22	59
Future Volume (veh/h)	365	16	218	940	22	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	480	21	256	1106	48	128
Peak Hour Factor	0.76	0.76	0.85	0.85	0.46	0.46
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	862	38	599	1294	190	339
Arrive On Green	0.48	0.48	0.11	0.69	0.11	0.11
Sat Flow, veh/h	1779	78	1781	1870	1781	1585
Grp Volume(v), veh/h	0	501	256	1106	48	128
Grp Sat Flow(s),veh/h/ln	0	1856	1781	1870	1781	1585
Q Serve(g_s), s	0.0	9.5	3.1	22.2	1.2	3.4
Cycle Q Clear(g_c), s	0.0	9.5	3.1	22.2	1.2	3.4
Prop In Lane		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	900	599	1294	190	339
V/C Ratio(X)	0.00	0.56	0.43	0.85	0.25	0.38
Avail Cap(c_a), veh/h	0	1307	839	1956	645	743
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	9.0	5.8	5.8	20.4	16.7
Incr Delay (d2), s/veh	0.0	0.5	0.5	2.5	0.7	0.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	2.6	0.5	2.8	0.5	1.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	9.6	6.3	8.3	21.1	17.4
LnGrp LOS	A	A	A	A	C	B
Approach Vol, veh/h	501			1362	176	
Approach Delay, s/veh	9.6			7.9	18.4	
Approach LOS	A			A	B	

Timer - Assigned Phs		2	3	4			8
Phs Duration (G+Y+Rc), s		10.3	10.3	29.1			39.4
Change Period (Y+Rc), s		5.0	5.0	5.0			5.0
Max Green Setting (Gmax), s		18.0	12.0	35.0			52.0
Max Q Clear Time (g_c+I1), s		5.4	5.1	11.5			24.2
Green Ext Time (p_c), s		0.4	0.4	2.9			10.3

Intersection Summary	
HCM 6th Ctrl Delay	9.2
HCM 6th LOS	A

HCM 6th TWSC
2: Future Homestead Road & Hiiaka St

2026 With Project PM
06/21/2022

Intersection	
Int Delay, s/veh	9.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	103	37	26	260	103
Future Vol, veh/h	148	103	37	26	260	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	161	112	40	28	283	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	325	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1290	-	669	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	648	823
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	690	-	-	1290	-
HCM Lane V/C Ratio	0.572	-	-	0.031	-
HCM Control Delay (s)	17	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.6	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1052	210	21	579	339	31
Future Volume (vph)	1052	210	21	579	339	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3438			3533	1770	1564
Flt Permitted	1.00			0.81	0.95	1.00
Satd. Flow (perm)	3438			2851	1770	1564
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1169	233	23	643	471	43
RTOR Reduction (vph)	23	0	0	0	0	18
Lane Group Flow (vph)	1379	0	0	666	471	25
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	29.6			37.4	19.6	22.4
Effective Green, g (s)	29.6			37.4	19.6	22.4
Actuated g/C Ratio	0.44			0.56	0.29	0.33
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1518			1619	517	639
v/s Ratio Prot	c0.40			c0.02	c0.27	0.00
v/s Ratio Perm				0.21		0.01
v/c Ratio	0.91			0.41	0.91	0.04
Uniform Delay, d1	17.4			8.5	22.9	15.0
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	8.2			0.2	20.3	0.0
Delay (s)	25.6			8.7	43.1	15.1
Level of Service	C			A	D	B
Approach Delay (s)	25.6			8.7	40.8	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	24.3	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	67.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	2	33	24	2	3
Future Vol, veh/h	146	2	33	24	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	209	3	46	34	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	337	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1370	-	663	834
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	640	834
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1370	-
HCM Lane V/C Ratio	0.011	-	-	0.034	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	156	0	33	39	0	0
Future Vol, veh/h	156	0	33	39	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	0	34	40	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	273	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1413	-	716	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	697	878
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1412	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	992	29	75	424	20	138
Future Vol, veh/h	992	29	75	424	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1044	31	97	551	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1075	0	1805	1060
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	745	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	649	-	87	272
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	469	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	649	-	74	272
Mov Cap-2 Maneuver	-	-	-	-	74	-
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	399	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	41.9
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	74	272	-	-	649	-
HCM Lane V/C Ratio	0.326	0.611	-	-	0.15	-
HCM Control Delay (s)	75.6	37	-	-	11.5	-
HCM Lane LOS	F	E	-	-	B	-
HCM 95th %tile Q(veh)	1.2	3.7	-	-	0.5	-

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	992	29	75	0	20	138
Future Vol, veh/h	992	29	75	0	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1044	31	97	0	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1075	0	1254	1060
Stage 1	-	-	-	-	1060	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	649	-	190	272
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	649	-	162	272
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	333	-
Stage 2	-	-	-	-	714	-

Approach	EB	WB	NB
HCM Control Delay, s	0	11.5	36.3
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	272	-	-	649	-
HCM Lane V/C Ratio	0.149	0.611	-	-	0.15	-
HCM Control Delay (s)	31.1	37	-	-	11.5	-
HCM Lane LOS	D	E	-	-	B	-
HCM 95th %tile Q(veh)	0.5	3.7	-	-	0.5	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	992	29	75	424	20	138
Future Volume (veh/h)	992	29	75	424	20	138
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1044	31	97	551	24	166
Peak Hour Factor	0.95	0.95	0.77	0.77	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1121	33	250	1391	222	288
Arrive On Green	0.62	0.62	0.06	0.74	0.12	0.12
Sat Flow, veh/h	1807	54	1781	1870	1781	1585
Grp Volume(v), veh/h	0	1075	97	551	24	166
Grp Sat Flow(s),veh/h/ln	0	1861	1781	1870	1781	1585
Q Serve(g_s), s	0.0	39.4	1.3	8.1	0.9	7.3
Cycle Q Clear(g_c), s	0.0	39.4	1.3	8.1	0.9	7.3
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1155	250	1391	222	288
V/C Ratio(X)	0.00	0.93	0.39	0.40	0.11	0.58
Avail Cap(c_a), veh/h	0	1275	265	1528	422	467
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	12.9	17.3	3.5	29.5	28.4
Incr Delay (d2), s/veh	0.0	11.6	1.0	0.2	0.2	1.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	15.0	1.0	1.5	0.4	2.7
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	24.5	18.3	3.7	29.7	30.2
LnGrp LOS	A	C	B	A	C	C
Approach Vol, veh/h	1075			648	190	
Approach Delay, s/veh	24.5			5.9	30.1	
Approach LOS	C			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		14.4	9.4	52.1		61.5
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		18.0	5.0	52.0		62.0
Max Q Clear Time (g_c+I1), s		9.3	3.3	41.4		10.1
Green Ext Time (p_c), s		0.4	0.0	5.7		3.6

Intersection Summary	
HCM 6th Ctrl Delay	18.8
HCM 6th LOS	B

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	138	111	185	34	14
Future Vol, veh/h	110	138	111	185	34	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	150	121	201	37	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	270	0	638	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1293	-	441	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	395	846
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	579	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	468	-	-	1293	-
HCM Lane V/C Ratio	0.111	-	-	0.093	-
HCM Control Delay (s)	13.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	494	259	31	1062	219	50
Future Volume (vph)	494	259	31	1062	219	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3330			3534	1770	1565
Flt Permitted	1.00			0.86	0.95	1.00
Satd. Flow (perm)	3330			3056	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	696	365	35	1193	337	77
RTOR Reduction (vph)	102	0	0	0	0	45
Lane Group Flow (vph)	959	0	0	1228	337	32
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	21.8			29.5	14.8	17.5
Effective Green, g (s)	21.8			29.5	14.8	17.5
Actuated g/C Ratio	0.40			0.54	0.27	0.32
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1336			1684	482	648
v/s Ratio Prot	0.29			c0.04	c0.19	0.00
v/s Ratio Perm				c0.36		0.02
v/c Ratio	0.72			0.73	0.70	0.05
Uniform Delay, d1	13.7			9.4	17.7	12.7
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	1.9			1.6	4.4	0.0
Delay (s)	15.5			11.0	22.2	12.7
Level of Service	B			B	C	B
Approach Delay (s)	15.5			11.0	20.4	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	14.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.80		
Actuated Cycle Length (s)	54.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.4%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	84	93	185	0	0
Future Vol, veh/h	26	84	93	185	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	142	166	330	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	188	0	779	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1398	-	367	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1395	-	313	939
Mov Cap-2 Maneuver	-	-	-	-	313	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	442	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1395	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	1	255	107	45
Future Vol, veh/h	26	0	1	255	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	2	425	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	472	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	551	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	550	1027
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1566	-
HCM Lane V/C Ratio	0.433	-	-	0.001	-
HCM Control Delay (s)	14.9	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0	-

Intersection	
Int Delay, s/veh	11.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	398	16	218	1026	22	59
Future Vol, veh/h	398	16	218	1026	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	524	21	256	1207	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	545	0	2254	535
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	1719	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1024	-	~ 46	545
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	159	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1024	-	~ 35	545
Mov Cap-2 Maneuver	-	-	-	-	~ 35	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	119	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	133.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	35	545	-	-	1024	-
HCM Lane V/C Ratio	1.366	0.235	-	-	0.25	-
HCM Control Delay (s)	$ 455	13.6	-	-	9.7	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	5.1	0.9	-	-	1	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.8

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	398	16	218	0	22	59
Future Vol, veh/h	398	16	218	0	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	524	21	256	0	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	545	0	1047	535
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1024	-	253	545
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1024	-	190	545
Mov Cap-2 Maneuver	-	-	-	-	190	-
Stage 1	-	-	-	-	587	-
Stage 2	-	-	-	-	452	-

Approach	EB	WB	NB
HCM Control Delay, s	0	9.7	18.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	190	545	-	-	1024	-
HCM Lane V/C Ratio	0.252	0.235	-	-	0.25	-
HCM Control Delay (s)	30.2	13.6	-	-	9.7	-
HCM Lane LOS	D	B	-	-	A	-
HCM 95th %tile Q(veh)	1	0.9	-	-	1	-

HCM 6th Signalized Intersection Summary
40: Mana Rd & Mamalahoa Hwy

2031 With Project AM
06/22/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	398	16	218	1026	22	59
Future Volume (veh/h)	398	16	218	1026	22	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	524	21	256	1207	48	128
Peak Hour Factor	0.76	0.76	0.85	0.85	0.46	0.46
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	995	40	603	1368	185	310
Arrive On Green	0.56	0.56	0.09	0.73	0.10	0.10
Sat Flow, veh/h	1786	72	1781	1870	1781	1585
Grp Volume(v), veh/h	0	545	256	1207	48	128
Grp Sat Flow(s),veh/h/ln	0	1857	1781	1870	1781	1585
Q Serve(g_s), s	0.0	11.2	3.2	29.7	1.5	4.3
Cycle Q Clear(g_c), s	0.0	11.2	3.2	29.7	1.5	4.3
Prop In Lane		0.04	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1035	603	1368	185	310
V/C Ratio(X)	0.00	0.53	0.42	0.88	0.26	0.41
Avail Cap(c_a), veh/h	0	1377	792	1910	528	615
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	8.4	5.6	6.2	25.0	21.4
Incr Delay (d2), s/veh	0.0	0.4	0.5	3.9	0.7	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	3.1	0.6	4.8	0.6	1.5
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	8.8	6.1	10.1	25.8	22.2
LnGrp LOS	A	A	A	B	C	C
Approach Vol, veh/h	545			1463	176	
Approach Delay, s/veh	8.8			9.4	23.2	
Approach LOS	A			A	C	

Timer - Assigned Phs	2	3	4		8
Phs Duration (G+Y+Rc), s	11.3	10.6	38.8		49.4
Change Period (Y+Rc), s	5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s	18.0	12.0	45.0		62.0
Max Q Clear Time (g_c+I1), s	6.3	5.2	13.2		31.7
Green Ext Time (p_c), s	0.4	0.4	3.4		12.7

Intersection Summary	
HCM 6th Ctrl Delay	10.4
HCM 6th LOS	B

HCM 6th TWSC
2: Future Homestead Road & Hiiaka St

2031 With Project PM
06/22/2022

Intersection	
Int Delay, s/veh	9.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	103	37	26	260	103
Future Vol, veh/h	148	103	37	26	260	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	161	112	40	28	283	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	325	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1290	-	669	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	648	823
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	690	-	-	1290	-
HCM Lane V/C Ratio	0.572	-	-	0.031	-
HCM Control Delay (s)	17	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.6	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1147	210	21	632	339	31
Future Volume (vph)	1147	210	21	632	339	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3445			3534	1770	1563
Flt Permitted	1.00			0.79	0.95	1.00
Satd. Flow (perm)	3445			2799	1770	1563
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1274	233	23	702	471	43
RTOR Reduction (vph)	18	0	0	0	0	17
Lane Group Flow (vph)	1489	0	0	725	471	26
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	36.3			44.1	22.3	25.1
Effective Green, g (s)	36.3			44.1	22.3	25.1
Actuated g/C Ratio	0.48			0.58	0.29	0.33
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1636			1642	516	615
v/s Ratio Prot	c0.43			c0.02	c0.27	0.00
v/s Ratio Perm				0.24		0.01
v/c Ratio	0.91			0.44	0.91	0.04
Uniform Delay, d1	18.5			9.2	26.1	17.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	7.8			0.2	20.5	0.0
Delay (s)	26.4			9.4	46.6	17.5
Level of Service	C			A	D	B
Approach Delay (s)	26.4			9.4	44.2	
Approach LOS	C			A	D	

Intersection Summary			
HCM 2000 Control Delay	25.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.90		
Actuated Cycle Length (s)	76.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	65.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	2	33	24	2	3
Future Vol, veh/h	146	2	33	24	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	209	3	46	34	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	337	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1370	-	663	834
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	640	834
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1370	-
HCM Lane V/C Ratio	0.011	-	-	0.034	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	156	0	33	39	0	0
Future Vol, veh/h	156	0	33	39	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	0	34	40	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	273	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1413	-	716	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	697	878
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1412	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	5.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1082	29	75	463	20	138
Future Vol, veh/h	1082	29	75	463	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1139	31	97	601	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1170	0	1950	1155
Stage 1	-	-	-	-	1155	-
Stage 2	-	-	-	-	795	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	597	-	71	240
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	445	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	597	-	59	240
Mov Cap-2 Maneuver	-	-	-	-	59	-
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	373	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	55
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	59	240	-	-	597	-
HCM Lane V/C Ratio	0.408	0.693	-	-	0.163	-
HCM Control Delay (s)	103	48.1	-	-	12.2	-
HCM Lane LOS	F	E	-	-	B	-
HCM 95th %tile Q(veh)	1.5	4.5	-	-	0.6	-

Intersection	
Int Delay, s/veh	6.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1082	29	75	0	20	138
Future Vol, veh/h	1082	29	75	0	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1139	31	97	0	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1170	0	1349	1155
Stage 1	-	-	-	-	1155	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	597	-	166	240
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	597	-	139	240
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	300	-
Stage 2	-	-	-	-	703	-

Approach	EB	WB	NB
HCM Control Delay, s	0	12.2	46.6
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	139	240	-	-	597	-
HCM Lane V/C Ratio	0.173	0.693	-	-	0.163	-
HCM Control Delay (s)	36.3	48.1	-	-	12.2	-
HCM Lane LOS	E	E	-	-	B	-
HCM 95th %tile Q(veh)	0.6	4.5	-	-	0.6	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1082	29	75	463	20	138
Future Volume (veh/h)	1082	29	75	463	20	138
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1139	31	97	601	24	166
Peak Hour Factor	0.95	0.95	0.77	0.77	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1156	31	198	1410	219	282
Arrive On Green	0.64	0.64	0.05	0.75	0.12	0.12
Sat Flow, veh/h	1812	49	1781	1870	1781	1585
Grp Volume(v), veh/h	0	1170	97	601	24	166
Grp Sat Flow(s),veh/h/ln	0	1861	1781	1870	1781	1585
Q Serve(g_s), s	0.0	49.9	1.3	9.5	1.0	7.8
Cycle Q Clear(g_c), s	0.0	49.9	1.3	9.5	1.0	7.8
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1188	198	1410	219	282
V/C Ratio(X)	0.00	0.99	0.49	0.43	0.11	0.59
Avail Cap(c_a), veh/h	0	1188	210	1424	394	437
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	14.4	21.2	3.6	31.7	30.8
Incr Delay (d2), s/veh	0.0	22.5	1.9	0.2	0.2	2.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	22.0	1.2	1.8	0.4	2.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	36.8	23.1	3.8	32.0	32.7
LnGrp LOS	A	D	C	A	C	C
Approach Vol, veh/h	1170			698	190	
Approach Delay, s/veh	36.8			6.5	32.6	
Approach LOS	D			A	C	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		15.0	9.4	57.0		66.4
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		18.0	5.0	52.0		62.0
Max Q Clear Time (g_c+I1), s		9.8	3.3	51.9		11.5
Green Ext Time (p_c), s		0.3	0.0	0.1		4.0

Intersection Summary	
HCM 6th Ctrl Delay	26.1
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	110	138	111	185	34	14
Future Vol, veh/h	110	138	111	185	34	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	120	150	121	201	37	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	270	0	638	195
Stage 1	-	-	-	-	195	-
Stage 2	-	-	-	-	443	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1293	-	441	846
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	647	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1293	-	395	846
Mov Cap-2 Maneuver	-	-	-	-	395	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	579	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3	13.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	468	-	-	1293	-
HCM Lane V/C Ratio	0.111	-	-	0.093	-
HCM Control Delay (s)	13.7	-	-	8.1	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.3	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	588	259	31	1261	219	50
Future Volume (vph)	588	259	31	1261	219	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	0.99			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.95			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3353			3535	1770	1565
Flt Permitted	1.00			0.85	0.95	1.00
Satd. Flow (perm)	3353			3018	1770	1565
Peak-hour factor, PHF	0.71	0.71	0.89	0.89	0.65	0.65
Adj. Flow (vph)	828	365	35	1417	337	77
RTOR Reduction (vph)	73	0	0	0	0	36
Lane Group Flow (vph)	1120	0	0	1452	337	41
Confl. Peds. (#/hr)		2	2			2
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	25.7			33.5	14.8	17.6
Effective Green, g (s)	25.7			33.5	14.8	17.6
Actuated g/C Ratio	0.44			0.57	0.25	0.30
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1478			1759	449	606
v/s Ratio Prot	0.33			c0.04	c0.19	0.00
v/s Ratio Perm				c0.43		0.02
v/c Ratio	0.76			0.83	0.75	0.07
Uniform Delay, d1	13.7			10.0	20.0	14.5
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	2.3			3.3	6.9	0.0
Delay (s)	16.0			13.3	27.0	14.5
Level of Service	B			B	C	B
Approach Delay (s)	16.0			13.3	24.7	
Approach LOS	B			B	C	

Intersection Summary			
HCM 2000 Control Delay	15.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.89		
Actuated Cycle Length (s)	58.3	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.7%	ICU Level of Service	D
Analysis Period (min)	15		
c Critical Lane Group			

Intersection	
Int Delay, s/veh	2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	84	93	185	0	0
Future Vol, veh/h	26	84	93	185	0	0
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	59	59	56	56	60	60
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	44	142	166	330	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	188	0	779	117
Stage 1	-	-	-	-	117	-
Stage 2	-	-	-	-	662	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1398	-	367	941
Stage 1	-	-	-	-	913	-
Stage 2	-	-	-	-	517	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1395	-	313	939
Mov Cap-2 Maneuver	-	-	-	-	313	-
Stage 1	-	-	-	-	911	-
Stage 2	-	-	-	-	442	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.7	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1395	-
HCM Lane V/C Ratio	-	-	-	0.119	-
HCM Control Delay (s)	0	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.4	-

Intersection	
Int Delay, s/veh	5.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	26	0	1	255	107	45
Future Vol, veh/h	26	0	1	255	107	45
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	60	60	60	60	55	55
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	0	2	425	195	82

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	43	0	472	43
Stage 1	-	-	-	-	43	-
Stage 2	-	-	-	-	429	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1566	-	551	1027
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	657	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1566	-	550	1027
Mov Cap-2 Maneuver	-	-	-	-	550	-
Stage 1	-	-	-	-	979	-
Stage 2	-	-	-	-	656	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	14.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	638	-	-	1566	-
HCM Lane V/C Ratio	0.433	-	-	0.001	-
HCM Control Delay (s)	14.9	-	-	7.3	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	2.2	-	-	0	-

Intersection	
Int Delay, s/veh	21.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	473	16	218	1220	22	59
Future Vol, veh/h	473	16	218	1220	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	622	21	256	1435	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	643	0	2580	633
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	1947	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	942	-	~ 28	480
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	122	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	942	-	~ 20	480
Mov Cap-2 Maneuver	-	-	-	-	~ 20	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	89	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.6	293
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	20	480	-	-	942	-
HCM Lane V/C Ratio	2.391	0.267	-	-	0.272	-
HCM Control Delay (s)	$ 1038.1	15.2	-	-	10.2	-
HCM Lane LOS	F	C	-	-	B	-
HCM 95th %tile Q(veh)	6.3	1.1	-	-	1.1	-

Notes
~: Volume exceeds capacity $: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

Intersection	
Int Delay, s/veh	5.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	473	16	218	0	22	59
Future Vol, veh/h	473	16	218	0	22	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	85	85	46	46
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	622	21	256	0	48	128

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	643	0	1145	633
Stage 1	-	-	-	-	633	-
Stage 2	-	-	-	-	512	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	942	-	221	480
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	602	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	942	-	161	480
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	529	-
Stage 2	-	-	-	-	438	-

Approach	EB	WB	NB
HCM Control Delay, s	0	10.2	21
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	161	480	-	-	942	-
HCM Lane V/C Ratio	0.297	0.267	-	-	0.272	-
HCM Control Delay (s)	36.5	15.2	-	-	10.2	-
HCM Lane LOS	E	C	-	-	B	-
HCM 95th %tile Q(veh)	1.2	1.1	-	-	1.1	-

HCM 6th Signalized Intersection Summary
40: Mana Rd & Mamalahoa Hwy

2041 With Project AM
06/22/2022

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	473	16	218	1220	22	59
Future Volume (veh/h)	473	16	218	1220	22	59
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	622	21	256	1435	48	128
Peak Hour Factor	0.76	0.76	0.85	0.85	0.46	0.46
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1232	42	595	1497	172	254
Arrive On Green	0.69	0.69	0.06	0.80	0.10	0.10
Sat Flow, veh/h	1799	61	1781	1870	1781	1585
Grp Volume(v), veh/h	0	643	256	1435	48	128
Grp Sat Flow(s),veh/h/ln	0	1859	1781	1870	1781	1585
Q Serve(g_s), s	0.0	16.2	3.8	63.9	2.4	7.2
Cycle Q Clear(g_c), s	0.0	16.2	3.8	63.9	2.4	7.2
Prop In Lane		0.03	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1274	595	1497	172	254
V/C Ratio(X)	0.00	0.50	0.43	0.96	0.28	0.50
Avail Cap(c_a), veh/h	0	1274	721	1580	330	395
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	7.4	5.5	8.3	40.7	37.2
Incr Delay (d2), s/veh	0.0	0.3	0.5	13.8	0.9	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	5.0	0.9	17.0	1.1	2.8
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	7.7	6.0	22.1	41.6	38.8
LnGrp LOS	A	A	A	C	D	D
Approach Vol, veh/h	643			1691	176	
Approach Delay, s/veh	7.7			19.6	39.5	
Approach LOS	A			B	D	

Timer - Assigned Phs		2	3	4			8
Phs Duration (G+Y+Rc), s		14.4	11.2	71.5			82.7
Change Period (Y+Rc), s		5.0	5.0	5.0			5.0
Max Green Setting (Gmax), s		18.0	13.0	64.0			82.0
Max Q Clear Time (g_c+I1), s		9.2	5.8	18.2			65.9
Green Ext Time (p_c), s		0.3	0.4	4.5			11.7

Intersection Summary		
HCM 6th Ctrl Delay		18.0
HCM 6th LOS		B

HCM 6th TWSC
2: Future Homestead Road & Hiiaka St

2041 With Project PM
06/21/2022

Intersection	
Int Delay, s/veh	9.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	103	37	26	260	103
Future Vol, veh/h	148	103	37	26	260	103
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	161	112	40	28	283	112

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	273	0	325	217
Stage 1	-	-	-	-	217	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1290	-	669	823
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1290	-	648	823
Mov Cap-2 Maneuver	-	-	-	-	648	-
Stage 1	-	-	-	-	819	-
Stage 2	-	-	-	-	887	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.6	17
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	690	-	-	1290	-
HCM Lane V/C Ratio	0.572	-	-	0.031	-
HCM Control Delay (s)	17	-	-	7.9	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	3.6	-	-	0.1	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (vph)	1363	210	21	752	339	31
Future Volume (vph)	1363	210	21	752	339	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0			5.0	5.0	5.0
Lane Util. Factor	0.95			0.95	1.00	1.00
Frpb, ped/bikes	1.00			1.00	1.00	0.99
Flpb, ped/bikes	1.00			1.00	1.00	1.00
Frt	0.98			1.00	1.00	0.85
Flt Protected	1.00			1.00	0.95	1.00
Satd. Flow (prot)	3458			3534	1770	1562
Flt Permitted	1.00			0.75	0.95	1.00
Satd. Flow (perm)	3458			2646	1770	1562
Peak-hour factor, PHF	0.90	0.90	0.90	0.90	0.72	0.72
Adj. Flow (vph)	1514	233	23	836	471	43
RTOR Reduction (vph)	13	0	0	0	0	13
Lane Group Flow (vph)	1734	0	0	859	471	30
Confl. Peds. (#/hr)		1	1			2
Confl. Bikes (#/hr)		1				
Turn Type	NA		pm+pt	NA	Prot	pm+ov
Protected Phases	4		3	8	5	3
Permitted Phases			8			5
Actuated Green, G (s)	46.2			54.1	24.1	27.0
Effective Green, g (s)	46.2			54.1	24.1	27.0
Actuated g/C Ratio	0.52			0.61	0.27	0.31
Clearance Time (s)	5.0			5.0	5.0	5.0
Vehicle Extension (s)	3.0			3.0	3.0	3.0
Lane Grp Cap (vph)	1811			1652	483	566
v/s Ratio Prot	c0.50			c0.02	c0.27	0.00
v/s Ratio Perm				0.30		0.02
v/c Ratio	0.96			0.52	0.98	0.05
Uniform Delay, d1	20.1			9.7	31.8	21.6
Progression Factor	1.00			1.00	1.00	1.00
Incremental Delay, d2	12.4			0.3	34.3	0.0
Delay (s)	32.5			10.0	66.0	21.6
Level of Service	C			A	E	C
Approach Delay (s)	32.5			10.0	62.3	
Approach LOS	C			A	E	

Intersection Summary			
HCM 2000 Control Delay	31.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.96		
Actuated Cycle Length (s)	88.2	Sum of lost time (s)	15.0
Intersection Capacity Utilization	71.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	146	2	33	24	2	3
Future Vol, veh/h	146	2	33	24	2	3
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	70	70	71	71	63	63
Heavy Vehicles, %	0	0	0	0	0	0
Mvmt Flow	209	3	46	34	3	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	212	0	337	211
Stage 1	-	-	-	-	211	-
Stage 2	-	-	-	-	126	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1370	-	663	834
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	905	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1370	-	640	834
Mov Cap-2 Maneuver	-	-	-	-	640	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	874	-

Approach	EB	WB	NB
HCM Control Delay, s	0	4.5	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	744	-	-	1370	-
HCM Lane V/C Ratio	0.011	-	-	0.034	-
HCM Control Delay (s)	9.9	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0.1	-

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	156	0	33	39	0	0
Future Vol, veh/h	156	0	33	39	0	0
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	97	97	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	164	0	34	40	0	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	165	0	273	165
Stage 1	-	-	-	-	165	-
Stage 2	-	-	-	-	108	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1413	-	716	879
Stage 1	-	-	-	-	864	-
Stage 2	-	-	-	-	916	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1412	-	697	878
Mov Cap-2 Maneuver	-	-	-	-	697	-
Stage 1	-	-	-	-	863	-
Stage 2	-	-	-	-	893	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	0
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	-	-	-	1412	-
HCM Lane V/C Ratio	-	-	-	0.024	-
HCM Control Delay (s)	0	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	-	-	-	0.1	-

Intersection	
Int Delay, s/veh	10

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1288	29	75	550	20	138
Future Vol, veh/h	1288	29	75	550	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1356	31	97	714	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1387	0	2280	1372
Stage 1	-	-	-	-	1372	-
Stage 2	-	-	-	-	908	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	494	-	44	179
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	393	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	494	-	35	179
Mov Cap-2 Maneuver	-	-	-	-	35	-
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	316	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	118.3
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	35	179	-	-	494	-
HCM Lane V/C Ratio	0.688	0.929	-	-	0.197	-
HCM Control Delay (s)	229.5	102.2	-	-	14.1	-
HCM Lane LOS	F	F	-	-	B	-
HCM 95th %tile Q(veh)	2.4	7.1	-	-	0.7	-

Intersection	
Int Delay, s/veh	11.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	1288	29	75	0	20	138
Future Vol, veh/h	1288	29	75	0	20	138
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	Stop
Storage Length	-	-	60	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	77	77	83	83
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1356	31	97	0	24	166

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	1387	0	1566	1372
Stage 1	-	-	-	-	1372	-
Stage 2	-	-	-	-	194	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	494	-	122	179
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	839	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	494	-	98	179
Mov Cap-2 Maneuver	-	-	-	-	98	-
Stage 1	-	-	-	-	236	-
Stage 2	-	-	-	-	675	-

Approach	EB	WB	NB
HCM Control Delay, s	0	14.1	96
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	98	179	-	-	494	-
HCM Lane V/C Ratio	0.246	0.929	-	-	0.197	-
HCM Control Delay (s)	53.3	102.2	-	-	14.1	-
HCM Lane LOS	F	F	-	-	B	-
HCM 95th %tile Q(veh)	0.9	7.1	-	-	0.7	-

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	1288	29	75	550	20	138
Future Volume (veh/h)	1288	29	75	550	20	138
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)		1.00	1.00		1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach	No			No	No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	1356	31	97	714	24	166
Peak Hour Factor	0.95	0.95	0.77	0.77	0.83	0.83
Percent Heavy Veh, %	2	2	2	2	2	2
Cap, veh/h	1363	31	119	1531	202	237
Arrive On Green	0.75	0.75	0.04	0.82	0.11	0.11
Sat Flow, veh/h	1821	42	1781	1870	1781	1585
Grp Volume(v), veh/h	0	1387	97	714	24	166
Grp Sat Flow(s),veh/h/ln	0	1863	1781	1870	1781	1585
Q Serve(g_s), s	0.0	107.9	3.4	16.5	1.8	14.6
Cycle Q Clear(g_c), s	0.0	107.9	3.4	16.5	1.8	14.6
Prop In Lane		0.02	1.00		1.00	1.00
Lane Grp Cap(c), veh/h	0	1394	119	1531	202	237
V/C Ratio(X)	0.00	1.00	0.81	0.47	0.12	0.70
Avail Cap(c_a), veh/h	0	1394	139	1552	218	252
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	0.0	18.2	52.2	3.9	58.6	59.3
Incr Delay (d2), s/veh	0.0	22.9	26.4	0.2	0.3	7.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	45.5	4.4	4.5	0.8	6.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	0.0	41.1	78.7	4.1	58.8	67.1
LnGrp LOS	A	D	E	A	E	E
Approach Vol, veh/h	1387			811	190	
Approach Delay, s/veh	41.1			13.1	66.1	
Approach LOS	D			B	E	

Timer - Assigned Phs		2	3	4		8
Phs Duration (G+Y+Rc), s		21.7	10.3	115.0		125.3
Change Period (Y+Rc), s		5.0	5.0	5.0		5.0
Max Green Setting (Gmax), s		18.0	7.0	110.0		122.0
Max Q Clear Time (g_c+I1), s		16.6	5.4	109.9		18.5
Green Ext Time (p_c), s		0.1	0.0	0.1		5.3

Intersection Summary	
HCM 6th Ctrl Delay	33.6
HCM 6th LOS	C

Appendix D – Draft EA Comments and Response Letters

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

November 7, 2022

Ms. Carah Kadota, Project Planner
SSFM International
501 Sumner Street, Suite 620
Honolulu, HI 96817

Dear Ms. Kadota:

Thank you for your submittal requesting comments to a Draft Environmental Assessment to relocate the Kipuka o ke Ola (KOKO) Native Hawaiian Rural Health Clinic to Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, South Kohala District, Hawaii Island, Tax Map Key (3) 6-4-038:011.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning & Ventilating
- Chapter 11-41 Lead-based Paint Activities
- Chapter 11-45 Radiation Control
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-504 Asbestos Abatement Certification Program

Information pertaining to other health and environmental issues may be addressed by other programs within our department.

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Thomas G. Lileikis
Program Manager
Indoor and Radiological Health Branch

SSFM International
Innovate | Adapt | Sustain

December 19, 2022

SSFM 2021_043.000

TO: State of Hawai'i
Department of Health
Indoor and Radiological Health Branch
P.O. Box 3378
Honolulu, Hawai'i 96801

Attention: Mr. Thomas Lileikis, Program Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Lileikis,

Thank you for your November 7, 2022 letter commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the comment provided by the State Department of Health (DOH), Indoor and Radiological Health Branch that project activities shall comply with the listed Administrative Rules of the DOH. Sections 2.4 and 3.14 of the Final EA include references to the applicable Administrative Rules of the DOH, including Chapter 11-39 Air Conditioning & Ventilating and Chapter 11-46 Community Noise Control.

A copy of your November 7, 2022 letter, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

HAWAII FIRE DEPARTMENT . COUNTY OF HAWAII .
HILO, HAWAII 96720

DATE November 14, 2022

Memorandum

TO : CARAH KADOTA, SSFM INTERNATIONAL INC.

FROM : CAPTAIN CLINTON BAYBAYAN, FIRE PREVENTION BRANCH

SUBJECT: KIPUKA O KE OLA, CLINIC RELOCATION

In regards to the above mentioned project, Fire Department Access and Water Supply shall comply with Chapter 18 of the 2018 Hawaii State Fire Code and Chapter 26 of the Hawaii County Code. For any questions please email Clinton.Baybayan@hawaiicounty.gov or call 808-323-4761.

Respectfully Submitted,



Clinton Baybayan
Fire Prevention Captain
Fire Prevention Branch
Hawaii Fire Department

SSFM International
Innovate | Adapt | Sustain

December 19, 2022 SSFM 2021_043.000

TO: County of Hawai'i
Fire Department
25 Aupuni St., Suite 2501
Hilo, Hawai'i 96720

Attention: Mr. Clinton Baybayan, Fire Captain

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Baybayan,

Thank you for your November 14, 2022 letter commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the County of Hawai'i, Fire Department's comment regarding compliance with Chapter 18 of the 2018 Hawai'i State Fire Code and Chapter 26 of the Hawai'i County Code. The project's requirement to comply with these codes has been noted in Section 3.12.1 of the Final EA.

A copy of your November 14, 2022 letter, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.



Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

DAVID Y. IGE
GOVERNOR
KE KIAʻĀINA

AUDREY HIDANO
COMPTROLLER
KA LUNA HOʻOMALU H

MEOH-LENG SILLIMAN
DEPUTY COMPTROLLER
KA HOPE LUNA HOʻOMALU HANA LAULĀ

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INTERNATIONAL, INC.
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STATE OF HAWAIʻI | KA MOKUʻĀINA O HAWAIʻI
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA ʻOIHANA LOIHELU A LAWELAWE LAULĀ
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)22.201

Carah Kadota
SSFM International
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

Dear Ms. Kadota:

Subject: Draft Environmental Assessment
Waimea Nui Regional Community Development Initiative
Kipuka o ke Ola (KOKO) Clinic Relocation
Waimea, South Kohala District, Island of Hawaii
TMK: (3) 6-4-038:011 por.

The Department of Accounting and General Services (DAGS) has an executive order for management and control of the Waimea Civic Center, identified by TMK: (3) 6-7-002:011, which is located approximately 1.5 miles from the proposed project area. The Waimea State Office Building, which is managed by DAGS, is located within this property. We do not anticipate the proposed project to have any impact to DAGS' projects or existing facilities.

If you have any questions, your staff may call David DePonte of the Planning Branch at (808) 586-0492.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

DD
c:
Mari Joy Angsioco, DAGS HDO

SSFM International
Innovate | Adapt | Sustain

December 19, 2022

SSFM 2021_043.000

TO: State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810

Attention: Ms. Christine Kinimaka, Public Works Administrator

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Ms. Kinimaka,

Thank you for your November 21, 2022 letter commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges that the State Department of Accounting and General Services (DAGS) does not anticipate the proposed project to have any impact to DAGS' projects or existing facilities.

A copy of your November 21, 2022 letter, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

From: Asman, Lindsy
To: Carah Kadota
Cc: Wolfe, Matthew J; Sether, Diane; Harrington, Carrie
Subject: USFWS Comments re: Waimea Nui Regional Community Development Initiative Clinic Relocation EA
Date: Tuesday, November 29, 2022 3:54:27 AM
Attachments: Waimea Nui Regional Community Development Initiative Kipuka o Ke Ola Clinic Relocation, Waimea, Hawaii Island.pdf
IPaC Info Letter_Species List Instructions_PIFWO_20Apr2022_Final.pdf

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Email received from EXTERNAL sender. Confirm the content is safe prior to opening attachments or links.

Aloha,

We received your request for comments on the draft EA for this project and appreciate the coordination with us to protect federally listed species and their habitat. At this time we are unable to review the draft EA due to staff shortages. However, we recommend acquiring a species list from IPaC, our online system, and incorporating all recommended avoidance and minimization measures into the proposed project description and the draft EA if this has not already been done.

I have attached instructions on how to acquire a species list and avoidance and minimization measures to avoid adverse effects to listed species. We highly recommend paying particular attention to the avoidance and minimization measures called "General project design guidelines" in the species list produced. Implementing these avoidance and minimization measures for listed species likely to be present within the action area should avoid adverse effects to listed species and the need for an incidental take permit.

Please let us know if we can be of any further assistance. And mahalo for your continued commitment to conserving our shared trust resources!

Lindsy Asman
Island Team Manager
Maui Nui & Hawai‘i Island
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122, Honolulu, HI 96850
Office Phone 808-792-9490
https://www.fws.gov/pacificislands/

SSFM International
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December 19, 2022 SSFM 2021_043.000

TO: U.S. Department of Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

Attention: Ms. Lindsy Asman, Island Team Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai‘i
Draft Environmental Assessment Comment Response Letter

Dear Ms. Asman,

Thank you for your November 29, 2022 email commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the comment provided by the U.S. Fish and Wildlife Service regarding species list being available on the online Information for Planning and Consultation (IPaC) system. The species list for the proposed project area has been included in Section 3.6.2 of the Final EA. The relevant minimization measures included in the "General Project Design Guidelines" have also been included in Section 3.6.2, and are included as Appendix B of the Final EA.

A copy of your November 29, 2022 email, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

Mitchell D. Roth
Mayor

Lee E. Lord
Managing Director

Stephen M. Pause, P.E.
Director

Malia Kekai
Deputy Director

County of Hawai'i
DEPARTMENT OF PUBLIC WORKS
Aupuni Center
101 Pauahi Street, Suite 7 · Hilo, Hawai'i 96720-4224
(808) 961-8321 · Fax (808) 961-8630
public_works@hawaiicounty.gov

December 2, 2022

SSFM International, Inc.
Attn: Carah Kadota
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817
(via email to: ckadota@ssfm.com)

SUBJECT: EARLY REQUEST CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT FOR PROPOSED WAIMEA NUI REGIONAL COMMUNITY DEVELOPMENT INITIATIVE KIPUKA O KE OLA (KOKO) CLINIC RELOCATION
SOUTH KOHALA, ISLAND OF HAWAII, HAWAII
TMK: (3) 6-4-038:011 por.

We have reviewed the request for comments for the draft Environmental Assessment dated November 3, 2022, and have the following comments:

1. All development generated runoff shall be disposed of on-site and shall not be directed toward adjacent properties. A drainage study shall be prepared by a licensed civil engineer and the recommended drainage system shall be constructed meeting the approval of the Department of Public Works.

2. All earthwork and grading activity shall conform to Chapter 10, Erosion and Sedimentary Control, of the Hawaii County Code.

3. The subject parcel is in an area designated as Flood Zone X on the Flood Insurance Rate Map (FIRM) by the Federal Emergency Management Agency (FEMA). Zone X is an area determined to be outside the 500-year floodplain.

Should there be any questions concerning this matter, please contact Bryce Harada of our Engineering Division at (808) 961-8042.

FOR:
ALAN K. THOMPSON, Division Chief
Engineering Division

BH

County of Hawai'i is an Equal Opportunity Provider and Employer.

SSFM International
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December 19, 2022

SSFM 2021_043.000

TO: County of Hawai'i
Department of Public Works
101 Pauahi Street, Suite 7
Hilo, Hawai'i 96720

Attention: Mr. Alan K. Thompson, Division Chief

SUBJECT: Waimea Nui Regional Community Development Initiative (WNR-CDI)
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Thompson,

Thank you for your December 2, 2022 letter providing comments on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the County of Hawai'i, Department of Public Works (DPW) Engineering Division's comments and provides the following responses:

1. Stormwater runoff from impervious areas will be collected by a proposed drainage system that will be designed in compliance with the County's Storm Drainage Standard and will meet the approval of the DPW. In addition, runoff will be disposed of on-site and will not be directed toward adjacent properties. A drainage study and design of a drainage system will be prepared as the project design progresses. This has been noted in Section 3.12.3 of the Final EA.

2. The requirement of all earthwork and grading activities to conform to Chapter 10, Erosion and Sedimentary Control of the Hawai'i County Code is included in Section 3.2 of the Final EA.

3. The project site's location within the FEMA Flood Zone X has been noted in Section 3.5 of the Final EA.

A copy of your December 2, 2022 letter, along with this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota,
Project Planner

501 Sumner Street | Suite 620 | Honolulu, Hawaii 96817 | Tel 808.531.1308 | Fax 855.329.7736 | www.ssfm.com
Planning | Project & Construction Management | Structural, Civil & Traffic Engineering

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

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FILE COPY

December 5, 2022

Ms. Carah Kadota
SSFM International, Inc.
501 Sumner Street
Suite 620
Honolulu, HI 96817

Dear Ms. Kadota:

Subject: Draft Environmental Assessment for the Waimea Nui Regional Community Development Initiative - Kipuka O Ke Ola Clinic Relocation
Tax Map Key (3) 6-4-038:011 (Portion)

We have reviewed the subject Draft Environmental Assessment.

Please note that any water system improvements required by a Water Development Agreement, will need to be completed and conveyed to the Water Board before granting water service to the project.

Should there be any questions, please contact Mr. Ryan Quitoriano of our Water Resources and Planning Branch at (808) 961-8070, extension 256.

Sincerely yours,

Keith K. Okamoto, P.E.
Manager-Chief Engineer

RQ:dfg

copy – State of Hawai'i, Department of Hawaiian Home Lands

. . . Water, Our Most Precious Resource . . . Ka Wai A Kāne . . .

The Department of Water Supply is an Equal Opportunity provider and employer.

SSFM International
Innovate | Adapt | Sustain

December 19, 2022 SSFM 2021_043.000

TO: County of Hawai'i
Department of Water Supply
345 Kekuanaoa Street, Suite 20
Hilo, Hawai'i 96720

Attention: Mr. Keith K. Okamoto, P.E., Manager - Chief Engineer

SUBJECT: Waimea Nui Regional Community Development Initiative (WNR-CDI)
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Okamoto,

Thank you for your December 5, 2022 letter providing comments on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the comment provided by the County of Hawai'i, Department of Water Supply regarding the requirement for water system improvements required by a Water Development Agreement to be completed and conveyed to the Water Board before granting of water service to the project. This has been noted in Section 3.12.1 of the Final EA.

A copy of your December 5, 2022 letter, along with this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

SUZANNE D. CASE
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
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

December 7, 2022

SSFM International, Inc.
Attn: Ms. Carah Kadota, Project Planner via email: ckadota@ssfm.com
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

Dear Ms. Kadota:

SUBJECT: Draft Environmental Assessment for the Proposed **Waimea Nui Regional Community Development Initiative** located at Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por. on behalf of DHHL

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.

At this time, enclosed are comments from the (a) Engineering Division, (b) Division of Forestry & Wildlife, and (c) Land Division-Hawaii District on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

SSFM International
Innovate | Adapt | Sustain

December 19, 2022 SSFM 2021_043.000

TO: State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawai'i 96809

Attention: Mr. Russell Tsuji, Land Administrator

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Tsuji,

Thank you for your December 7, 2022 letter commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges that the State Department of Land and Natural Resources' Engineering Division and Land Division – Hawai'i District have no further comments, and that the comments received by the Division of Forestry and Wildlife (DOFAW) have been included and addressed in the Final EA. A separate response letter has been provided to DOFAW.

A copy of your December 7, 2022 letter, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Nov 15, 2022

MEMORANDUM

FROM: ~~TO:~~

DLNR Agencies:
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
X Engineering Division (DLNR.ENGR@hawaii.gov)
X Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
X Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
X Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for the Proposed **Waimea Nui Regional Community Development Initiative**
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International, Inc. on behalf of DHHL

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on November 8, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-08-TEN.pdf

Please submit any comments by **December 6, 2022**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
(✓) We have no additional comments.
( ) Comments are included/attached.

Signed: *[signature]*
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Nov 17, 2022

Attachments
cc: Central Files

11/29/22

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Nov 15, 2022

MEMORANDUM

TO:

DLNR Agencies:
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
X Engineering Division (DLNR.ENGR@hawaii.gov)
X Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
X Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
X Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for the Proposed **Waimea Nui Regional Community Development Initiative**
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International, Inc. on behalf of DHHL

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on November 8, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-08-TEN.pdf

Please submit any comments by **December 6, 2022**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

(✓) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
( ) Comments are included/attached.

Signed: *[signature]*
Print Name: GORDON C. HEIT
Division: Land Division
Date: 12/2/22

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

Nov 15, 2022

MEMORANDUM

FROM: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ **Div. of Forestry & Wildlife** (rubyrosa.t.terrago@hawaii.gov)
__Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
__Office of Conservation & Coastal Lands
_X_ Land Division – Hawaii District (gordon.c.heit@hawaii.gov)

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Draft Environmental Assessment for the Proposed **Waimea Nui Regional Community Development Initiative**
LOCATION: Waimea, South Kohala District, Island of Hawaii; TMK: (3) 6-4-038:011 por.
APPLICANT: SSFM International, Inc. on behalf of DHHL

Transmitted for your review and comment is information on the above-referenced subject matter. The DEA was published on November 8, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-08-TEN.pdf

Please submit any comments by **December 6, 2022**. If no response is received by this date, we will assume your agency has no comments. Should you have any questions, please contact Darlene Nakamura directly via email at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Lainie Berry*
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Dec 6, 2022

Attachments
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

December 2, 2022

Log no. 3893

Carah Kadota, Project Planner
SSFM International, INC.
501 Sumner Street, Suite 620
Honolulu, Hawai'i 96817
Attn: ckadota@ssfm.com

Dear Ms. Carah Kadota,

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments for the Draft Environmental Assessment and Anticipated Finding of No Significant Impact for the Waimea Nui Regional Community Development Initiative (WNR-CDI) to relocate the Kipuka o ke Ola (KOKO) Native Hawaiian Rural Health Clinic to the Department of Hawaiian Home Lands (DHHL) Homestead Lands located in Waimea, on the island of Hawai'i; TMK: (3) 6-4-038:011 (por.). The proposed project consists of developing 9,600 square feet, one-story building KOKO Clinic facility on a 2-acre portion of the 191.711-acre parcel owned by DHHL.

DOFAW concurs with the mitigation measures included in the DEA intended to avoid construction and operational impacts to State-listed species including the Hawaiian Hoary bat or ʻŌpeʻapeʻa (*Lasiurus cinereus semotus*), Hawaiian Duck (*Anas wyvilliana*), Hawaiian Stilt (*Himantopus mexicanus knudseni*), Hawaiian Coot (*Fulica alai*), Hawaiian Goose or Nēnē (*Branta sandvicensis*), Hawaiian Hawk (*Buteo solitarius*), Blackburn's Sphinx Moth (*Manduca blackburni*) and seabirds. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i, please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf. We also appreciate the measures outlined to prevent the spread of invasive species and for the use of native plant species. DOFAW has no additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible.

If you have any questions, please contact Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or paul.m.radley@hawaii.gov.

Sincerely,

Lainie Berry
LAINIE BERRY
Wildlife Program Manager

SSFM International
Innovate | Adapt | Sustain

December 19, 2022 SSFM 2021_043.000

TO: State of Hawai'i
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St., Room 325
Honolulu, Hawai'i 96813

Attention: Ms. Lainie Berry, Wildlife Program Manager

SUBJECT: Waimea Nui Regional Community Development Initiative
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai'i
Draft Environmental Assessment Comment Response Letter

Dear Ms. Berry,

Thank you for your December 2, 2022 letter commenting on the Draft Environmental Assessment (Draft EA) for the subject project. The State Department of Hawaiian Home Lands acknowledges the State Department of Land and Natural Resources, Division of Forestry and Wildlife's concurrence with the listed mitigation measures included in Section 3.6 of the Draft and Final EA, and that the division has no additional comments regarding the potential for the proposed project to affect listed species in the vicinity of the project area.

A copy of your December 2, 2022 letter, as well as this response letter, will be included in the Final EA. We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

JOSH GREEN, M.D.
GOVERNOR

EDWIN H. SNIFFEN
DIRECTOR

Deputy Directors
DREANALEE K. KALILI
TAMMY L. LEE
ROBIN K. SHISHIDO
ROSS M. HIGASHI

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

DIR 1073
STP 8.3506

December 8, 2022

VIA EMAIL: ckadota@ssfm.com

Ms. Carah Kadota
Project Planner
SSFM International Inc.
501 Sumner Street, Suite 620
Honolulu, Hawaii 96817

Dear Ms. Kadota:

Subject: Draft Environmental Assessment (EA)
Waimea Nui Regional Community Development Initiative (WNR-CDI)
Kipuka o ke Ola (KOKO) Clinic Relocation
Waimea, Hawaii Island, Hawaii
Tax Map Key: (3) 6-4-038:011 por.

Thank you for the letter dated November 3, 2022, requesting the Hawaii Department of Transportation's (HDOT) review and comments for the subject project. The HDOT understands the WNR-CDI proposes to relocate the KOKO Native Hawaiian Rural Health Clinic to a 2-acre portion of Department of Hawaiian Home Lands Homestead Lands in Waimea on the island of Hawaii. The proposed project includes the development of a 9,600 square-foot, one-story building and is located approximately 0.69 miles from the northeast end of the runway at the Waimea-Kohala Airport.

HDOT has the following comments:

HDOT's Pre-Assessment Comments were inadvertently omitted from the published Draft EA, as referred in letter SSFM 2021_043.000, dated November 14, 2022 (see attached).

Airports Division (HDOT-A)

1. Section 3.12.2, page 36 (PDF Viewer 47), discusses the wastewater system and its compliance with Federal Aviation Administration (FAA) Advisory Circular (AC) 150/2500-33B, Hazardous Wildlife Attractants On Or Near Airports. Please note that although this was the most current AC when the 2015 Final EA – Finding of No Significant Impact (FONSI) was published, the AC has since been updated. The HDOT-A recommends reviewing the most updated version, FAA AC 150/5200-33C, Hazardous Wildlife Attractants On Or Near Airports.

2. Section 3.12.4, page 36 (PDF Viewer 47), discusses the use of an anaerobic biodigester which was proposed in the 2015 Final EA – FONSI. The biodigester shall be properly enclosed and maintained to prevent any possible wildlife being attracted to the area, which can potentially become a hazard to aircraft operations. Please review the aforementioned AC for guidance. If the project's anaerobic biodigester creates a wildlife attractant, the developer shall immediately mitigate the hazard upon notification by the HDOT-A and/or FAA.

Highways Division

1. HDOT provided comments on the proposed KOKO Clinic relocation Pre-Assessment Consultation letter in July 2022. Highways comments appear to have been addressed in the Draft EA, including our request for a Traffic Impact Assessment Report (TIAR).

2. HDOT provided comments on the Draft EA and TIAR for the Waimea Nui Regional Community Development Initiative (WNR-CDI) in February 2015. The WNR-CDI proposed a variety of land uses on Department of Hawaii Home Lands land. The proposed primary access to the WNR-CDI site was via Kamamalu Street, which intersects with Mamalahoa Highway (Route 19). This segment of Route 19 is under County jurisdiction. We concluded, "The project is not anticipated to have a significant impact to State highway facilities."

3. No WNR-CDI construction has occurred, including the interior access road extending to Kamamalu Street, and the land is vacant. The existing KOKO clinic is in the vicinity of the new site and is accessed via local roads intersecting with Route 19 within the same County segment of Route 19 as the new site.

4. The relocation of KOKO clinic to the WNR-CDI development area is not anticipated to have a significant impact on State highway facilities. However, we suggest the Final EA and TIAR describe the nearest boundary of State and County jurisdiction of Route 19, and qualitatively describe the potential impacts to State Route 19 traffic conditions.

If there are any questions, please contact Mr. Blayne Nikaido of the HDOT Statewide Transportation Planning Office at (808) 831-7979 or via email at blayne.h.nikaido@hawaii.gov.

Sincerely,

EDWIN H. SNIFFEN
Director of Transportation

Attachment – Letter SSFM 2021_043.000

SSFM International
Innovate | Adapt | Sustain

December 19, 2022 SSFM 2021_043.000

TO: State of Hawai‘i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai‘i 96813

Attention: Mr. Edwin H. Sniffen, Director (Ref: DIR 1073; STP 8.3506)

SUBJECT: Waimea Nui Regional Community Development Initiative (WNR-CDI)
Kīpuka o ke Ola (KOKO) Clinic Relocation
Tax Map Key: (3) 6-4-038:011 por.
Waimea, South Kohala District, Island of Hawai‘i
Draft Environmental Assessment Comment Response Letter

Dear Mr. Sniffen,

Thank you for your December 8, 2022 letter providing comments on the Draft Environmental Assessment (Draft EA) for the subject project. For your consideration, the State Department of Hawaiian Home Lands (DHHL) acknowledges the State Department of Transportation's (HDOT) comments and provides the following responses:

A copy of your comment letter was inadvertently omitted from the published Draft Environmental Assessment. We apologize for this oversight. A copy of your July 27, 2022 letter, as well as the response letter, has been included in Appendix A of the Final EA.

Airports Division (HDOT-A)

1. The updated FAA Advisory Circular 150/5200-33C Hazardous Wildlife Attractants On or Near Airports has been reviewed, and the reference in Section 3.12.2 of the Final EA has been updated.

2. Section 3.12.4 of the Final EA has been updated to note that the biodigester shall be properly enclosed and maintained to prevent possible wildlife from being attracted to the area.

Highways Division (HDOT-HWY)

1. DHHL acknowledges that HDOT-HWY's comments have been addressed in the Draft EA.

2. DHHL acknowledges that HDOT-HWY's concludes "The project is not anticipated to have a significant impact to State highway facilities."

3. Construction of the interior access road extending to Kamamalu Street has begun on the southern portion of the WNR-CDI parcel, but the road has not been completed and the land is currently vacant. DHHL confirms that the KOKO Clinic is in the vicinity of the new site and is accessed via local roads intersecting with Route 19 within the same County segment of Route 19 as the new site.

4. The TIAR and Section 3.12.5 of the Final EA have been updated to describe the nearest boundary of State and County of Hawai‘i (COH) jurisdiction of Route 19 and potential impacts to State Route 19 traffic conditions. The portion of Mamalahoa Highway within the project vicinity (between Kamamalu Street and Mana Road) fall under the COH's jurisdiction. It is anticipated that there will be no net change in traffic volume to the west of Kamamalu Street and to the east of Mana Road, resulting in no net change to the traffic volume and traffic operations of the State-owned portion of Route 19.

We appreciate your participation in the EA process. Should you have any additional comments or questions regarding the proposed project, please feel free to contact me at (808) 356-1233 or by email at ckadota@ssfm.com.

SSFM INTERNATIONAL, INC.

Carah Kadota

Carah Kadota,
Project Planner
Email: ckadota@ssfm.com

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

December 15-16, 2019

To: Chairman and Members, Hawaiian Homes Commission

Thru: Andrew H. Choy, Planning Program Manager

From: Julie-Ann Cachola, Planner

Subject: Beneficiary Consultation Report for three (3) Land Use Requests in Wai‘anae, O‘ahu

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission (HHC) accept this Beneficiary Consultation Report as the official record of beneficiary comments and concerns on three (3) unsolicited Land Use Requests submitted by:

(1) Ka‘ala Farm, Inc. for TMK 8-5-004:036 (97 acres)

(2) Wai‘anae Valley Homestead Community Association for TMK 8-6-001:022 (2.6 acres)

(3) Wai‘anae Coast Comprehensive Health Center for TMK 8-6-001:012 (1 acre); TMK 8-6-001:024 (4 acres); TMK 8-6-001:025 (4.9 acres); TMK 8-6-001:026 (5 acres); TMK 8-6-001:027 (5 acres); and TMK 8-6-001:028 (5 acres). The total acreage requested is approximately 25 acres.

DISCUSSION

Background

The Department of Hawaiian Home Lands (DHHL) received three (3) unsolicited requests for the long-term use of Hawaiian Home Lands in the Wai‘anae. Land Use Requests were received from:

(1) Ka‘ala Farm, Inc.;
(2) Wai‘anae Valley Homestead Community Association; and
(3) The Wai‘anae Coast Comprehensive Health Center.

These applicant-organizations are proposing projects on different parcels of land, that will require a long-term land

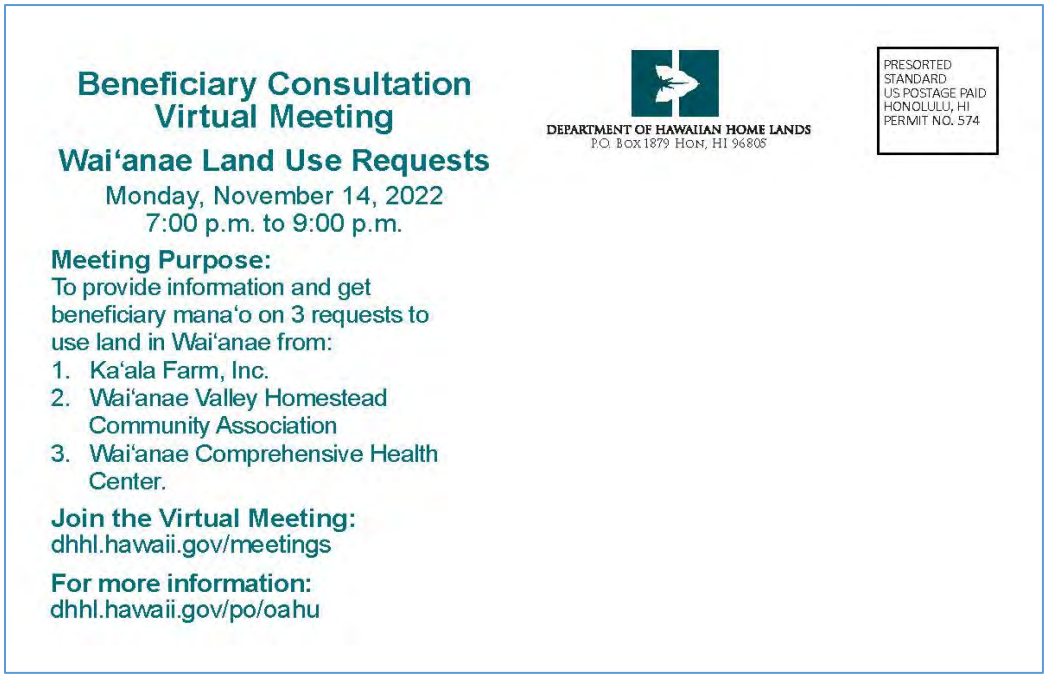
disposition. Before making any decision to commit Hawaiian Home Lands to a certain land use for a long period of time, the Department must consult with beneficiaries who live in the area.

Beneficiary Notification

On November 3, 2022, DHHL mailed invitation postcards (see Figure 1) to the 4,338 lessees and applicants who reside in the Waiʻanae moku (zip code = 96792). Beneficiaries were invited to attend a Virtual Beneficiary Consultation Meeting on Monday, November 14, 2022, from 7:00 p.m. to 9:00 p.m.

Figure 1:Invitation Postcard





Virtual Beneficiary Consultation Meeting

On November 14, 2022, DHHL conducted a virtual Beneficiary Consultation meeting from 7:00 p.m. to 9:00 p.m. on the three (3) Wai'anae Land Use Requests. Andrew Choy opened the meeting and presented introductory material, including: the purpose of the consultation meeting, housekeeping and ground rules, and the meeting agenda. Each organization was given 10-minutes to make their presentation. Following each presentation, Andrew Choy facilitated questions/answers, and encouraged beneficiaries to share their concerns and comments. When there were no further questions/comments, Andrew introduced the next organization to make their presentation.

Meeting Materials

All information related to the three (3) Land Use Requests, including maps and the video of the Beneficiary Consultation meeting are already posted or will soon be posted on DHHL's website at: https://dhhl.hawaii.gov/po/oahu/waianae-land-use-requests-november-2022/ The power-point presentation is attached as Exhibit A.

Attendance

A total of 28 people identified themselves in the chat feature or was one of the presenters. The attendees and their organizational affiliations are listed below.

- **Department of Hawaiian Home Lands (DHHL)**
  - William Aila, Chairman, Hawaiian Homes Commission
  - Patty Teruya, Commissioner, Hawaiian Homes Commission
  - Andrew Choy, Planning Program Manager
  - Julie-Ann Cachola, Planner
- **Kaʻala Farm, Inc.**
  - Eric Enos, Executive Director
  - Kelika Bennett, Staff, Hawaiian language, research
  - Gabrielle Sham, Townscape
- **Waiʻanae Valley Homestead Community Association, Inc. (WVHCA)**
  - Josiah Jury, President and homestead lessee
  - West Oʻahu Funeral Services (WOFS)
    - Lori Buchanan,
  - Waiʻanae Sustainability Cooperative (WSC)
    - Kapua Keliʻikoa-Kamai, President (also Waiʻanae Valley Homestead lessee)
    - Jan Makepa, Secretary (also Waiʻanae Valley Homestead waitlister)
  - Shake Energy Collaborative (Working with Waiʻanae Sustainability Cooperative)
    - Ali Andrews
    - Ikaika Hussey
- **Waiʻanae Coast Comprehensive Health Center (WCCHC)**
    - Joyce O'Brien, Executive Vice President
    - Dr. Kyle "Kaliko" Chang, Psychologist, Director of Ha Ola Pa -- Teaching Health Center and Hawaiian Cultural Center/Museum
    - Leinaʻala Kanana, MSW, Director of Community Health Services -- Social Services (also Waiʻanae Valley Homestead lessee)

        - Alicia Higa, Director of Health Promotion -- Food Campus, Warehouse, Cultivation, Kitchen and Food Distribution
        - Nalani Benioni, Center for Traditional Native Hawaiian Healing
        - Daniel Gomes, Board member
        - John Griego, Architect

- **Beneficiaries**
    - Waiʻanae Valley Homestead Lessees
        - Sharlette Poe
        - Ipo Akiona
        - Kehau Hanohano
        - Lokana Keliikoa-Pua
    - Waiʻanae Valley Homestead Resident
        - Victoria (Leialoha) Acedillo
    - Princess Kahanu Estates Homestead Lessee
        - Karrie Uʻi Arquette
    - Nānākuli Homestead Lessee
        - Valerie Mānoa
    - Jamie White attending on behalf of Marianne Samson, beneficiary

KAʻALA FARM PRESENTATION

Land Use Request:

Eric Enos, Executive Director, explained that for the last 25 years, 97 acres of Kaʻala Farm was operating under a License agreement with DHHL. The 25-year License ends in 2033. The cultural learning site is in the back of Waiʻanae Valley, where there are the best preserved intact cultural sites on Oʻahu. The area has not been touched by a bulldozer. He explained that the key to the cultural sites, agricultural training, and achieving the mission of Kaʻala Farms is the water and the fact that they established rights to use the water.

He explained that Kaʻala belongs to the community. Management of these Hawaiian lands need to be by native Hawaiians. It allows the Homestead Association to be part of shaping the future of Kaʻala. If we can get the lease, we have ability to leverage additional resources, which a license agreement does not allow.

Ka‘ala Farm provides access through group visits. Ka‘ala Farm welcomes visitors with traditional protocol. Ka‘ala has established a cultural foundation of Hawaiian values, history and cultural activities. They host 3,000 people per year and over half of these people are native Hawaiians; one-third are from Hawaiian homesteaders. They also have youth programs and internships over the summer break.

Ka‘ala Farm’s Mission

To reclaim and preserve the living culture of the Po’e Kahiko (people of old) in order to strengthen the kinship relationships between the `āina (land, that which nourishes) and all forms of life necessary to sustain the balance of life on these venerable lands.

Long-Range Conceptual Site Plan

Eric shared highlights of Ka‘ala Farm’s Conceptual Site Plan. The left side is all traditional land use, native forest. They would like to develop a field kitchen, where they can teach people how to cook healthy foods. It becomes a school…a place of learning, using benefits of modern technology. The youth are learning how to apply their skills on the land. They are providing cultural and environmental education programs for our keiki, families and communities.

BENEFICIARY QUESTIONS/ANSWERS, COMMENTS/CONCERNS REGARDING KA‘ALA FARM’S REQUEST

1. Ipo Akiona: beneficiary in Waianae valley. Uncle Eric, I am so in love with everything Ka‘ala Farm has done up until this time. My family goes out, into lo’i, helps clean the area. It’s just awesome. I have a concern: I was informed that there not only would be microgrids but that Ka‘ala Farm was donated solar panels. If I’m going up north/south road and looking towards the mountain, all I saw was sheetmetal across the mountain. Is that what we can expect on our beautiful mountain or will it be contained somewhere else to power that little entity you guys are trying to do

Eric Enos Response: You‘re talking about big solar farms—that’s not what we‘re going to be doing. When we use those panels, we‘re going to be doing small microgrid units, just a few panels. Just enough to power up, but not creating a solar farm. In fact, other people wanted to put some solar farms in and we were against it. Putting acres and acres of solar panels is not the kind of thing we want. We have the same concerns about converting an area to a solar farm. Microgrids have small panels, like the ones you put on your house. They will be incorporated to existing structures or in a small, little area. Does that answer your question

Ipo Akiona: It does and I appreciate you answering my question. Thank you so much

2. Sharlette Poe: For the microgrid setup, how big of a project or system are you looking at to support the microgrid field kitchen use? Are you open to different generating system technologies that would not be panel based?

   Eric Enos: Yes, Ka‘ala is bringing down water from about 600 ft elevation. By the time that hits Ka‘ala, it‘s about 400 ft elevation. You also have 125 lbs per sq inch of pressure. Working on small hydro electric units that could power it up. The unit is about the size of a backpack. Really small. The energy we‘ll be using is a combination. We’ll need batteries to store the hydro or solar energy. We are exploring small systems…that’s why it’s called micro. They’re small units that can tie in that doesn‘t affect the landscape. We were the ones that stopped the windmill project on the side of Kahe. Smaller units can be incorporated into existing structures.

3. Julie-Ann Cachola: From the chat, there is a lot of support for hydro. Ikaika is saying it would be awesome if it could be integrated into the ‘auwai system. Lori also commented that it’s awesome work that Ka‘ala is doing.

4. Valerie Mānoa: Mahalo to Eric. Several years ago, maybe as far as 2001, I had the opportunity to meet with Eric. At

that time, through Dalani, learning and teaching kapa with my 4th graders at Nānākuli Elementary School, As I worked along the coast at different schools, I had the opportunity to bring students to Kaʻala Farm. I saw them learning their culture, learning oli, learning moʻolelo. Students getting into the loʻi; looking at dry land. Last year, I had the opportunity with students from Kamaile to take them to have a look at this microgrid and the hydro water system thatʻs so far up into the mauna. All the work that went into bringing the water down to an area that could be used is such great work! Our students had the opportunity to eat in the area--I guess thatʻs the field kitchen which is still under construction.

4. I truly enjoyed the thoughtfulness of Eric and his people at Kaʻala Farm in trying to continue the culture while looking at how technology can support culture in a way where we can still respect our culture and our land. Without our land, we are nothing.

5. I want to mahalo Eric and all the people working with him. I know at times itʻs very trying to move forward with the things in our heart. If we donʻt have organizations like Kaʻala Farm, what would we have? They have the manaʻo, They have people with aloha that want to share their manaʻo too and work with all of our people of our moku. So I just want to mahalo Eric.

6. As you consider storage, pls go beyond lithium ion batteries especially due to the high heat and wildfire threats

7. Eric Enos: Mahalo. We stand on the shoulders of our kūpuna so everything we did we have to give credit to those that came before us and we have a long list of kūpuna and so many that have come from the moku of Waiʻanae.

8. I have long, long list and they were with us many years and then those that came before us. Nothing we do alone It takes a healthy village to raise a healthy child and that healthy child then grows up to raise healthy villages

9. Kapua Keliikoa-Kamai: Aloha Eric, I just wanted to thank you and everybody you have worked with and everybody that came before you for those of us today and those of us to come. Your dedication and commitment is so Waiwai. We mahalo nui you and your staff
Eric Enos: Mahalo

10. Julie-Ann Cachola: One more question came in: Is there any possibility of someone living up there?

Andrew Choy: I can answer that one. Kaʻala Farms is looking for a general lease from the Department of Hawaiian Home Lands. Because itʻs a general lease, there can be no long term 24/7 residency up there. If there were, it would be inappropriate because we have 27,000-28,000 native Hawaiians on the waiting list, waiting for a homestead. Because it is a non-homestead use of Hawaiian Home Lands, there can be no permanent occupancy or 24/7 occupancy of the site.

11. Are you open to generating different system technologies that would not be panel based?
Eric Enos (KFI): We are working on small hydro electric units that could power up; the unit is really small, about the size of a backpack. Energy we'll be using is a combination of hydro and solar energies and will require batteries to store the energy. We are exploring small units that do not affect the landscape. We were the ones that stopped the windmill project on the side of Kahe. Rather than using the whole side of the mountain, we are interested in small units that can be incorporated into existing structures.

12. Is there any possibility of someone living at Kaʻala Farm?
Andrew Choy (DHHL): Kaʻala Farms is looking for a non-homestead general lease (GL) from the Department of Hawaiian Home Lands. A GL does not allow for permanent occupancy or 24/7 residency on the site. Furthermore, residency would be inappropriate given the 27,000 - 28,000 beneficiaries currently on the waitlist for a homestead.

Suggestions

1. *Integrating Hydro Power into the ʻAuwai System* -- it would be awesome if the generation of hydro power could be integrated into the ʻauwai system.
2. *Consider Other Power Storage Options* -- please go beyond lithium ion as you consider storage options given the high heat and wildfire threats.
3. Interest in Additional Discussion with Kaʻala Farm. *Sharlette Poe* -- would like to continue discussions with Eric Enos related to this project offline. (Contact: 96792solutions@gmail.com)

WAIʻANAE VALLEY HOMESTEAD COMMUNITY ASSOCIATION, INC. PRESENTATION

[The power point presentation that corresponds to this section is attached as Exhibit A]

Land Use Request

The Waiʻanae Valley Homestead Community Association, Inc (WVHCA) is requesting a Right-of-Entry permit(ROE) for due diligence purposes. The parcel has existing warehouse structures, driveways, a 3-bedroom home, and a perimeter fence. The parcel is 2.5 acres located at 86-220 Farrington Highway, adjacent to the Waiʻanae Wastewater Treatment Plant. It is designated Industrial. The Association is contemplating two different land uses on the 2.5-acre parcel. The ROE will provide more information to determine if the two potential uses can be accommodated on the parcel. The ROE will also help to determine the best way to meet Chapter 343 HRS requirements.

The two potential uses they are exploring are:

1. A 250 Kw community solar project which would generate electricity that would be purchased by HECO. In addition, the community solar project would lower electricity bills by 10% to 15% for homesteaders who sign up as subscribers of the project. The community solar project would be subject to specifications set forth in the related HECO RFP and the community solar project would need to be selected by HECO. The community solar project would be managed and developed by the Waiʻanae Sustainabilty Cooperative, whose

mission is to produce locally-owned, affordable energy for the benefit of homesteaders and members.

2. The ROE will allow the Association to assess the feasibility of accommodating a second land use on the parcel. West O'ahu Funeral Services, is looking for industrial lands located away from residential areas in order to provide a crematorium service for the West O'ahu community as a viable alternative to final end of life arrangements.

   A Crematorium Aligns with the Wai'anae Regional Plan Priority Project to develop a columbarium. The ROE will allow the Association to look into other uses for the emissions of the crematorium that could provide additional economic development opportunities.

BENEFICIARY QUESTIONS/ANSWERS, COMMENTS/CONCERNS REGARDING WAI'ANAE VALLEY HOMESTEAD COMMUNITY ASSOCIATION'S LAND USE REQUEST.

1. Josiah Jury, President of WVHCA, explained that the Association is requesting a ROE to a DHHL industrial parcel located at 86-220 Farrington Highway – in order to do due diligence work on the parcel to determine if both projects could fit on the parcel.

2. Wai'anae Sustainability Cooperative President, Kapua Keliikoa Kamai explained that they have had numerous meetings with homestead beneficiaries. They decided to form a cooperative because they are locally owned, controlled, and supports local hiring:
   - Mission: pilot project created by and for community members that everyone can afford
   - 2021 did health survey—kula papakolea—coop can redirect savings elsewhere
   - CBRE anticipating 15% saving if bill is $200, will save $30 per month.
   - Proposed 730 panels on existing buildings providing 250 kw of energy for 70-80 households.
3. Lori Buchanan, President of West O'ahu Funeral Services:
   - 30 years of experience, runs full service mortuary on Molokai

- Families will have the option of choosing hawn business
- Daughter is lessee in Waianae will help run
- Structures are in disrepair, need
- Cremation unit.
- Benefits and services: locally owned, proximity to West O'ahu; no mortuary in West Oahu. First phase is a crematory but they may expand services include3 full service mortuary
- Community ec opp to support community: venue, food, flowers, tables/chairs, etc. caskets, urns, cemetery, puu honua. When we hala, it's such a big part of life. l'm excited because we're talking about a holistic view of life.
- This project is a fraction of what can be done. The health survey identifies more that can be done for: mental health, cdulrtu ed, financial practices, multi generation l living,
- We want to use the parcel as homebase as an information center,
- Also support small businesses

4. Julie-Ann Cachola is reading: Question from Shar
    - Aloha and Mahalo. My 'ohana has been in similar industry, marble, granite, bronze, headstones, monuments, vases and urns
    - I'm happy this aspect of our lives is being talked about and planned for our own moku
    - I have a question about the base load of power the crematory requires
    - Andrew Choy: Good question
    - Josiah Jury: Mahalo Shar, I think Aunty Lori going jump in to answer this question
    - LB: I can
    - I'm not sure what you mean by the base load of power, but the source of power we're looking at is, no need go back to slide, but we're primarily looking at propane as the base load of the power

- Other sources, but we're looking directly at propane being the source of the power
- Julie-Ann Cachola: Maybe you can get back to Shar about how much power it requires
- She's asking how much power does that machine require
- Andrew Choy: Thank you for that question
- Any other questions or comments
- I see Nolan's hand up

5. Nolan: Are you saying the solar project is for the Wai'anae Valley Homestead Community?
   - Does every house in the community get the break
6. Kapua Keliikoa-Kamai: Mahalo for the question
   - This is a small project
     - Only generating about 250 kw of energy
     - Based on our information, can support 70-80 homes
   - Those of us who don't have solar on our rooftops yet, this is something we could consider especially if you know you have repairs that would be necessary so there would be an upfront cost
   - By signing up as a subscriber, you are able to receive a discount without any changes to your home structure
7. Nolan: If you get solar, you qualify
   - No, if you already have solar, you would not qualify. This program would be for those without solar, who might not even have a rooftop because they live in an apartment building.
8. Kapua Keliikoa-Kamai: Yes, we do have a subscription application that will be available as we get closer to that
   - There will be a vetting policy
     - First off we will be serving our Wai'anae Homestead beneficiaries
     - We'll be looking to those individuals that do not have any solar
     - To those individuals that have a disproportionate amount of their income going towards their energy expenses, which is also usually large families, multiple-generational
     - Looking to help those people that are of lower to middle income

- There are a variety of criteria that we will be looking for in the applicants
- You're welcome to contact us at wvhcbre@gmail.com if you have any questions

9. Kapua: wanted to emphasize that this a pilot project.
10. Josiah Jury: Thank you Nolan
11. Josiah Jury (chat): Great question Nolan. You can also reach out to me should you need anything else. 469-2354
12. Lori Buchanan (chat): molokailori@gmail.com for any question on crematory and my number (808 658-6706
13. Andrew Choy: Mahalo Nolan for those excellent questions
    - If you want more information about how to sign up or want to communicate with the group, their email is in the chat, wvhcbre@gmail.com
    - We started discussion at 7:30
    - Have about 13 more minutes to ask questions or make comments
14. Kapua Keliikoa-Kamai: I wanted to expand, as stated in our presentation this is a pilot project
    - It is our desire to serve more of our beneficiaries, especially those beneficiaries on the waitlist
    - That would be a larger project
    - We want to show the success of this smaller project first so we ask for your support
15. Andrew Choy: Ok, thank you for that Kapua
    - Any other questions, comments
    - JAC, anything in the chat
16. Julie-Ann Cachola: Lori also gave her contact information if anybody has questions for her
    - Who wants to talk to her
17. Andrew Choy: On crematory part of the project
18. Julie-Ann Cachola: Yes
19. Andrew Choy: Ok
    - Encourage people to make comments or questions
    - Now is the most opportune time. It's early in the process to ask questions, make comments, any mana'o, any suggestions
20. Patty Teruya: I don't know if my comment is due right now or during at the time of our commission meeting, but I

think I will have different comments on the crematorium proposal

- That is very striking that this proposal is being proposed on a right of entry (ROE), by the way, with the homestead, but I do have several concerns I think I will personally question her on the crematorium proposed plan for that site
- Thank you

21. Andrew Choy: Mahalo Commissioner
22. Julie-Ann Cachola: Lokana has a question
23. Andrew Choy: Go ahead Lokana
24. Lokana Keliikoa-Pua: I had a comment to make
    - As far as the crematorium, this was in line with one of our visions that we've had for quite a while
        - For a columbarium to be here on homestead
        - A lot of people born here, and we're going to hala here
    - This crematorium aligns with another priority project we have in mind
    - Think we're looking into other uses
        - Emissions of crematorium, what that can be used for as well
    - There's other things this crematorium will be able to do to help us to gain economic development as well
    - These are things we're still exploring, but we know they exist
        - Using energy from this to something else
        - Those are things we're looking to as well
    - Our president, Josiah, had mentioned these are just pilot projects that we're going to branch out into other things
    - I just want you to know that this crematorium is aligned with our columbarium that we've had on our hearts for quite a while and I believe it's in the regional plan as well
    - Thank you
25. Julie-Ann Cachola: Comment in the chat
    - I read all of the proposals and have no objections but aloha for moving the Hawaiian culture forward
26. Andrew Choy: Mahalo for your comment

- Again, just want to encourage folks to ask questions or share their mana‘o on these proposals
- Ok, if there are no other questions or comments on Wai‘anae Valley Homestead Association’s land use request at this time, we’re going to move on to our last presenter of the evening

Follow-Ups/Contacts

27. Lori Buchanan, who can be reached by email at molokailori@gmail.com and by phone at (808) 658-6706, was asked to follow up with Sharlette Poe (96792solutions@gmail.com) regarding the amount of power required by the machine for the crematory.
28. Commissioner Patty Teruya would like to address her concerns related to the crematorium proposal being made on a ROE with Lori Buchanan (molokailori@gmail.com or (808) 658-6706)Contacts
29. Email Kapua Keliikoa-Kamai at wvhcbre@gmail.com or call Josiah Jury at (808) 469-2354 with any questions related to the Wai‘anae Sustainability Cooperative solar project.
30. Email Lori Buchanan at molokailori@gmail.com or call (808) 658-6706) with any questions related to the West O‘ahu Funeral Service project.

WAI‘ANAE COAST COMPREHENSIVE HEALTH CENTER’S PRESENTATION
(WCCHC)—Joyce OBrien

1. Requesting long term lease
   - To continue expansion of teaching health center and training to create jobs
   - To grow our native Hawaiian activities to perpetuate our culture
   - To expand our social services support system
   - To develop a food campus to address food security
2. Master planning for awhile
   - Working with YMCA to do pool and more trails
   - DHHL far right
   - WWTP to filter water for plants
   - Workforce housing

3. Founders envisioned the need to make care of ourselves—opened in 1972. 50 years late, we now have 12 clinics, 34,000 patients, 63% of our patients live in Waianae, 49% are native Hawwaiians,600 employees, 58% on Wai‘anae Coast, 45% native Hawaiian, 60% of the Board of Directors are native Hawaiian.
4. Kaliko: Looking at next generation
5. Cultural center to share cultural practices and healing with community, staff, patients, providers
6. Training center—1st yr Arizona, 3rd, 4th yr. come here, doctors, nurse practitioners, psychology
7. Growing our own healers—have some background.
8. Ha Ola Pa-place where people will share their Ha., 5,000 encounters over the year.

Leinaala Kanana, Dir of community health services.—goal to increase access to care—all services, case management, homeless outreach, trans, rent, mortgage, utility assistance, care coordination, case manageme4nt,

- Will include a social services building
- Improving underlying social and ec conditions…moving beyond midstream
- Improvement in health can only be changed if we look upstream and change the conditions making us sick.

Alicia Higa—food campus, food security

- 2008 farmer’s market, snap 63% native Hawaiian
- Food subscriptions for those houses done
- Community wellness events.
- Large scale food distribution 2,200 hours
- Emergency feeding plan
- Future: build food systems campus: edible landscaping, green house, covered lanai for ag workshops, food warehouse, healthy food pantry, certified classroom incubator kitchen

BENEFICIARY QUESTIONS/ANSWERS, COMMENTS/CONCERNS REGARDING WAI‘ANAE COAST COMPREHENSIVE HEALTH CENTER’S PRESENTATION

1. Andrew Choy: I see a hand up from Johnnie

2. Johnnie-Mae L. Perry: Thank you for your presentation
    - Along the coast, the beach area, there are a lot of homeless
        - More mental health illness
    - The type of services coming to Wai‘anae is very alarming
    - I can’t see Wai‘anae being used another 50 yrs with mental illness and homeless
    - I often say Wai‘anae is not the capital of homeless
    - You seem to not be 100% sustainable on your own because you go through the legislature every year for funding
        - The senator is a big supporter of Wai‘anae Comp
    - At some point, you guys need to fend for yourself and outreach
        - Go to the beach and outreach to the families
    - If you don’t have homeless or mental illness or all this type of services, you guys would be out of business so I don’t really feel you guys are there to really turn their lives around 100%
    - It seems this coast is getting worse and worse, younger and younger
    - Where’s the education about alcohol
    - Where’s the education about vaping, about tobacco use
    - Where’s the education about nicotine
    - I don’t see that you guys are doing a good job because I see them at the beaches just getting worse and younger
    - Thank you and I don’t want to see another 50 yrs of mental illness and homeless in this community
    - Many of you who get top dollars probably don’t live in this community
    - I’m born and raised here
    - Born and raised and that’s my concern
3. Joyce O’Brien: Mahalo Johnnie-Mae
    - We don’t like the growth of the homeless either
    - We’ve been providing the homeless services for a long time
    - Leina just talked about that

- Kaliko is a psychologist so he deals with the substance abuse and the mental health
- We do go for funding, but we also get reimbursement for the services that we provide
- We're like any other nonprofit in going to seek services either from the legislature, private foundations
- For our buildings, it's always going up for grants to support
- It's just the nature of the health center and how we've grown all these years
- We're proud of our services
- We wish we could address fully and get a handle on the health needs of the community but I think we need to continue
- We've done great and we'll continue to work at addressing all the problems
- If Leina or Alicia, Kaliko have anything to add

4. Julie-Ann Cachola: We have other questions that have come in
    - Lori Buchanan wanted to say that the EBT/SNAP doubling and WIC is an excellent program and great work, Waiʻanae Comp
    - Sharlette wanted to say aloha, mahalo
        - She has 2 questions
            - Will the Native Hawaiian Health Center completely open up again
            - When will the food integrated approach to health and healing for our people that you all have touched upon that is an appropriate blending of healing with more laʻau lapaʻau, and opportunities to eliminate prescription and western medicine
                - I know it cannot be all the time as some cases are more severe, but in other cases making more successes in weaning our people off western medicines could be possible
    - Mahalo

5. Nalani Benioni: Thank you so much for that question
    - I’m going to focus on the Center for Traditional Native Hawaiian Healing
    - Yes we are closed
        - We have been a victim of the pandemic
    - We have put into place protocols so we can reopen
        - Specifically for the two areas that are in demand
            - Ho'oponopono
            - La‘au lapa‘au
    - Yes, we know those are the requests for services
    - We are opening
        - Can’t give you a date at this time
    - Our healing center is a little different than other native Hawaiian healing centers
        - We are connected to one of the largest nonprofit community health centers
            - Definitely in the state and maybe the whole nation
        - We have to follow all kinds of different protocols and legal issues
    - That’s where we are right now
        - Trying to reopen
    - We have not closed up our services
        - We still do provide services on a case by case basis
        - We understand that
    - I cringe when the thinking is to get away from western medicine
        - Mainly because traditional native Hawaiian healing, please understand that we don’t talk about cure
        - We talk about what native la‘au can we use to help our people feel better, get better
        - That’s basically what we do
    - We have learned with Covid there’s so many people that came to us for a cure for covid
        - They had heard that there’s this one traditional healing center on this island or that island that found a cure for Covid
        - That’s what I do at the center

        - I do all the research
        - I vet anything that comes through when people say this is good for …
        - I'm the one who does the research on the laʻau and I wish we had a cure for Covid
        - We don't have a cure but we have vaccines
        - I'm a walking example of being a kupuna that has been able to dodge the bullet on Covid many, many times
- We're here to serve
- The center will open
    - When, we don't know yet
- Every month, I tell myself it's going to be this month but we just have different hurdles to jump through
- There was a comment about the funding that comes to the Waiʻanae Comp
    - That funding also comes to the center
    - There's a lot of work
    - Many, many people that go out and write the grant so the WCCHC will continue to function
    - We are a nonprofit
    - Folks, I don't know about you and I don't know how many of you go to the Waiʻanae Comp but I have never been to a health center
        - If you cannot afford to pay, they will see you anyway
        - That's never the issue
        - If you can't afford to pay, you're not going to get services so thanks to our BOD and one of our board representatives is here
        - That has been the goal of the health center from it's creation, 50 yrs ago
        - It still stands
        - I've never worked… I am old, I'm kupuna
        - I've never worked in an organization anywhere that is so dedicated to this community and all the things we're talking about, all the proposals for the improvements are to benefit this community
        - I function and work with kūpuna
            - That is my number one

    - Everyone is talking about we have homeless on the beach
    - We have kūpuna folks that without the services that they're getting from WCCHC not only medical services
    - As Alicia and Leina have talked about, the social services that they get
    - Without that, our kūpuna would be in very dire straits and I can testify to that because I work on a daily basis with kūpuna so all the efforts of the WCCHC, let me tell you there's not one dollar wasted there
    - It's probably one of the most streamlined, economical nonprofits I've ever worked in so I don't know if I answered your question or what the question was or if I'm rambling but I'm very passionate about the work we do and as a member of the kūpuna council in the center
    - If you have questions, please don't hesitate to talk to me directly or email me and I'll be willing to work with all of you
  - Thank you
6. Alicia Higa: I just wanted quickly to address Johnnie-May's comments regarding tobacco cessation
  - I wanted to share another hat I wear at the health center is overseeing the tobacco cessation program, which is a free program whether you're a patient of our health center or not
  - It is a grant funded program that offers free nicotine replacements and counseling
    - That is available to anyone
    - If you'd like more information on that, I'm happy to share it
  - Regarding the grants and funding we do bring in
    - We're very intentional with our spending
    - I know for the food access portion, whatever monies I get in, we make sure it touches as many

people as it can in the community, not just as far as distributing and getting food to people in need, but also supporting the local farmers in our Waiʻanae community and the local culinary programs and the local businesses who we purchase the food from for these distributions
        - From January to now, every dollar that we've brought in, close to $1.1M has gone straight into our local Waiʻanae food system
    - Leinaala Kanana: I also wanted to address Johnnie-Mae's concerns regarding our homeless and our mental health
        - I am also a resident of Waiʻanae and I see it as well
        - I do want to mention it is a lot of work to work with our mental health population and those experiencing homelessness
        - It's not always a cookie cutter, one stop shop kind of response
            - Sometimes it takes time and it takes a team
            - It takes a whole support effort to move our people from either the beach, the park, their home or wherever they're living into a sustainable home or into a shelter
        - Sometimes we're faced with our community members who don't want to make that move
        - We, as service providers, really need to meet our community where they're at
        - Whether we like it or not, we need to listen to the autonomy of our community, the autonomy of our people and listen to them and, like I said, meet them where they are at so we're not a one stop shop
        - I do believe in the network and collaboration of other service providers as well, along the coast who we work really closely with
        - Also, Kaliko and our behavioral department as well
7. Julie-Ann Cachola: Kapua says she appreciates the Comprehensive Health Center and all the training services

you provide to our community, but what do you provide for the Hawaiian Homes Commission's beneficiaries specifically

- Or what do you provide that is above and beyond the community benefits, especially for our low to moderate income beneficiaries, wherever they are
  - In homes
  - Or yards in homes
  - In vehicles, parks, beaches, etc
- Is the Comprehensive able to provide free medical to those beneficiaries that don't have income
- I'm a supporter of the Comprehensive but believe our beneficiaries deserve more that our beloved Wai'anae community
- So what are you doing specifically for low income Hawaiian Home Lands beneficiaries

8. Leinaala Kanana: In terms of medical insurance or free medical, the state does have the Med-QUEST program where we are able to assist beneficiaries, community, patients to apply for that program for medical insurance
   - Is that what you were talking about Aunty Kapua
9. Kapua Keliikoa-Kamai: I love you guys, what you guys do
   - To me, when referring to our lands, how is the beneficiary being treated differently from the general community
   - Is there rates
     - I heard Nalani say you don't provide free services
     - If we can get the state or someone else to cough up the bill, excellent
     - But we have some beneficiaries that meet the Hawaiian Homes Act criteria
     - If they need that help, are you folks able to provide them the services whether it be mental health or some training on the…
10. Nalani Benioni: Yes, Aunty Kapua, I'll give you one little example
    - I work with the kūpuna in our community
    - We just finished a series of computer training for kūpuna that we developed just for kūpuna

- Our kūpuna came from Nānākuli Homestead and from Wai‘anae Kai Homestead and from Princess Kahanu Homestead
  - That‘s where our participants in this program came from
- It was free to them
  - We bussed them in
  - We fed them
- Alicia and Leina and Joyce O‘Brien and Kaliko was a concerted efforts of several programs at the Wai‘anae Comp
- We trained over 75 kūpuna
  - Most had never touched a computer
  - Or had and were frightened of it
- Our goal was at the end of the 3 day training, 3 hour training, 3 separate sessions
  - Most came everyday because they enjoyed it
  - Goal was they‘d be able to get on a Zoom call like this
- If you can imagine, when they first walked in most of our kūpuna were afraid
  - They looked at the…
  - And we provided laptop computers for them that they were able to keep when it was pau
  - And no cost to them
  - Also got them discounted internet for their homes
- When they finished the training, the last thing was ok we‘re going to do a Zoom call
  - We had 30 something kūpuna in this room
  - Leina was there
  - All on Zoom
  - Noisy, everyone yelling and screaming and calling each other on Zoom because they were so excited they finally learned what Zoom was
    - They’d heard about it
- An offshoot of this
  - We now have Kūpuna U, U meaning university
  - All of the kūpuna that came through our program now have access on their laptops to this resource of training developed for kūpuna

        - Things like how do you keep your security updated
        - How do you update your computer
        - How do you get telehealth, etc
    - That's just one of the little programs we've done for beneficiaries
    - There's great demand and we're ready to start another group of kūpuna because so many want to come to it
    - The first group, we did look at beneficiaries so mainly Nānākuli, Wai'anae Kai, and Princess Kahanu
    - I don't think we had any from Wai'anae Valley but as well look at participants for this next group, we're going to reach out to others as well
    - We will focus on beneficiaries, yes, absolutely
11. Andrew Choy: Kapua, did that answer your question
12. Kapua Keliikoa-Kamai: Yes it did
    - Nalani, thank you so much
    - I knew you folks were doing things out there
        - Just can't catch it all
    - Especially appreciative when Alicia brought her folks in during Covid
        - 5 days a week
        - We were blessed
        - It started out with 1 day a week
        - We got 5 days a week for over a year
    - That's the type of services and targeting services to our beneficiaries that I refer to
    - I totally appreciate what you're doing for our kūpuna, doing for our community, doing for us
    - Mahalo nui
13. Andrew Choy: I see Johnnie-May's hand up
    - We're going to her next
    - Then we'll go to the chat
    - Julie, go back to chat after Julie
    - Then, Valerie, I see your hand up so we'll get to you in that order
14. Johnnie-Mae L. Perry: You mentioned about tobacco
    - Since you have on Saturday at Wai'anae Mall, present some of those educational information

- When you say native Hawaiians so to be on the DHHL list, you have to be 50% Hawaiian or more
  - Not because they look like Hawaiians they qualify and they on the waitlist
  - Kapua brings up good points, even if we all look like Hawaiians, if we're not on the list then you cannot claim us as Hawaiians if we're not beneficiaries and we're not on the list
  - You guys gotta do better
  - To take a survey of your services
  - This year you started high
  - Your numbers should be going down to improve this community
  - You guys not improving the community
  - Getting worse because you guys want job protection
- Thanks

15. Andrew Choy: Mahalo for your comments
    - Julie, go to the chat
16. Julie-Ann Cachola: Shar is saying Kaliko as the one in the Ha Ola Pa space, can we kukakuka because I do have a number of questions that are in your wheel well
    - According to your schedule
    - My email is 96792solutions@gmail.com
    - Another question
      - Saw on services, the ACP and Spectrum 100 program/plan, is this a specific company promotion for cable/internet company Spectrum
17. Leinaala Kanana: No it's not a promotion for a specific company
    - Depends on what the caller or community member is calling in with and what company they're with then we help them apply through the ACP program
18. Julie-Ann Cachola: Kapua is saying after you folks explained, that's exactly what I'm talking about, Nalani
    - Awesome
    - Shar got it
    - That's all in the chat
19. Andrew Choy: Mahalo
    - Valerie, you can unmute yourself

20. Valerie Manoa: Mahalo everybody again

- I'm mainly here because I've had the opportunity to experience a lot of the good
- It's good we're hearing all aspects of what everybody in the community hears or feels about the WCCHC
- I'm a school teacher so many of my experiences with the WCCHC comes from being a teacher on the coast
- I've brought many students up to the WCCHC for field trips where the students…
  - Educating our children is important
  - Educating them about health
- Maybe they would get onto a path of good health and nutrition
  - Making those positive choices so that when they become adults they will be in a better place for themselves and their family and maybe be the ones to take care and help the community
- We've had many field trips up at the WCCHC where students can learn about the center and can be part of what the center has become
- I think the center also had the Mini Doc program
  - I'm trying to remember
  - Which brought in future doctors into the school
  - I know it may seem like a one-sided thing but it brought in health and nutrition lessons for the students that hopefully they would take back to their families to learn more about and make healthier choices
- I've also seen the food pantries at the schools so that families can pick up food to take home to their families
- WCCHC offering Covid testing at the schools too
- As a community member, I've had the opportunity to help with food distribution with Alicia this past December and being a recipient of Covid home testing when they did their distribution in January
- I just want to say when I drive from Nānākuli towards the WCCHC, it's a beautiful, spectacular view where I think their buildings fade into the surroundings so if I can say, not an eyesore but a pleasure to look at so

when I drive from Nānākuli towards WCCHC and I can see their buildings on that small, little hill, I actually feel happy that as a small Hawaiian community we've come together to provide services for our families to teach them preventative medicines to be healthy and also provide a beautiful place for our people to be in to become not only healthy in their medical sense but also healthy in their well being

- So I just want to mahalo the WCCHC people, all that work there, and especially the people on this call that I've had the opportunity to work with, thank you

21. Joyce O'Brien: Mahalo
22. Andrew Choy: Mahalo for that comment, Valerie
    - Commissioner Teruya, you had your hand up
23. Patty Teruya: Yes, thank you so much
    - I know we're going to be closing, but thank you Val for saying that
    - I wanted to add that I am a resident and I do use the Waiʻanae Comp, my family and I for many, many years
    - To say they're not doing their job I think is not a good statement
        - They've provided a lot of opportunities in our community
            - I've worked with Alicia Higa on food bank, food sustainability
            - Through the whole 2 year Covid shutdown, working with Waiʻanae Comp
                - To provide these services as a community leader working with the Comprehensive
                - That network was just tremendous for our community
            - I also use the tobacco program
                - I quit smoking for such a long time, many, many years
            - Kaliko, the behavioral department in that area
                - I had to use the behavioral program there when I lost my son

        - I’m just like a normal resident and I use the Comp
        - They have a good behavioral program that helped me get through the grief
        - The services me and my family obtain from the Waiʻanae Comp was real personal because we live there, we know the people who work there
            - So there’s a very strong connection
            - You feel included and wanted and they know your name and call you Aunty when they see you
        - Very rewarding to see their vision to provide these and expand their community services and programs to the Waiʻanae moku
        - I think it’s a great opportunity to see this in our coast
        - You don’t see this in other areas that I’ve seen in Oʻahu
        - I thank them for their Mākeke Market that they provide
            - Vegetables we shop
            - I also use that services a lot
            - Discount and coupons
            - Gathering place where they bring community together with no division
            - Very important for all of us when we live on the Waiʻanae Coast that we break this division, use their services, and they provide this services from Nānākuli to Makaha
- I just wanted to make that statement and share my manaʻo as a resident and a beneficiary
    - Grateful they’re there
    - Services there
    - They have improved

        - I saw many years going to the Comp, they escalated to good service and they provide these services
        - The young generation that work there
            - Girls are awesome
            - They call me Aunty
            - I'm glad they don't call me kupuna, not yet
            - They make me feel warm when you go there
                - Aunty how are you
                - How are you feeling
        - I feel welcomed
        - That's a good sign
    - Truly blessed to see you're expanding services through the Wai'anae Coast
    - They went out of the box
        - Went to the homeless areas
        - Worked with several of them, service providers, when we worked together in community on the homeless situation
        - They're there for the community
        - I wanted to make mention and thank them and staff for employment they provide to our generations to come
    - Thank you so much for this opportunity to be here, to share, and to be together and work together for Wai'anae Coast as one
        - Whether beneficiary or not, we're all just one community, 96792
    - Thank you for the staff and everyone for being here tonight
    - Mahalo nui

24. Julie-Ann Cachola: Lori says she agrees that the Wai'anae Comp is a very aesthetically, beautiful facility
    - Ka'ala Farms is saying we work very closely with WCCHC and fully support their efforts in the Wai'anae community
    - Ipo Akiona would like to make a statement
25. Andrew Choy: We'll take Ipo's statement, then we'll go to Jan, then Kapua
26. Ipo Akiona: Thank you everyone for sharing

- I too am a hard worker for the Waiʻanae Coast
  - I work for the Department of Human Services
  - SNAP & EBT services for 35+ years
- I see the endeavors of WCCHC, working with them hand in hand everyday
  - With Leinaala, Alicia, and some other workers they really work their okole, I have to say that
- Kaʻala Farms, top notch
  - Always flourishing in the culture and perpetuating the Hawaiian culture in any way they can
  - Awesome
- I just wanted to share with all of us that why I came on this meeting was I heard about the solar farms here, solar farm there
  - My heart ached when I was going up north/south road and I didn't want to see that in Waiʻanae
- I honor all your endeavors and when we're all moving forward as a community to keep the community in tact, mālama the land, and I commend every institute asking for the use of land and why and best of luck to everyone
- Aloha

27. Andrew Choy: Mālama Ipo
    - Jan
28. Jan Makapa: Aloha, I just wanted to make a comment about the WCCHC
    - I just wanted to say Mahalo because we see you
    - We see you folks out there doing the food distributions
    - We see you folks out there with the health services
    - We see you folks out there with the outreach and social programs
    - We see you folks out there in our homeless community.
      - Pounding the pavement
      - Being out there talking to them
      - Getting them the help they need
      - Getting information that will help them along
    - We see that and appreciate that

- It is a concern to see more homeless tents popping up along our coast
  - We don’t have an answer
  - We don’t truly have successful programs
  - There are programs available for our community
  - It may not be fixing the problem, but it is a dedication to helping when and where you folks can so we do see that
- We do mahalo you for all of that and for how you folks mālama everyone in our community being that we are one moku
- We know we are the moku that has the highest concentration of Hawaiians regardless of whether or not you are a 50%, 100%, or 25%, we are all Hawaiians and we have the highest percentage just in our moku alone
  - I hate to think of where our community would be without you folks
  - And the services you provide
  - You have stepped up and out when we need you folks the most
- Looking at the plans you’ve offered, I can get excited for you and the future plans that you have for our community so mahalo, mahalo, mahalo

29. Julie-Ann Cachola: Kahua agrees with Commissioner Teruya that the Comprehensive is an extension of our ‘ohana as they care for us and all those in need so mahalo to the Comprehensive board and staff
    - Jamie White is saying situations arise everyday so we may have new houseless and also transients
30. Andrew Choy: We’re coming up on the 9:00 hour so appreciate you sticking with us through these last two hours

RECOMMENDED ACTION

DHHL staff respectfully requests approval as recommended.

HAWAIIAN HOME LANDS

HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Beneficiary Consultation

Long-term Requests to Utilize DHHL Land In Waiʻanae

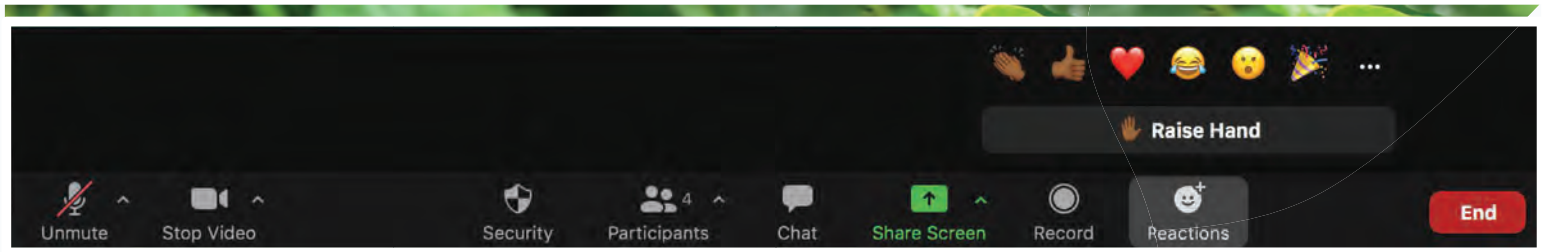
November 14, 2022

Meeting will start at 7:00pm

Meeting purpose

- To collect DHHL beneficiary feedback on three separate proposed long-term requests to utilize DHHL land by the following organizations:

1. Kaʻala Farm, Inc.
2. Waiʻanae Valley Homestead Community Association
3. Waiʻanae Coast Comprehensive Health Center





House Keeping

- **Please keep your microphone on mute when you are not talking**
- **Type your questions in the chat or raise your virtual hand**
- **Please keep in mind this meeting is being recorded**
- **In the CHAT please sign-in (First & Last Name, where you live, applicant, lessee, or other)**

Meeting Kuleana

- Be respectful of the person talking – please do not interrupt the person that is talking;
- Wait for the facilitator to call on you or type your question into the chat box;
- When addressing other participants (verbally or in the chat box), be respectful, show aloha, treat others how you would like to be treated;
- Agree to disagree — accept that others may have different perspectives and opinions;
- Have an open mind — take home new ideas or new information.

DHHL Beneficiary Consultation Policy

- Beneficiary Consultation is required for four types of proposals that require Hawaiian Homes Commission approval
  - Statewide Policy Issues
  - Amendments to Land Use Designations
  - Development of DHHL Plans
  - Long-term use of DHHL land for a non-homestead use

Tonight's Agenda

- Welcome & Introductions
- **Presentation by Kaʻala Farm, Inc. (10 minutes)**
- Beneficiary Manaʻo on Kaʻala Farm Request (20 minutes)
- **Presentation by Waiʻanae Valley Homestead Community Association (10 minutes)**
- Beneficiary Manaʻo on Waiʻanae Valley Homestead Community Association Request (20 minutes)
- **Presentation by Waiʻanae Coast Comprehensive Health Center (10 minutes)**
- Beneficiary Manaʻo on Waiʻanae Coast Comprehensive Health Center Request (20 minutes)
- Wrap-Up & Next-Steps

Meeting purpose

- To collect DHHL beneficiary feedback on <u>three separate</u> proposed long-term requests to utilize DHHL land by the following organizations:

1. Kaʻala Farm, Inc.
2. Waiʻanae Valley Homestead Community Association
3. Waiʻanae Coast Comprehensive Health Center

Land Use Request Locations



Request for a Long-Term Lease for the Cultural Learning Center at Kaʻala Farm



Beneficiary Consultation Meeting

November 14, 2022

DHHL Purpose

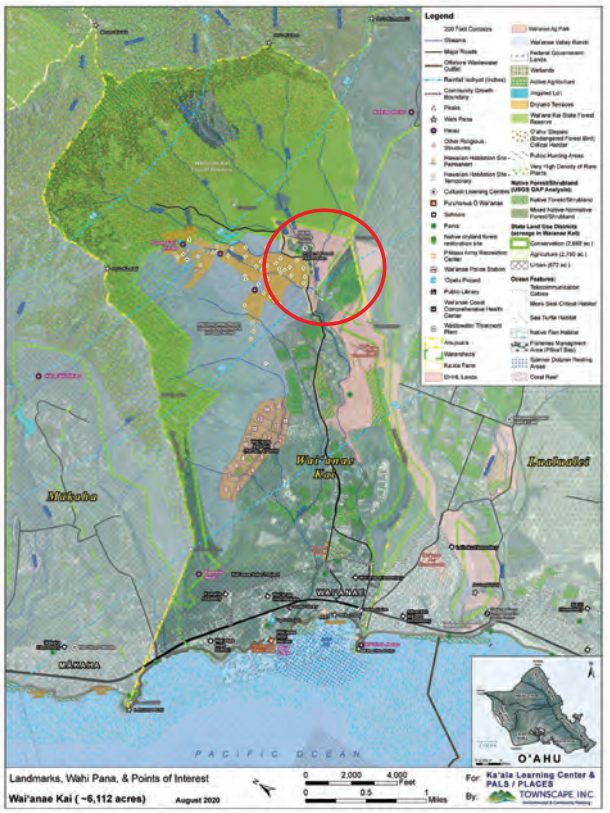
The Department of Hawaiian Home Lands is governed by the Hawaiian Homes Commission Act of 1920, enacted by the U.S. Congress **to protect and improve the lives of native Hawaiians.**

Kaʻala Farm's Mission

To reclaim and preserve the living culture of the Poʻe Kahiko (people of old) in order to strengthen the kinship relationships between the ʻāina (land, that which nourishes) and all forms of life necessary to sustain the balance of life on these venerable lands.



Cultural landscape of Ka‘ala Farm, and the Upper Wai‘anae Valley, serves as a modern-day pu‘uhonua







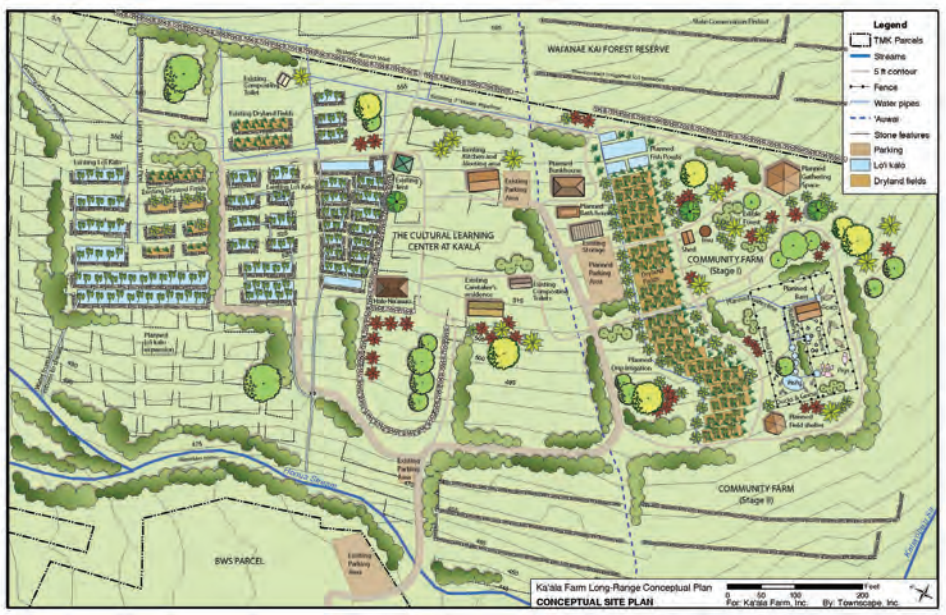


Over 40 years of impact…

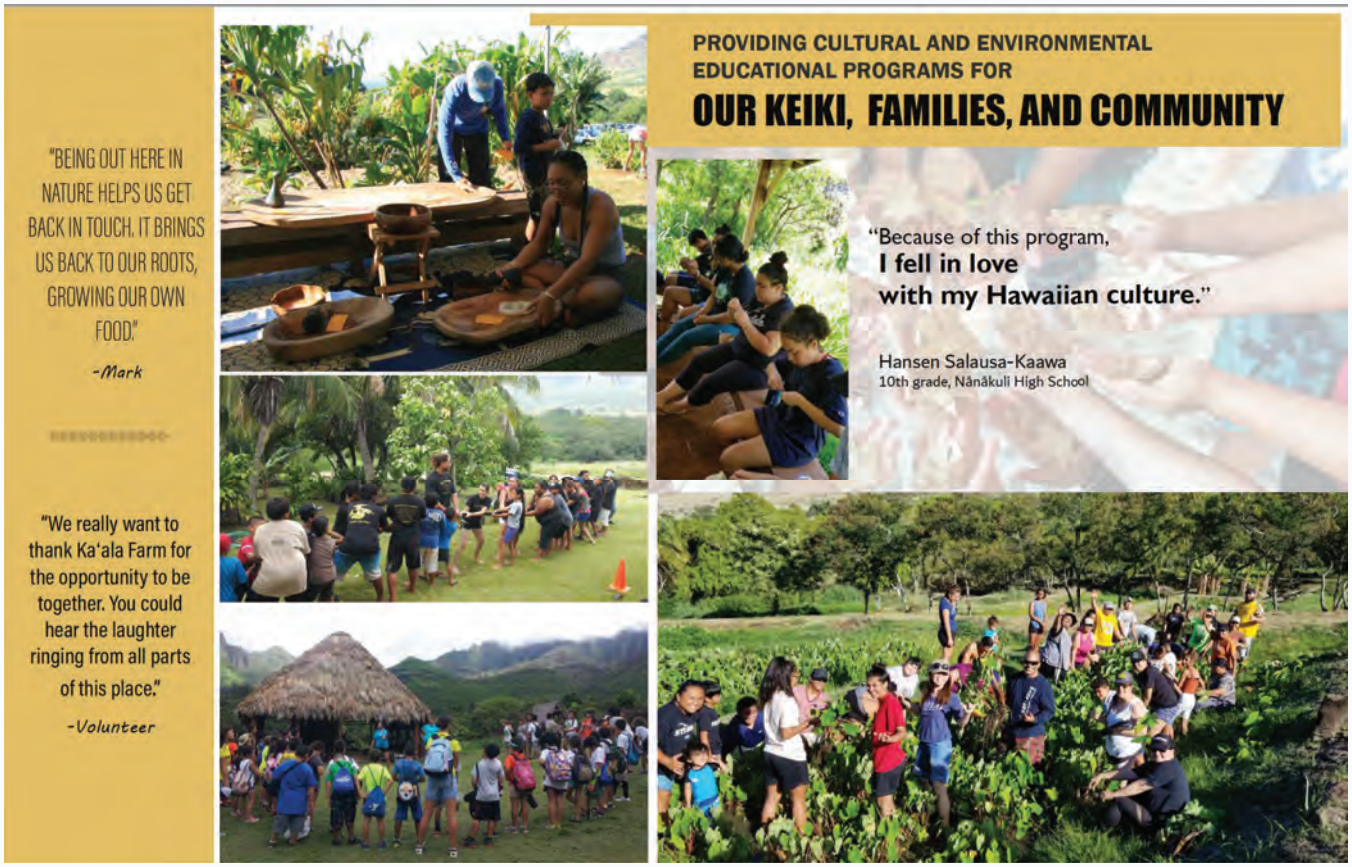
- Participation from Kaupuni Village, Wai'anae, Lualualei, Nānākuli, and other Hawaiian homestead communities
  - Place-based, project-learning experiences for youth
  - Family workdays at the community garden plots
  - Community partnerships – experiences for Ho'omau Ke Ola haumana
  - Support for DHHL Kuleana Homestead Program - demonstration model for training families to transform raw, undeveloped land for subsistence use
  - Grab and Go's
- Member from the Wai'anae Homestead Association to be appointed to the Ka'ala Farm Board of Directors

Long-range Conceptual Site Plan

- Maintain lo'i and gardens, walking pathways, 'ohana garden compound, field kitchen, storage & shelter, open air classroom spaces, caretaker facilities, parking areas/access for emergency vehicles
- Repair hale
- Construct washroom and changing facility and an equipment and tools shed
- Maintain, repair, and upgrade water intake system
- Microgrid
- Upgrade to a wastewater septic system
- Fire mitigation



ITEM G-5, EXHIBIT A



Nīnau & Manaʻo

Questions and/or Comments on

Kaʻala Farm

Proposed Use of DHHL Land

(20 minutes)

Presentation By
Waiʻanae Valley Homestead Community Association

Waiʻanae Valley Homestead Community Association

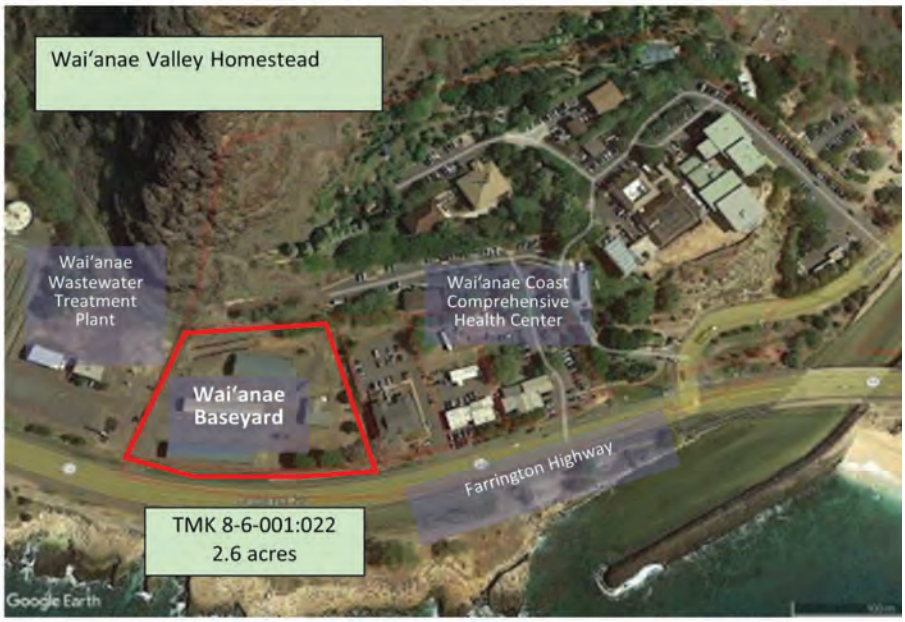
Beneficiary Consultation
11/14/2022





Overview

- Requesting a due diligence ROE to a DHHL industrial parcel at 86-220 Farrington Hwy
- Our vision is a community-based economic development center providing benefits to Homesteaders
- Currently exploring two projects on the site:
  - Wai'anae Sustainability Co-op, a community-owned solar project which will lower electricity costs for Homesteaders
  - West O'ahu Funeral Services, a crematorium service organization that will offer our community another alternative to their final end of life arrangements.



WAI'ANAE SUSTAINABILITY COOPERATIVE

COMMUNITY-OWNED SOLAR

Who are we – Cooperative Board



Kapua Keli'ikoa-Kamai, *President*



Georgette Stevens, *Vice President*



Jan Makepa, *Secretary*



Kaukaohu Wahilani, *Director*

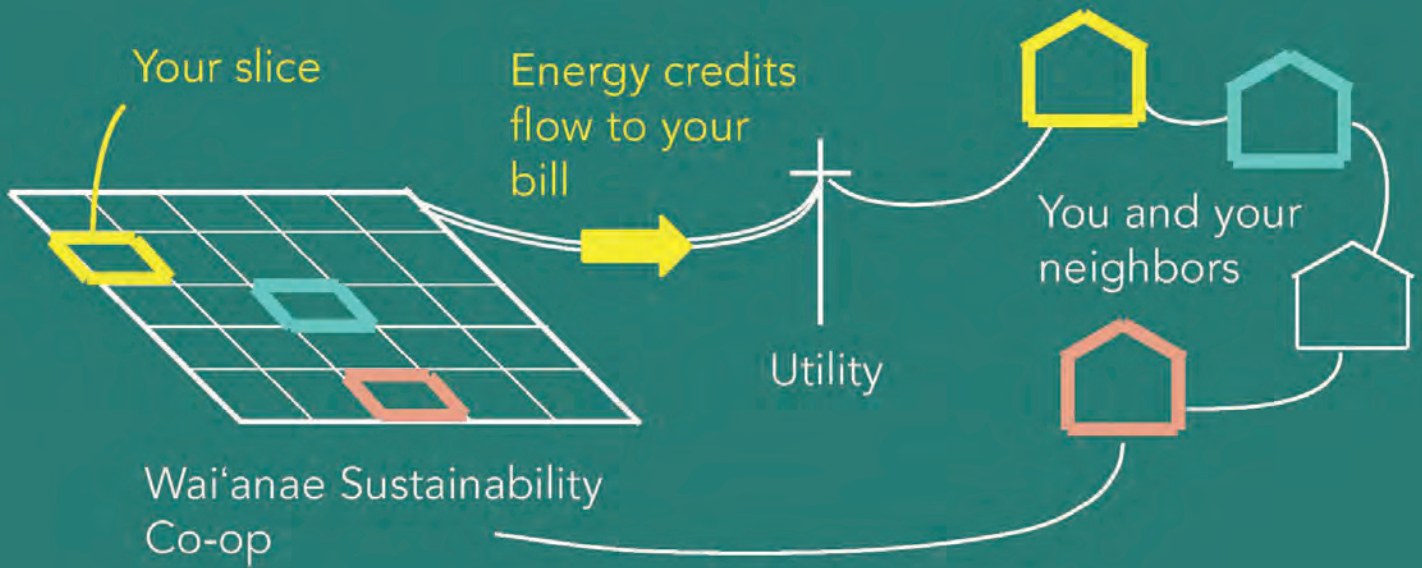
Why a cooperative?

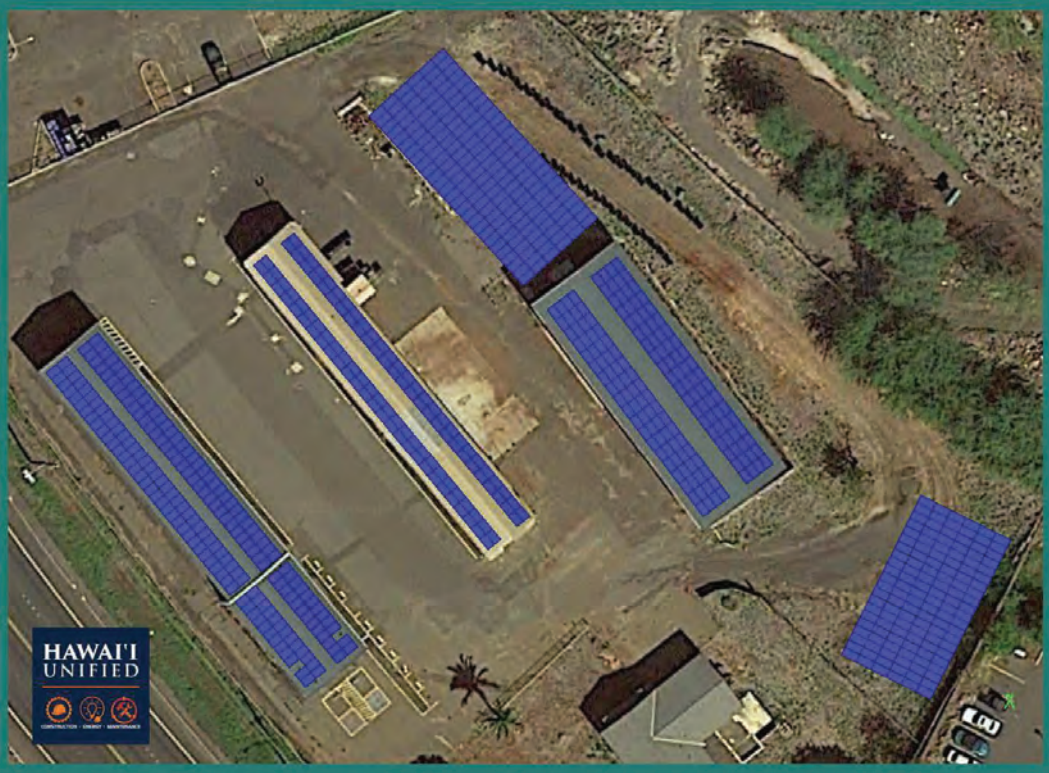
- Owned/controlled by members, not outside investors
- Limited return on capital
- Exist to serve members
- Motivated by service, not profit
- Return surplus revenue based on use, not investment

Mission

- To produce locally-owned, affordable energy for the benefit of our homesteaders and our members
- Gives the Waianae Valley Homestead & 96792 community the ability to build from ground-up the type of energy system we want in our community. Not just sit around while another solar farm is built within our community.
- Allow for our people to purchase green energy without expensive repairs, modifications, or difficult financing

We're starting with a Community-Based Renewable Energy (CBRE) project





- 730 photovoltaic panels (250 kW)
- Panels mounted on rooftops and carports
- Big enough to serve 70-80 households



West Oahu Funeral Service



Moku Buchanan



Lori Buchanan



Makana Buchanan
Darren Tsuchiya



Leialoha and Harry Acedillo

Waianae Industrial Site Existing Structures









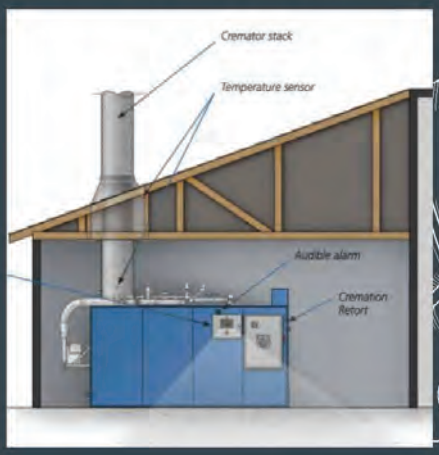




Cremator with Stack

A-250-WH Cremator

Height 8'4"	Fuel: Natural Gas, Propane or Butane
Length 15'6"	Electrical: 220V/60Hz/1 (Nationally)
Width 6'9"	Max Fuel Rating: 2.25MM BTU/HR
Weight 28,000 lbs	Warranty: 2-yr "Best in Class"



Trilogy Combustion Control
& Monitoring System for Fuel Efficiency,
Advanced Monitoring and Diagnostics



Benefits & Services

- Locally Owned and Operated
- Proximity
  - No Mortuary in West Oahu
- Economic Opportunity
  - Food, Flowers, Tables/Chairs, etc...
- Expansion
  - Expanding services beyond cremation to full service Mortuary

LOCAL ENERGY CAN LOWER THE COST OF LIVING

Figure 19. Since the COVID-19 outbreak in Hawai'i, has your household received food assistance (Food Bank/ Food Pantries or Commodity foods?

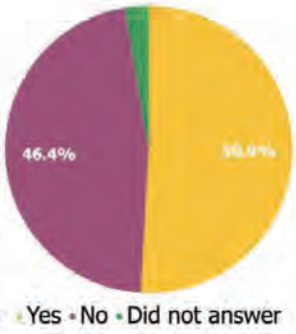
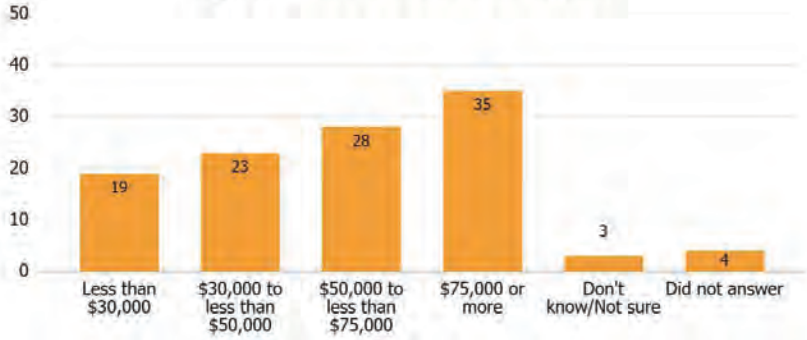


Figure 2. Annual Household Income



SOURCE: 2021 WAI'ANAE VALLEY HOMESTEAD HEALTH SURVEY REPORT



Nīnau & Manaʻo

Questions and/or Comments on

Waiʻanae Valley Homestead Community Association

Proposed Use of DHHL Land

(20 minutes)

WAIANAE COAST COMPREHENSIVE HEALTH CENTER

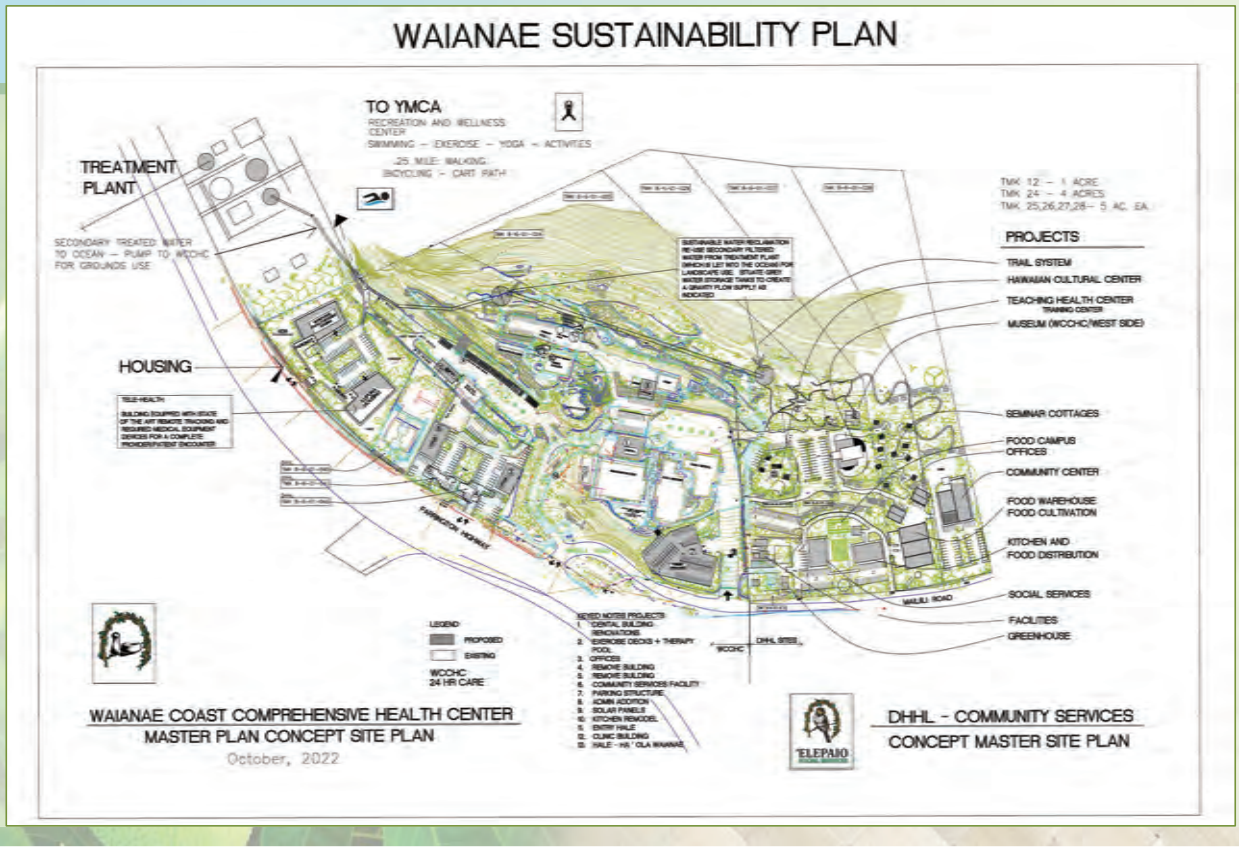
Department of Hawaiian Home Lands Beneficiary Consultation

REQUEST FOR A LONG-TERM LEASE for TMK's 8-6-01-012; and 024 – 028



to continue development of our sustainability model through a focus on a teaching health center/training to create jobs; a cultural and community center for perpetuation of Native Hawaiian culture; a social services support center; and a food campus (food cultivation, warehouse, distribution) to address food security for the community.

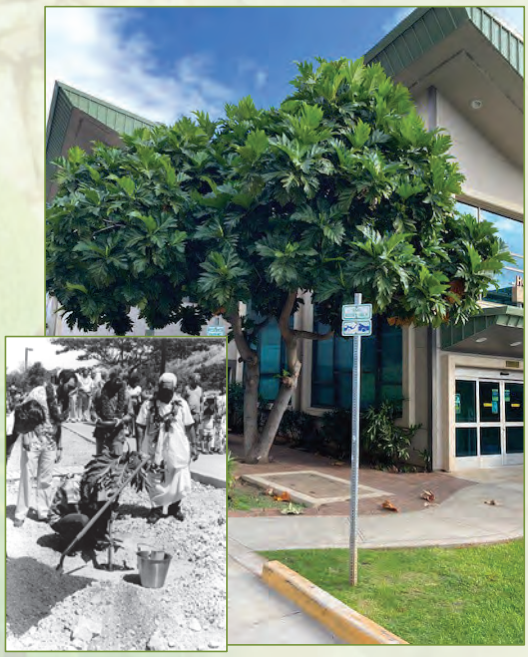
34



ABOUT WAIANAE COAST COMPREHENSIVE HEALTH CENTER

OUR FOUNDERS
Envisioned comprehensive health services for the Waianae Coast

OUR BOARD OF DIRECTORS
Committed to perpetuating the vision of our Founders and meeting the health, social services and economic wellness needs of the communities we serve.



This year we're Celebrating our 50th Anniversary…
Proud to have supported generations of families.

50th Anniversary!
WAIANAE COAST COMPREHENSIVE HEALTH CENTER
Celebrating 50 years of healthcare: 1972 - 2022

OUR HISTORY

OCTOBER 1972
Opened with one clinic, one doctor and 5 staff.







TODAY
12 clinics located in Waianae, Nanakuli, Kapolei, Ewa and Waipahu

37

WHO WE SERVE

WE SERVE:

- 34,000 patients annually
- 63% of patients live on the Waianae Coast
- 49% of patients are Native Hawaiian
- 70% of patients are covered under Medicaid (QUEST) or Medicare





38

WHO WE ARE

OUR EMPLOYEES: 600 STRONG….

- 58% of our employees live on the Waianae Coast
- 45% of employees are Native Hawaiian





OUR BOARD OF DIRECTORS:

- 60% of our board members are Native Hawaiian
- 5 are Homestead residents

39

DEVELOPING A MODEL OF SUSTAINABILITY FOR PATIENTS AND THE COMMUNITY

DR. KYLE "KALIKO" CHANG, Psychologist, Director of Ha Ola Pa
Teaching Health Center & Hawaiian Cultural Center/Museum

LEINAALA KANANA, MSW, Director of Community Health Services
Social Services

ALICIA HIGA, BA, Director of Health Promotion
Food Campus, Warehouse, Cultivation, Kitchen & Food Distribution

WAIANAE COAST COMPREHENSIVE HEALTH CENTER

40

DHHL: TEACHING HEALTH CENTER/HAWAIIAN CULTURAL CENTER



GROWING OUR OWN HEALERS THROUGH LIFELONG LEARNING



By "growing our own healers" we meet the needs of the community for culturally competent healthcare providers and staff while also helping Waianae coast residents gain meaningful employment in the community where they live.

A COMMITMENT TO TRAINING

A.T. Still University - School of Osteopathic Medicine: Training physicians during their 2nd, 3rd and 4th year of medical school.

Behavioral Health training programs: Pre-Doctoral Psychology Internship Program.

Nurse Practitioner Post-Graduate Residency Program: New family and adult nurse practitioners expand their competency to deliver comprehensive, patient-centered primary care services.

Family Medicine Residency Program: Training of new family medicine doctors in a community setting.

Medical Assistant Advancement: Training of Medical Assistants

Other Health Careers Training: Programs provide onsite clinical training for students, interns and residents in a wide variety of healthcare careers.

Chuck Wothke Health Career Scholarships: Annual scholarships for Waianae Coast residents pursuing a health career field.



HA OLA PA

PRESERVE | PERPETUATE | PRACTICE

Native Hawaiian traditions and values to inspire health and wellness









HAWAIIAN CULTURAL CENTER/MUSEUM








45

COMMUNITY HEALTH SERVICES

Ensure increased access to and decreased barriers to primary care



Non-clinical visits aimed to enable patients to use medical services available at WCCHC to improve health care and outcome.









46

COMMUNITY HEALTH SERVICES

SERVICES

- Case Management
- Care Coordination
- Health Education
- Homeless Outreach
- Patient Assistance Services
- Perinatal Case Management
- Transportation
- Rent/Mortgage/Utility Assistance
- Medication Delivery

STAFF

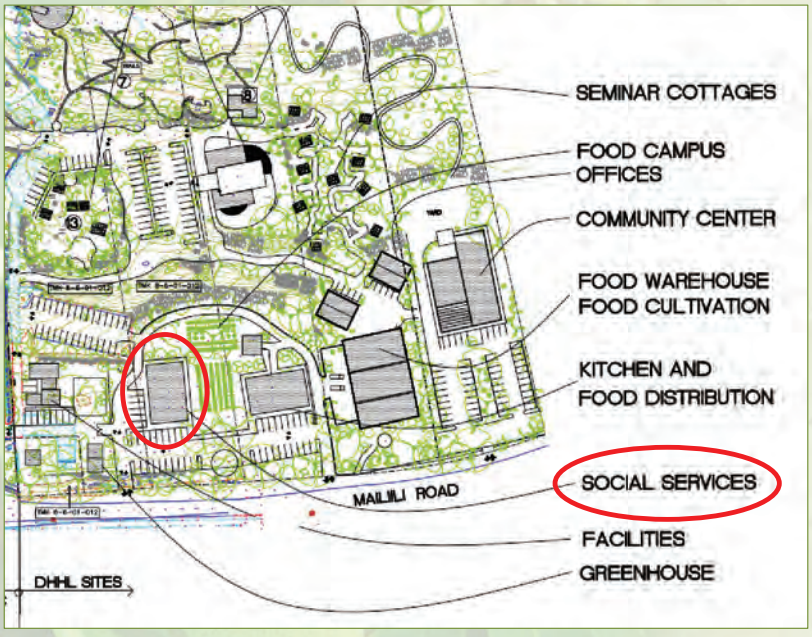
- Social Workers
- RN's
- Case Managers
- Outreach
- Van Drivers
- Navigators

FUNDING

- Federal
- State
- City
- Non-profit
- Contracts with Insurance Plans
- Donations

47

DHHL: SOCIAL SERVICES



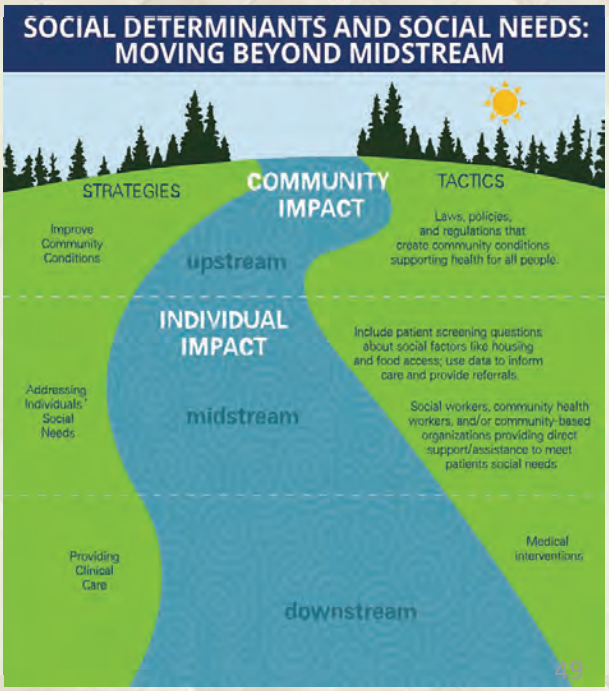
SOCIAL SERVICES

- Social Service network of agencies
- Med-Quest, Medicare, Federal Marketplace
- Public Assistance Programs: Financial/SNAP
- Public Housing Applications
- Sliding Fee Scale
- Advanced Health Directives
- Enroll in ACP and Spectrum 100 Program
- Notary Services
- Rent/mortgage/utility assistance
- Kiosk to connect to PCP

48

IMPROVING UNDERLYING SOCIAL AND ECONOMIC CONDITIONS

- Mediating the patients' individual social needs.
- Efforts to address conditions that impact the overall health of our community.
- Current model needs to be enhanced.
- We need to look upstream.



DHHL: FOOD CAMPUS, WAREHOUSE, CULTIVATION, KITCHEN, DISTRIBUTION



HISTORY OF WORK AROUND FOOD ACCESS AND SECURITY



- Food as medicine: Keiki & Adult Produce Prescriptions, Food Subscriptions
- Community Wellness events and workshops



- Mākeke Farmers' & Green Markets
- EBT/SNAP Doubling and WIC

51

EMERGENCY FEEDING RESPONSE

- Pop up keiki grab & go meals
- Community drive thru food distributions
- Kupuna pantries
- Keiki pantries
- Emergency feeding plan





52

PLANS FOR A STRONGER AND HEALTHIER FOOD SYSTEM!

Seed to distribution

- Edible landscaping
- Greenhouse
- Covered lanai for agricultural workshops
- Food warehouse
- Patient healthy food pantry
- Certified classroom/incubator kitchen



53

MAHALO!

50th Anniversary!
WAIANAE COAST COMPREHENSIVE HEALTH CENTER
Celebrating 50 years of healthcare: 1972 – 2022

54

Nīnau & Manaʻo

Questions & Comments on

Waiʻanae Coast Comprehensive Health Center

Proposed Use of DHHL Land

(20 minutes)

Next-Steps

- 30-Day Beneficiary Consultation Comment Period (Nov. 14 to Dec. 13)

Email comments to: dhhl.planning@hawaii.gov

- Beneficiary Consultation Report to the Hawaiian Homes Commission and Seek Commission Approval on Requests (December 19 & 20)

PLANNING OFFICE
DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

TO: Chairman and Members, Hawaiian Homes Commission

FROM: Andrew H. Choy, Planning Program Manager

SUBJECT: Accept the Beneficiary Consultation Report for the South Kohala Coastal Partnership Proposed Firebreak Project in the Kailapa Homestead Community, Kawaihae, Hawai`i Island (TMK No. (3)-6-1-001:016 (por.)

RECOMMENDED MOTION/ACTION

That the Hawaiian Homes Commission (HHC) accept this Beneficiary Consultation Report as the official public record of beneficiary input and feedback relative to the South Kohala Coastal Partnership request to access Hawaiian Home Lands to implement a firebreak in the Kailapa Homestead Community, Kawaihae, Hawai`i Island.

DISCUSSION

Background

The South Kohala Coastal Partnership (SKCP) with funding from the National Oceanic Atmospheric Agency (NOAA) is proposing to develop a fire break on DHHL lands above the existing Kailapa homestead community. The proposed fire break project will include a clearing of overgrown invasive vegetation on the mauka side of an existing ungulate fence to form a roughly 30-foot wide, 0.8-mile long corridor to act as a fuel break to restrict the extent of future wildfires in the area. The proposed project has been modified to limit the fire break to the mauka side of the fence (farthest from the coastline). It will not include any work along the side boundaries of the fence to avoid known archeological sites and historical trails that are found closer to the coastline.

The DHHL recognizes that meaningful, timely, and informative beneficiary consultation is necessary for the successful formulation and implementation of its policies, programs, and projects. In 2009, the HHC adopted a Beneficiary

Consultation (BC) Policy (Policy). The purpose of the Policy is to ensure that appropriate beneficiary consultation processes and activities are incorporated into DHHL's planning and decision-making. The Policy requires BC for four types of proposals: 1) Statewide Policy Issues, 2) Amendments to Land Use Designations, 3) Development of DHHL Plans and 4) Proposed long-term use of DHHL lands for non-homesteading uses.

The request by South Kohala Coastal Partnership for a Right-of-Entry Permit to access Hawaiian Home Lands to implement a firebreak in the Kailapa Homestead Community constitutes a proposed long-term use of DHHL lands for a non-homesteading use. Beneficiary Consultation is required prior to the HHC taking action on the organization's request. Subsequently, a beneficiary consultation meeting was held on November 15, 2022 with DHHL homestead lessees in the Kawaihae region on Hawai`i Island. The meeting was held on the Zoom virtual meeting platform.

Beneficiary Consultation Process

The proposed use of Hawaiian Home Lands went through the following steps prior to the BC to ensure that beneficiaries were informed about the opportunity to provide feedback on the legislative proposal.

STEP 1. THE PROPOSED ACTION IS DESCRIBED:

The South Kohala Coastal Partnership requests to access Hawaiian Home Lands to implement a firebreak mauka of the existing Kailapa Community.

STEP 2. BENEFICIARIES WERE NOTIFIED OF OPPORTUNITIES TO CONSULT

The Department conducted a beneficiary consultation meeting utilizing the Zoom virtual meeting platform with DHHL beneficiaries that reside in Hilo on the island of Hawai`i.

1. Approximately 200 letters were mailed to all homestead lessees in the Kawaihae area. [Exhibit A]

STEP 3. PRESENTATION MATERIALS FOR ALL MEETINGS ARE AVAILABLE FOR FEEDBACK:

DHHL created a webpage to disseminate information and provide easy access to information related to this request, including:

1. Weblink to the BC meeting and recording;
2. Meeting notes from the November 15, 2022 beneficiary consultation meeting

The webpage for this consultation meeting can be found here as well as video recording of the meeting:

https://dhhl.hawaii.gov/po/hawaii-island/proposed-kailapa-community-firebreak-project/

STEP 4. COMMENTS ARE COMPILED INTO MEETING REPORTS:

The following table and data below captures the level of participation and engagement at the November 15, 2022 consultation and subsequent 30-day comment period:

Table 1: Summary of Beneficiary Participation

Beneficiary Consultation Meeting	Estimated Attendance	No. Self-ID as DHHL Beneficiaries	No. of Questions and/or Comments
November 15, 2022	9	7	15
Written Comments Submitted during the 30-Day Comment Period	--	--	1
TOTAL	**15**	**6**	**6**

BC attendees did not sign a physical sign-in sheet due to their participation via a virtual online platform. Instead, attendees were asked to sign-in to the "Chat-box" on Zoom and self-identify whether or not they were a DHHL beneficiary. There may have been multiple people participating from a single computer or mobile device. Therefore it is difficult to determine the exact amount of participants during the meeting.

As reflected in Table 1, approximately nine people attended the virtual meeting on November 15, 2022. The majority of participants self-identified as a DHHL beneficiary. In addition to comments received at the beneficiary consultation meeting, one additional comment was received from one individual during the 30-day comment period.

The following exhibits reflect BC meeting notes, participant opinions and/or comments:

1. Exhibit C – November 15, 2022 Meeting Notes

2. Exhibit D – November 15 – December 14, 2022: Correspondence submitted during the 30-day Comment Period

Summary of Beneficiary Comments:

In summary, all of the beneficiaries that participated in the consultation process supported the proposed firebreak project. There was no opposition expressed regarding the proposed firebreak. However, there were concerns expressed regarding providing ample notification to the residents of the community prior to start of work as well as whether there would be enough community member volunteer participation for workdays related to this project. There were also questions related to long-term management and maintenance of the firebreak by an individual that submitted written comments. There were also concerns expressed related to other issues in the Kawaihae ahupua`a not directly related to the firebreak project such as soil erosion into near-shore waters, development of an emergency evacuation road to Kohala Ranch, and providing affordable water to the community.

Ample notice should be provided to the Kailapa Community Prior to the start of the project.

Beneficiaries that expressed support for the firebreak project, but would like ample notification be provided to the community before the start of the project.

> *"Guess I need to find out when you guys are going to do the job next year. All of the animals are going to be there, our house pets that run around down hill. They will be there when you all are working, might be dangerous, if you could send us notice, we all have big dogs, they chase goats. If you could send us a notice, so we can tell everyone, tie up your animals…..would appreciate some kind of notice."*

> *"Hoping the community hears us [the Kailapa Community Association Board] so that when it does start you don't hear the 'we didn't know this was happening' kind of resistance."*

Need for Community Involvement with the Firebreak Project

Meeting participants also expressed that there was a great need for community members not only to be notified about the project, but also participate in the work associated with the firebreak project.

> *"So this project, I think for our community, if we can inform more of our community where we live and get them involved. If there is a fire, we all gotta work together, so if we can get most of the people in the community to go up in this wherever, fire thing location."*

> *"As a community, the goal is for all of [us] to be working as a community making sure [we] are fire resilient."*

Other Issues Raised During the Consultation Meeting

Other issues not directly related to the firebreak project were raised by meeting participants during the meeting including, soil erosion into nearshore waters, need for an alternative emergency access road, and providing a more affordable water source to the Kailapa Community.

> *"Every time it rains because of the fires and goats picking up the stuff from the ground, it erodes and right now it erodes so badly, there's no landscaping at all and Kawaihae does not have water to put in plants and all those stuff. How do you avoid anymore pollution in Kaiopae Bay and Honokoa Bay and Pelekani Bay? Now it's brown water, not blue, brown."*

> *"Can the Board members take the site visit with you guys up there, so they can see what it looks loke up there? Because we also have the project I wrote you about, so if they can get a chance to access the black line, edge of your red line on Kohala Estate side, if they can go up there and take a look at the grading of the land so we can see how 're going to continue planning our project [emergency access road to Kohala Estates], I've been asking Hawaiian Homes, they've been reluctant to respond."*

> *"They ask about the water, are we getting water, well that's another thing, slow process too, something we're working on, no one is going to do it for free."*

Recommendation

Staff respectfully requests that the Hawaiian Homes Commission approves the recommended motion as stated.

ITEM G-6 EXHIBIT A -- MEETING NOTICE

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

JOSH GREEN
LT. GOVERNOR
STATE OF HAWAII

WILLIAM J. AILA, JR
CHAIRMAN
HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
P O BOX 1879
HONOLULU, HAWAII 96805

November 2, 2022 Ref.: PO-22-281

Aloha Kawaihae Homestead Lessee,

The Department of Hawaiian Home Lands (DHHL) invites you and your 'ohana to a Beneficiary Consultation meeting regarding a proposed Fire Break project on DHHL lands above the existing Kailapa Homestead Community. The project is being proposed by the National Oceanic Atmospheric Agency (NOAA) and the South Kohala Coastal Partnership (SKCP). **The meeting will be held virtually via Zoom on:**

Tuesday November 15, 2022
6:00pm to 7:30pm
Please go to DHHL website for Zoom Meeting Link Log-in:
https://dhhl.hawaii.gov/meetings/

NOAA and SKCP are seeking a Right-of-Entry Permit from DHHL to implement the proposed Fire Break Project. The proposed Firebreak Project will include clearing of overgrown invasive vegetation on the mauka side of an existing ungulate fence to form a roughly 30-foot wide, 0.8 mile long corridor to act as a fuel break to restrict the extent of future wildfires in the area. The proposed project has been modified to limit the Fire Break to the mauka side of the fence (farthest from coastline) and will not include any work along the side boundaries of the fence to avoid known archeological sites and historical trail that are found closer to coastline. See enclosed map for project location information.

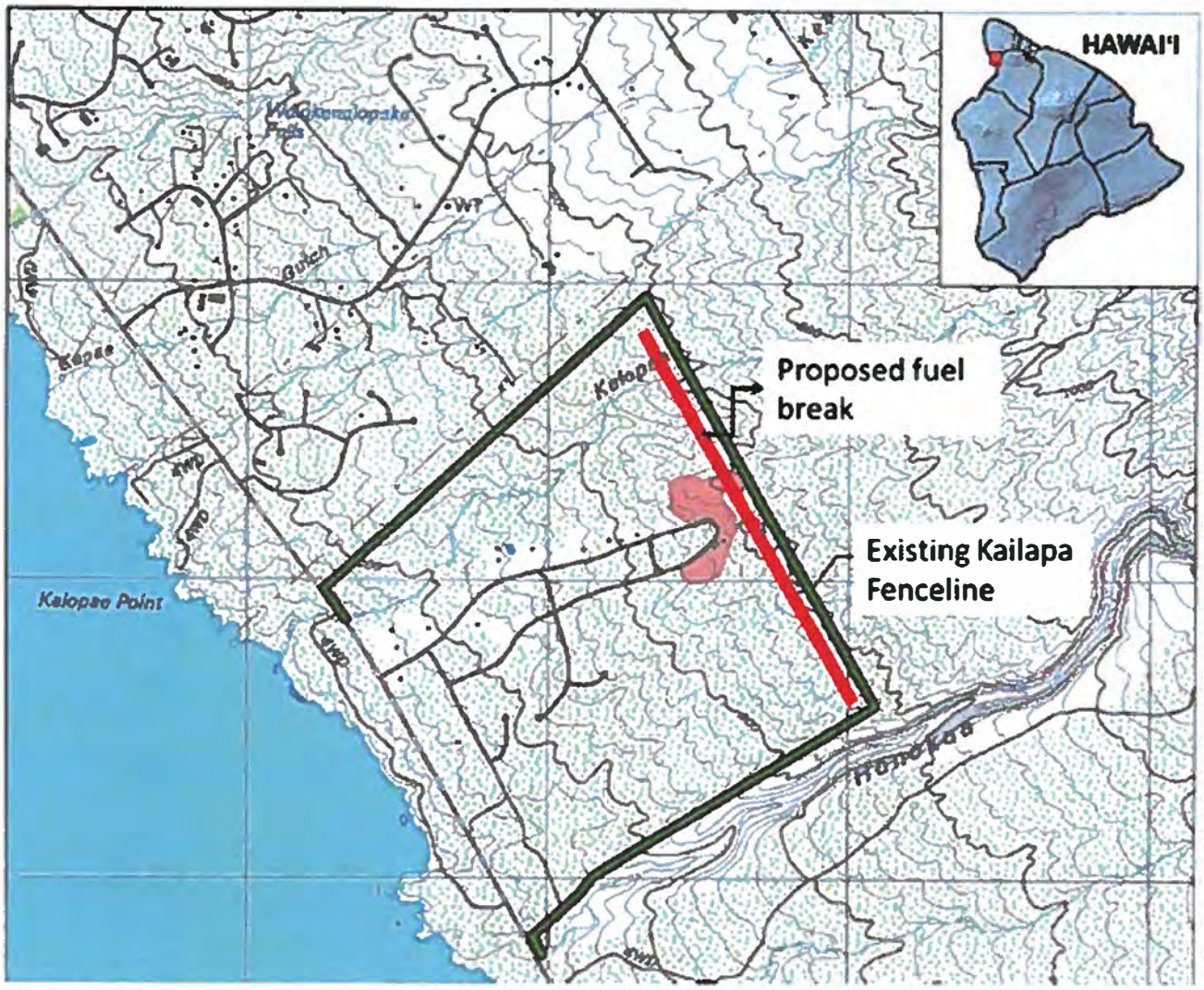
Should you have any questions, please email dhhl.planning@hawaii.gov . We look forward to your participation at the November 15th Zoom meeting.

Sincerely,

William J. Āila Jr., Chairman
Hawaiian Homes Commission

Enclosure: Location Map of Proposed Firebreak

Map of Proposed Fire Break



HAWAIIAN HOME LANDS
HAWAIIAN HOMES COMMISSION · DEPARTMENT OF HAWAIIAN HOME LANDS

Beneficiary Consultation

Proposed Kailapa Community Firebreak Project

November 15, 2022

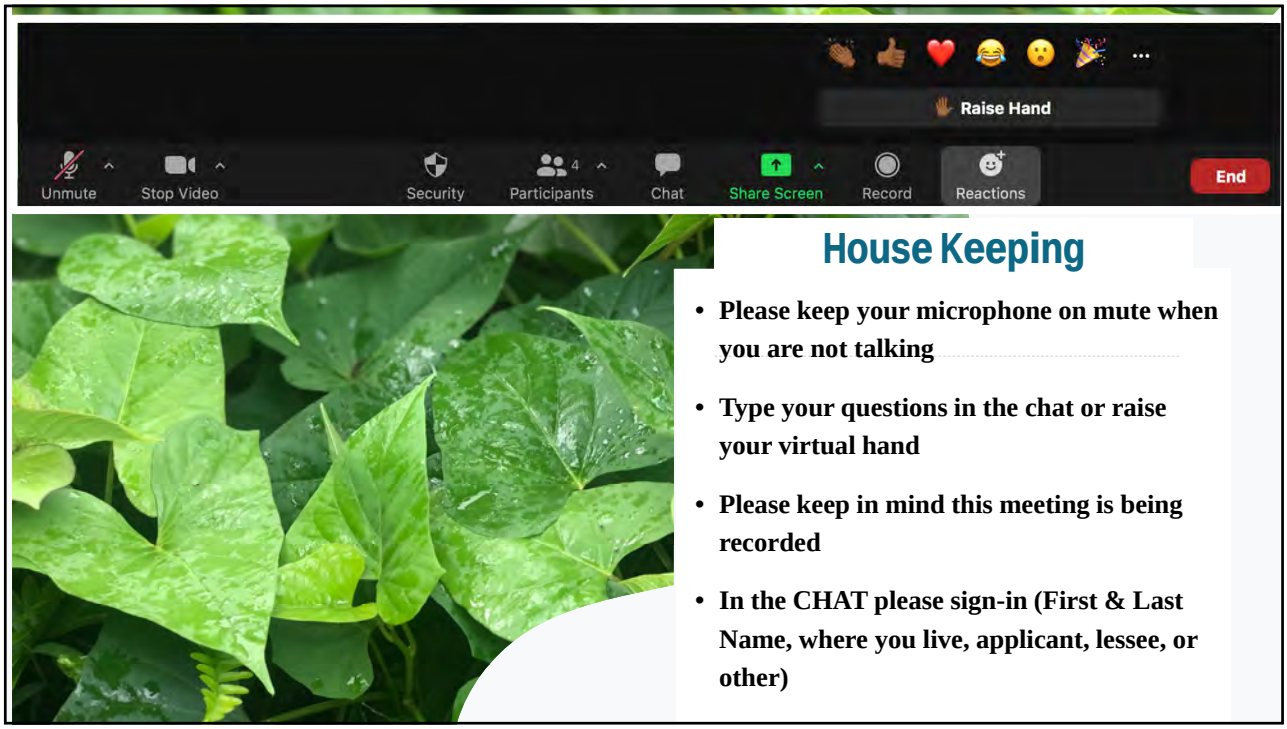
Meeting will start at 6:00pm

1

Meeting purpose

- To provide information regarding the proposed Kailapa firebreak project by the South Kohala Coastal Partnership (SKCP) and the National Oceanic Atmospheric Association (NOAA)
- To collect Kailapa homestead beneficiary feedback on proposed firebreak project

2



House Keeping

- **Please keep your microphone on mute when you are not talking**
- **Type your questions in the chat or raise your virtual hand**
- **Please keep in mind this meeting is being recorded**
- **In the CHAT please sign-in (First & Last Name, where you live, applicant, lessee, or other)**

3

Meeting Kuleana

- Be respectful of the person talking – please do not interrupt the person that is talking;
- Wait for the facilitator to call on you or type your question into the chat box;
- When addressing other participants (verbally or in the chat box), be respectful, show aloha, treat others how you would like to be treated;
- Agree to disagree — accept that others may have different perspectives and opinions;
- Have an open mind — take home new ideas or new information.

4

DHHL Beneficiary Consultation Policy

- Beneficiary Consultation is required for four types of proposals that require Hawaiian Homes Commission approval
  - Statewide Policy Issues
  - Amendments to Land Use Designations
  - Development of DHHL Plans
  - Long-term use of DHHL land for a non-homestead use

5

Tonight's Agenda

- Welcome & Introductions
- Presentation by the South Kohala Coastal Partnership and NOAA
- Beneficiary Questions on Presentation
- Beneficiary Mana‘o on Proposed Firebreak Project
- Next-Steps

6

Meeting purpose

- To provide information regarding the proposed Kailapa firebreak project by the South Kohala Coastal Partnership (SKCP) and the National Oceanic Atmospheric Association (NOAA)
- To collect Kailapa homestead beneficiary feedback on proposed firebreak project

7

Presentation by South Kohala Coastal Partnership

8


Create with Canva
PROPOSED KAILAPA FUELBREAK PROJECT
November 15, 2022
Update by
Lauren Kurpita, South Kohala Coastal Partnership Coordinator

9


Background of South Kohala Coastal Partnership
SOUTH KOHALA
COASTAL PARTNERSHIP
The vision: A restored, healthy, abundant and resilient South Kohala coastal system cared for and cherished by an island community guided by the values and traditions of South Kohala.
For more information:
www.southkohalacoastalpartnership.com

10

Kailapa Fuelbreak Project

Project purpose:

- to create a fuelbreak to assist in the resiliency of the Kailapa Community and ahupua'a

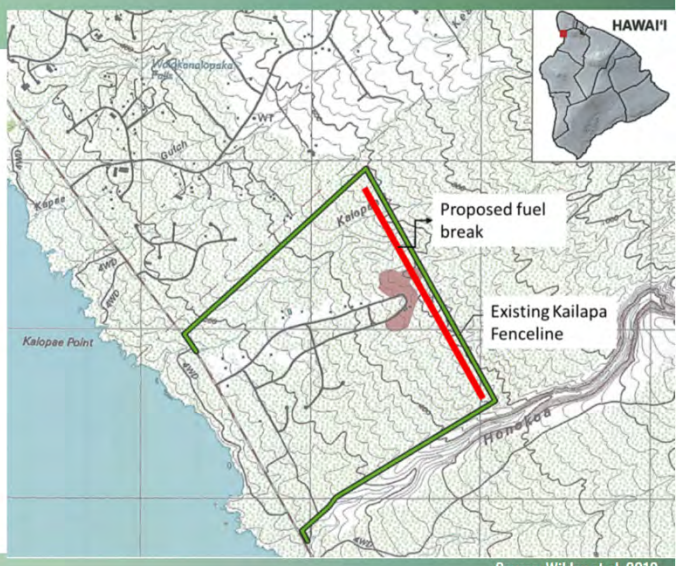


11

Kailapa Fuelbreak Project

Project Area:

- Makai of the mauka fence line
- Will not include the side fence lines to avoid archaeological sites

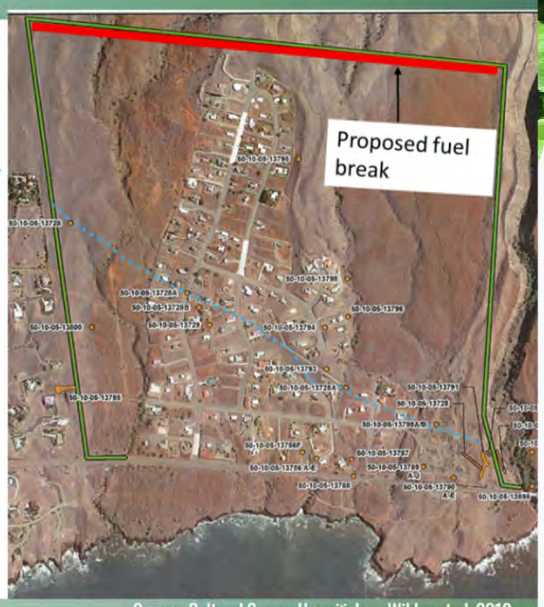


12

Kailapa Fuelbreak Project

Project Scope of Work:

- clearing vegetation to form an approximate a 30-ft wide, 0.8 mile long corridor to act as a fuel break
- using hand-held portable equipment
  - NO digging into or disturbing the soil itself to remove roots
  - NO use of heavy machinery
  - NO use of chemical herbicides.



Source: Cultural Survey Hawai'i, Inc.; Wildey et al. 2018

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Proposed Project Timeline:

- Today until December 14- submit comments to DHHL
- DHHL will give a letter of support to SKCP & NOAA that will be submitted to Hawai'i State Historic Preservation Division (SHPD)
- SHPD submit approval of project to NOAA and Hawai'i State Division of Aquatic Resources (DAR)
- DAR will create a request for bids
- DAR will select a bid and contractor
- The contractor will work SKCP to gain access from DHHL and to inform DHHL and the community of the project workdays
- Projected completion of the fuel break is by July 2023

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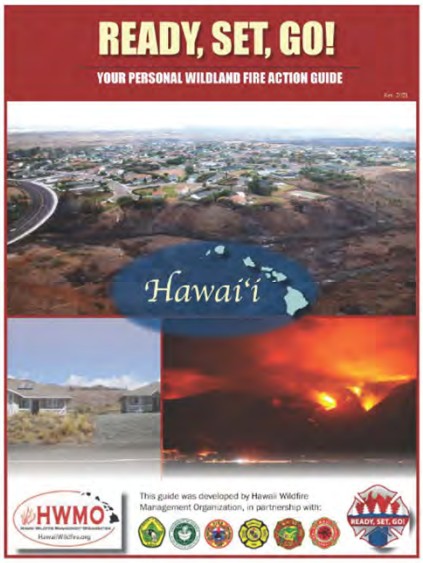
Future Project Ideas:

- Talk to your Kailapa Community Association board members
  - Firewise community workdays
  - Hawaii Wildfire Management Organization (HWMO) READY, SET, GO! presentations
  - Funding opportunities for additional ideas



15

Mahalo for attending and listening!

Questions?

16

Nīnau

Questions on the Presentation

17

Manaʻo

Comments and Feedback on the

Proposed Firebreak Project

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Next-Steps

- 30-Day Beneficiary Consultation Comment Period (November 15 to December 14)

Email comments to: dhhl.planning@hawaii.gov

- Beneficiary Consultation Report to the Hawaiian Homes Commission and Seek Commission Approval on Right-of-Entry Permit to South Kohala Coastal Partnership and/or NOAA to access DHHL land in order to complete the project (December or January Hawaiian Homes Commission meeting)

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11-15-2022 Kawaihae / Kailapa Fire Break Project Meeting
Virtual Beneficiary Consultation Meeting
November 15, 2022, 6:00 pm to 7:30 pm
DHHL Notice | Invite | Video Recording

Meeting Purpose

Department of Hawaiian Home Lands (DHHL) will hold a beneficiary consultation meeting regarding a proposed firebreak project (the Project) on DHHL lands above the existing Kailapa Homestead Community. The Project is being proposed by the National Oceanic Atmospheric Agency (NOAA) and the South Kohala Coastal Partnership (SKCP). NOAA and SKCP seek a Right-of-Entry Permit from DHHL to implement the proposed Project. The proposed Project will include the clearing of overgrown invasive vegetation on the mauka side of an existing ungulate fence to form a roughly 30-foot wide, 0.8-mile long corridor to act as a fuel break to restrict the extent of future wildfires in the area. The Project has been modified to limit the firebreak to the mauka side of the fence (farthest from the coastline). It will not include any work along the side boundaries of the fence to avoid known archeological sites and historical trails that are found closer to the coastline.

Participants

- DHHL
    - Andrew Choy, Planning Program Manager
- Beneficiaries
    - Kailapa Community Association (KCA)
        - Tommy Silva
        - Brandie Oye
    - NOAA
        - Paulo Maurin
    - SKCP
        - Lauren Kurpita, SKCP Coordinator
    - Residents
        - Jojo
        - iPhone

Synthesis

Community Member Questions & Answers by DHHL, SKCP, and NOAA

- **Q: Are association members able to attend the site visit with SKCP to access and see the area at the edge of the Kohala estate?**
    - *The Project is currently limited to the 0.8 miles corridor along the fence line and SKCP has to work with DHHL in order to obtain access to enter that area. Though it is an important conversation to have in regards to finding ways to connect Kohala Ranch, this is not part of the scope of the work for the Project.*
- **Q: How much community involvement will be needed when the time comes to assist and help with the clearing work?**
    - *SKCP shared that there is no set number of volunteers or number of days that people are required to participate to help with the work. As part of the Firewise program, the goal is for*

communities to work together in order to become more fire resilient and increase collaboration across neighborhoods. Through the program, there is funding available to support community efforts related to meeting these needs.The fuel break Project is a small step in the whole community becoming fire resilient.

- **Q: What kind of contractor will be needed for this Project?**
    - *SKCP shared that DAR is going to be responsible for the funding part of the Project in a cooperative agreement with NOAA. They have curated a list of deliverables the potential contractor will need to have met in order to be qualified for the Project. Deliverables include using only hand tools for the Project and having technical expertise and experience in firebreaks.*
- **Q: How do you avoid ongoing pollution to Kaiopae Bay, Honokoa Bay, and Pelekani Bay due to the continual erosion caused by ungulates stripping the vegetation?**
    - *DHHL is working with the Kohala Mountain Watershed Partnership to help put up the ungulate proof fences. DHHL sees this as the first step to prevent additional ungulates from entering the community. DHHL engaged in community conversations regarding appropriate methods to remove ungulates from the watershed and reduce the amount of vegetation they eat. A firm consensus has not been reached on appropriate or inappropriate methods to remove ungulates. This may require an additional conversation.*
    - *SKCP and NOAA are aware of the concern related to the goats eating the vegetation down to the root, leaving nothing in the ground. Having a Watershed Management Plan can support communities to create action items that support management control of the ungulate population which may include fencing and native revegetation. DHHL plans to review some of the recommendations out of the SKCP and NOAA planning process to identify what might work for DHHL in order to manage ungulate population in a way that is appropriate and supported by the community.*
- **Q: How will the erosion that goes into the ocean be addressed and fixed?**
    - *Paulo from NOAA shared that the Coral Program is funding a fuel break project upland to address the sedimentation issue that has long been an issue in the South Kohala area. The Project's goal is to protect the remaining vegetation from burning down and exposing sedimentation that will runoff into the reefs. Though this does not completely eliminate the risk of fires, it diminishes the ability for fires to go all the way through to the reef, which helps the reef and keeps the area a little safer.*
- **Q: Will community residents have notice when the Project work will start so people can prepare and tie up their animals?**
    - *Yes, there is a plan to give at least 2 weeks notice prior to the start of the Project work. SKCP and NOAA also hope that the community will be involved and participate in the work day events and support the ongoing maintenance needed.*
- **Q: How can other community members reach out or find more information if they missed the Zoom meeting?**
    - *Understanding that not everyone is able to meet on the date and time that the Department holds its consultation meeting, DHHL allows for additional questions and comments to be emailed to dhhl.planning@hawaii.gov by December 14th. The recording and slide presentations from tonight's meeting can be found on the DHHL Website so people can hear the same information that was shared tonight.*

11-15-2022 Kawaihae / Kailapa Fire Break Project Meeting
Virtual Beneficiary Consultation Meeting
November 15, 2022, 6:00 pm to 7:30 pm
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- *DHHL plans to compile all questions and comments we receive this evening, and present it to the Commision in December. In December or January, DHHL will ask the Commission to give a right of entry to the South Kohala Coastal Partnership so that they can move forward with the Project. Any entity that would like to enter DHHL property not leased out for more than 30 days must receive Commission approval. DHHL would like to ensure that the partnership has access to DHHL lands to complete the job thoroughly.*
- *If there are any additional questions or comments that you think of after the meeting, feel free to submit it to dhhl.planning@hawaii.gov*

Community Member Concerns

- ***Plans for Queen Emma Lands May Not Fit the Needs of Kailapa Hawaiian Homestead*** -- lacking a water source, Hawaiian Homestead residents in Kailapa may not be able to exercise erosion control through revegetation as SKCP has implemented in Queen Emma.
- ***Storm Runoff From Rivers into Neighborhood Yards*** -- the aftermath of rainstorms leaves a lot of debris that comes from the rivers and ends up in people's yards, including remains of goats, pigs, and other deceased animals. Community members raised this concern and asked how that might be stopped.
- ***Having Enough Community Member Volunteer Participation for Workdays*** -- when the time comes, KCA hopes to involve people in their community in the workdays. SKCP informed the group that these volunteer workdays can start as one day with a small group of people. Over time, people may become interested in the work being done as it starts to spread throughout the community. This might be a slow process, but it has shown to work in other communities.
- ***Current Ungulate Fencing may be Inadequate*** -- as goats have been seen on the side of the road and running across the highway. As a result, the Department of Transportation has decided to add wild animal signage on the highway as a safety measure and to protect their road.
- ***Water Concerns for Kailapa Homestead Residents*** -- the KCA continues to move through the slow process to provide water to their homestead. A resident questioned whether DHHL should be assisting Kailapa homestead communities and providing the water.

Suggestions from Community Members

- ***Opportunity to Inform and Involve the Neighborhood*** -- which may include getting community neighborhood members to visit where the firebreak location will be. This may help to inform and keep neighborhood members up to date on what is going on and not be surprised or caught off guard when work begins near the fenceline.
- ***Use Community Chalkboard to Communicate with Kailapa Residents*** -- which serves as a KCA communication platform. KCA suggested that residents take the time to read and review the updates on Chalkboard so they do not find themselves caught off guard when the Project work starts. Additionally the KCA suggested passing out flyers to residents from the top and working their way down to ensure everyone is informed and up to date.
- ***Send Out Notices to Neighborhood Prior to the Start of Work*** -- potentially 2 weeks ahead of the Project's start so the neighborhood can tie up their animals, especially horses. Many residents have big dogs that chase the goats.

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- ***Regular and Ongoing Communication with KCA and Kailapa Lessees*** -- on any updates to the Project's timeline, process, and additional information regarding schedules.

Beneficiary Q&A & Mana'o on Proposed Firebreak Project & Presentation

Starting at 14:59 of Recording

- Jojo: Guess I need to find out when you guys are going to do the job next year
    - All the animals are going to be there, our house pets that run around down hill
        - They will be there when you all are working, might be dangerous
    - If you could send us a notice
        - We all have big dogs
        - They chase the goats
    - If you give us a notice, so we can tell everyone, tie up your animals, especially the horses,
    - We go from there
    - Would appreciate some kind of notice, thank you
- Lauren: Definitely
    - After whole timeline of actions, once we continue with project and once contractor is selected by DAR and when they do work, will make sure everyone in community is notified
- AC: Jojo, how much notice is needed
    - 30 days
    - 2 weeks
- Jojo: Everyone kupuna is not going to know that far
- AC: So maybe 2 weeks
- Jojo: Yeah couple weeks, or something, thank you
    - Another question for Lauren
        - Goes along with question I emailed you
        - When you go up for site visit or when you go up there for site visit
        - Can association members go with you guys and take a look up there
- Lauren: Can they go, is that the question
- Jojo: Question is, can we also go on the site visit,
    - Can the Board members take the site visit with you guys up there
    - So they can see what it looks like up there
    - Because we also have the project I wrote to you about
    - So if they can get a chance to access the black line, edge of your red line on Kohala estate side
    - If they can go up there and take a look at the grading of the land
        - So we can see how we're going to continue planning our project
    - I've been asking Hawaiian Homes
        - They've been reluctant to respond at all
        - So maybe we can take a look with you all
- Lauren: One of the things with the project, Jojo all of you know about the project
    - We have to work with DHHL to obtain access something that Andrew talked about
    - Maybe a conversation, as of right now for this project
        - Really going to be that .8 of mile long along fence line

        - What Jojo is talking about, finding a way to connect to Kohala Ranch as another way of having an access out
        - Think that's an important convo to continue possibly having
        - But not in this scope of work
- Jojo: Thank you, appreciate that clarification
- Andrew: Brandie
- Brandie: Question about how much community involvement you will need
    - Say we get contractor
    - Know we had discussion, Lauren, with I think Rebecca
    - That'd we'd be asked to join in to help clear fence line as well
    - When contractor is found
        - Is that when the community has to come out as well and assist
        - Just wondering how many community members you help to find
    - What kind of contractor will we need
    - Because hand tools
        - Landscaping type of contractor
        - Wondering how we approach clearing of the firebreak
- Lauren: Great question
    - Going to be, some of the bullet points I put in
    - What's going to happen
        - DAR who is going to be, almost in charge of funding project in cooperative agreement with NOAA
        - Going to have list of deliverables
            - Only using hand tools
            - Not digging
            - Not using chemical herbicides
        - Also a technical aspect
            - Contractor needs to have had proven firebreak experience
            - Agree that they're only using hand tools
    - So I can't say, if it's going to be whoever applies for it
        - That's why this project is a little, don't know who it's going to be
        - Know Kohala Center has worked on DHHL land so maybe they apply
        - Or maybe Forrest Solutions
        - Or maybe landscapers companies
    - Brandie, convo we had about community involvement
        - What's going to happen, talked about using match for that grant, for community volunteer days
        - That could be where we talked about, on adjacent sides
        - Ties into your Firewise program
        - Where we want to touch base with Nui
            - As a community the goal is for all of you to be working as a community making sure you are fire resilient
            - You are eligible for money to be able to do that
        - Not a set number of volunteers or number of days that people have to help work

        - Think it's a goal that maybe we start out small and do a little work
        - Have some food together and maybe we can help around other people's yards to make sure we have that fuel break consistent
        - Sorry, know that is kind of a vague answer
- Brandie: That kind of helped me to understand how we're approaching this
- Lauren: Yeah
- Brandie: Ok, I understand now
    - How we're doing just the top part through DAR and the Contractor
    - The community involvement will be more for the volunteer part on the side of the fence line
- Lauren: That could be but, could also help out along the top portion
- Brandie: Thank you
- Lauren: Goal is to spark community to becoming firewise and working together
    - Could be maintaining firebreak
    - Sparking off in other communities
    - Working with other people properties
    - Using those hours worked in order to make sure everybody is working to become fire resilient
- Brandie: Ok, thank you
- Andrew: Good question
    - Other questions or mana‘o
    - Small group so feel free to ask
- Tommy: I have a question
- Andrew: Go ahead, Tommy
- Tommy: So with this project, I think for our community
    - If we can inform more of our community where we live and get them involved
    - If there is a fire, we all gotta work together
    - So if we can get most of the people in the community to go up in this wherever, fire thing location
        - And let them know what's happening
        - So they can get an idea of what we're doing
    - Instead of trying to talk to each individual
        - Each time we have a board meeting
    - Just something, not just our community as board members
        - We represent the people that live here in the community
        - They should understand, we're just the board members
        - You guys are helping us too, as being community residents
- Lauren: Those volunteer days, I expressed to Brandie
    - Everyone is busy, everyone has a lot of responsibilities
    - Maybe we can find a way where we work for certain amount of time
        - And some have food together
- Tommy: Yeah, doesn't have to be one certain day
    - Can be couple different days, yeah
- Lauren: Yes, definitely
- Tommy: Like you said, lot of people work and stuff you know
- Lauren: Yes, everyone has lot of responsibilities, everyone busy

    - Everyone working together as a community to become fire resilient
- Tommy: Yeah, for me, living here in Kawaihae for years
    - Seen fires come from Waimea with mauka winds
        - Coming down, know it's coming
        - Winds die and turn it around
        - Either going up or come back down
        - When it's going 50, 30, 40 miles an hour, it's coming
- Lauren: This fuel break project, small little blip in the whole community becoming fire resilient
    - Picture I showed in 2015 fire in Kawaihae
    - Then 10 days later had massive rains
        - Flooded
        - All of that sediment flowed out to the reef
        - Not only goal of is to help protect homes and properties
        - Also working on protecting coastal resources
        - If fire came and vegetation was just easily washed away
- Tommy: Yeah, not in our subdivision, but where Young Brothers, they have the County building, substitution over there
    - Bridge right above
    - When they had another rain storm, had lot of debris coming down the river
    - My neighbor right next to me has a lot of that dirt from the river in his yard
    - There's a lot of goat bones, pig bones, animals that died
    - There's alot of stuff
    - How do you stop it, yeah, that's the thing
- Lauren: Yeah, that is a small thing
    - Leading into, we have the Honokoa Watershed Management Plan is in draft
    - I'll be reaching out to the board soon and trying to have a meeting,
    - Trying to have a meeting with community members to get opinions on some of the management actions
    - Hopefully it's those small steps in looking to the future in making sure we have a resilient ahupua'a for the future
- Andrew: Jojo I see your hand up
- Jojo: Thanks, maybe question is for Paulo
    - With the fires and stuff, your line goes from Kaiopae gulch, Honokoa gulch
    - Everytime it rains because of the fires and goats picking up the stuff from the ground, it erodes
    - And right now it erodes so badly,that there's no landscaping at all
    - Kawaihae does not have water to put in plants and all those stuff
    - How do you avoid anymore pollution in the Kaiopae Bay and Honokoa Bay and Pelekani Bay
        - Now it's brown water, not blue, brown
    - Is there anyway, this project, going to solve that problem as well
- Lauren: Paul you want to start
- Paul: You start, I'll follow
- Lauren: Ok, Jojo, thanks
    - This is a little tiny piece
    - So many pieces together

- I've been talking with DHHL about ungulate plan
- We know that goats are a big concern of eating the vegetation down to the root and leaving nothing
- One of the things that will help create more mgmt actions and allow DHHL and your community to have more access to funding is through a Watershed mgmt plan
    - Even though I am the coastal partnership coordinator, I am employed through the Nature Conservancy
    - The Nature Conservancy has been helping to draft the management plan
        - Action items in there
        - Continued fencing and ungulate control
        - Moving on, goes into different stages
        - Once goat populations, or feral ungulates are low
            - Need to make sure we're doing smart grazing in areas
            - To make sure we don't have high fuel loads
            - Trying to native revegetation
            - We've been working with partners in Pelekani and Queen Emma, Parker Ranch and Forest Solutions
                - Working on revegetation and erosion control in that watershed
        - Hopefully some of the things we learn there can transfer over and help all of you
- Jojo: Can I respond to her
- Andrew: Yes, it's an opportunity to share mana'o
- Jojo: Ok, thank you because the goat control you talk about and erosion control that you guys are working on is on Queen Emma lands
    - But your line here is Hawaiian Homes
    - I am speaking to Hawaiian Home Lands, it's the Hawaiian Homelands that's getting eroded
        - And it's the hawaiian home lands that don't have the water to put in any vegetation
    - Wondering how you guys are going to help us with this erosion problem
    - You guys are going to clean the grass what not
        - The rain is going to come down and erode into the two gulches again
            - Out Pelekani and out Honokoa, Kaiopae
            - All going to be out there
        - And winter season now
    - I hear you, I see you guys working out in Queen Emma
    - I see them growing stuff in the tent thing the agriculture grew on Hawaiian Homelands
        - But all that stuff goes into Queen Emma Lands
    - So just wanted to let you know that we're observing what's happening in our community
        - That doesn't actually work for Hawaiian Homelands side, our side, thank you
- Andrew: Thanks for that
    - Just wanted to say that the Department has been working with Kohala Mountain Watershed Partnership
        - They help to put up the ungulate proof fences
        - So that's step 1
            - Put up the fences so additional ungulates don't enter the community
        - Step 2

- Start to remove some of the ungulates
- Had previous convos with the community on what are appropriate methods to remove ungulates from the watershed so we can reduce the amount of vegetation they eat

    - We haven't really reached a firm consensus on what is appropriate or not appropriate methods to remove ungulates, remove the goats
        - I think it's a conversation we'll have to revisit
- Appreciate Lauren and her organization's work
    - To come up with a larger watershed management plan
    - To help with these types of timely issues
- Think in a lot of ways, we will kind of look at some of the plan recommendations that come out of the planning process
    - See what works and doesn't work for DHHL
    - Big piece is managing goats that are on Hawaiian Homelands
    - Making sure we manage them in a way that is appropriate and supported by the community

- Jojo: It's me again
    - Want to let you know then that the Department of Transportation has decided that they have to put wild animal signage on the highway
        - Because, I don't know where all of these goats come from if you have all this fencing
        - They on the side of the road or running across the highway
        - Honokoa gulch, Kaiopae Gulch and Pelekani Bay, that's all Hawaiian homes side
        - So yeah you have all this fencing and stuff
        - It's a major traffic fatality
        - DOT has to protect their road
        - Don't know, maybe not working well enough
- Andrew: Mahalo
    - Any other questions or manaʻo or questions on firebreak project
    - Heard good questions on it
    - And how we can get involved where the location is
    - Can we access when you folks go to do it
    - Just wanted to see if there are any other manaʻo or questions on the firebreak
- Jojo: Is that to me
- Andrew: To the group
- Jojo: Ok
- Andrew: So far you folks have asked really good questions
    - Want to make sure you guys got all your questions out
    - If no other specific questions on the firebreak
    - Just wanted to remind folks
- Brandie: Sorry, Andrew, would you like me to ask the community through our community chalkboard if they have any questions or comments
    - How can other community members reach out if they missed this Zoom meeting
- Andrew: Ok, good I was going to go there
    - Thank you

- Great minds think alike
- Brandie: Ok
- Andrew: Ok, can you see my screen

Starting at 40:30 of Recording

- Jojo: Don't know if Paulo had a chance to answer my question
  - I know its not straight directly with working up there with the firebreak
    - But its a cause of
  - Or might be part of our food sustainability and the ocean right where we live
  - The erosion that goes into the ocean, maybe Paulo can answer how they're going to fix that problem
- Paulo: Sure, I'll try
  - I'm very happy you asked that question
  - The main reason why the coral program is funding a fuel break project so upland, so far from the reef is because of the sedimentation issue that has a long history in the area, in South Kohala
    - It's a big problem
    - A single bad sedimentation event can kill corals that have been growing there for hundreds of years
      - Big issue
      - Know it's been happening
      - We have to address it
  - Basically, this is one of the many steps that needs to be taken to be able to make a difference
  - Right now the project is trying to get the fuel out for the fire
    - Around 30 foot wide stretch along the fence
    - Idea being, having very little vegetation in this small amount of land
      - Is better if it keeps the rest of the vegetation from burning down
      - Having then miles of land that would be basically have sedimentation exposed when rain will take it over, wash it over and send it to the reefs that we're trying to protect
  - We feel this is better than just being exposed to fires all along
    - With the added benefit that it helps the community
  - Doesn't completely eliminate the risk of fires
    - Fires can still go around it
    - Fires can find their way
  - It diminishes ability for fires to go all the way through
    - Makes it a little bit safer
    - Helps the reef
  - Is that all that we need to do to keep the reefs from being affected by sedimentation
    - Not at all
    - Know there's a whole lot more that needs to be done
  - You mentioned that some of the work being tried out in some other areas like the rainguard
    - Or revegetation projects are not going to work here
    - Other techniques that we could try

- Goat removal being an easy one to think about conceptually, it's a lot harder to actually do it
- Have partial fencing that would allow for at least the goat population to be controlled

- As Lauren mentioned, this could be the continuation of a fire conversation for the community
- Wanted to say, for the comment earlier of will you let us know so we can tie up the dogs and all that
  - Certainly
  - We hope for you to be involved beyond than just tying up your dog
  - We want you to show up at the event
  - We envision as the community helping
    - You are protecting your community
    - You are doing this
  - I would like to be there along with rest of the community helping along
  - It will be needed for maintenance
    - Not just one time you do it and that's it
    - You'll have to keep it maintained
  - Something we thought input and support for community, or it won't happen
- Lot more that needs to be done in for this to make a difference in the reefs we're trying to help below
- This could be a continuation we have
- Through Lauren, in the network of many other funding opportunities, other ideas that then we can try out, and through DHHL
- We hope this becomes an impetus for us to come together, talk a little bit fire, see what else needs to be done
  - And see what else we can do out here to make the community even more fire safe
  - With the added benefit of keeping the reefs down below, the waters a little bit cleaner for the benefits of the reefs as well as the people
- In a nutshell, there's a lot that needs to be done
  - This is one step out of many that should be taken
- Wanted to say, as Lauren mentioned, there's long steps that need to be happen
  - Even if everyone here thinks it's a great idea and wants to move forward
  - We still don't control many of the processes that need to happen
    - We'll give it a try
    - Hopefully it'll happen
    - We think it's a good idea
    - And if you agree and DHHL agrees
    - We'll move it forward and see if we can make it happen
    - There's many many steps in there
- If we are not able to make it happen now
  - And think it's a good idea and there's a great need
  - We can brainstorm, and keep looking for funding opportunities
  - See if we can make it happen one way or another
  - If it's a good idea that's necessary and will help the community and reefs

        - We can help basically, eventually find the funding to help do some of it
    - Did I answer your question
- Jojo: Yes, you did, thank you
    - I will keep this in mind for the future projects
    - Thank you
- Paulo: One step out of the many that we need to take
    - Thank you for the question
- Andrew: Any other questions or comments on the proposed firebreak project
- Brandie: I have a question
    - If the community responds and comments, what happens then
        - Do they review the comments
        - Is it addressed again and we do another meeting
    - Wondering what would be the next steps after the comments are submitted by December 14th
- Andrew: Next step is for the Department to compile the comments we receive
    - Submit those comments to our Hawaiian Homes Commission for their consideration
    - I think, one thing that we're considering is giving a right of entry permit to South Kohala Coastal Partnership to do the project
    - I think, might not have explained it
        - Anything over 30 days
        - If an entity wants to access DHHL property that is not leased out
        - Anything over 30 days requires commission approval
        - Anticipating the work might take longer than 30 days
        - Want to make sure the partnership has access to DHHL lands so that they can do the project
            - Not rush but do a good job
- Brandie: Ok
    - Know you gave us the timeline, I took a screenshot, was just kind of wondering
    - Will share the website on our community chalkboard
    - I know, we can probably send it out through an email
    - We did communicate this meeting through a chalkboard, email, and website
    - Hoping the community hears us
        - So that when it does start
        - You don't hear the we didn't know this was happening kind of resistance
        - Wanted to make sure the board is vigilant on our part to communicate what is going on when the questions come up
        - Just want to clarify
- Andrew: Just want to mahalo you for your efforts and your volunteerism on the board, so thank you for that
    - One of the major manaʻo we heard tonight
    - Not just tonight, but as the project moves forward, regularly communicate with the association and lessees of Kailapa
    - So there's good awareness about where we are on the project
    - Once timeline is a little more firm
        - Communicate when work might begin

        - And when community workdays and opportunities to participate might be occurring
    - Tonight is just the initial conversation
    - Know Lauren has reached out to you folks individually
    - Tonight just wanted to provide opportunities and notice to others in the community that the Department is considering doing
        - Here's your opportunity to share your mana'o
    - This is definitely one conversation
        - Want to make sure that conversations and information in the future as the project progresses and more information becomes available in terms of schedule
            - That information is shared with the community
    - Good questions
        - Any other questions about schedule, process
        - Questions about scope of the project
    - Noticed that couple people might have jumped on a little bit later
        - So if you folks have any questions, happy to take them
- Brandie: Think the slides with the bullet points
    - Think that's a good presentation
    - So we know what to expect coming down the line
- Andrew: Lauren, can you flash, she think was referring to your steps
- Lauren: Yes, I can put that up (Proposed Project Timeline Slide)
- Andrew: Think what you were going to say, potentially be sharing
    - We can put our powerpoints on the DHHL website as well
- Lauren: Brandie, in here, it doesn't, in this proposed project timeline in the actions that need to happen
    - Doesn't really mention the volunteer participation
    - Like Paulo said, the goal of this is to spark some interest
        - That's ok if it starts small
        - Can do it multiple days
        - Do it to we're maintaining it
    - Hopefully with this top line, it will add little more protection
        - Hopefully we can get into some schedule of trying to have some volunteer days to work together
- Brandie: Yes, thank you
    - Just didn't want anyone, especially along the fenceline
    - Didn't want them to be surprised by any of it
- Lauren: Yeah, like Paulo and I said, all of these different bullet points have to happen in order for this proposed project to occur
    - If there are any snags along the way, this project wont happen
    - Doesn't mean we cannot find another opportunity
    - We can go for something else
- Brandie: Yeah, thank you
- Andrew: Any last questions or comments from folks
    - Know you are super busy, don't want to keep you any longer than needed
    - Just wanted to provide the opportunity for you to ask or make comments since we're in this space

11-15-2022 Kawaihae / Kailapa Fire Break Project Meeting
Virtual Beneficiary Consultation Meeting
November 15, 2022, 6:00 pm to 7:30 pm
DHHL Notice | Invite | Video Recording

- Tommy: Brandie, I think you're doing a hell of a job on the Chalkboard
    - People just gotta pay attention in our community
    - They keep saying send out emails, let us know this or that
        - Slow and read the Chalkboard
        - You're not on the H-1 going up the highway
- Brandie: Thanks Tommy
    - I'll make sure to put the website
    - Ask for questions and comments before 12/14
- Tommy: What I think we should do, anytime you write something like that and we want their attention
    - Maybe we put sign above, please read, important
    - Maybe these guys will slow down and read
    - Our community, any community
        - People going grumble
        - The ones that grumble are the ones that don't go to read
- Brandie: That's what I'm worried about
    - The people by the fenceline
    - Don't want when that time comes
    - July 2023, I'm hopeful
    - When the time comes, hope we can do what we want to do
- Tommy: When we get together as a bord, maybe we pass out flyers from the top
    - So ppl on the top know we're doing something up there
    - Fire whatever, so that they know
- Brandie: Yeah
- Tommy: We got some new members, new families that moved in
- Brandie: Ok
    - Just want to make sure everyone within Kailapa is informed as much as possible
    - So that they don't grumble later
- Tommy: Exactly
    - I was asked about the question yesterday, what is this fire thing about
    - Said, just in case there is a fire, we'll have a place, maybe there's some place we can escape
        - If we cannot go from the bottom, we gotta certainly go from the top and get out of there
- Brandie: Or at least a little more control, ok
- Lauren: Brandie, I know you're worried about getting volunteer participation like you expressed that before
    - And that has happened in a lot of different communities
- Brandie Not just ours
- Lauren: No, its a lot of different communities
    - Everyone is so busy
    - Everyone has so many responsibilities
    - But one of the things is
        - If we just have a small crew that starts off on one day
        - But then we have another day schedule
        - If people have chainsaws, weed eaters, people are making noise
            - That noise, people start to hear

        - Then we're going to eat some food and have a good time
        - It starts to spread throughout the community
        - It might spread slowly
        - But it has worked in other communities
        - It's a slow process
        - Hopefully that can happen here
    - Completely agree with you about the communication
    - Tommy appreciate you saying, handing out flyers from the top and working your way down just to make sure everybody knows
- Tommy: Yeah, especially our community
    - There's people that live here, most of the older people that I talk to
        - They ask questions and want to know what's happening
        - I kind of brief them on what's going on
        - What we're dong
        - It's a slow process
    - They ask about the water, are we getting water
        - Well that's another thing, slow process too
    - Something we're working on
    - No one is going to do it for free
        - We gotta pay people to do this stuff
    - Like all of our board members we've had in past and present
        - Lot of, everybody, never do this job or that job years ago
    - Question was brought up in one of residents
        - Why are we working on getting water
        - Why shouldn't Hawaiian Homes provide us with water
        - They said when we moved here that they would provide us the land and water
        - So far we got the land, not the water
            - We got water, but it's up Kohala ranch
    - Anyway, just my…
    - Like you said, the more participation we get of doing this stuff and the hear the weed wackers and chainsaws
        - They going wonder what we are doing
        - And once we explain, hopefully they'll help
        - We just gotta start some place and work our way
- Andrew: Mahalo everyone
    - If there are any additional questions or comments that you think of after the meeting, feel free to submit it to dhhl.planning@hawaii.gov
    - Hope to compile all questions and comments we receive this evening, and present it to the Commision in December
        - Shortly thereafter in December or January, we will ask the commission to give a right of entry to the South Kohala Coastal Partnership so that they can move forward with this project
    - These are the immediate next steps
        - Know Lauren had full list of next steps to actual implementation

        - In the next month, these are the immediate next steps of what we need to do in order to move this project forward
    - Just want to thank you for all for you time with
        - Know you all have many responsibilities and ‘ohana
    - We will be posting this on website
    - Oh, one last question, from iPhone
    - If not, we will be posting this meeting video on the website
        - Hope to keep the community informed as we progress
- Tommy: Alright guys, thank you Andrew, Aloha

Next Steps

From 38:48-40:30 of Recording

- Andrew: As Lauren mentioned earlier
    - One of the requirements of our beneficiary consultation policies for the department to allow additional time for beneficiaries to leave comments or ask questions
    - Understanding that not everyone is able to meet on the date and time that the department holds the meeting
        - We do allow for additional questions and comments
    - Folks can email comments to
        - dhhl.planning@hawaii.gov
        - That would be the method to provide us with any additional mana‘o for those who were not able to attend this evening but are interested in learning about the project
    - We will be posting this meeting video on department website, along with the presentation
        - So folks can watch the presentation
        - And gain the same information you folks gained tonight
    - You can point them to the website you folks used to access the Zoom meeting
        - Will put it in chat
    - While I’m doing that
        - Jojo you can unmute and ask your question

Slide Presentation of Proposed Kailapa Fuel break Project

From 4:43-14:59 of Recording

- Lauren: All of you are partners within the partners, Kailapa Community Association (KCA) is a partner
    - Vision for partnership is to have a healthy and restored, abundant resilient South Kohala Coastal System
    - Partnerships founded
        - Formed state of Hawai‘i DAR and coral working group
            - South Kohala identified as priority reef area
            - Implement action to reduce human actions and impact to reef
    - Background
        - Emphasis on the importance of collaboration
        - Working together to develop resources, identify strategies, and promote stewardship

- Addressing threats to coastal ecosystems
- Go to website if have questions or reach out to me

- Specifics on projects
  - Photo of 2015 destructive Kawaihae fire
  - As climate continues to change and drought increase fires will and have increased in frequency
  - Goal is to create fuel break to increase resiliency of your community
    - And the ahupua‘a
  - Project based upon previous Kailapa community association board and former coordinator of partnership
- What does this project consist of
  - Project area, red lines, makai of fence line
  - Will not include side fence line to avoid archaeological sites
- What occurs during project
  - Fuel break consists of clearing vegetation
    - 30 ft wide fuel break along 0.8 mile corridor
    - Only handheld port equipt will be used
      - No digging or disturbing soil
      - No heavy machinery
      - No chemical herbicides
- Proposed project timeline
  - Many actions need to occur in order for project to come to fruition
  - You are at meeting to inform community on fuel break project
  - Today till 12/14, Kailapa Community will have opp to submit comments to DHHL
  - DHHL will give letter of support to SKCP and NOAA
    - Submit to SHPD
  - SHPD will submit approval of project to NOAA and DAR
    - Who will actually be funding project
    - Funded through cooperative agreement between NOAA and DAR
  - DAR request for bids
    - In order for contractor to work and create fuelbreak
    - Contractor needs technical expertise and history in creating successful fuelbreaks
  - DAR select bids and contractor
    - Right now, don't know who will be doing the work
    - I am going to act as liaison between contractor and helping to inform your community association of when work will happen
  - Contractor works with me at SKCP to gain access from DHHL
    - Inform DHHL and your community association of project workdays
  - Projected completion of fuelbreak is next summer
  - All of these need to get checked off in order for work to go through
    - In order for this to go through, the work done to create fuel break will not happen until Summer 2023
- Some ppl contacted me on future project ideas

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- Want to make sure you're talking to your community association board members
- Some things we can work on is KCA is a firewise community
    - Means, all of you and your community are required to work on becoming resilient against wildfires
    - Happens through Hawai'i Wildfire Management Organization (HWMO)
        - Partner with SKCP
        - Nui does presentations of Ready, Set, Go program
        - Nui is the safety officer
- My role as liaison between contractor DAR selects for the fuelbreak work
    - And can assist board members of community association think through funding for other resilience areas
- I want to thank you all for attending and listening
- And if anybody has any questions

Chat

- N/A -- Not part of the video recording that was posted to the DHHL Website

Choy, Andrew H

From: Brandie Oye <brandielei@kailapa.org>
Sent: Tuesday, November 22, 2022 11:31 AM
To: Lauren Kurpita; Choy, Andrew H
Subject: [EXTERNAL] Re: Kailapa Firebreak
Attachments: Kailapa FB.docx

Aloha Lauren and Andrew,
I am attaching a letter from my neighbor. He tried to zoom into our meeting last week but was unable to do so. He is very interested and knowledgeable about firebreaks and fuelbreaks because he is currently handling similar issues at Pohakuloa for the military. He has interesting ideas and experience with Kailapa's landscape and our challenges. One idea is to use goats to graze in fenced areas to maintain the grass growth and relieve our community and volunteers from the responsibility of maintaining regrowth. He shared his background and experience in this attachment. He said to share it with DHHL on the website that was sent for questions and comments from our meeting but I wanted to share this with both of you first because it is well thought out, thorough, and sheds light from an experienced and different perspective. While writing this, my neighbor Dale cut his grass and timed it to see how long it would take to cover a measured area to include that when sharing his information. If and when you have the time, could you please read his paper with his comments and questions? He provided his contact information as well and I believe he is in tune with our landscape and our current and future challenges as he has been a resident here since the 90's. Please let me know your thoughts and questions or feel free to contact him directly to share mana'o about Kailapa.
Thank you for your time and assistance.
Aloha,
Brandie Oye

The Nature Conservancy
Hawai'i and Palmyra

KAILAPA FIRE BREAK

Background:

- As a Resident of Kailapa;
- Awarded Homestead in 1983.
- Built in 2000.
- 22 years at Kailapa after retired from USMC.
- Work at Pohakuloa Training Area (PTA) as the base Maintenance Mechanic Work supervisor (MMWS) for the entire base.

Experience:

- As PTA MMWS it requires direct supervision of a 12 member team.
- 4 of the 12 Team members are directly involve with following operations below.
- Crew involves technical skill such as heavy, medium, light and hand type equipment operations to maintain 118 miles of un improve roads/trails roads and approximately 12 miles of fire and fuel breaks at PTA.
- Section is also responsible for design of FB that needs to comply to Section 106, NEPA, NAGPRA, SHPD, and NPS when situation or project applies.
- Other responsibilities covers trades in Carpentry, HVAC, High and Low Voltage Electricity from primary to secondary, Lock Smith, Metal working, all phases of welding, heavy equipment repair and maintenance, supply and resource inventory and accountability,
- Coordinate with contractor for building planning and construction.
- Develop quarterly, semi-annual and annual work plan.
- Maintain and control a 750K annual budget to maintain PTA with materials needed to support mission.
- Maintain a 10M inventory of equipment ranging from office to heavy equipment.
- Responsible for Maintenance day to day operations,

Fire Prevention using Fire breaks and Fuel Breaks:

1) Fire Break
   - A cleared path that is taken down to no vegetation approximately 10 or more feet wide.
   - Used for vehicle traffic to control active fire.
   - Shoulder cleared additional 10’ or more on each side to create a fuel break.
   - Requires heavy or light equipment work.
   - Gives emergency crew a route and means to actual fire location to maintain and control fire.
   - Good chance off erosion if not properly stabilized.
   - Used for long term and permanent solution.
   - Once completed easier to maintain.
   - Have vehicle access to maintain and provide EM services
   - Possibly working with state to get cold plane material for road stabilization?

2) Fuel Break
   - 30 feet wide
   - Vegetation maintained to a maximum of 3" in height
   - Used to slow down fire.
   - Low to no erosion impact.
   - Can be maintained through use of hand operated equipment.
   - Requires more maintenance in the future and increases man hours.
   - Possible higher risk for maintenance of equipment being used.
   - Increases risk for possible injury
   - Increase liability.

Future Requirements and Goals:

Is this temporary?

How is it sustained in the future?

Will funding through DAR/NOAA and fire wise be able to sustain on-going maintenance?

How will this be embedded into the community?

Will the future involve having a fire station at Kailapa to service residents north and south of Kailapa?

Will different types of Fire Control Measures be available?

Does DHHL have future plans for Kailapa's safety sustainment and does it entails more than approving besides approving right of way or entry?

Will this project be managed by Board members or volunteers or paid professionals from grants?

Can this be a self-sustained project to help Kailapa build revenue?

Are there other alternatives such as grazing using ungulate goats?

If there is a no cost or minimum cost to provide materials for a trial project. Where ungulates are used to graze that requires no equipment operation or maintenance on community. In turn vender uses animals to recover initial cost to set up fencing along boundary to create paddocks to rotate ungulates and to control grazing efforts? I would be interested in managing and supporting this effort if DDHL approves this method.

Resources:

- Personnel- utilizing community members is a great start but long-term sustainment maybe become a non-volunteer program.
- Kawaihae is a hot place to work in and requires participants to be well hydrated before working in its harsh conditions.

Equipment:

- Personal equipment to be used by volunteer force?
- Does project coordinator provide Equipment?
- How is equipment maintained and repaired when situation arises?
- How is expendable items provided and replaced?
- Is fuel provided?
- Is Personal protective equipment provided?

Training:

- Will training be provided?
- What topics will training cover such as, equipment use and maintenance, proper use of required PPE, Minimum PPE required, etc.,
- Can or will someone in the community be trained in techniques of equipment operation and maintenance?

Liability:

- Will participants have sign waivers to release community and supporting cooperation from liability in case of injuries?
- What is and who will overall responsible for the proper execution of project.
- Will someone be medically certified to apply medical attention if and when the situation arises.

History:

When I moved into Kailapa a few things occurred that the environment never recovered from. Fires are devasting to the environment when they occur. Prior to or during the developing of Kailapa a large fire occurred and these sites are still visible to the naked eye and the result is amplified during wind and dust storms to include heavy rains.

We tend to use ungulates as a large part of the cause to the erosion that has occurred. In my opinion they are responsible for some of it but not all of it.

Fires occur 90% of the time from people who lack or fail to be responsible citizens and concern for the environment.

Last rain downfall that occurred in the Kawaihae Area especially at the entrance to the new boat harbor. A comment was made the silt build up on the road and entering the harbor through the low water crossing was due to ungulate goats. In the past we had a fire that has been and is also a contributing cause. Majority of the silt built up in harbor was due to the state harbor clearing and removing vegetation in the ditch prior to the heavy rain from the low water crossing to the bridge on Kawaihae road. Due to this action we have failed to resource and do a complete engineering plan to determine the effect it will impose on the environment. Actions such as hardening ditch slope and floor with boulder would have greatly reduce and minimize the silt settlement and debris in Kawaihae Harbor. Another course of action would be to install weirs in these ditches to help slow and control the hydrology effects it has on the environment. The more weirs installed in ditches the better you would be able to control

silt sediments from reaching the ocean. These method should be considered in main entrance ways from the land into the ocean. Kawaihae Uka bridge is a great place to start.

Does it mean we control the humans through eradication. Certainly not an option but the humans are the first to say get rid of nature creatures who at some point in our lives we will become dependent upon them for sustainment of the human life. Opportunity to benefit from these living creatures by developing the means for present and future sustainment is today. Beef at some point and time will no longer be a sustainable staple for surviving in Hawaii it is being predicted through today's environmental evolution. Today's environment is changing, and we need to adapt to the resource ungulates provide. They are very persistent in survivable techniques and require minimum water and can sustain on the harsh vegetation available. We just need a better way to manage it. We know of everyway they hurt the environment but minimum knowledge how to live with them and reap the benefits for future sustainment.

We here at Kailapa have an opportunity of a lifetime to be a model for other DHHL communities to follow. Upgrade our thinking to move forward with today's technology and using it to our advantage. As the kupunas in their time took advantage of the technology to advance and improve their way of living here on earth in there time.

Closing:

I hope this can shed some light on ways we can move forward.

DHHL approve the access required.

As a Royal Heir and Direct Lineal Descendant with undivided interest certainly looking forward to working with this corporation and DHHL for the betterment of Kailapa's safety and the environment overall whether it be mauka or makai.

v/r

Dale Clement Paki Hoopai

P.O. Box 44646

Kamuela Hi 96743

808-315-4297

D_hoop@live.com

ITEM G-6 EXHIBIT D WRITTEN COMMENTS RECEIVED

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

December 19-20, 2022

To: Chairman and Members, Hawaiian Homes Commission

From: Andrew H. Choy, Planning Program Manager

Subject: Memorandum of Understanding Agreement Among DHHL, Trustees of the Bishop Estate of Bernice Pauahi Bishop dba Kamehameha Schools, and the County of Hawaii Department of Water Supply Regarding Water System Improvements and Allocation of DWS Water Credits and Facility Charge Credits, Keauhou, North Kona, Hawai'i Island

Recommended Action

That the Hawaiian Homes Commission authorize the Chairman to enter into a Memorandum of Understanding Agreement (Exhibit A) among DHHL, Trustees of the Bishop Estate of Bernice Pauahi Bishop dba Kamehameha Schools, and the County of Hawaii Department of Water Supply Regarding Water System Improvements and Allocation of DWS Water Credits and Facility Charge Credits.

Purpose

The purpose of this submittal is to inform the Hawaiian Homes Commission (HHC) about the DHHL Memorandum of Understanding referenced above in anticipation of HHC decision-making on the matter on Tuesday, December 20, 2022.

Background

The DHHL Kealakehe-Regional Plan Update was adopted by the HHC in 2020. One of the priority projects that was identified by beneficiaries and DHHL during the planning process was to develop additional water sources in North Kona to provide water for future DHHL homestead development and homestead-led community development initiatives in North Kona. See: https://dhhl.hawaii.gov/po/hawaii-island/hawaii-island-regional-plans/

After the buildout of La‘i ‘Ōpua Village 4 Phase I Akau and Phase II Hema, DHHL will not have any water credits available from the County DWS to develop additional homesteading in the North Kona region. (Note, one water credit is equivalent to 600 gallons per day). Current DHHL water use is approximately 0.33 million gallons per day (MGD).

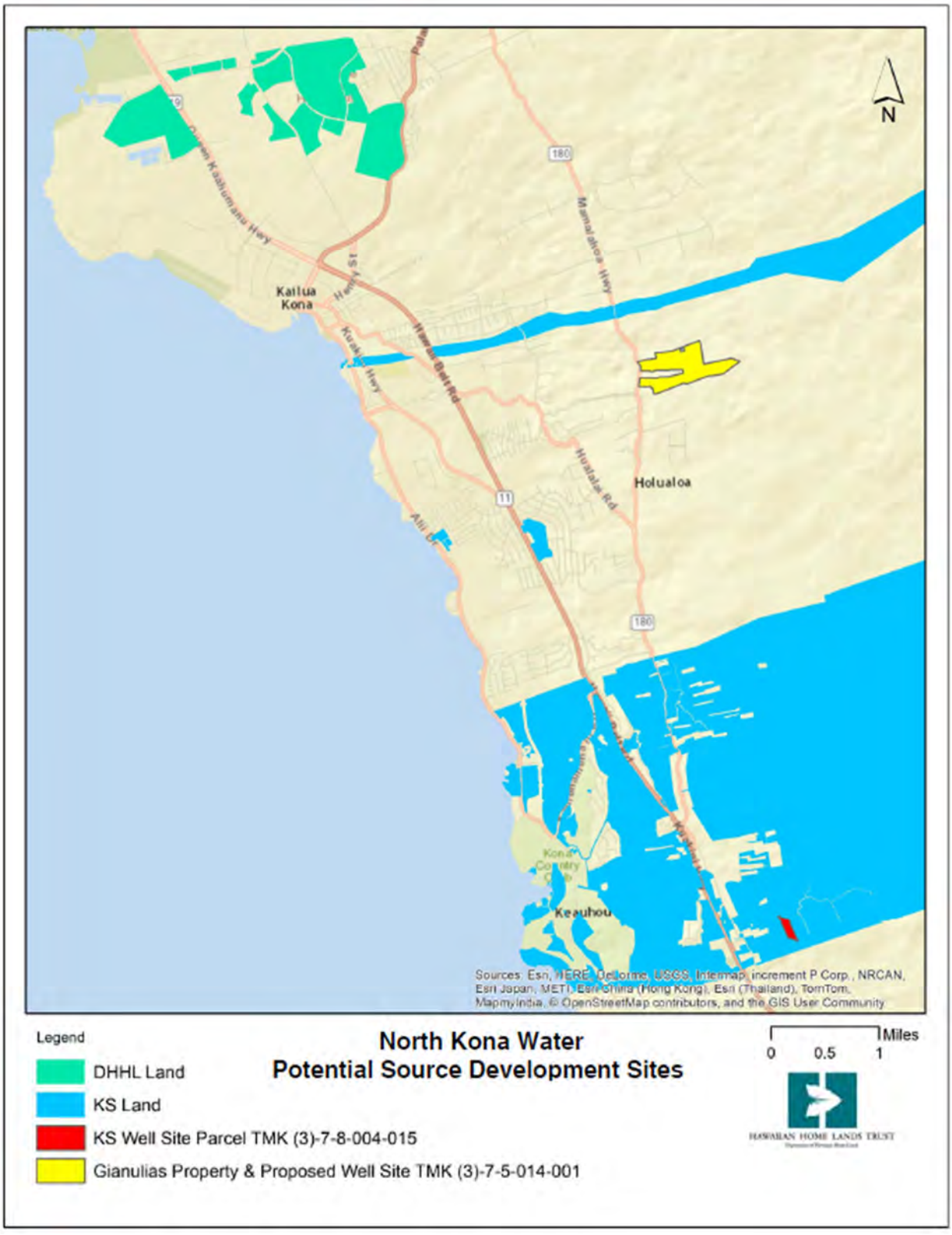
DHHL lands in North Kona are not located at a high enough elevation that would make well development feasible. As such, DHHL needs to partner with other landowners to develop water sources in more suitable locations.

Total DHHL water demand for current use and projected future uses is estimated to be 3.728 MGD. After subtracting out areas already constructed and those having water allocations from the total demand of 3.728 MGD, the unmet water demand for full buildout of remaining DHHL lands in North Kona is approximately 3.398 MGD. In 2015, the state Commission on Water Resource Management approved a water reservation in that water amount for DHHL.

The 2020 DHHL Kealakehe Regional Plan identified two potential private landowners in which DHHL could partner with. Kamehameha Schools (KS) was one of the two private landowners that DHHL has been in conversations with over the last several years on potential well development on its lands. KS approached DHHL to potentially partner with them to bring an existing well online to the County DWS system (KS Well 2) and also develop a new well (KS Well 2A) and related water system improvements (storage and transmission). Conversations with KS on Well 2, potential future Well 2A, and related water system improvements began approximately four years ago in 2018.

KS has an existing well on its lands in Keauhou, approximately 8 miles from DHHL lands in Kealakehe. See map in Figure 1. KS developed the well on its Keauhou property several decades ago. The well is commonly referred to as KS Well 2. The current well is not in use nor connected to the County DWS water system. KS development plans for its Keauhou lands have changed over the course of several decades and the organization’s projected future water demand has significantly decreased.

Figure 1


N
Kailua Kona
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Sources: Esri, HERE, DeLorme, USGS, Intermap, increment P Corp., NRCAN, Esri Japan, METI, Esri China (Hong Kong), Esri (Thailand), TomTom, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Legend
DHHL Land
KS Land
KS Well Site Parcel TMK (3)-7-8-004-015
Gianulias Property & Proposed Well Site TMK (3)-7-5-014-001
North Kona Water
Potential Source Development Sites
Miles
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1
HAWAIIAN HOME LANDS TRUST

Discussion

The County Department of Water Supply (DWS) is interested in accessing and using KS Well 2 as a water supply for island residents and improving the overall reliability of the water system through improvements in the Keauhou and Kahaluʻu areas. As mentioned previously, DHHL desires water credits for future development of its lands in North Kona.

The three parties have been in conversation for the last four years on a potential water development agreement. The Memorandum of Understanding (Exhibit A) is a result of preliminary conversations among DHHL, KS, and DWS on a potential water development agreement. The MOU is meant to be a preliminary agreement among the parties that outlines future commitments that each party would agree to as well as areas needing further discussion in the future. The KS Board of Trustees approved the MOU (Exhibit A) in October 2022 and KS gave its permission to share the agreement publicly at the December 2022 HHC meeting.

Future additional agreement(s) that articulate specific costs to each party and specific water credit allocation amounts and facility charge credit amounts will be needed. DHHL staff will seek HHC approval on future agreement(s) with DWS and KS related to the project as these agreements are drafted.

The terms of the MOU as it relates to **DHHL's commitments and benefits are as follows**:

- DHHL Commitments:
  - DHHL shall complete a hydraulic study of the DWS system to identify whether any additional storage capacity improvements are needed on the DWS system (DHHL initiated the hydraulic study and it is currently on-going);
  - DHHL shall fund, design, and construct additional storage as determined by the findings of the hydraulic study performed by DHHL. It is estimated that any increase of storage capacity should not exceed 2 million gallons;
  - DHHL shall prepare Environmental Assessments and / or Environmental Impact Statements for water system improvements;

- DHHL shall reimburse KS for costs incurred by KS in the development of KS Well 2. The cost incurred by KS to drill, test, and case KS Well 2 was the sum of $1,110,478.

- DHHL Benefits:
  - Receive one-third of the maximum day pumping capacity of Well 2 for use for the development within future La‘i ‘Ōpua homestead phases.
  - Receive two-thirds of the maximum day pumping capacity of Well 2A for use for the development within future La‘i ‘Ōpua homestead phases (if DHHL commits to developing Well 2A);
  - Receive Facilities Charge Credits from DWS related to DHHL costs incurred in the, designing, permitting, and construction of improvements at the KS Well 2 Site, Kahalu‘u Tank Site, and related pipelines and facilities to connect to the public water system;
  - Receive Facility Charge credits, related to the cost of reimbursement of KS as specified in 2(e) and 4(a), as allowed by DWS rules and regulations;
  - Receive Facility Charge credits for the preparation of an Environmental Assessment or Environmental Impact Statement costs related to the Keauhou Well 2 site and the improvements to the Kahalu‘u Segment.

The terms of the MOU as it relates to **DWS’s commitments and benefits are as follows**:

- DWS Commitments:
  - DWS shall acquire all necessary property interests (including non-exclusive utility easements) for the land area designated for the Keauhou Well 2 Site and KS Well 2A Site. KS shall be compensated at fair market value for the sites. DWS may have an option to purchase from KS and/or KIC the fee under easements and / or other necessary property interests at fair market value;
  - DWS shall pay for the costs to acquire all necessary property interests for the Keauhou Segment, including but not limited to surveying, appraisals, subdivision, and recording fees required for the development of KS Well 2, control building, and a 2 MG storage tank. The land area will need to be

adequate in size to accommodate the future development of Well 2A.
    - DWS shall fund, design, permit, and construct improvements for the existing KS Well 2, including the installation of a pump, control building, 2 MG Concrete Tank, and pipeline connection to the existing public water system. DWS shall construct such improvements to adequate size sufficient to accommodate the future development of Well 2A.
    - Accept responsibility for long-term operation and maintenance of the water system improvements made by the other parties.

- DWS Benefits:
    - DWS would receive capital improvements of water source accessibility, storage, and transmission on its water systems in North Kona funded in part by DHHL.

The terms of the MOU as it relates to **KS's commitments and benefits are as follows:**

- KS Commitments:
    - KS shall dedicate to DWS any Well 2 improvements previously made by KS;
    - KS shall convey non-exclusive easements over KS lands to DWS for a transmission line to connect the improvements located at the Well 2 Site to the existing public water system;
    - KS shall work cooperatively with DWS in making appropriate adjustments to existing utility easements for necessary transmission line(s) improvements, if any, required to connect to the existing public water system;
    - KS shall convey to DHHL its allocation of Equivalent Units of Water generated from the development of Well 2.

- KS Benefits:
    - KS will be reimbursed by DHHL for costs incurred in the development of KS Well 2 ($1,110,478);
    - KS will be reimbursed by either DHHL or DWS for use of its lands for the project;

- KS will have resolved prior commitments and obligations to DWS under previous agreements between the two parties.

Unresolved decisions identified in the MOU that will require additional future discussion and subsequent agreement(s) among the three parties are as follows:

- DHHL or DWS shall design, fund, permit, and construct a second well (KS Well 2A) and install pump system and related controls; If DHHL decides to develop Well 2A, DHHL will receive additional water credits from DWS (two-thirds allocation of the maximum day pumping capacity of KS Well 2A).
- DHHL or DWS shall purchase the necessary property interests from KS for the expansion of the Kahaluʻu Tank site. KS shall be compensated at fair market value.
- DHHL and DWS shall compensate KS (or KIC) or its lessees for any loss and/or damages suffered related to crop damage, interruption to agricultural operations, reduced access rights, and other damages that are caused to KS (or KIC) lessees by the granting of easements / property interests and / or construction of the improvements on KS (or KIC) owned properties. *The potential compensation amount is still to be determined*.
- Specific water allocation / credit amounts and facility charge credit amounts to be received by parties to the agreement.

Costs of DHHL Commitments in Agreement

Because of the above unresolved decisions as well as other factors (identified below), the rough order of magnitude total cost of DHHL commitments cannot be calculated at this time. However, several of the DHHL commitment costs are known at this time. They are as follows in the table:

DHHL Commitment	Estimated Cost
Hydraulic Study and Chapter 343 EA (both currently under contract)	$345,952
Design and construct additional storage as determined by the findings of the hydraulic study	Unknown until completion of hydraulic study
Reimburse KS for costs incurred by KS in the development of KS Well 2	$1,110,478
Design and Construct Well 2A (to be decided in future conversations between DHHL and DWS)	$5,900,000*
Purchase the necessary property interests from KS for the expansion of the Kahaluʻu Tank Site (to be decided in future conversations between DHHL and DWS)	Unknown. Dependent upon whether DHHL or DWS purchase property from KS. Also dependent upon reaching an agreement on purchase price with KS.
Compensate KS or its lessees for any loss and/or damages related to crop damage or interruption to agricultural operations.	Unknown. Dependent upon whether DHHL or DWS provide compensation to KS for improvements. Also dependent upon future conversations with KS on reasonable compensation amounts.

*2022 Dollars and Rough Order of Magnitude Estimate

Estimated Water Amount DHHL Could Receive from Agreement

Assuming Well 2 and Well 2A maximum day use produces 1 MGD and assuming DHHL decides to design and construct Well 2A, the estimated amount of water DHHL could receive under the agreement could be:

Well	MOU Allocation to DHHL	DHHL Water Amount (MGD)	Approx. Equivalent Units (1 Unit = 600 gallons per day)
Well 2	One-third of Max Day Use (1MGD)	0.333	555
Well 2A	Two-third of Max Day Use (1MGD)	0.666	1,111

(Note these amounts are subject to change pending future conversations with DWS and actual maximum day production of Well 2 and Well 2A)

County DWS Facility Charge Credits

The amount of County DWS Facility Charge Credits for DHHL contributions to the project will need to be calculated and confirmed by DWS in the future pending decisions and agreements on unresolved decisions.

Next-Steps

- This MOU will need to be approved by the County DWS;
- HRS Chapter 343 Environmental Assessment will need to be completed;
- Additional conversations and agreement(s) among the parties to resolve undecided decisions will need to be completed including real estate transactions to secure sites needed for water system improvements;
- Design and construction of water system improvements.

Recommendation

DHHL staff respectfully requests approval of the recommended motion as stated above.

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding ("**MOU**") dated _____ by and between the Department of Hawaiian Home Lands ("**DHHL**"), the Water Board of the County of Hawaiʻi ("**Water Board**"), which is the governing board of the Department of Water Supply County of Hawaii ("**DWS**"), a semi-autonomous agency of the County of Hawaiʻi, the Trustees of the Estate of Bernice Pauahi Bishop dba Kamehameha Schools ("**KS**"), and Kamehameha Investment Corporation ("**KIC**") is intended to summarize their understanding regarding the proposed usage of KS Well 2 and KS Well 2A, and construction and operation of water system improvements located in Keauhou, Hawaiʻi (the "**Proposed Transaction**"). DHHL, Water Board, DWS, KS, and KIC are collectively referred to herein as "**Parties**" and individually as "**Party**" as appropriate.

RECITALS

Whereas, KIC, KS, DHHL, the Water Board and DWS desire to enter into a transaction to make improvements to support additional water resources in the Keauhou Development Area.

Whereas, KS owns and has partially developed the KS Well 2, a water well located on the KS Well 2 Site, which is currently not in use.

Whereas, DWS is interested in accessing and using KS Well 2 as a water supply for residents on the Island of Hawaiʻi, and improving the overall reliability of the water system through improvements in the Keauhou and Kahaluʻu areas.

Whereas, DHHL desires Water Credits (as defined below) which it may use towards future residential development expansion plans at Laʻi ʻŌpua on Island of Hawaiʻi and in return is willing to fund some of the improvements for the water system.

Whereas, the Parties desire to summarize their respective understandings regarding the aforementioned development of KS Well 2, use of the proposed water system, water system improvements, and related Water Credits, and payments, as further described below.

Whereas, the Parties recognize that no legal obligation arises in relation to the subject matter contained herein.

Now, therefore, the Parties set forth herein their non-binding understanding of the Proposed Transaction as follows:

UNDERSTANDING

A. PROPOSED TRANSACTION

The Proposed Transaction consists of the Proposed Project (Section A.2) and the Allocation of Water Credits (Section A.3) as discussed below.

1. Definitions

a. "1981 Agreement" means the letter of water commitment from DWS dated April 3, 1981, as renewed, amended and/or superseded by the letter from DWS dated June 1, 1982, and the letter from DWS dated September 28, 1982.

b. "1983 Agreement" means the Water Commitment Agreement between KIC and Water Commission of the County of Hawai'i dated October 17, 1983.

c. "2011 Agreement" means the Water Agreement between KIC and KS, on one hand, and Water Board, on the other, dated October 20, 2011, which agreement pertains to 235 Equivalent Units of Water that are presently assigned to Tax Map Key No. (3) 7-8-013-002.

d. "2012 Agreement" means the Water Agreement between KIC and KS, on one hand, and Water Board, on the other, dated April 4, 2012, recorded in the State of Hawai'i Bureau of Conveyances as Doc A-44841337, which agreement pertains to 291 Equivalent Units of Water that are presently assigned to parcel LA 10, identified by Tax Map Key No. (3) 7-8-010- 078, and 349 Equivalent Units of Water that are presently assigned to parcel LA 26, identified by Tax Map Key No. (3) 7-8-010-004.

e. "864 Equivalent Units" means eight hundred sixty four (864) Equivalent Units of Water, which constitute the remaining balance of 2,845 Equivalent Units of Water that KIC purchased at various times, at then prevailing Facilities Charge rates, pursuant to the 1981 Agreement and the 1983 Agreement, which 864 Equivalent Units of Water are identified in the schedule attached herewith as Exhibit 4.

f. "Average Daily Usage" the amount of potable water equivalent to four hundred (400) gallons per day.

g. "DHHL" means the Department of Hawaiian Home Lands.

h. "DWS" means the Department of Water Supply County of Hawaii, a semi-autonomous agency of the County of Hawai'i.

i. "DWS Rules and Regulations" means the Rules and Regulations of the Department of Water Supply, County of Hawai'i, prepared by the DWS and

adopted by the WaterBoard in accordance with applicable laws and as amended (effective July 28, 2016; amendment effective December 25, 2020).

j. "DWS Standards" means the Standards for Public Water Systems Construction in the County of Hawai'i, preparedby the DWS and adopted by the Water Board in accordance with applicable laws and as amended (i.e.; Water System Standards 2002, as amended).

k. "Equivalent Units" or "Equivalent Units of Water" means the amount of potable water equivalent to six hundred (600) gallons per Maximum Day.

l. "Facility Charge" means the charge established by Water Board from time to time and paid by developers, subdividers, or owners (in addition to the costs of serviceconnection or service lateral) as their share of the cost of the capital expenditures for the public water system and debt service payments on bonds issued to finance such capital expenditures. DWS current charge for each residential unit is $6,095.

m. "Facilities Charge Credit(s)" means a credit against the Facilities Charge payable for each Equivalent Unit of Water to be provided to each lot or dwelling unit of a development in the Keauhou Development Area, as defined herein, and in Rule 4-6 of the DWS Rules and Regulations, and shall also include full satisfaction of any applicable DWS capital assessment fees and/or water commitment fees, for development of each lot or dwelling unit of a development in the Keauhou Development Area.

n. "FMV" means Fair Market Value.

o. "Kahalu'u Segment" - means the portion of the public water system, comprised of water transmission lines, pump station facilities and related appurtenances, which is necessary to transmit potable water between the Kahaluu Shaft Tank and the public water system at Mamalahoa Highway as shown on Exhibit 2 – Kahalu'u Segment Map, attached hereto.

p. "Kahalu'u Shaft Tank" means an existing water tank with a storage capacity of one million gallons, which is located adjacent to the Kahalu'u Shaft Well on the parcel of land identified by Tax Map Key No. (3) 7-8-010-054.

q. "Kahalu'u Shaft Well" means Kahalu'u Shaft Well (also known as Well No. 3557-05), which is an existing potable water source for the public water system and located on the parcel of land identified by Tax Map Key No. (3) 7-8- 010-054.

r. "Kahalu'u Tank Site" means the land underlying the existing tanks and potential expansion of those tanks located on TMK Nos. (3) 7-8-009-054 and -077 and such portions of TMK Nos. (3) 7-8-009-014, and -032 that are adjacent to and

contiguous with the existing tanks and are required for expansion of the existing tanks as shown on Exhibit 2 – Kahaluʻu Segment Map, attached hereto.

s. "Keauhou Development Area" means that area in which the Water Credits can be used as outlined on Exhibit 3 – Keauhou Development Area, attached hereto.

t. "Keauhou Segment" means the portion of the public water system comprised of water transmission lines, wells, pump station facilities and related appurtenances, which is necessary to transmit potable water from KS Well 2 to the public water system at Mamalahoa Highway as shown on Exhibit 1 – Keauhou Segment Map, attached hereto. Active water transmission lines currently exists within utility easements located in Bishop Road.

u. "KIC" means Kamehameha Investment Corporation, a Hawaiʻi corporation.

v. "KS" means Trustees of the Estate of Bernice Pauahi Bishop.

w. "KS Well 2" means Keauhou-Kamehameha 2 Well (also known as Well No. 8-3355-01), which is the potable water source located at the KS Well 2 Site owned by KS.

x. "KS Well 2A" means an additional well to be developed on the KS Well 2 Site.

y. "KS Well 2 Site" means an area of approximately one and two-tenths (1.2) acre in size within the parcel of land presently identified by Tax Map Key No. (3) 7-8-004-015, as generally shown on Keauhou Segment Map 1, attached hereto as Exhibit - 1, and subject to the mutual agreement of DWS, on one hand, and KIC and KS, on the other, as to final site designation upon which KS Well 2 and Well 2A and related improvements have been and/or will be developed, together with any necessary and appropriate non-exclusive easements.

z. "Laʻi ʻŌpua Development area" means that area as shown on Exhibit 5.

aa. "Maximum Day" is defined as 1.5 times the Average Daily Usage.

bb. "Storage Tank" means a water storage tank with a storage capacity of two million gallons, to be developed by DWS at the approximately one (1) acre in size within TMK (3) 7-8-004-016, subject to mutual agreement by DWS, on the one hand, and KIC and KS, on the other, as to the final site designation.

cc. "Transaction Documents" mean the final documents memorializing the transactions related to the Proposed Project.

dd. "Water Board" means the Water Board of the County of Hawaiʻi which is the governing board of the DWS.

ee. "Water Credit" – Water Source allocation of one (1) Equivalent Unit of Water.

2. Proposed Project

The Proposed Project consists of two segments; the Keauhou Segment, and the Kahaluʻu Segment

a. Keauhou Segment as shown on Exhibit 1

i. DWS shall acquire all necessary property interests (including non-exclusive utility easements) for the land area designated for the Keauhou Well 2 Site and KS Well 2A Site. KS shall be compensated for the conveyed property interest based on the fair market value of those lands conveyed. DWS may have an option to purchase from KS and/or KIC the fee under easements and/or other necessary property interests at fair market value.

ii. DWS shall pay for the costs to acquire all necessary property interests for the Keauhou Segment, including but not limited to surveying, appraisal, subdivision, and recording fees required for the development of KS Well 2, control building, and a 2 MG storage tank. The land area will need to be adequate in size to accommodate the future development of KS Well 2A.

iii. DWS shall fund, design, permit, and construct improvements for the existing KS Well 2, including the installation of a pump, control building, 2 MG Concrete Tank, and pipeline connection to the existing public water system within the Bishop Road utility easement and continuing on to Māmalahoa Highway. DWS shall construct such improvements to an adequate size sufficient to accommodate the future development of KS Well 2A.

iv. KS shall dedicate to DWS any KS Well 2 improvements previously made by KS. KS shall be reimbursed by DHHL for costs incurred by KS in the development of KS Well 2.

v. KS shall convey non-exclusive easements over KS lands (as shown on Exhibit 1) to DWS for a transmission line to connect the improvements located at the KS Well 2 Site to the existing public water system within Bishop Road utility easement.

vi. DHHL and/or DWS shall, in the future, design, fund, permit, and construct a second well (KS Well 2A) and install pump system and related controls.

b. Kahaluʻu Segment as shown on Exhibit 2

i. DHHL or DWS shall purchase the necessary property interests from KS for the expansion of the Kahaluʻu Tank Site. KS shall be compensated for the conveyed property interest based on the fair market value of those lands conveyed. The funding Party shall be responsible for the payment of all costs required to secure said property interest, including but not limited to, surveying, appraisal, subdivision, and recording fees.

ii. KS shall work cooperatively with DWS in making appropriate adjustments to existing utility easements for necessary transmission line(s) improvements, if any, required to connect to the existing public water system from Māmalahoa Highway through the Kahaluʻu Tank Site and continuing on to the Kahaluʻu Shaft Well.

iii. DHHL shall fund, design, and construct additional storage as determined by the findings of the hydraulic study performed by DHHL. It is estimated that any increase of storage capacity should not exceed 2 million gallons.

iv. DHHL shall prepare a hydraulic study to determine how its projected developments will benefit from the development of KS Well 2 and respective water system improvements. Hydraulic study shall be approved by DWS.

c. Both the Keauhou Segment and Kahaluʻu Segment

i. DHHL to prepare Environmental Assessments and/or Environmental Impact Statements for all DWS and DHHL improvements.

ii. Environmental Assessment and Environmental Impact Statement costs incurred by DHHL shall be considered part of the well development costs, or improvements, and as allowed for in DWS Rules & Regulations.

iii. All studies, e.g. EA/EIS, to be given to KS and/or KIC without cost to KS and KIC.

d. Funding

The source of any funds used by DHHL and DWS to acquire and/or construct improvements on the easement or for the Proposed Project shall be disclosed to the Parties. Any financing, grants, or moneys from whatever source shall be subject to prior approval by the Parties. There would be a provision in the easement

document that if this financing approval requirement is violated, the property interest shall terminate and the improvements shall be removed by the grantee and Party(ies) making the improvements on the easement.

e. KS and KIC Lessees' Damages

DHHL and DWS shall, or shall require their respective contractors to be responsible for compensating KS or KIC Lessees for any loss and/or damages suffered related to crop damage, interruption to agricultural operations, reduced access rights, and other damages that are caused to KS or KIC Lessees by the granting of easements/property interests and/or the construction of the improvements on KS or KIC owned properties.

f. Laws and Standards

The Proposed Project must meet all applicable laws and standards, including without limitation, DWS Rules and Regulations and DWS Standards, in order for the Proposed Project to be dedicated to DWS.

3. Allocation of Water Credits

The following are the allocation of new Water Credits and treatment of existing Water Credits between the Parties:

a. DHHL shall

i. Upon completion and connection of the KS Well 2 and related storage tank and other improvements of the Keauhou Segment, receive KS and/or KIC's vested right to an allocation of Equivalent Units of Water equal to one-third (1/3rd) of the maximum day pumping capacity of the Well for use for the development within the La'i 'Ōpua Development area.

ii. Should DHHL commit to funding the development of KS Well 2A, DHHL shal receive a two-thirds (2/3rd) allocation of the maximum day pumping capacity of KS Well 2A for use for the development within the La'i Opua Development area.

iii. Receive Facilities Charge Credits from DWS related to DHHL costs incurred in the, designing, permitting, and construction of improvements at the KS Well 2 Site, Kahalu'u Tank Site,and related pipelines and facilities to connect to the public water system.

iv. Have the ability to purchase additional Water Credits from DWS at the prevailing rate.

b. DWS shall

i. Grant Facility Charge Credits to DHHL as applicable as specified in the current DWS Rules & Regulations, Section 4-6 attached as Exhibit 6.

ii. Confirm KS's and KIC's existing Water Credits available for use in the Keauhou Development Area.

iii. Confirm that the 1981 Agreement and the 1983 Agreement are both terminated and that KS and KIC have no further duties or obligations under those agreements.

iv. Confirm parameters (to be agreed to between KS and KIC and DWS) applicable to all KS and KIC Water Credits, including the use of, ability to reallocate and/or transfer, and life terms of such Water Credits.

v. Confirm existing water commitments or Equivalent Units of Water previously issued to KIC and/or KS, including, without limitation, the following:

1. 235 Equivalent Units under the 2011 Water Agreement; and extend the Term of the 2011 Water Agreement by an additional 10 years, and
2. 349 Equivalent Units of Water under the 2012 Water Agreement, and extend the Term of the 2012 Water Agreement by an additional 10 years.

vi. Enter into a new water agreement with KS and/or KIC for no less than 115 water commitments or no less than 115 Equivalent Units of Water applicable to the Keauhou Beach Hotel for a term of no less than 20 years.

c. KS and/or KIC shall

i. Convey to DHHL its allocation of Equivalent Units of Water generated from the development of KS Well 2.

ii. Waive its rights up to, but no more than, 864 Equivalent Units.

4. Benefits of the Proposed Transaction for Each Party

a. KS shall be reimbursed by DHHL for costs incurred in the development of KS Well 2. The cost incurred and paid by KS and/or KIC to drill, test and case KS Well 2 was the sum of $1,110,478.

b. DWS to receive capital improvements of water source accessibility, storage, and transmission.

c. DHHL to receive Equivalent Units of Water that will support its development at La‘i ‘Ōpua

d. DHHL to receive DWS facility charge credits for Environmental Assessment costs related to the Keauhou Well 2 site and the improvements to the Kahalu‘u Segment contemplated herein.

e. DHHL would receive Facility Charge credits, related to the cost of reimbursement to KS as specified in 2(e) and 4(a), as allowed by DWS rules and regulations.

5. Proposed Transaction Documents

It is contemplated that the Transaction Documents for the Proposed Transaction will consist of a number of agreements.

a. Trustee Limitation of Liability

Any Transaction Document with KS shall have the following provision that such document has been executed by or on behalf of the Trustees of the Estate of Bernice Pauahi Bishop in their fiduciary capacities as said Trustees, and not in their individual capacities. No personal liability or obligation under any Transaction Document shall be imposed or assessed against said Trustees in their individual capacities.

DHHL, the Water Board, and DWS may have similar provisions regarding execution of the Transaction Documents by individuals not in their individual capacities.

b. Governing Law

The Transaction Documents shall be governed by and construed in accordance with the laws of the State of Hawaii without giving effect to principles of conflicts-of-laws.

c. Other Terms and Conditions

The Transaction Documents shall contain such other standard terms and conditions as is usual for a transaction of this nature as mutually agreed to by the Parties.

B. MOU TERMS AND CONDITIONS

1. Non-binding

The ultimate determination of whether to proceed with this Proposed Transaction, including execution of all Transaction Documents, will be subject to applicable approvals of the Parties (including, with respect to KS, several levels of approvals, including approval of the KS Board of Trustees), in addition to all other conditions described herein and customary terms and conditions for a transaction of this nature.

The Parties specifically acknowledge that this is a nonbinding understanding and there is no legal obligation or liability to the other with respect to the matters set forth in this MOU (except for this Section B) unless and until the applicable Transaction Documents are fully executed (and subject to fulfillment of all term and conditions of such Transaction Documents). As such, unless and until the applicable Transaction Documents are fully executed, any of the Parties may, at any time and for any or no reason, terminate its negotiations with the other Parties.

2. Expenses

Except as otherwise provided herein, each Party agrees to bear its own internal cost and outside advisor expenses in connection with the negotiation and execution of this MOU and the Transaction Documents.

3. Confidentiality

The terms and conditions of this MOU, the fact that the Parties are in discussions regarding the Proposed Transaction, and this MOU are confidential and shall not be shared with any other person or entity without first obtaining the written consent to disclose such information from all other Parties to the Proposed Transaction. DHHL and DWS understand that in order for KS to comply with legal and other requirements, if requested by any of the following Parties, KS may disclose this MOU and the fact that the Parties are in discussions regarding the Proposed Transaction to: (a) the Office of the Attorney General, State of Hawaiʻi, (b) any Master appointed by the Circuit Court, State of Hawaiʻi, and (c) the Internal Revenue Service, and any such disclosure by KS shall not be deemed a breach of this MOU.

4. Parties' Relationship

None of the Parties hereto shall be deemed to be partners or members of a joint venture, nor shall the Parties, individually or collectively, be deemed to be an agent, representative, principal, trustee or fiduciary of the other as a consequence of the execution of this MOU.

5. Counterparts/Electronic Delivery

This MOU may be executed in multiple counterparts, each of which shall be deemed a duplicate original, but all of which taken together shall constitute one and the same instrument. The Parties hereto agree that this MOU may be executed (whether by original ("wet-ink") signature or an electronic signature (including through e-sign services providers such as DocuSign)) and the signature pages transmitted by facsimile, electronic image scan transmission (such as emailing a "pdf" file), or other electronic transmission. The delivery of such signature pages via facsimile, electronic image scan transmission, or other electronic transmission shall constitute effective execution and delivery hereof. If so executed and delivered by the Parties hereto, the effectiveness of this MOU shall not be affected by the non-delivery of any manually-signed signature page.

6. Governing Law

This MOU shall be governed by and construed in accordance with the laws of the State of Hawaii without giving effect to principles of conflicts-of-laws.

7. Parties Limitation of Liability

This MOU has been executed by or on behalf of the Trustees of the Estate of Bernice Pauahi Bishop in their fiduciary capacities as said Trustees, and not in their individual capacities. No personal liability or obligation under this MOU shall be imposed or assessed against said Trustees in their individual capacities.

The Hawaiian Homes Commission has similarly approved and authorized execution of this MOU in the capacity as Commissioners under the Hawaiian Homes Act and not in their individual capacities. No personal liability or obligation under this MOU shall be imposed or assessed against the Commissioners in their individual capacities.

The Department of Water Supply's Water Board has similarly approved and authorized execution of this MOU in the capacity as Board Members and not in their individual capacities. No personal liability or obligation under this MOU shall be imposed or assessed against the Board Members in their individual capacities.

[Signature Page(s) Follow]

The Parties have executed this MOU as of the date set forth above.

DEPARTMENT OF HAWAIIAN HOME LANDS

By_____
Name_____
Its _____

TRUSTEES OF THE ESTATE OF BERNICE PAUAHI BISHOP dba Kamehameha Schools

By_____
Name_____
Its _____

KAMEHAMEHA INVESTMENT CORPORATION

By_____
Name_____
Its_____

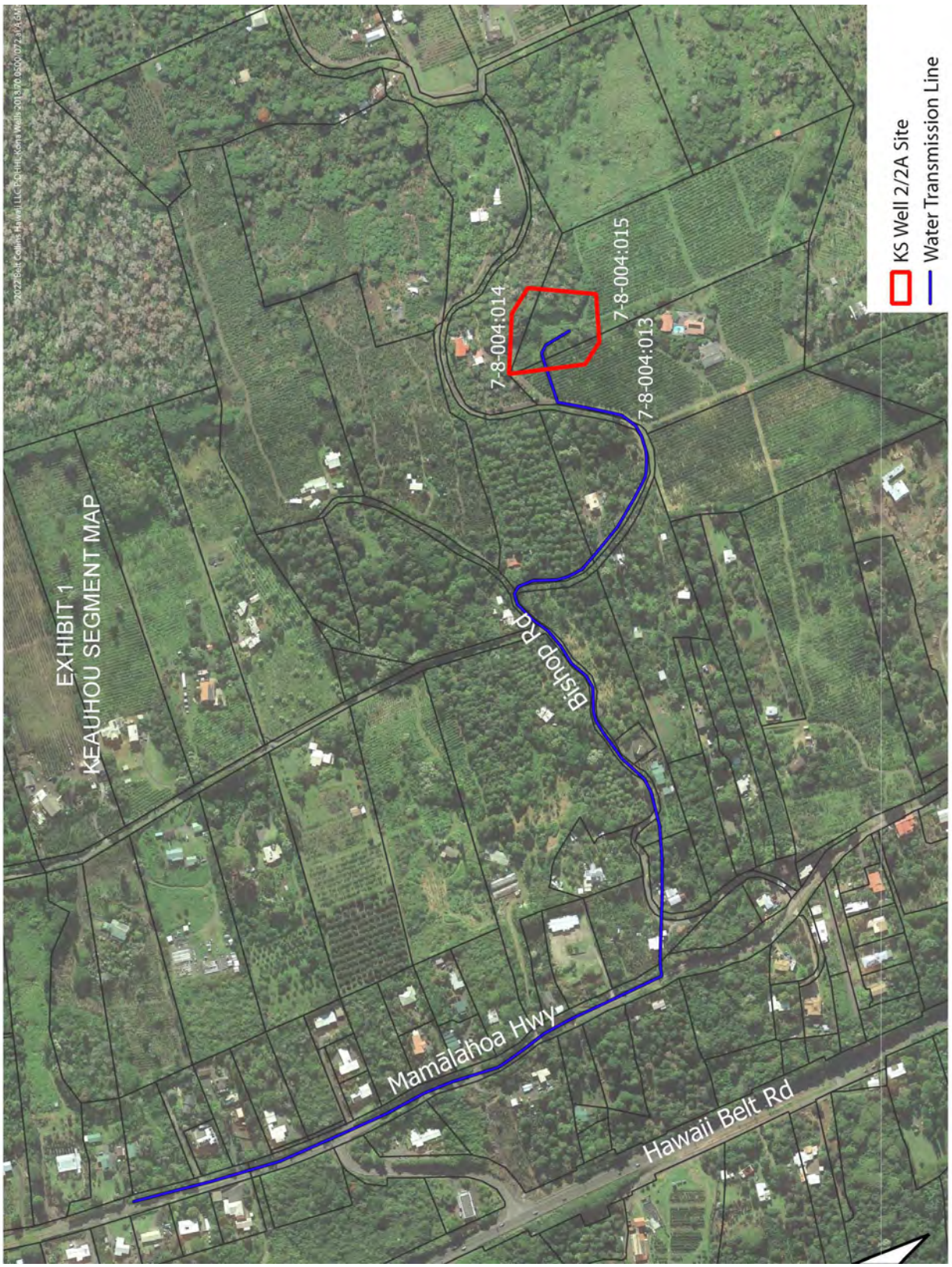
WATER BOARD OF THE COUNTY OF HAWAII

By_____
Name_____
Its_____

DEPARTMENT OF WATER SUPPLY, COUNTY OF HAWAIʻI

By_____
Name_____
Its _____

ITEM G-7 EXHIBIT A



ITEM G-7 EXHIBIT A

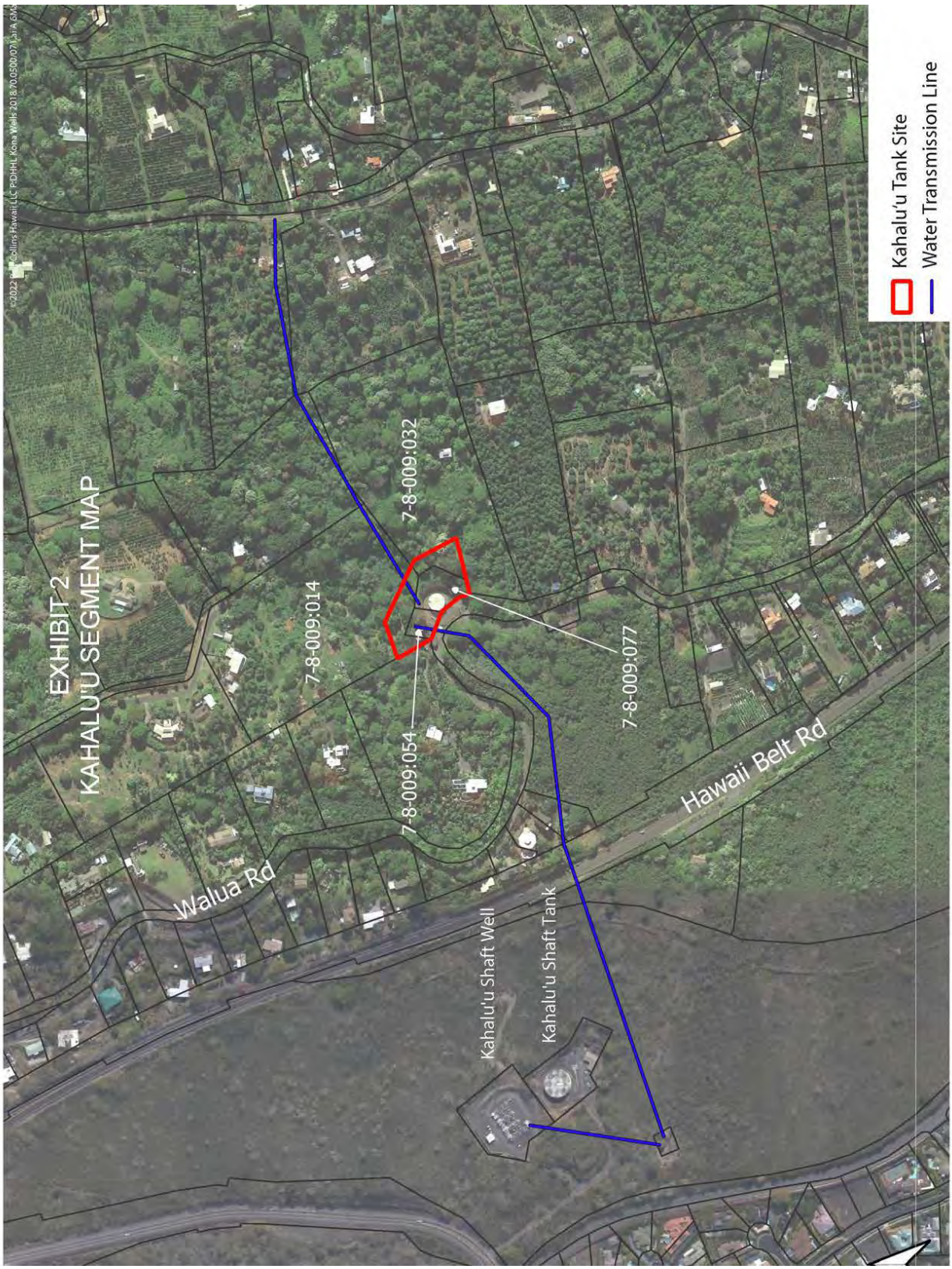


EXHIBIT 3

Keauhou Development Area

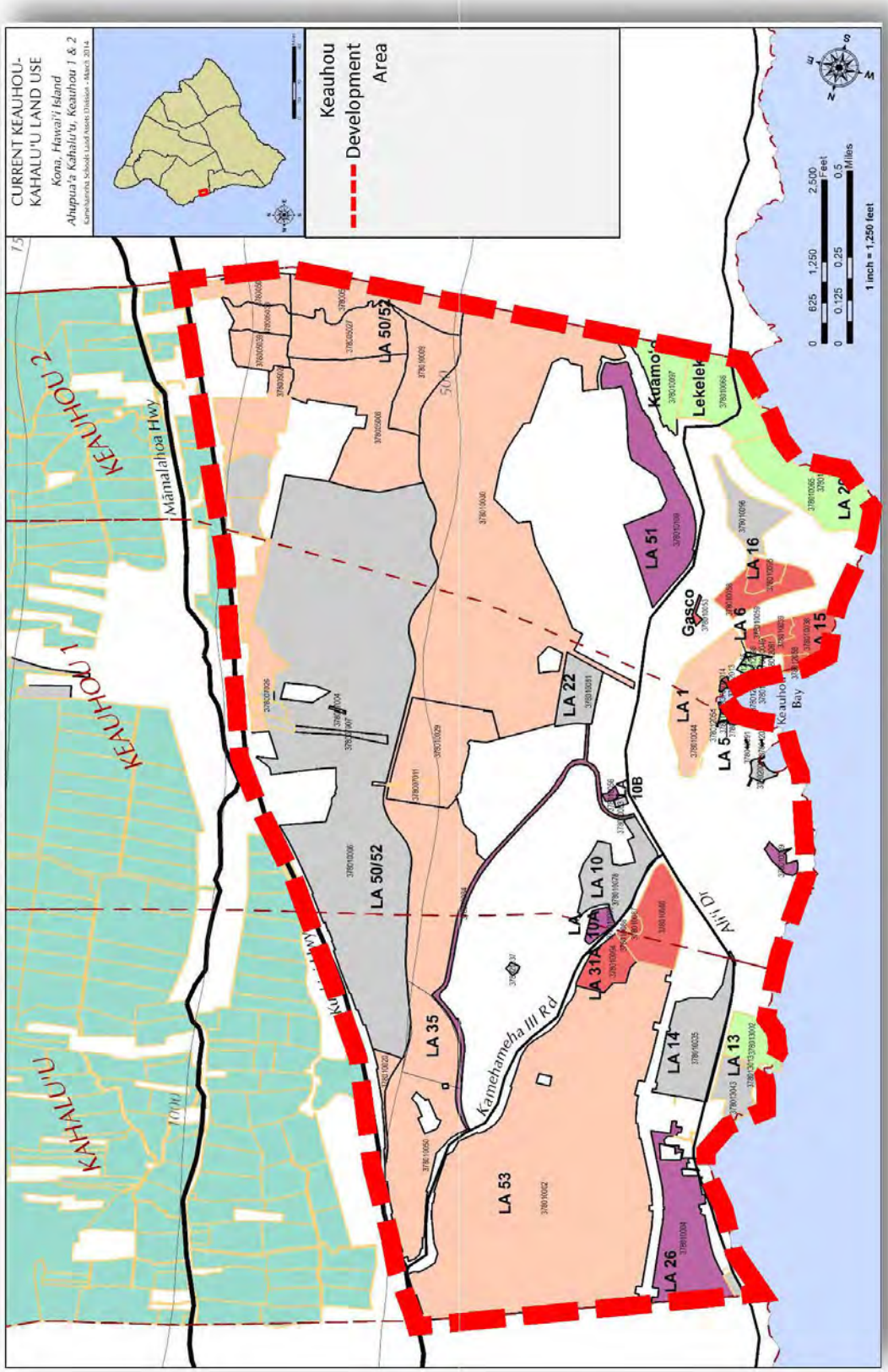


EXHIBIT 4

Schedule of 864 Equivalent Units

LAND AREA	DESCRIPTION	TMK	UNITS SUBJECT TO FORFEITURE
21	FIRE STATION	7-8-10:83	14
22	CLUB HOUSE MAUKA	7-8-10:30 POR	40
24	KEAUHOU VILLAS	7-8-10:79	15
1A	KEAUHOU BAY HOTEL**	7-8-10:44 POR	577
1B	K BAY CONDO (KIC)	7-8-10:44 POR	70
14B	KONA GARDENS	7-8-10:35 POR	120
	"KEAUHOU RESORT"		64
	UNRECONCILED EQUIVALENT UNITS		(36)
		TOTAL	864

NOTE: Equivalent units subject to reconciliation by the DWS and KIC/KS during Due Diligence Period

EXHIBIT 5

LAʻI ʻŌPUA PROJECT AREA MAP

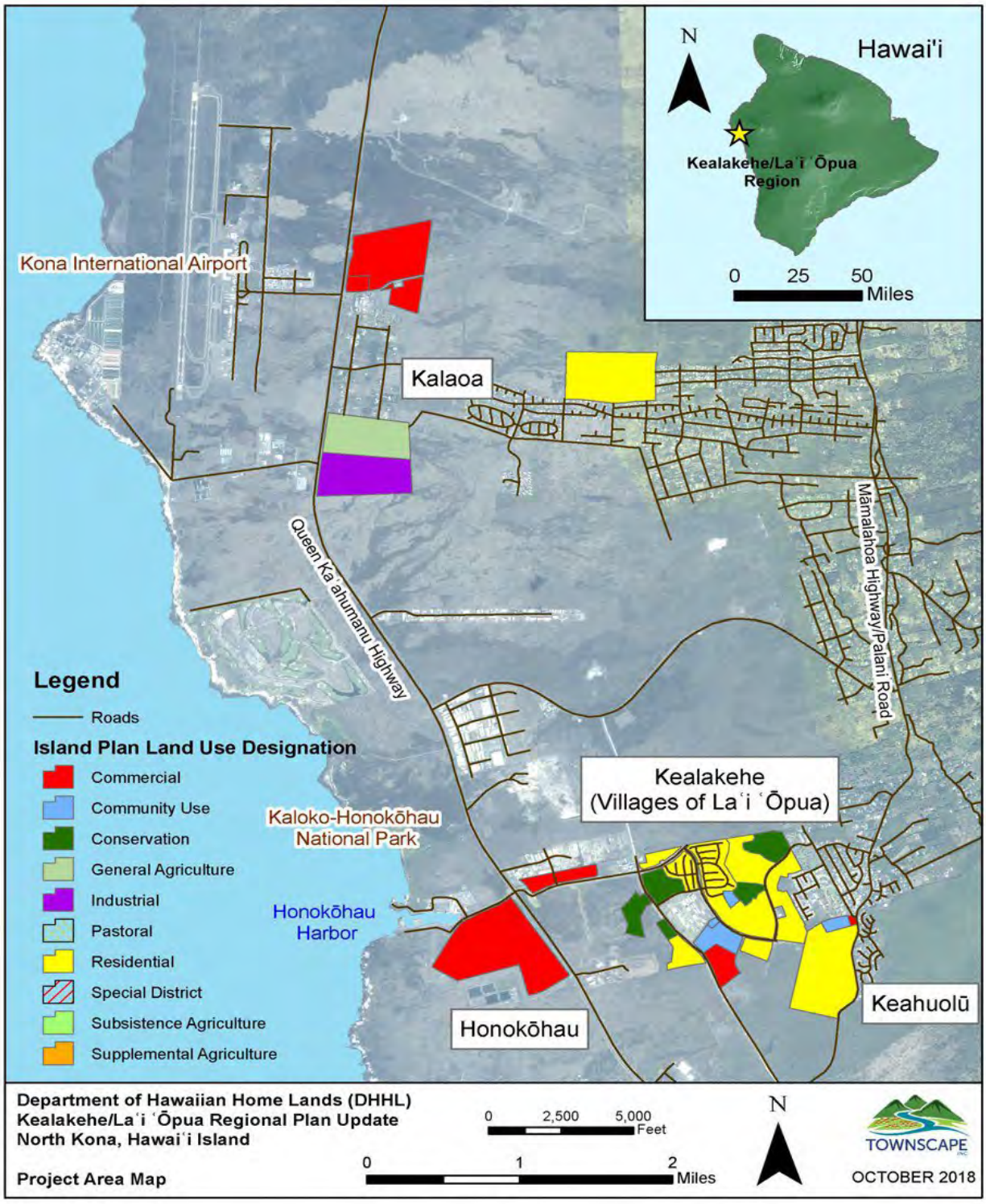


EXHIBIT 6

DEPARTMENT OF WATER SUPPLY

Rules & Regulations, Section 4-6. Facilities Charge

Section 4-6. Facilities Charge

The developer shall pay the prevailing facilities charge and applicable capital assessment fee for each lot, dwelling unit or equivalent unit of the development prior to final subdivision approval at rates established from time to time by the Board. Copies of the Facilities Charge Schedule, containing the facilities charge rates established by the Board, shall be on file and available at the Department.

Credits towards the total facilities charge may be granted by the Department for elements of the water system which will benefit the Department according to the following schedule:

Elements Contributed by the Developer	Credit
(1) Drill and case well	22% of facilities charge
(2) Outfit well - electrical, control building, etc.	15% of facilities charge
(3) Reservoirs	26% of facilities charge
(4) Transmission Pipelines	24% of facilities charge
(5) Booster pumps (per station, 6.5% if one pump)	13% of facilities charge

To receive a credit for any of the above elements, the developer's contribution must be more than the facilities charge.

STATE OF HAWAI'I
DEPARTMENT OF HAWAIIAN HOME LANDS

December 19, 2022

To: Chairman and Members, Hawaiian Homes Commission

Thru: Andrew Choy, Planning Program Manager AC

From: Pearlyn Fukuba, Planner plf

Subject: For Information Only - Status Update on Nānākuli and Wai'anae Plan Implementation

Recommended Action

None; for information only.

Background

By request of the Chairman, the Planning Office provides the HHC with a status report on prior policies and/or plans that affect lands and homestead communities where the HHC conducts its monthly community meeting. For December 2022, the Planning Office will be providing an update on the regional plans for Nānākuli and Wai'anae-Lualualei.

Discussion

EXISTING PLANS AND IMPLEMENTATION STATUS

O'ahu Island Plan Policies Related to the Wai'anae Moku

The purpose of each DHHL Island Plan is to:

(1) Provide a comprehensive resource for planning and land management purposes;
(2) Establish Land Use Designations for all land holdings to promote orderly land use development and efficient development of infrastructure systems; and
(3) Identify island-wide needs, opportunities, and priorities.

The O'ahu Island Plan was adopted by the HHC in 2014. The Island Plan delineated four planning regions, or moku, for the island of O'ahu: Wai'anae, 'Ewa, Kona, and Ko'olaupoko.

The 2014 O'ahu Island Plan identifies the following land use designations and acreage amounts for Wai'anae, Lualualei and Nānākuli. To date, there have been no changes to the Wai'anae moku land designations.

Land Use Designation (LUD)	Wai'anae	Lualualei	Nānākuli	Total Acres	Percent of LUD in Wai'anae	Percent of LUD on O'ahu
Special District	95	10		105	3%	42%
Conservation	75	190	825	1,090	32%	42%
General Agriculture		95	705	800	24%	88%
Residential	130	125	745	1,000	30%	61%
Pastoral	-	-	-	-	-	-
Subsistence Agriculture	50	140		190	6%	86%
Supplemental Agriculture	-	-	-	-	-	-
Industrial	-	3	-	3	0.8%	0.4%
Community Use	10	75	55	140	4%	45%
Commercial	-	-	10	10	.2%	11%
TOTALS	**360**	**638**	**2,340**	**3,338**	**100%**	**50%**

O'ahu Island Plan: Priorities and Recommendations (2014)

The O'ahu Island Plan, adopted in 2014, serves as a 20-year development guide for DHHL landholdings. The following Wai'anae Moku initiatives support the plan's Priorities and Recommendations:

1. Homestead Development:

Mā'ili Homestead Community Residential Plans: DHHL is planning the design of approximately 40 acres of land in Mā'ili, O'ahu. The project is anticipated to provide residential opportunities for DHHL's waitlist beneficiaries on the former Voice of America site. On June 22, 2021, DHHL conducted Beneficiary Consultation #1 to share project information, answer beneficiary questions and gauge beneficiary preferences. On April 7, 2022, Beneficiary Consultation #2 was held to provide a status update on the project, including the results of a benficiary survey where participants noted their preference for Housing Alternative 2. The layout

includes both single family and multi-family units and approximately 280 units could be accommodated on the 40 acres. The Draft Environmental Assessment was published on April 8, 2022. Publication of the Final Environmental Assessment is currently on hold due to pending review from the State Historic Preservation Division. See Agenda Item E-3 for more information.

REGIONAL PLAN PRIORITY PROJECTS

Nānākuli Regional Plan (2018)

1. **Disaster Preparedness** - Nānākuli homestead communities have identified issues of disaster preparedness, community resilience, and broader climate change adaptation as high priorities. Perhaps the most visible of related projects is the Wai'anae Coast Emergency Access Road (WCEAR). Alongside the WCEAR, a second/parallel access road is being considered. Perhaps most importantly, homesteaders identified needs for both short-term disaster preparedness - evacuation routes and emergency plans to ensure immediate safety - and long-term disaster resiliency, which could come as a result of community self-sufficiency.

2. **Improve Community Access to Non-Homesteading Areas** - Non-homesteading areas, utilized by communities in ways other than living, are vital to the wellbeing and connectedness of the Nānākuli homestead communities, as well as to the Wai'anae Coast as a whole. Potential spaces within the Nānākuli homestead communities have been identified, each with varying levels of feasibility.

3. **Street Repairs and Improvements for Health and Safety in the Region** - Several roadway-related issues were identified by Nānākuli homesteaders, all of which directly influence the safety of homesteaders and their families. Measures necessary to combat identified issues and advance opportunities - in addition to general repair and maintenance of homestead and regional roadways - will require coordination among multiple entities including the State, the City & County, the Department of Transportation, DHHL, and private stakeholders, among others.

4. **Establish Community-Based Education Programs** - Education is critically important to the Nānākuli homestead communities, as it is one of many factors that drives communities forward, connecting them and raising up the next

generation. A main focus of community education in the Nānākuli homestead communities is Hawaiian language and culture. In addition to cultural and ʻāina-based education programs, community members have expressed interest in other forms of education.

5. **Identify and Pursue Opportunities for "Pono Economic Development" and Community Action** - "Pono Economic Development" for the Nānākuli homestead communities means providing sustainable opportunities for all to support ourselves and our communities. Economic development can be accomplished by a variety of means and can also include services provided to community members, which in turn strengthen resiliency and sustainability.

Waiʻanae and Lualualei Regional Plan (2018)

1. **Increase Capacity for Specific Community-Based Projects** - Community-based projects and economic development for the Waiʻanae and Lualualei homestead communities means providing sustainable opportunities for all to support ourselves and our communities. Economic development can be accomplished by a variety of means and can also include services provided to community members, which in turn strengthen resiliency and sustainability.

2. **Improve Community Access to Non-Homesteading Areas** - Non-homesteading areas, utilized by communities in ways other than living, are vital to the wellbeing and connectedness of the Waiʻanae and Lualualei homestead communities, as well as to the Waiʻanae Coast as a whole. Potential spaces within the Waiʻanae and Lualualei homestead communities have been identified, each with varying levels of feasibility.

3. **Homestead Infrastructure & Maintenance** - Several infrastructure- and maintenance-related needs were identified by Waiʻanae and Lualualei homesteaders. Measures necessary to combat identified issues and advance opportunities - in addition to general repair and maintenance of homestead and regional roadways - will require coordination among multiple entities including the State, the City & County, the Department of Transportation, DHHL, and private stakeholders, among others.

4. **Safety & Community Enforcement** - Safety hinges upon all aspects of a community, including its infrastructure, its

policies and laws, and the people that inhabit it. The Wai'anae and Lualualei homestead communities have indicated a readiness to enforce safety-related policies and regulations, and a goal is to establish the necessary community education and framework to do so.

5. **Disaster Preparedness & Coordination** - Wai'anae and Lualualei homestead communities have identified issues of disaster preparedness, community resilience, and broader climate change adaptation as high priorities. Perhaps the most visible of related projects is the Wai'anae Coast Emergency Access Road (WCEAR). Alongside the WCEAR, a potential second/parallel access road is being considered. Perhaps most importantly, homesteaders identified needs for both short-term disaster preparedness - evacuation routes and emergency plans to ensure immediate safety - and long-term disaster resiliency, which could come as a result of community self-sufficiency.

REGIONAL PLAN IMPLEMENTATION STATUS

The Tables that follow describe each Priority Project and reports on the current status of the project.

1.		
Priority Project	**Objectives**	**Current Status**
A. Disaster Preparedness	• A safe community with comprehensive emergency procedures, routes, and facilities, prioritizing the safety of our kupuna and keiki. • A disaster preparedness and climate change mitigation via community self-sustainability. • Coordinated and efficient disaster-minded roadway improvements, including the Wai'anae Coast Emergency Access Road (WCEAR) and Wai'anae Coast Parallel Route.	The State Department of Transportation (DOT), Highways Division, completed the Farrington Highway Corridor Study in March 2021. The corridor study identified interim measures to keep Farrington Highway functioning acceptably while the long-term plans to widen Farrington Highway is completed (estimated completion date 2035). The list of projects include improvements for safety, congestion relief and resilience.
B. Improve Community Access to Non-Homesteading Areas	• Maintain and improve DHHL-designated Community use and non-homesteading areas in Nānākuli. • Availability of needed Community Use and non-homesteading areas, redesignated underused or unused areas.	A blessing for the Nānākuli Village Center was held in November 2019. Commercial tenants include CVS/Longs, Wendy's and Taco Bell/Pizza Hut and Starbucks. On April 27, 2021, Kamehameha Schools opened the Kalanihookaha Community Learning Center, that will provide 'āina-based programs,

	• Growth in the Nānākuli communities as a result of community centers. • Non-homesteading areas available, cultivated, and utilized, which will lead to increased community financial sustainability. • Non-homesteading areas that provide safety in case of a disaster or emergency, stocked with emergency supplies and easily accessible by viable roadways and evacuation routes.	career development and training. The facility includes a large multi-purpose room with flexible space, covered lānai for indoor and outdoor use, serving kitchen, pavilion and pā/outdoor staging area. The Nānākuli Village Center is a joint effort of the Nānākuli Hawaiian Homestead Community Association and the Hawaiian Community Development Board. DHHL also initiating repairs to the Nānākuli Cemetery. See HHC Agenda Item E-1 for more information.
C. Street Repairs and Improvements for Health and Safety in the Region	• Clog-free residential roadways, creating safer environments for both drivers and pedestrians. • Decreased traffic and increased road safety using roadway improvements and traffic-calming measures. • Safer pedestrian environments in homestead areas.	DHHL continues to work with the City & County of Honolulu (City) to assume responsibility for proper roadway maintenance and improvement within homesteads. DHHL Nānākuli Traffic Calming Project in progress. See HHC Agenda Item E-3 for more info.
D. Establish Community-Based Education Programs	• Access for Nānākuli homestead communities and their residents, from keiki to ʻōpio to mākua to kūpuna, to quality, values-based, and skills-focused education that is responsive to their communities' needs. • Opportunities for keiki – the next generation – to learn from their kūpuna. • Opportunities for kūpuna to live affordably (kūpuna housing), age in place, and pass their manaʻo to the next generations. Proper compensation for kūpuna's time, effort, and knowledge. Nānākuli homestead communities in which homesteaders of all ages feel welcome and encouraged to contribute to our communities.	Community led initiatives are ongoing.

E. Identify and Pursue Opportunities for "Pono "Economic Development" and Community Action	• Opportunities for culture-based, community-led economic development in the Nānākuli homestead communities. • Strengthened financial, resource, and cultural sustainability of our communities as a result of community economic development. • Community and organizational capacity built to ensure the impact of community economic development for generations. • Meaningful opportunities for everyone, from keiki to kūpuna, to participate in and contribute to the development of our homestead communities.	Community led initiatives are ongoing. Implementation of the Nānākuli Village project is on-going.

2. Wai'anae and Lualualei Regional Plan (December 2018)		
Priority Project	**Description**	**Current Status**
A. Increase Capacity for Specific Community-Based Projects	• Management of community use spaces for revenue generation. • Community-owned and community-led commercial development that elevates and supports local businesses. • Capacity building within local organizations, associations, and communities to effect desired change and coordinate among multiple entities. • Sustainable culture-oriented, often 'āina-based opportunities that provide connection to place, education, healthy food, and self-sufficiency.	Community led initiatives are ongoing. DHHL is offering capacity building grants for associations in its FY 23 Grant solicitation. DHHL received three (3) unsolicited requests for long-term use from: 1) Ka'ala Farm, Inc., 2) Wai'anae Valley Homestead Community Association, and 3) Wai'anae Coast Comprehensive Health Center. See Agenda Item G-5.
B. Improve Community Access to Non-Homesteading Areas	• Maintained and improved DHHL-designated Community use and non-homesteading areas in Wai'anae and Lualualei. • Availability of needed Community Use and non-homesteading areas, redesignated underused or unused areas.	Community led initiatives are ongoing. Ka Waihona o Ka Na'auao holds a DHHL license for a public charter school.

	• Growth in the Wai'anae & Lualualei communities as a result of community centers. • Non-homesteading areas available, cultivated, and utilized, which will lead to increased community financial sustainability. • Non-homesteading areas that provide safety in case of a disaster or emergency, stocked with emergency supplies and easily accessible by viable roadways and evacuation routes.	DHHL received three (3) unsolicited requests for long-term use from: 1) Ka'ala Farm, Inc., 2) Wai'anae Valley Homestead Community Association, and 3) Wai'anae Coast Comprehensive Health Center. See Agenda Item G-5.
C. Homestead Infrastructure & Maintenance	• Clog-free residential roadways, creating safer environments for both drivers and pedestrians. • Decreased traffic and increased road safety using roadway improvements and traffic-calming measures. • Safer pedestrian environments in homestead areas. • Areas re-assessed for home-steading use, such as un- or under-used areas and Pāhe'ehe'e Ridge.	DHHL continues to work with the City & County of Honolulu (City) to assume responsibility for proper roadway maintenance and improvement within homesteads. DHHL has recurring meetings with the City to help keep the focus on collaboration, aligning priorities and addressing issues. DHHL working on West O`ahu Sewer System Improvements. See HHC Agenda Item E-1 for more information.
D. Safety & Community Enforcement	• Safer homestead environments for all residents. • Safer homestead environments for all residents by recognizing that safety starts with the community.	Community led initiatives are ongoing.
E. Disaster Preparedness & Coordination	• A safe community with comprehensive emergency procedures, routes, and facilities, prioritizing the safety of our kupuna and keiki. • Disaster preparedness and climate change mitigation via community self-sustainability. • Coordinated and efficient disaster-minded roadway improvements, including the Wai'anae Coast Emergency Access Road (WCEAR) and the Wai'anae Coast Parallel Route.	The State DOT Highways Division completed the Farrington Highway Corridor Study in March 2021. The corridor study identified interim measures to keep Farrington Highway functioning acceptably while the long-term plans to widen Farrington Highway is completed (estimated date 2035). The list of projects include improvements for safety, congestion relief and resilience. DHHL coordinating WCEAR. See HHC Agenda Item E-1 for more information.

Recommendation: For information only. No action required.

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022

H – ITEMS

ADMINISTRATIVE SERVICES OFFICE

STATE OF HAWAII

DEPARTMENT OF HAWAIIAN HOME LANDS

DECEMBER 19, 2022

TO: Chairman and Members, Hawaiian Homes Commission

FROM: Rodney K. M. Lau, Administrative Services Officer Rodney K Lau

SUBJECT: Transfer of Hawaiian Home Receipts Money at the End Of the Second Quarter, FY 2023

RECOMMENDED MOTION/ACTION

That the Commission approve the transfer of the entire receipts deposited in the Hawaiian Home Receipts Fund as of December 31, 2022 to the Hawaiian Home General Loan Fund.

DISCUSSION

Section 213 (g) of the Hawaiian Homes Commission Act, 1920, as amended, reads in part as follows:

> "(3) Hawaiian home receipts fund. All interest moneys from loans or investments received by the department from any fund except as provided for in each respective fund, shall be deposited into this fund. At the end of each quarter, all moneys in this fund may be transferred to the Hawaiian home operating fund, the Hawaiian home administration account, the Hawaiian home trust fund, and any loan fund in accordance with rules adopted by the department."

Section 10-3-52(b) of Title 10, DHHL Administrative rules, provides that:

"If the Commission fails to approve a plan for transfer, all moneys in the Hawaiian home receipts fund shall be transferred at the end of that respective quarter as follows:

(1) Nine per cent to the operating fund; and
(2) Ninety-one per cent to the general loan fund."

As of December 31, 2022, the estimated balance in the Hawaiian Home Receipts Fund will be approximately $975,000. Based on the

on-going loan requirements for fiscal year 2023, it is recommended that cash receipts in the Hawaiian Home Receipts Fund for the quarter ending December 31, 2022 be transferred to the Hawaiian Home General Loan Fund.

HAWAIIAN HOMES COMMISSION
DECEMBER 19 & 20, 2022
FACE-TO-FACE &
INTERACTIVE CONFERENCE
TECHNOLOGY

J – ITEMS

REQUESTS TO ADDRESS THE COMMISSION

Hawaiian Homes Commission
December 19 & 20, 2022
Requests to Address the Commission

J-1 Kekoa Enomoto – Maui/Lanai Mokupuni Council and Paupena Community Development Inc.
J-2 Homelani Schaedel – Various Concerns
J-3 Bo Kahui – Laiopua Development Corporation
J-4 Debbie Mahuna - Puunani
J-5 Blossom Feiteira – Various Concerns
J-6 Simeon "Butch" Ramos – Kewalo Lease
J-7 Kauilani Almeida – PHHLCA
J-8 Keomailani Hirata – DHHL Ualapue Kuleana Homestead Project
J-9 Rogeitte Bernardino - Kauluokaha`i Self-build

J-1

From: Kekoa
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] RSVP to advocate on 12/20/22 J Agenda
Date: Monday, December 12, 2022 12:47:36 PM

Aloha mai kaua e Leah,

May I RSVP to advocate on behalf of the Maui/Lana`i Mokupuni Council and Pa`upena Community Development Inc., on the J Agenda during the 12/20/22 Hawaiian Homes Commission meeting?

I will discuss my efforts to contact and advise those on the 11/19/22 list of approximately 116 deceased Hawaiian-homelands waitlisters, who died without successor beneficiaries. In this context, I will seek to find out the number in the past 12 months (November 2021 through October 2022) of (1) deceased waitlisters who died WITH successor beneficiaries, and (2) beneficiaries who were removed from the waitlist and moved onto homelands. Then, I would like to compare the latter number with the total number of 2022 deceased waitlisters, i.e., contrast who got onto homesteads with who died on the waitlist in the last year.

Likewise, I will be re-emphasizing my support for, as follows:

1. **The need for all waitlisters, most of whom have languished on the waitlist for decades, to receive undivided-interest status; so their successor beneficiaries of 25 percent Hawaiian blood quantum may succeed to the waitlist.**

2. **The kuleana-awards program, in order to expedite**

getting beneficiaries off the waitlist and onto homelands; let homesteaders exercise their sovereignty, organize and manage their own trust lands.

-

J-2

From: Homelani Schaedel
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] December HHC "J" Agenda
Date: Friday, December 06, 2022 2:44:04 PM

Aloha e Leah,

If at all possible, may I please be added to the “J” agenda to address community concerns for Malu’ohai.

Mahalo,
Aunty Home

J-3

From: Craig Bo Kahui
To: Burrows-Nuuanu, Leatrice W
Cc: Craig Bo Kahui; DIANE KANEALII; Dora Aio; Sharleen Kahumoku; Sam Walker
Subject: [EXTERNAL] DHHL COMMISSION HEARING DEC mON 19TH & 20TH
Date: Monday, December 05, 2022 5:44:37 AM

Aloha Lea,
On behalf of Laiopua CDC, we would like to be placed on the J Agenda for the next Commission hearing on Dec. 19th & 20th.
We appreciate your consideration in this matter
Mahalo,
Bo Kahui

J-4

From: dhhl.icro1@hawaii.gov
To: Burrows-Nuuanu, Leatrice W
Subject: New submission from Submit J-Agenda Testimony
Date: Sunday, December 04, 2022 4:22:51 PM

Name
Debbie Mahuna
Email
dmahuna.puunani@gmail.com
Message
We would like to give an update for Pu'unani.

J-5

From: dhhl.icro1@hawaii.gov
To: Burrows-Nuuanu, Leatrice W
Subject: New submission from Submit J-Agenda Testimony
Date: Tuesday, December 06, 2022 2:20:13 PM

Name

Blossom Feiteira

Email

blossom96708@yahoo.com

Message

Request placement on the Hawaiian Homes Commission Agenda item J for Tuesday, December 20, 2022.

Mahalo!!!

J-7

From: Keomailani Hirata
To: Burrows-Nuuanu, Leatrice W
Cc: Zachary Helm
Subject: [EXTERNAL] Request - DHHL Commission meeting
Date: Tuesday, December 06, 2022 1:16:43 PM

Aloha Leah,

I would like to request to address the commission, at the next DHHL Commission meeting under general agendized section, for this month, December 2022. The topic I would like to present information on is, DHHL Ualapu'e Kuleana Homestead Project.
If you need more clarification let me know.

Malama pono,
Keomailani Hanapi Hirata
(808) 213-5377

Sent from Yahoo Mail on Android

J-8

From: dhhl.icro1@hawaii.gov
To: Burrows-Nuuanu, Leatrice W
Subject: New submission from Submit J-Agenda Testimony
Date: Sunday, December 04, 2022 1:09:26 PM

Name

PHHLCA President Kauilani Almeida

Email

kumukauilani@gmail.com

Message

Please list me on the “j” agenda for the December commission meeting in case I cannot get on land management’s agenda.

J-9

From: bernardinobunch@hawaiiantel.net
To: Burrows-Nuuanu, Leatrice W
Subject: [EXTERNAL] Re: HCC Contact:
Date: Monday, December 12, 2022 4:01:07 PM
Attachments: image003.png

Aloha Leah
My son, Kaimana Bernardino, and myself will be appearing in person before the commissioners. All documents pertaining to our home construction is with the DHHL, Awards Division, Home Construction Section.

To date, an application to 1st Tribal Lending was submitted for a loan a mortgage loan. We spent approximately a year processing our mortgage application through Homestreet, only to be denied because our contractor of choice could not use their own bonding company. Homestreet also had one (1) agent processing all DHHL applications and we took a back burner status because we were not "Turn Key" applicants. It should be first in, first out. It is unacceptable to treat home construction applicants different from turn-key applicants. To me, it is a fine line of discrimination with federal HUD184 loans.

We are going on 3 years. The only hold up was the bonding company that Homestreet did not approve of except those for bonding companies that were on their list.

Mahalo, Rogeitte Bernardino