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

April 18, 2022 Ref.:PO-22-081

Ms. Mary Alice Evans, Director
State of Hawai'i
Office of Planning and Sustainable Development
Environmental Review Program
235 South Beretania Street, Room 702
Honolulu, HI 96813

RE: DRAFT ENVIRONMENTAL ASSESSMENT AND ANTICIPATED FINDING OF NO SIGNIFICANT IMPACT FOR THE PROPOSED KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN, MAKAWAO, MAUI, TMKS (2) 2-2-002:067 AND 068

Dear Ms. Evans:

With this letter, the State of Hawai'i Department of Hawaiian Home Lands (DHHL) hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed Kēōkea Homestead Farm Lots Association Master Plan situated on TMK parcels (2) 2-2-002:067 and -068, on the island of Maui, for publication in the next available edition of *The Environmental Notice*.

In addition to this letter, the online Environmental Review Program (ERP) Publication Form has been submitted through the ERP website, including one (1) electronic copy of the DEA-AFONSI as an Adobe Acrobat PDF file.

Should you have any questions, please contact Julie-Ann Cachola at (808) 779-5084, or our authorized agent of this project, Vincent Shigekuni, of PBR HAWAII at (808) 521-5631.

Mahalo,

William J. Ailā, Jr.
Chairman, Hawaiian Homes Commission

Copy: Alika and Piilani Akana, Kēōkea Homestead Farm Lots Association
Vincent Shigekuni, PBR HAWAII & Associates, Inc.

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Monday, April 18, 2022 6:55:42 AM

Action Name

Proposed Keokea Homestead Farm Lots Association Master Plan

Type of Document/Determination

Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Makawao, Maui

Tax Map Key(s) (TMK(s))

(2) 2-2-002:067; 068

Action type

Applicant

Other required permits and approvals

Numerous (see Section 5.4 of the DEA)

Discretionary consent required

n/a

Approving agency

Department of Hawaiian Home Lands

Agency contact name

Julie-Ann Cachola

Agency contact email (for info about the action)

julie-ann.cachola@hawaii.gov

Agency contact phone

(808) 779-5084

Agency address

P.O. Box 1879
Honolulu, HI 96805
United States
Map It

Applicant

Keokea Homestead Farm Lots Association

Applicant contact name

Alika and Piilani Akana

Applicant contact email

alikaakana@yahoo.com

Applicant contact phone

(808) 378-6810

Applicant address

1245 Keanuhea Place
Kula, HI 96790
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

PBR HAWAII & Associates, Inc.

Consultant contact name

Vincent Shigekuni

Consultant contact email

vshigekuni@pbrhawaii.com

Consultant contact phone

(808) 521-5631

Consultant address

1001 Bishop Street
Suite 650
Honolulu, HI 96813
United States
Map It

Action summary

The master plan developed by the Keokea Homestead Farm Lots Association (KHFLA) would include: a Cultural Education Center, Native Food and Medicinal Plant Gardens, Child and Senior Care Complex, Multipurpose Community Center Complex, Amphitheater, local small business and food venue, and native forest restoration efforts.

Reasons supporting determination

Please refer to Section 7.1 of the Draft EA (Significance Criteria).

Attached documents (signed agency letter & EA/EIS)

- Draft-EA-05.pdf
- Keokea-MP-draft-EA-_AFONSI-04.18.22.pdf

Action location map

- Project_Area.zip

Authorized individual

Brittany Wheatman

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

PROPOSED KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN

DRAFT ENVIRONMENTAL ASSESSMENT/ ANTICIPATED FINDING OF NO SIGNIFICANT IMPACT (HRS 343)

Kēōkea Ahupuaʻa, Makawao District, Maui

TMKs (2) 2-2-032:067 and 068

APPLICANT:

Kēōkea Homestead Farm Lots Association

APPROVING AGENCY:

DEPARTMENT OF HAWAIIAN HOME LANDS

PREPARED BY:

PBR HAWAII & ASSOCIATES, INC.

Prepared pursuant to Chapter 343, Hawaiʻi Revised Statutes and Chapter 11-200.1, Hawaiʻi Administrative Rules

APRIL 2022

SUMMARY

Project Name:	Proposed Kēōkea Homestead Farm Lots Association Master Plan
Location:	Kēōkea ahupuaʻa, Makawao, Island and County of Maui (Figure 1. Regional Location Map)
Judicial District:	Makawao
Tax Map Key (TMK):	(2) 2-2-002:067 and 068 (Figure 2. Tax Map Key Map)
Land Area:	69± acres
Landowner:	Department of Hawaiian Home Lands
Applicant:	Kēōkea Homestead Farm Lots Association (KHFLA)
Approving Agency:	Department of Hawaiian Home Lands
Existing Use:	The Project site is mostly vacant (see Figures 3 and 9), although is occasionally used for community events such as the Kēōkea Hawaiian Homestead Hoʻolauleʻa and Farmers Market, which was held on Sundays (starting in October 2014) prior to the COVID-19 pandemic. There is a gravel parking area, outdoor temporary pavilion, and gardens (see Figure 3). Due to restrictions on gathering, the event has been on hold.
Proposed Action:	The master plan developed by the Kēōkea Homestead Farm Lots Association (KHFLA) would include: a Cultural Education Center, Native Food and Medicinal Plant Gardens, Child and Senior Care Complex, Multipurpose Community Center Complex, Amphitheater, local small business and food venue, and native forest restoration efforts. (Figure 4. Vision Plan)
Current Land Use Designations:	*State Land Use District Boundary:* Agricultural (Figure 5) *Makawao-Pukalani-Kula Community Plan*: "DHHL" (Figure 6) *County Zoning*: Agricultural (Figure 7) *Special Management Area (SMA)*: Not in SMA *DHHL Maui Island Plan Land Use Designation:* General Agriculture (Figure 8)
Alternative Considered:	One alternative was considered: "No Action"
Permits & Approvals:	HRS Chapter 6E review; building permit; grading permit; NPDES; individual wastewater system approval; noise permit; food establishment permit; DCAB facility access review; County Department of Water Supply review
Potential Impacts and Mitigation Measures:	The Project will have beneficial cultural, social, health and economic impacts to the homestead community. Any potential adverse impacts would be mitigated as follows: • Design measures: ○ To mitigate stormwater impacts, on-Project site drainage design will incorporate low impact

	development practices such as vegetated buffer/filter strips, open vegetated channels, and infiltration. ○ To mitigate erosion and sedimentation impacts during construction, the grading plans will specify best management practices such as early construction of drainage control features; construction of temporary sediment basins to trap silt; use of temporary berms and cut-off ditches where needed; and use of temporary silt fences or straw bale barriers to trap silt. ○ The Individual Wastewater System permit approved by DOH will ensure the septic tanks and leach field systems have adequate capacity. ○ Identify a site for an emergency siren on the Project site plan in coordination with the State of Hawaiʻi Department of Defense, and coordinate the specifications, timing, and funding with this agency. The closest existing emergency siren is located at the intersection of Kula Highway and Copp Road, approximately four miles north of the Project site. ○ Consider the safety of pedestrian and vehicular movements on roads and pathways connecting to the Project site. • Construction measures: ○ To mitigate construction noise and dust, construction documents will include standard measures such as ensuring mufflers are in proper operating condition, limiting construction hours, and wetting down exposed surfaces. ○ The construction documents will include a provision that should historic features such as walls, platforms, pavements and mounds, or remains such as artifacts, burials, concentrations of shell or charcoal or artifacts be inadvertently encountered during construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor will immediately contact State Historic Preservation Division, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary. ○ Construction documents will require the contractor to provide the County Department of Environmental Management an estimate of construction waste to be

	disposed at county facilities prior to commencing construction.
	• Operational measures:
	  ○ To mitigate potential impact to seabirds, the design will specify shielded outdoor lights in conformance with County outdoor lighting requirements.
	  ○ To protect low-flying, foraging bats, no barbed wire will be used for fencing.
	  ○ Hours of operation can be adjusted if noise to neighbors becomes a concern.

Anticipated Determination:	Finding of No Significant Impact

(This page left blank intentionally.)

Table of Contents

SUMMARY ..... **I**

1 INTRODUCTION **1**
1.1 Landowner 1
1.2 Applicant 1
1.3 Approving Agency 1
1.4 Environmental Consultant 2
1.5 Compliance with State of Hawai‘i Environmental Laws 2
1.6 Studies Contributing to this EA 2

2 PROJECT DESCRIPTION **3**
2.1 Background Information 3
2.1.1 Location and Property Description 3
2.1.2 Existing Use 3
2.1.3 Surrounding Land Uses 3
2.2 Purpose and Need 3
2.3 Project Description 4
2.4 Development Timetable and Preliminary Costs 6

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES **7**
3.1 Climate 7
3.2 Geology and Topography 8
3.3 Soils 9
3.4 Hydrology 11
3.5 Natural Hazards 14
3.6 Flora and Fauna 17

4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES **21**
4.1 Archaeological and Historic Resources 21
4.2 Cultural Resources 22
4.3 Roadways and Traffic 25
4.3.1 Roadway System 26
4.3.2 Transit Facilities 26
4.3.3 Bicycle and Pedestrian Facilities 26
4.3.4 Existing Traffic Volumes 27
4.3.5 Existing Observations and Intersection Analysis 27
4.4 Sound 29
4.5 Air Quality 30
4.6 Visual Resources 32
4.7 Infrastructure and Utilities 32
4.7.1 Water System 32

4.7.2 Wastewater System 34
4.7.3 Drainage System 35
4.7.4 Solid Waste 36
4.7.5 Utilities 36
4.8 Socio-Economic Characteristics 36
4.9 Public Services and Facilities 38
4.9.1 Public Schools 38
4.9.2 Police, Fire and Medical Services 38
4.9.3 Recreational Facilities 39

5 LAND USE CONFORMANCE 41
5.1 DHHL Planning System 41
5.2 State of Hawaiʻi 42
5.2.1 Chapter 343, Hawaiʻi Revised Statutes 42
5.2.2 State Land Use Law, Chapter 205, Hawaiʻi Revised Statutes 43
5.2.3 Coastal Zone Management Act, Chapter 205A, Hawaiʻi Revised Statutes 43
5.2.4 Hawaiʻi State Plan, Chapter 226, Hawaiʻi Revised Statutes 49
5.2.5 State Functional Plans 76
5.2.6 Hawaiʻi State Environmental Policy and Guidelines, Chapter 344-3 and 344-4, HRS 86
5.3 County of Maui 90
5.3.1 Countywide Policy Plan 90
5.3.2 County's Maui Island Plan 93
5.3.3 Makawao-Pukalani-Kula Community Plan 93
5.3.4 County of Maui Zoning 94
5.3.5 Special Management Area 94
5.4 Approvals and Permits 94

6 ALTERNATIVES 97
6.1 No Action Alternative 97

7 FINDINGS AND ANTICIPATED DETERMINATION 99
7.1 Significance Criteria 99
7.2 Anticipated Determination 102

8 CONSULTATION 103
8.1 Pre-Assessment Consultation 103
8.1.1 State of Hawaiʻi 103
8.1.2 Federal 103
8.1.3 County of Maui 104
8.1.4 Private Organizations & Individuals 104

9 REFERENCES 107

APPENDICES

Appendix A Figures

Appendix B Pre-Assessment Consultation

Appendix C Survey Results

Appendix D ROM Cost Estimate

Appendix E Archaeological Literature Review & Field Inspection Report

Appendix F Cultural Impact Assessment

Appendix G Traffic Impact Analysis Report

Appendix H Preliminary Engineering & Drainage Report

TABLES

Table 4-1: Comparison of Intersection Level of Service for Existing Traffic Conditions, Base Year 2042 Traffic Conditions, and Base Year 2042 Conditions with Project Traffic 28

Table 4-2: Preliminary Water Demand Calculations 34

Table 5-1: Coastal Zone Management Act, Chapter 205A, Hawaiʻi Revised Statutes 44

Table 5-2: Hawaiʻi State Plan, Chapter 226, Hawaiʻi Revised Statutes 49

Table 5-3: State Functional Plans 77

Table 5-4: Hawaiʻi State Environmental Policy and Guidelines, Ch. 344-3 and 344-4, HRS 86

Table 5-5: Anticipated Permits and Approvals 94

FIGURES
(Located In Appendix A)

Figure 1. Regional Location Map

Figure 2. Tax Map Key Map

Figure 3. Aerial Photograph

Figure 4. Vision Plan

Figure 5. State Land Use Districts

Figure 6. Makawao-Pukalani-Kula Community Plans

Figure 7. Maui County Zoning

Figure 8. DHHL Maui Island Plan Land Use Designation

Figure 9. Site Photos

Figure 10. DHHL Kēōkea-Waiohuli Long-Range Conceptual Plan

Figure 11. U.S. Department of Agriculture Natural Resources Conservation Service Soil Study

Figure 12. Land Study Bureau Detailed Land Classification

Figure 13. Agricultural Lands of Importance to the State of Hawaiʻi

Figure 14. U.S. Fish & Wildlife Service Wetlands

Figure 15. Flood Insurance Rate Map

Figure 16. U.S. Fish & Wildlife Service Mapped Critical Habitat

LIST OF ACRONYMS

ABAAG	Architectural Barriers Act Accessibility Guidelines
ADAAG	ADA Standards for Accessible Design
AFONSI	Anticipated Finding of No Significant Impact
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawaiʻi
ATA	Austin, Tsutsumi & Associates, Inc.
AWUDP	Agricultural Water Use and Development Plan
BMP	Best Management Practices
CFC	chlorofluorocarbons
CFS	Cubic Feet Per Second
CIA	Cultural Impact Assessment
CP	Maui County Community Plan (per Maui County Code 2.80B)
CWRM	State of Hawaiʻi Commission on Water Resource Management
CZM	Coastal Zone Management
DAGS	State of Hawaiʻi Department of Accounting & General Services
DBEDT	State of Hawaiʻi Department of Business, Economic Development, and Tourism
DCAB	State of Hawaiʻi Disability and Communications Access Board
DHHL	State of Hawaiʻi Department of Hawaiian Home Lands
DHS	State of Hawaiʻi Department of Human Services
DLNR	State of Hawaiʻi Department of Land and Natural Resources
DOA	State of Hawaiʻi Department of Agriculture
DOD	State of Hawaiʻi Department of Defense
DOE	State of Hawaiʻi Department of Education
DOFAW	DLNR Division of Forestry & Wildlife
DOH	State of Hawaiʻi Department of Health
DPR	County of Maui Department of Parks and Recreation
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERP	State of Hawaiʻi Environmental Review Program (formerly "Office of Environmental Quality Control")
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
FU	Fixture Units
gpd	Gallons per day
gpm	Gallons per minute
HAR	Hawaiʻi Administrative Rules
HDOT	State of Hawaiʻi Department of Transportation
HCFC	hydrofluorocarbons

HHCA	Hawaiian Homes Commission Act, as amended
HRS	Hawaiʻi Revised Statutes
KHFLA	Kēōkea Homestead Farm Lots Association
LCA	Land Commission Award
LEED	Leadership in Energy and Environmental Design
LID	Low Impact Development
LOMR	Letter of Map Revision
LRFI	Literature Review and Field Inspection
LSB	Land Study Bureau
LUC	State of Hawaiʻi Land Use Commission
MCC	Maui County Code
MDWS	Maui Department of Water Supply
MGD	Million gallons per day
MPD	Maui Police Department
NAAQS	National Ambient Air Quality Standards
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination Systems
NRCS	USDA Natural Resources Conservation Service
NRHP	National Register of Historic Places
NPS	National Park Service
PRV	Pressure Reducing Valve
RLB	Rider Levett Bucknall
ROE	Right-of-Entry
ROM	Rough Order of Magnitude (cost estimate)
ROW	Right-of-Way
sf	square feet
SHPD	State of Hawaiʻi Historic Preservation Division
SIHP	State Inventory of Historic Places
SMA	Special Management Area
SWPP	State Water Projects Plan
TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WHHAI	Waiohuli Hawaiian Homesteaders Association, Inc.
WUDP	Maui Island Water Use and Development Plan

1 INTRODUCTION

This Environmental Assessment (EA) has been prepared in accordance with Chapter 343, Hawaiʻi Revised Statutes (HRS) and Title 11, Chapter 200.1, Hawaiʻi Administrative Rules (HAR). The Kēōkea Homestead Farm Lots Association (KHFLA) developed a master plan for a community center ("Project") on Department of Hawaiian Home Lands. The use of State lands and funds is one of the "triggers" for compliance with HRS Chapter 343.

1.1 Landowner

The DHHL is the fee simple landowner and granted KHFLA a Right-of-Entry (ROE) permit for use of the Project site. The ROE allows the parcels to be used for agricultural, pastoral, limited commercial, and stewardship.

1.2 Applicant

Kēōkea Homestead Farm Lots Association (KHFLA) is the applicant. KHFLA has a Right-of-Entry (no. 496) to use the Project site.

Contact: Kēōkea Homestead Farm Lots Association
ATTN: Alika and Piʻilani Akana
1245 Keanuhea Place
Kula, HI 96790
Phone: (808) 378-6810
email: alikaakana@yahoo.com

1.3 Approving Agency

DHHL is the approving agency.

Contact: Department of Hawaiian Home Lands
ATTN: Julie-Ann Cachola, Project Manager
P.O. Box 1879
Honolulu, HI 96805
Phone: (808) 779-5084
email: julie-ann.cachola@hawaii.gov

1.4 Environmental Consultant

PBR HAWAII is the environmental planning consultant.

Contact: PBR HAWAII & Associates, Inc.
ATTN: Vincent Shigekuni
1001 Bishop Street, Suite 650
Honolulu, Hawai‘i 96813
Telephone: (808) 954-6317
Email: vshigekuni@pbrhawaii.com

1.5 Compliance with State of Hawai‘i Environmental Laws

Preparation of this document is in accordance with the provisions of Chapter 343, HRS and Title 11, Chapter 200.1, HAR pertaining to Environmental Impact Statements. Section 343-5, HRS established nine “triggers” that require either an EA or an Environmental Impact Statement (EIS). The use of State or County lands or funds is one of these “triggers.”

It should be noted that the Project site was discussed in the Final EA/Finding of No Significant Impact for the Department of Hawaiian Home Lands Kēōkea Agricultural Lots – Unit 1 (November 2001) and published in the December 8, 2001, issue of the *Environmental Notice*.

1.6 Studies Contributing to this EA

Key reports that provide updated information are attached as appendices to this EA:

- Archaeological Literature Review and Field Inspection (TCP Hawaii, LLC)
- Cultural Impact Assessment (TCP Hawaii, LLC)
- Preliminary Engineering and Drainage Report (Austin, Tsutsumi & Associates, Inc.)
- Traffic Impact Analysis Report (Austin, Tsutsumi & Associates, Inc.)
- ROM Cost Estimate (Rider Levett Bucknall)

2 PROJECT DESCRIPTION

2.1 Background Information

2.1.1 Location and Property Description

The Project site is located in the Kēōkea Homestead Farm Lots subdivision, Kēōkea ahupuaʻa, Makawao District, Island and County of Maui (see Figure 1). The 69±-acre Project site is identified as 2-2-032:067 and 068 (see Figure 2).

The Kēōkea Homestead Farm Lots subdivision consists of 66 agricultural homestead lots. The Project site is located alongside Kula Highway (see Figure 1).

2.1.2 Existing Use

Prior to COVID-19 pandemic, the Kēōkea Hawaiian Homestead Hoolaulea and Farmers Market was held on Sundays (starting in October 2014). There is a gravel parking area, outdoor temporary pavilion, and gardens (see Figure 3). The balance of the Project site is vacant open land (see Figure 9. Site Photos). Due to restrictions on gathering, the event has been on hold.

2.1.3 Surrounding Land Uses

North: Immediately north of the Project site are DHHL farm lots and residences (see Figure 3).

East: East of the parcels are Grandma's Coffee Shop and Henry Fong General Store (see Figure 3).

South: Immediately south of the Project site is Kula Highway, Thompson Road, and Kēōkea Place. Further south is Kula Hospital (see Figure 3)

West: Immediately west of the Project site are the Kēōkea Agricultural Lots and Haleakalā Ranch lands (see Figure 3).

2.2 Purpose and Need

The mission of the Department of Hawaiian Home Lands (DHHL) is to effectively manage the Hawaiian Home Lands Trust and to develop and deliver lands to native Hawaiians. As part of its long-range planning efforts, in June 2010, DHHL published the Kēōkea-Waiohuli Regional Plan.

As previously noted, DHHL's Kula lands cover nearly 6,112 acres on the slopes of Haleakalā offering tremendous homesteading opportunities. There are currently three homestead areas under development: 1) the Kula Residence Lots subdivision; 2) the Waiohuli Undivided Interest subdivision; and 3) the Kēōkea Farm Lots. Together, these areas include about 800 homestead lots. With adequate water and funding, this area has the potential to be the largest homestead region on Maui.

One of the priority projects of the Kēōkea-Waiohuli Regional Plan was to identify and support the development of community facilities for Kēōkea and Waiohuli. The Kēōkea-Waiohuli Regional Plan stated:

> *There are many different needs of the community that Kēōkea and Waiohuli homesteaders would like to see met. This project would help to address those needs by identifying and developing various community facilities and spaces… Kēōkea farmers on the other hand have expressed a need for community farmers' market to sell their produce. Other projects that homesteader have expressed an interest for include a riding park, child care site, police sub-station, community gardens, playgrounds, community cemetery, fire protection infrastructure, and green waste sites. Currently, a total of 69 acres have been allocated for community and park use for the Kēōkea and Waiohuli homesteads.*

In 2013, the KHFLA secured a Right-of-Entry (ROE) permit from DHHL for approximately 69 acres. The ROE allowed agricultural, pastoral, limited commercial, and land stewardship activities.

In 2016, the KHFLA submitted to DHHL, a Land Use Request for a long-term License and their 10-Year Vision Plan for the 69-acre site ("Kēōkea Master Plan 10 year"). The Plan included the following mission statement:

> *"KHFLA to direct the use of the 70 plus acres located in the area long the Kula Hwy at the upper most portion of the Kēōkea Hawaiian Home Lands Farm Lots for the benefit of lessees of the Kēōkea, Waiohuli and Kahikinui Homesteads. The lands would be used for Cultural education center, Native food and Medicinal Plant gardens, Native Healing Center, Police Substation, Keiki immersion school/daycare and Kupuna daycare, a multipurpose/meeting/entertainment complex also to serve as an Emergency Evacuation Center for People and an area for their animals, local small business and food venue and a restored native forest. Also a Kēōkea Farmers Co-op be established with an association Produce Processing Plant. These facilities would be built from funding through grants, partnerships with educational organizations, Senior and Childcare organizations and federal and state organizations. These services, facilities cultural educational opportunities would directly benefit the growing populations of the three nearby homesteads..."*

2.3 Project Description

Working with the topography of the Project site which slopes mauka to makai with a cross slope, the Project site plan consists of the following use areas (Figure 4):

- ***Mālalani Garden.*** The area furthest mauka on the Project site (TMK :068 or "Parcel 68") will feature a Native plant garden (māla and loʻi) for educational tours in the Wahi Nanea (cultural educational center) area. The space is envisioned as having minimal grading and utilizing the topography of the site to provide walkable areas for educational purposes as well as hosting of classes for the general public to learn more about native plants and traditional landscaping and cultural traditions.

- ***Healing Center (Hale Ola), with food trucks and parking area.*** Situated adjacent to the Mālalani Garden is the Healing/Wellness center, which features parking for Parcel 68 and also a food truck area for events and gatherings. The building will contain approximately 10,000 sf at full build out, with roughly 3,000 sf designated as an initial "Phase 1". Projected uses include a variety of medical services, from general practitioners to dentists and eye doctors along with rotating access to various wellness services and programs including lomi lomi, diabetes prevision, exercise, nutrition classes, and physical rehabilitation. An office space within the building is slotted to be used by the Maui Police Department (MPD) as a sub-station for check ins and report filings to provide MPD with additional access to this region of Maui County. Discussions with MPD are on-going. Parking for Parcel 68 is estimated to be approximately 66 stalls to serve the Healing Center, Mālalani Garden, and food truck area. The food truck area is estimated to hold approximately 20 trucks at peak times.
- ***Multipurpose Hale and Amphitheater.*** The main community use building and main projected economic drivers for the Project are the 5,000 sf multipurpose "hale" building and approximately 200 seat outdoor amphitheater. The Multipurpose Hale is envisioned to be 3,500 sf of enclosed space, with 1,500 sf of covered open air lanai space wrapping around the perimeter of the slab footprint to allow outdoor gatherings and shared event space with the amphitheater. Parcel 67 parking features space for queueing for drop-off, and approximately 81 stalls. Projected uses include replacing the existing temporary outdoor marketplace, multi-purpose function hall, outdoor amphitheater, and office/program spaces for various organizations and community uses which may include social services, non-profits, Native Hawaiian, senior and youth services, craft fairs, or other events (see Figure 4). The amphitheater will be built into the hillside and utilize the existing topography as much as possible to reduce cut and fill. The amphitheater would be used for concerts, performances, cultural events (hula), or other programs. Thermal solar panels for hot water generation and photovoltaic panels for supplemental electricity generation will be utilized. Natural ventilation, building overhangs will reduce or eliminate air conditioning needs while natural lighting will be utilized to reduce daytime lighting requirements. The Multipurpose Hale is also envisioned to be an emergency evacuation center, including shelter for farm animals.
- ***Kūpuna Daycare.*** Kūpuna Daycare is currently unavailable or underserved in the Kēōkea region, this facility features approximately 3,500 sf of daycare space, eventually serving 40-50 seniors.
- ***Preschool to Kindergarten Immersion School.*** The preschool to kindergarten school is envisioned to be approximately 4,450 sf and be featured adjacent to the Kūpuna daycare facilities, to allow for an intergenerational learning and care environment. The Preschool to Kindergarten outdoor play area is approximately 2,250 sf.
- ***K-6 Immersion School.*** The immersion school would feature classes approximately 15-30 students in size, with 18,000 sf of building space and 7,000 sf of outdoor play space. This outdoor play space would be adjacent to the Preschool to Kindergarten outdoor play area to complete the educational center of the master plan.

- ***Support Facilities & Infrastructure.*** *Vehicular and pedestrian access* will be from Kaʻamana Street and off Kula Highway. Two points of access are anticipated, one being near the existing intersection, and the second further makai which will be a one way in for daycare and school drop off. *Drainage* will generally utilize surface sheet flow to a series of culverts on site. *Landscape* planting will feature plants endemic to the area. Other plants and shrubs could be planted for medicinal use and supplementing community needs including flowers for hālau, seniors' clubs and childcare groups. Consideration will also be given to establish plants that provide shade for activities.
- ***Accessibility Design.*** All buildings, facilities, and sites shall conform to applicable federal, state, and county accessibility guidelines and standards. Hawaiʻi Revised Statutes §103-50 requires all State of Hawaiʻi or County government buildings, facilities, and sites to be designed and constructed to conform to the Americans with Disabilities Act Accessibility Guidelines, the Federal Fair Housing Amendments Act, and other applicable design standards as adopted and amended by the Disability and Communication Access Board (DCAB). The law further requires all plans and specifications prepared for the construction of State of Hawaiʻi or County government buildings, facilities, and sites to be reviewed by the DCAB for conformance to those guidelines and standards. Applicable standards include:
    - Buildings and facilities-- Department of Justice's (DOJ) 2010 ADA Standards for Accessible Design (ADAAG);
    - Parking-- accessible parking be provided in each designated parking area per the ADAAG 2010 Standards;
    - Outdoor Developed Areas (e.g., trails, picnic areas) Final Guidelines, Architectural Barriers Act Accessibility Guidelines (ABAAG); Outdoor Developed Areas; published September 26, 2013;
    - Rights-of-way improvements—pedestrian facilities to be designed in accordance with HRS §103-50.

The final configuration and dimensions will be determined during the design phases.

2.4 Development Timetable and Preliminary Costs

Rider Levett Bucknall (RLB) prepared a rough order of magnitude (ROM) cost estimate (Appendix D) based on the Master Plan (Figure 4). Since implementation of the various elements of the Master Plan is subject to the availability of funding (public and private sources), RLB was directed to provide an estimate for each component of the Master Plan in 2021 dollars (assuming the Project would not be phased, and accordingly, with no escalation in costs by phasing). Total construction costs are estimated at $441,222,000 in 2021 dollars.

3 DESCRIPTION OF THE NATURAL ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes existing conditions of the natural environment, potential impacts related to the proposed Kēōkea Master Plan, and mitigation measures to minimize impacts.

3.1 Climate

Like most areas of Hawaiʻi, Maui's climate is relatively uniform year-round. Maui is characterized by a semi-tropical climate containing a multitude of individual microclimates. The Project site is located approximately at an elevation of 2,850 feet above mean sea level. The Kēōkea area is blessed with moderate temperatures ranging from 46°-85° F. The area receives its comfortable temperatures from prevailing trade winds. The area is within the Maui Vortex formed by the trade winds passing around the north west corner of Haleakalā and travelling southward over the central valley towards the southern part of the isthmus, then finally sweeping upland to Kula, forming clouds in the latter part of the morning. During Kona storms, the winds blow from a southerly direction. Rainfall in the area averages 30 to 40 inches annually. Most precipitation occurs from October to April.

The main driver of global warming since the mid-20th century has been the emission of greenhouse gases from human activities. (U.S. EPA, 2017) Greenhouse gases contribute to global warming by trapping heat in the atmosphere. The most notable greenhouse gases of global concern, in decreasing order of human emissions, are carbon dioxide, methane, nitrous oxide, and fluorinated gases[1].

- Of the gases listed above, carbon dioxide occurs in the highest concentration and contributes the most to global warming. Carbon dioxide is naturally occurring but also results from the burning of fossil fuels, solid waste, and wood. Changes in land use such as deforestation and soil degradation also contribute to carbon dioxide emissions. Carbon dioxide can remain in the environment for thousands of years after emissions, moving through the ecosystem and atmosphere. Responsible land stewardship practices such as reforestation can sequester carbon dioxide, removing it from the atmosphere.
- Methane is the second most common of these gases, and the second highest contributor to warming. Methane is naturally occurring but also results from the production and transport of oil, natural gas, and coal. Agriculture and the anaerobic decay of organic

[1] Technically, water vapor is the most abundant greenhouse gas in Earth's atmosphere. However, human activities have little direct influence over its concentration. Water vapor concentration is controlled by temperature, and warmer temperatures make it easier for water to evaporate and stay in the air in vapor form. Thus human production of other greenhouse gases (such as carbon dioxide and methane) have a substantial indirect influence over water vapor concentrations. The relationship between water vapor and global temperature is an example of a positive feedback loop, in which warming leads to more warming. (U.S. EPA, 2017)

material in municipal landfills also contribute to methane emissions. Methane can remain in the atmosphere for an average of about 12 years.

- Nitrous oxide is naturally occurring. Emissions result from agricultural activities, particularly fertilizer use, as well as the burning of fossil fuels and solid waste. Nitrous oxide can remain in the atmosphere for an average of 121 years.
- Emissions of fluorinated gases result from a variety of commercial, industrial, and household uses. Fluorinated gases are sometimes used as substitutes for ozone-depleting chlorofluorocarbons (CFCs) and hydrofluorocarbons (HCFCs). Production of CFC has been phased out globally due to the harm they cause to the ozone layer. They do not occur naturally and therefore are currently present in low concentrations, but these gases have a strong influence on the climate and can remain in the atmosphere for a few weeks to thousands of years, depending on the gas.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project is not expected to have a significant effect on climatic conditions. The State, through Act 234 and SB 559, has acknowledged that greenhouse gas emissions pose a statewide impact. While the Project will involve land uses that will indirectly result in the emission of greenhouse gases, global climate impacts are not anticipated due to the scope and scale of the Project. Emissions generated by the Project in combination with past, present, and reasonably probable future projects could contribute to these emissions.

Recognizing that climate change is thus cumulative in nature, KHFLA will consider ways to incorporate state-of-the-art energy conservation and green practices to support the Project. KHFLA will consider renewable sources and passive energy-conserving measures such as natural ventilation, solar water heating, and photovoltaic energy. The Project will not interfere with the development of clean energy supplies, energy-efficient technologies, conservation practices, and other mitigative strategies.

From an environmental standpoint, replacement of vegetative surfaces with hardscapes associated with roadways, paved parking areas, and buildings may yield a tendency towards slightly increasing ambient air temperatures. To address this “heat island” effect, proposed landscaping and landscaped buffers will be integrated into the non-agricultural components of the proposed improvements. However, no significant impacts are expected regarding the “heat island” effect as roughly 66.2 acres of either garden or undeveloped uses are anticipated as part of the proposed Project. This represents that approximately 96 percent of the 69-acre Project site will remain vegetated.

Outcomes of global climate change, including sea level rise as a natural hazard, are discussed in Section 3.5.

3.2 Geology and Topography

The island of Maui was built by two major volcanoes, the older West Maui Mountains, also known as Mauna Kahalawai, and the more recently active Haleakalā. The Project site is located on the

western slope of Haleakalā, a dormant volcano that last erupted around 1790. A majority of the ground surface of the site is currently covered by undeveloped forested area, and generally slopes from southeast to northwest. Onsite elevations range from 2,900 to 2,800 feet above mean sea level (MSL).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant adverse impact to geology or topography is anticipated. The Project will require excavation and/or embankment for the construction of parking areas and proposed building pads, and attempts will be made to balance "cuts" and "fills" to the best extent feasible in order to accommodate drainage and service utilities, while minimizing the import and/or export of earthwork materials. All grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the Maui County Code (MCC).

The Project will require construction of new infrastructure, roadways, building pad areas, and drainage features. No increase in runoff from the Project area is anticipated as a result of the Project. Section 4.7.3 discusses existing and proposed drainage conditions. Furthermore, Low Impact Development (LID) design strategies will be considered at the Project area, which would further mitigate potential impacts.

While the Project will alter how the land is currently used, the proposed improvements are not expected to significantly impact the overall geological character of the region. Construction activities, such as grading, may alter the topography to accommodate the Project and address potential flooding concerns. See Section 3.5. Appropriate engineering, design and construction measures will be implemented to minimize potential erosion due to grading of soils during construction. All grading work will comply with applicable requirements of Chapter 20.08, Soil Erosion and Sedimentation of the MCC. Further information on soils and grading is provided in Section 3.3.

3.3 Soils

Three soil suitability studies prepared for lands in Hawaiʻi describe the physical attributes of land and the relative productivity of different land types for agricultural production; these are: 1) the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS) Soil Survey; 2) the University of Hawaiʻi Land Study Bureau (LSB) Detailed Land Classification; and 3) the State Department of Agriculture's Agricultural Lands of Importance to the State of Hawaiʻi (ALISH) system.

Natural Resource Conservation Service Soil Survey

The soil at the Project site (Figure 11) is classified by the NRCS as Kula very rocky loam, 12 to 40 percent slopes (KxbE) and Kaimū extremely stony peat 7 to 25 percent slopes (KCXD) (Natural Resources Conservation Service, United States Department of Agriculture, Accessed April 2015). The Kula series consists of well-drained, very shallow soils on uplands on the island of Maui. These soils developed in volcanic ash. They are gently sloping to steep. Elevations range from 2,000 to

3,500 feet. The annual rainfall amounts to 25 to 40 inches. The mean annual soil temperature is 66 degrees F. KxbE soils runoff is medium, and the erosion hazard is moderate.

The Kaimū series consists of well-drained, very shallow soils on uplands on the island of Maui. These soils developed in organic material. They are moderately sloping, to moderately steep. Elevations range from 1,000 to 3,500 feet. The annual rainfall amounts to 30 to 50 inches. There is some afternoon cloud cover most of the year. The mean annual soil temperature is about 68 degrees F. KCXD soils occur on rough, undulating, relatively young ʻaʻā lava flows. Permeability is very rapid. Runoff is very slow, and the erosion hazard is no more than slight. In places roots penetrate to a depth of two feet.

LSB Detailed Land Classification

The LSB, Island of Maui classifies soils based on a productivity rating. Letters indicate class of productivity with A representing the highest class and E the lowest. The State Land Use Law (HRS Chapter 205) considers Class A and B soils to be prime farmland. The majority of the soils of the Project site are classified as D – Poor, with a smaller portion of the southern portion classified as E – Very Poor (Figure 12. Land Study Bureau Detailed Land Classification).

Agricultural Lands of Importance to the State of Hawaiʻi

The ALISH system classifies agricultural lands as Prime, Unique, or Other Agricultural Land. Approximately half of the soils of the Project site are classified as Other, with the rest of the soil on Project site unclassified by the State of Hawaiʻi (Figure 13. Agricultural Lands of Importance to the State of Hawaiʻi).

POTENTIAL IMPACTS AND MITIGATION MEASURES

No adverse impacts are anticipated. Based on soil suitability, the Project site is not considered prime agricultural land. The LSB D and E ratings for the Project site corresponds to the NRCS rating of “not prime farmland”, irrespective of ALISH’s Other rating.

To mitigate adverse temporary impacts to soil resources during the construction phase, the following best management practices (BMPs) will be required by KHFLA of its contractors:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.
- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).

- Preserve existing drainage conditions.
- Comply with National Pollutant Discharge Elimination System (NPDES) permitting requirements for construction exceeding one acre.

Contractors will be required to provide BMPs as part of their contracts. All construction activities will comply with all applicable Federal, State, and County regulations and rules for erosion control.

3.4 Hydrology

Surface Water & Wetlands

There are no wetlands on or near the Project site, according to the National Wetlands Inventory (see Figure 14. U.S. Fish & Wildlife Service Wetlands).

The Project area's western (makai) boundary is located approximately five miles from the nearest coastline which is classified as a Class A water ("open coastal waters between Puʻu Ōlaʻi and Nākālele Point")[2].

According to State of Hawaiʻi Department of Health (DOH) Water Quality Standards, "It is the objective of class A waters that their use for recreational purposes and aesthetic enjoyment be permitted as long as it is compatible with the protection and propagation of fish, shellfish, and wildlife, and with recreation in and on these waters" (§11-54-03, HAR).

The State has a General Policy of Water Quality Antidegradation (§11-54-1.1, HAR), which states that existing uses and the level of water quality necessary to protect them, shall be maintained and protected. In the case that water quality exceeds levels necessary to protect aquatic habitats, water quality may not be degraded without director approval.

All discharges related to the Project's construction or operation activities, whether or not NPDES system permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55.

Ground Water

There are five major public water systems in Maui County, operated by the Department of Water Supply (DWS): Central Maui, Upcountry Maui, West Maui, East Maui, and Molokaʻi. Water sources consist of streams (surface water) and aquifers (groundwater). The majority of the water supplied by DWS comes from groundwater, which is typically more abundant and reliable and less expensive to purify than surface water. (County of Maui, 2010)

The Maui Island Water Use and Development Plan (WUDP) provides a plan for the protection, management and use of water resources on Maui by all water users over a 20-year period. Each

[2] Refer to https://health.hawaii.gov/cwb/files/2013/05/WQS_20140204_Maui.pdf

county prepares a WUDP as a component of the statewide Hawai'i Water Plan. The Draft Maui WUDP Update was prepared by the Maui Department of Water Supply (MDWS) and approved by the Board of Water Supply in January 2019 and submitted to the Maui County Council in March 2019 for adoption by ordinance.

In addition, the State Department of Agriculture oversees and promotes diversified agriculture and state-owned irrigation systems. The 2004 Agricultural Water Use and Development Plan (AWUDP) projected demand to 2020 on lands served by major irrigation systems which include the East Maui and Upcountry Maui Irrigation Systems.

The DOH classifies groundwater under an aquifer coding system to identify and describe these aquifers. According to the WUDP, The Project site is located within the Central Aquifer Sector.

The DOH Safe Drinking Water Branch administers the Underground Injection Control (UIC) program to protect the quality of the state's underground drinking water sources from chemical, physical, radioactive, and/or biological contamination that could originate from injection well activity. DOH Administrative Rules, Title 11, Chapter 23 provides conditions governing the location, construction, and operation of injection wells so that injected fluids do not migrate and pollute underground sources of drinking water. The boundary between exempted aquifers and underground sources of drinking water is generally referred to as the UIC Line. Restrictions on injection wells differ, depending on whether the area is mauka or makai of the UIC Line.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No impact to surface water or wetlands is anticipated. The intent for drainage of the Project area is to limit the need for extensive grading as much as possible and to minimize the alteration of the existing drainage pattern. Section 4.7.3 discusses existing and proposed drainage conditions.

All discharges related to the construction and operation of the Project will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR. Any potential impacts to Class A waters caused by the construction and/or operation of the Project will meet the provisions of the: a) anti-degradation policy (Chapter 11-54-1.1, HAR); b) designated uses (Chapter 11-54-3, HAR); and c) water quality criteria (Chapter 11.54-4 through 11-54-8, HAR).

Pursuant to the Clean Water Act, a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that the Project may result in any discharge into navigable waters or as otherwise triggered.

To mitigate impacts to surface and groundwater resources during the construction phase, the following best management practices (BMPs) will be required by KHFLA of its contractors:

- Prevent cement products, oil, fuel and other substances from falling or leaching into the ground. Remove all construction debris and toxic substances daily to prevent entry into the ground.
- Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed offsite.

- Properly install and maintain erosion control barriers such as silt fencing or straw bales.
- Disturb the smallest area possible.
- Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid stand establishment.
- Apply any pesticides only during dry periods or low rainfall to minimize chemical runoff (applied only by certified applicators).
- Preserve existing drainage conditions.
- Comply with NPDES permitting requirements for construction exceeding one acre.
- Contractors will be required to provide BMPs as part of their contracts.

Table 15-16 of the WUDP provides the proposed land uses within Kēōkea (and Waiohuli and Puunene), and potable (and non-potable) water standards (by either residential units, land use acreage or students). According to the WUDP, "The 2017 State Water Projects Plan (SWPP) has been updated to address DHHL's project needs from 2016 to 2031." Table 15-17 of the WUDP list DHHL projects (including Kēōkea), planned use by aquifer system within the Central ASEA.

The WUDP states:

> *"Kēōkea/Waiohuli is a large mixed use tract. The future Residential, Subsistence Agricultural and Community Use land use areas which will require water are limited to the mauka half of the tract in the SWPP time frame. The remaining 768 proposed Residential units and approximately 40 acres of Community Use which will be located below the 2,400-foot elevation will require a new water system. According to the SWPP, an exploratory well at the 1,900-foot elevation of the Waiohuli tract located water at approximately six feet above sea level. The water will need to be pumped from the wells to a reservoir which will service the higher elevations, and then will flow by gravity to the remainder of the service area. A second reservoir and a series of Pressure Reducing Valves (PRVs) will also be required.*
>
> *The SWPP states that non-potable water will be required for irrigation of the Subsistence Agriculture lands, which could be supplied by the Upcountry Maui Irrigation System. The U.S. Department of Agriculture (USDA), National Resource Conservation Service (NRCS), is in the process of constructing this agricultural water system to supply untreated irrigation water from the Kahakapao Reservoir to farmers in the Upper Kula area, which will be operated by MDWS. The 1997 Final Watershed Plan Environmental Impact Statement indicated that there would be nine lateral systems supplied by the main pipeline, including the DHHL Kēōkea area. Due to budgetary considerations, DOA has indicated that they do not have any plans to construct the lateral to service the Kēōkea area, but that DHHL could construct this lateral at its own cost. Nevertheless, it is expected that the DHHL demands will be reflected in the upcoming Agricultural WUDP update. The USDA indicated that the current supply of water from MDWS may not be adequate to even service the proposed project area identified in the 1997 watershed plan. The DHHL recommends a coordinated effort be undertaken between DHHL, DOA and MDWS to determine the feasibility of utilizing the Upcountry Maui Irrigation System to supply the non-potable demands and, if so, to ensure that costs of the Kēōkea lateral are reflected in the AWUDP."*

To mitigate any long-term impacts to Maui's groundwater resources, KHFLA proposes that runoff from the proposed Project be directed to grassed swales. The proposed Project will be required to mitigate the 50-year, 1-hour storm on site with drainage above that to be conveyed to the grassed swale system. Use of grassed swales (as an alternative to pipes) allows water to infiltrate and return at least in part to the groundwater system.

Additionally, site users at the Project area will be encouraged to consider the following water conservation measures:

- Facility design to maximize water efficiency;
- Low-impact development (LID) approach to landscape and hardscape design;
- Water efficient fixtures;
- Dual flush toilets;
- Leak detection sensors and alarms;
- Minimizing landscaped areas requiring extensive irrigation;
- Use of landscaping materials with low water needs (xeriscaping and embracing the use of native plants);
- Smart irrigation systems and moisture sensing feedback technology; and
- Use of automatic drip irrigation as the predominant delivery system.

KHFLA will embrace the use of native plants as a means of water conservation and to support cultural practices; this may positively impact flora resources.

3.5 Natural Hazards

Maui is susceptible to potential natural hazards such as flooding, tsunami inundation, hurricanes, earthquakes, and volcanic eruptions. The State Department of Defense (DOD), Office of Civil Defense operates a system of civil defense sirens throughout the state to alert the public of emergencies and natural hazards, particularly tsunamis and hurricanes. During the pre-Assessment consultation process, the DOD provided a map that would appear to indicate that the closest emergency warning siren is "Upper Kuma Siren MA126", which is located approximately four miles from the Project site.

The County Civil Defense Agency is responsible for administering and operating the various local, state, and federal civil defense programs for the County. This includes planning, preparing, and coordinating civil defense operations in meeting disaster situations and coordinating post-disaster recovery operations. The County's 2015 Hazard Mitigation Plan is a master plan for the County that:

- Identifies the hazards and risks posed by natural and technological disasters;
- Identifies hazard mitigation actions and activities to reduce losses from such disasters; and
- Establishes priorities and a long-term sustained process to implement those actions.

The County's Hazard Mitigation Plan focuses on mitigating hazards to critical facilities and special populations or areas. Critical facilities include those public and private facilities that need to be operational during and after a hazard event to meet public health and safety needs, or to speed economic recovery. These facilities include the following:

- Emergency response facilities: Civil Defense Emergency Operations Center (EOC), emergency shelters, police, fire and Emergency Medical Service (EMS) stations, hospitals, and Department of Public Works base yards.
- Government facilities and services: Government buildings and schools that are all important for maintaining daily operations and preserving the economy.
- Critical infrastructure and lifeline facilities: transportation (harbors, airports, roads/bridges), energy (electrical, fuel, gas), communication (wired/cabled telecommunication, wireless), water, and wastewater.
- Other Important Assets: debris clearing and disposal, car rentals, buses, financial institutions, survival and building supplies.

During the pre-Assessment consultation process, the State Department of Land and Natural Resources (DLNR) Engineering Division wrote: "*The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project.*" Flood hazards are primarily identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA). The Project site has a flood zone classification of Zone X (see Figure 15. Flood Insurance Rate Map). Zone X is characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2% annual chance floodplain. Flood zone classification is based on the Flood Insurance Rate Map (FIRM) number 1500030685E, effective September 25, 2009, as prepared by the Federal Emergency Management Agency.

The Project site is located in the Tsunami Evacuation Safe Zone (outside the Tsunami Evacuation Zone).

Records show that strong windstorms have struck all major islands in the Hawaiian Island chain since the beginning of history. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August of 1950. Since 1980, two hurricanes have had a devastating effect on Hawaiʻi: Hurricane ʻIwa in 1982 and Hurricane ʻIniki in 1992.

In Hawaiʻi, most earthquakes are linked to volcanic activity rather than the movement of tectonic plates. Each year, thousands of earthquakes occur in Hawaiʻi, but the vast majority of them are only detectable with highly sensitive instruments. Nevertheless, moderate and disastrous earthquakes have occurred in Hawaiʻi.

The 1938 Maui Earthquake, with a magnitude of between 6.7 and 6.9 and an epicenter six miles north of Maui, created landslides and forced the closure of Hāna Highway. Damaged water pipes and ground fractures were reported in Lahaina.

A more recent series of earthquakes, with magnitudes of 6.7 and 6.0, occurred at Kīholo Bay (Hawaiʻi Island) on October 15, 2006. On Maui, these earthquakes caused a closure of the Pāʻihi Bridge between Kīpahulu and Hāna, as well as a rockslide over the highway between Kīpahulu

and Kaupō, cutting utility lines and undermining sections of the narrow roadway. The road between Kīpahulu and Kaupō was shut down in December 2006 and not re-opened until October 2008.

On May 4, 2018, a series of earthquakes occurred, including a powerful magnitude 6.9, hit Hawaiʻi Island, where the Kīlauea volcano had been releasing lava into residential areas resulting in the evacuation of hundreds of residents. The USGS said the strongest tremor, magnitude 6.9, occurred at 12:32 PM.

Volcanic hazards on Maui are generally minimal due to the dormant status of the island's volcanoes. According to the USGS, the eruption threat assessment for Haleakalā is in the Moderate Threat Group. (USGS, 2018)

While sea level rise models are inherently uncertain, sea level rise due to human-driven climate change is occurring and will continue to occur in Hawaiʻi and throughout the world. Sea level has risen over the last century on each island at rates varying from 0.5 to 1.3 inches per decade. (UH Sea Grant, 2014) For the foreseeable future, the planet's warming atmosphere will cause increased melting of ice sheets and snow, in addition to thermal expansion of ocean water, resulting in sea level rise. The Hawaiʻi Sea Level Rise Vulnerability and Adaptation Report provides a statewide overview of vulnerability to sea level rise and the potential impacts from chronic flooding based on modeling coastal flooding with sea level rise due to passive flooding, annual high wave flooding, and coastal erosion in the Sea Level Rise Exposure Area (SLR-XA) with up to 3.2 feet of sea level rise and depicts flood hazards that may occur in the mid- to latter-half of this century. According to the report, this "timeframe is within the expected lifespan of most new construction and much of our existing development. It should be noted that sea level rise projections greater than 3.2 feet are 'physically plausible' by the end of the century, based on the latest climate science…" (Hawaiʻi Climate Change Mitigation and Adaptation Commission, 2017)

In addition to sea level rise, human-driven climate change will result in warmer air temperatures, a decrease in prevailing northeasterly trade winds, a decline in rainfall and resulting decline in water resources and aquatic ecosystems, warming and acidifying seawater, and stress to human health. (UH Sea Grant, 2014)

POTENTIAL IMPACTS AND MITIGATION MEASURES

No short- or long-term adverse impacts are anticipated, especially from tsunamis or sea level rise. Building codes have requirements to ensure buildings are able to withstand potential risks from earthquakes and hurricanes. The proposed Project will not exacerbate any hazard conditions with respect to volcanic activity. There would be a beneficial impact since the proposed community center building could function as a congregate shelter for those whose homes may have been damaged in a natural hazard event. If the shelter could be designed and funding is available to "harden" the community center, it could be used as a hurricane evacuation shelter.

During the pre-Assessment consultation process, the State Department of Defense (DOD) recommended *"…that the developer install an emergency sign to cover the area."* In their letter, the DOD provided a map that would appear to indicate that the closest emergency warning siren is "Upper Kuma Siren MA126". DHHL will consider the DOD recommendation for the installation of the siren as long as it is funded by the Legislature.

The proposed Project will not adversely impact climate change and related issues including such as warmer air temperatures, a decrease in prevailing northeasterly trade winds, a decline in rainfall and resulting decline in water resources and aquatic ecosystems, warming and acidifying seawater, and stress to human health.

No impacts to the Project site are anticipated. According to the Hawaiʻi Sea Level Rise Vulnerability and Adaptation Report (Hawaiʻi Climate Change Mitigation and Adaptation Commission, 2017), the Project site is outside the SLR-XA for 3.2 feet of sea level rise.

To mitigate water resource-related stress resulting from drought- or storm-related water supply reduction and/or changing rainfall patterns, KHFLA will be encouraged to consider the following water conservation measures:

- Facility design to maximize water efficiency;
- Low-impact development (LID) approach to landscape and hardscape;
- Water efficient fixtures;
- Dual flush toilets;
- Leak detection sensors and alarms;
- Minimizing landscaped areas requiring extensive irrigation;
- Use of landscaping materials with low water needs (xeriscaping and embracing the use of native plants);
- Smart irrigation systems and moisture sensing feedback technology; and
- Use of automatic drip irrigation as the predominant delivery system.

KHFLA will also embrace the use of native plants as a means of water conservation and to support cultural practices.

3.6 Flora and Fauna

A botanical survey encompassing the Project site was undertaken by Char & Associates in August 1998 (SSFM International, 2001). The survey described the vegetation as dominated primarily by introduced or alien species. There were no endangered or threatened flora or fauna species. PBR HAWAII conducted a site visit on September 26, 2020, accompanied by KHFLA representatives. The Project site was within an area characterized by wattle and Tinaroo (glycine vines). Bocconia was also seen during the PBR HAWAII site visit and appeared quite prevalent. Silky oak and some Christmas berry were observed in the gated seating area of parcel 68. Fireweed and false ʻilima were also observed on Project site, with KHFLA noting jacaranda present on Project site as well. Khaki weed was observed in the gravel lot of parcel 67. Tree tobacco was not observed on Project site.

The Project site is not located within any critical habitats mapped by the U.S. Department of the Interior, Fish and Wildlife Service (USFWS). See Figure 16. U.S. Fish & Wildlife Service Mapped Critical Habitat.

During the pre-Assessment consultation process, the DLNR Division of Forestry and Wildlife (DOFAW) provided information on the Hawaiian Hoary Bat; the impact of outdoor lighting on seabirds; the Blackburn's Sphinx Moth; the Hawaiian Goose; soil contamination; Rapid ʻŌhiʻa Death; and the use of native plant species in Project landscaping:

> *"The State listed Hawaiian Hoary Bat or ʻŌpeʻapeʻa (Lasiurus cinereus semotus) could potentially occur in the vicinity of the project area and may roost in nearby trees…*
>
> *Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disorientated. This disorientation can result in a collision with manmade structures or the grounding of birds…*
>
> *The project area falls within or is encompassed by the historic range of the State listed Blackburn's Sphinx Moth (BSM; Manduca blackburni). Larvae of BSM feed on many nonnative hostplants that include tree tobacco (Nicotiana glauca) which grows in disturbed soil...*
>
> *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 this species…*
>
> *Soil and plant material may contain invasive fungal pathogens (e.g., Rapid ʻŌhiʻa Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coqui Frogs), or invasive plant parts that could harm our native species and ecosystems…*
>
> *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.)."*

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant adverse impact to botanical resources is anticipated. All presently observed plant species at the Project site are relatively common in the state and are of no particular conservation concern.

As noted in Section 2.3, the Project may have a positive impact with regard to ethnic and/or native species, particularly plants, resulting from the intentional reintroduction of traditional practices and supporting resources through the development of the proposed Mālalani Garden. Located furthest mauka on the Project site (Parcel 68), the proposed Mālalani Garden will feature a Native plant garden (māla and loʻi) for educational tours in the Wahi Nanea (cultural educational center) area. The space is envisioned as having minimal grading and utilizing the topography of the site to provide walkable areas for educational purposes as well as hosting of

classes for the general public to learn more about native plants and traditional landscaping and cultural traditions.

No significant adverse impact to fauna (including insects, birds, and mammals) is anticipated, however KHFLA will undertake mitigation measures recommended by DOFAW, as described below:

- To mitigate impacts to the endangered Hawaiian hoary bat, avoid removing or trimming woody plants greater than 15 feet tall during the Hawaiian hoary bat breeding season (June 1 to September 15). Additionally, because Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground, avoid using barbed wire fencing.
- For nighttime work that might be required, DOFAW recommends that all lights used to be fully shielded to minimize impacts. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season from September 15 through December 15. Permanent lighting also poses a risk of seabird attraction, and as such should be minimized or eliminated. To mitigate impacts to the endangered Blackburn's sphinx moth (BSM), DOFAW recommends contacting its Maui Branch DOFAW office at (808) 984-8100 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 it is planned to either remove tree tobacco over one meter in height or to disturb the ground around or within several meters of these plants, DOFAW recommends that the plants be thoroughly inspected by a qualified biologist for the presence of BSM eggs and larvae.
- If any Hawaiian Geese are present during construction activities, all activities within 100 feet (30 meters) should cease, and the birds should not be approached. Work may continue after birds leave the area of their own accord. If a nest is discovered at any point, DOFAW recommends contacting the Maui DOFAW Branch Office at 808-984-8100. DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. DOFAW also recommends consulting the Maui Invasive Species Committee (MISC) at (808) 573-6472 in planning, design, and construction of the Project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70% alcohol solution to prevent the spread of Rapid ʻŌhiʻa Death and other harmful fungal pathogens.
- To prevent the spread of Rapid ʻŌhiʻa Death, if ʻōhiʻa trees are present and will be removed, trimmed, or potentially injured, DOFAW requests that the information and guidance at the following website be reviewed and followed: https://cms.ctahr.hawaii.edu/rod.
- 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.). DOFAW also recommends consulting the Hawaiʻi-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). DOFAW recommends that www.plantpono.org be referred to for guidance on selection and evaluation for landscaping plants. It should be noted that the area furthest mauka on the Project site (Parcel 68) will feature a Native plant garden (māla and loʻi) for educational tours in the Wahi Nanea (cultural educational center) area. The space is envisioned as having minimal grading and utilizing the topography of the site to provide walkable areas for educational purposes as well as hosting of classes for the general public to learn more about native plants and traditional landscaping and cultural traditions.

4 DESCRIPTION OF THE HUMAN ENVIRONMENT, POTENTIAL IMPACTS, AND MITIGATION MEASURES

This section describes the existing conditions of the human environment, preliminary potential impacts of the Project, and preliminary mitigation measures to minimize any impacts.

4.1 Archaeological and Historic Resources

TCP Hawaiʻi (TCP) completed an Archaeological Literature Review and Field Inspection (LRFI) in support of the Kēōkea Master Plan (Appendix E). For the purposes of the LRFI, TCP focused its fieldwork *only* in locations where the community proposes to alter the ground surface, build structures and infrastructures, etc., and *not* on the entire 69-acre Project area. The smaller area designated the "proposed development area," measures about 15 acres. The objectives of the LRFI study included:

(1) Documentation and description of the parcel's land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes;

(2) Identification of any significant historic properties or component features in the Project area and proposed development area; and

(3) Providing information relevant to the likelihood of the proposed development plans adversely affecting any significant historic properties.

The results of the LRFI are as follows:

(1) The four previously identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall Project area are <u>not</u> located in the proposed development area;

(2) one additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital;

(3) the three previously identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are <u>not</u> preservation sites and have been previously determined to be "no further work" sites by the State Historic Preservation Division (SHPD), have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301); and

(4) a modern rock wall along parts of Kula Highway and Kaʻamana Street is <u>not</u> a historic property.

The only unevaluated (new) site identified during the LRFI is the incinerator site. TCP gathered sufficient evidence to obtain a formal State Inventory of Historic Places (SIHP) # if requested by the SHPD. This site is likely eligible for the Hawaiʻi Register of Historic Places (HRHP) under criterion "d" for its informational value to the history of the twentieth century in Kula and Kēōkea,

and possibly criterion "a" based on its association with the development of the nearby Kula Sanitorium (Hospital), whose structures are listed on the National Register of Historic Places (NRHP) (SIHP # 50-50-10-1540).

POTENTIAL IMPACTS AND MITIGATION MEASURES

Provided that the issue of the incinerator site is resolved (e.g., in consultation with the SHPD, to see what additional information needs to be gathered), the proposed development Project should have "no effect" on significant historic properties. Based on all available evidence, TCP offered the following recommendations:

(1) From the community's perspective, in particular, the old incinerator site is primarily an environmental concern, and a health and safety hazard, rather than retaining heightened value as a historically significant cultural resource. As discussed above, if the SHPD requests this resource be assigned a formal SIHP #, TCP has sufficient documentary evidence to complete this process; and

(2) There are no other historic-preservation concerns associated with the proposed development area described and documented in the LRFI.

For inadvertent finds during construction, the construction documents will include a provision that should remains such as artifacts, burials, concentrations of shell or charcoal or artifacts be encountered during construction activities, work will cease immediately in the immediate vicinity of the find and the find will be protected. The contractor will immediately contact the SHPD, which will assess the significance of the find and recommend appropriate mitigation measures, if necessary.

Although current funding plans do not include federal funds (see §2.4), KHFLA should comply with Section 106 of the National Historic Preservation Act (NHPA) and National Environmental Policy Act (NEPA) should funding sources change to include federal funds.

4.2 Cultural Resources

TCP also completed a cultural impact assessment (CIA) in support of the Kēōkea Master Plan (Appendix F). According to TCP, the following cultural resources, practices and beliefs are associated with the Project area:

The Project area is part of the uplands of Kēōkea ahupuaʻa, in the moku (traditional district) of Kula, known today as the district of Makawao. The Project area is situated on the lower slopes of Haleakalā, known in Hawaiian traditions as the "House of the sun".

Historian Helen Wong Smith's compilation of cultural and historical information about the Project-area environs describes Makawao, in general, as "kula-o-ka-maʻo-maʻo," or Land of Mirages, where lost souls once wandered until they found a place to rest. Pukui et al. (1974:142) interpret the place name Makawao as "forest beginning".

Puʻu-o-kali (literally, "hill of waiting") is a prominent hill (elevation 1,481 ft.) a couple miles northwest of the Project area along the boundary between the ahupuaʻa of Kēōkea and Waiohuli. From the coastline, this puʻu (hill) is a major visual aid and landmark between these lands. It is also associated with the following moʻolelo (oral-historical accounts): [It was] . . . believed once [to be] a moʻo, the wife of nearby Puʻu-hele; their child, Puʻu-o-inaina (hill of wrath) was placed on Ka-hoʻolawe and later was a lover of Pele's sweetheart, Lohiʻau. (Pukui et al. 1974:203).

Māhele data from the Project area show an atypical pattern compared with most of the Hawaiian Islands: the Project area was part of both Crown land—that is, large tracts (such as entire ahupuaʻa) set aside for the monarchy's exclusive use—as well as kuleana (hoaʻāina, or commoner) parcels. Wong Smith explained: "Although there were many small parcels granted in Kēōkea . . . the Indices states that Kēōkea was Crown Land from the beginning. The numerous [small, kuleana] parcels may be a result of an experiment by the Kamehameha III's administration prior to the Great Māhele concerning trial fee ownership runs. In a report by Riford . . . 11 Land Commission Awards (LCA) either within or bordering the Kēōkea parcel [i.e., including the current Project area] . . . are listed. The bulk of the parcels are designated as kula land and houselots".

Two LCAs (#s 10639 to Pa [1.9 acres] and 6720-B: ʻāpana 4 to Nahelu [3.6 acres]) are entirely, or nearly so, contained within the Project area; however, they are both well outside of the proposed development area. Interestingly, Nahelu's LCA contains two of the preservation sites identified in previous studies of the Project area: SIHP #s 50-50-10-2099—a heiau known as Papākea—and 2311, a burial site. Pa's kuleana parcel is described as "kalo [taro] land" that he received in 1843. Nahelu received his parcel in 1823.

Several other LCAs are located around the north and northeast sides of the Project area; most are a short distance away, but one (LCA # 6724 to Makakulani) includes a small portion of the Project area. This and others (LCA #s 6179-B: ʻāpana 2 [to Kalama], 6480: ʻāpana 2 [to Halekahi], 6415: ʻāpana 1 [to Kakua], and at least a dozen more) suggest a fairly densely-populated area, at least in the mid-1800s.

Wong Smith, discussing the time of the California gold rush (1840s), noted that the Kula Moku (District) was a place of commercial agricultural operations and cash crops. In particular, Kula was a place where "Irish" (white) potatoes were grown and shipped to California for profit. Other crops, including "corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton," were also grown in Kula (Mark 1975), which into modern times supplied the state with up to 35% of its vegetables (Wong Smith in Brown 1989:4).

In the late 1800s to early 1900s, the uplands of Kēōkea, in particular, were depicted as best suited for pasturage and ranching, rather than agriculture. The general limits of "good agricultural land" are located just mauka (upslope) of the Project area (on a map dated 1885–1903). On a 1911 map, the area just southeast of the Project area is labeled "Maui County Farm." According to the NRHP form for the Kula Sanitorium (see below), the "Maui County Farm and Sanitorium" was established in 1910. This same (1911) map shows the "Kula pipeline" just east of the Project area, upslope a short distance. According to Mark (1975:4), the pipeline was built in 1905 during a terrible drought. The water source was in Olinda.

Maps from 1915 depict several buildings labelled "Sanitorium" in the location of the current Kula Hospital. The "Kula Sanitorium" was founded for the care of tuberculosis suffers. Initially the sanitorium consisted of two tent-houses which accommodated 12 patients. This site (SIHP # 50-50-10-1540) was listed on the NRHP in 2003. The NRHP form states that the hospital was a complex of wood-framed structures from 1910-1937; then, starting in 1937, the historic buildings that are on the NRHP were built.

Although there is not much specific information available on this issue, there is an area within the current Project area known as the "incinerator site," which was a place used by the Kula Hospital (Sanitorium) to burn waste, presumably biohazardous materials. According to an environmental assessment that included the current Project area, the hospital used the incinerator site for a period of time before 1980. It was reported that Mr. George Tanji, who worked at the Kula Hospital until his retirement, believed the incinerator ceased operation sometime in the late 1950s. (It should be noted KHFLA's right-of-entry from DHHL specifically states: "PERMITTEE acknowledges and shall agree that access to and use of an approximate two (2) acre portion of the Remainder Lot 167, which was known and used as a former incinerator site, is specifically excluded from this ROE.")

During the twentieth century, the current Project area was used primarily for cattle grazing.

Regarding the influx of Chinese to the Project area environs starting in the middle 1800s, Mark's (1975) oral-history study contains a multitude of relevant information about this important part of Kēōkea's history that is listed in the report.

Additional interviews gathered by others (i.e., Maxwell n.d.; Smith 2001; Kihara 2013) focus on Hawaiian perspectives, paniolo ("Hawaiian cowboys"), and small, family-owned stores in the area, such as Ching Store and Henry Fong Store. Relevant highlights from these interviews are in the report.

Finally, the most relevant results of the group interview conducted with three kamaʻāina (native born) to this land (i.e., Perry Artates, Richard Dancil, and Roderick Fong) include the following:

(a) All the different groups of people—Hawaiian, Chinese, Portuguese, Filipino, etc., had to learn each other's culture and respect each other, living as they did far away from the major settlement areas along the coast—they had to practice self-reliance and sustainable ways of living—Kēōkea was a place where everyone took care of, and knew the business of, everyone else.

(b) Even the Kula Hospital (Sanitorium), which most people in the area have some kind of relationship with through family members or personally, was fully self-sufficient, including using some of DHHL's land (on lease) to grow food and raise animals.

(c) Those interviewed know generally about the fact that old Hawaiian sites are in the area, but they were not familiar with specific sites because they were raised to not be nosy.

(d) The importance of the availability of water for farming and subsistence and life was discussed in both historic and modern-day terms.

(e) Those interviewed spoke passionately about moving forward in Kēōkea carefully and slowly and with a good plan that does not turn the place into a city or a tourist destination, but one that works for those who live and work and garden there now; and

(f) All of those interviewed advocate for taking care of the archaeological sites that are in the Project area/proposed development area.

The vision for the Kēōkea Master Plan includes the promotion of cultural education, promotion of cultural practices (food and medicinal plants), and restoration of a native forest.

> *"KHFLA to direct the use of the 70 plus acres located in the area long the Kula Hwy at the upper most portion of the Kēōkea Hawaiian Home Lands Farm Lots for the benefit of lessees of the Kēōkea, Waiohuli and Kahikinui Homesteads.* ***The lands would be used for Cultural education center, Native food and Medicinal Plant gardens, Keiki and Kupuna daycare****, a multipurpose/meeting/entertainment complex, local small business and food venue and a* ***restored native forest****. Also, a Kēōkea Farmers Co-op be established with an association Produce Processing Plant…These services, facilities* ***cultural educational opportunities*** *would directly benefit the growing populations of the three nearby homesteads..."*

POTENTIAL IMPACTS AND MITIGATION MEASURES

Based on all available evidence, TCP determined that the proposed development Project will have no negative impacts on traditional and customary practices associated with the Project area; cultural resources that support these practices; and/or other beliefs about the Project area that relate to these resources and practices.

4.3 Roadways and Traffic

During the pre-Assessment consultation process, the Hawaiʻi Department of Transportation (HDOT) wrote:

> *"1. A Transportation Assessment or a Traffic Impact Analysis Report should be prepared by a traffic engineer licensed in the State of Hawaii and should be included in the DEA.*
> *2. Both the DEA and traffic study should fully evaluate whether the day-to-day operations, special events, and drainage patterns will have any impacts on the nearby State highways."*

As part of the Draft EA, a Traffic Impact Analysis Report (TIAR) was prepared by a traffic engineer licensed in the State of Hawaiʻi, Austin Tsutsumi & Associates, Inc. (ATA). The TIAR is summarized below and attached to this EA as Appendix G.

4.3.1 Roadway System

The following are brief descriptions of the existing roadways studied within the vicinity of the Project:

Kula Highway is generally a north-south, two-way, two-lane roadway. This roadway begins to the south near ʻUlupalakua School & Ranch (where it transitions from Piʻilani Highway) and extends northward until it transitions to Haleakalā Highway north of its intersection with Makaena Place. In the vicinity of the Project, Kula Highway has a posted speed limit of 25 miles per hour (mph).

Kaʻamana Street is a two-way, two-lane roadway that provides connection to residences in the study area. This roadway begins to the west with its intersection with Keanuhea Street and continues eastward until its intersection with Kula Highway. The posted speed limit is 20 mph in the vicinity of the Project.

Thompson Road is generally a two-way, two-lane roadway that begins to the north at its intersection with Kula Highway and extends southward until it transitions to Kēōkea Place, which ultimately provides access to Kula Hospital & Clinic and loops around to connect back to Kula Highway. The posted speed limit is 15 in the vicinity of the Project.

The Project is located on approximately 69 acres on the south end of the DHHL Kēōkea subdivision. The Project is located north of Kula Highway and bifurcated by Kaʻamana Street. Access to the Project site will be provided via Kaʻamana Street.

Analysis within the Project's study area was performed at the following intersections:

- Kula Highway/Kaʻamana Street (March 2021 - Unsignalized)
- Kula Highway/Thompson Road (March 2021 - Unsignalized

4.3.2 Transit Facilities

The Maui Bus system offers several routes that connect the major areas in Maui. As of July 2021, a one-way fare costs $2.00, and a monthly pass costs $45.00. In the vicinity of the Project, there are two bus stops which are served by the Kula Islander (Route 39), which provides service between Kula Hospital and the transit hub at Queen Kaʻahumanu Shopping Center in Kahului. One stop is located near the intersection of Kula Highway and Kēōkea Place, across the street from the Project. Another stop is located along Kaʻamana Street, less than 500 feet from the Project.

4.3.3 Bicycle and Pedestrian Facilities

In the vicinity of the Project, there are no sidewalks or bicycle facilities currently available along Kula Highway or Kaʻamana Street.

According to Bike Plan Hawaii, published by the State of Hawaiʻi Department of Transportation in 2013, there is a signed shared roadway proposed along Kula Highway between Kekaulike Avenue/Haleakalā Highway and Piʻilani Highway.

4.3.4 Existing Traffic Volumes

The hourly traffic volume data utilized in this report was collected on Wednesday, March 3, 2021. Based on a comparison to HDOT volumes taken in 2015, traffic volumes collected in 2021 were similar and comparable, but adjusted slightly to match growth from 2015. See the traffic count data provided in Appendix G for the existing intersections studied and their corresponding traffic count data. Based on the traffic count data, the weekday AM and PM peak hours of traffic were determined to occur between 6:45 AM and 7:45 AM and 3:30 PM and 4:30 PM, respectively.

4.3.5 Existing Observations and Intersection Analysis

Traffic volumes along Kula Highway were observed to be very low throughout the AM and PM peak hours, with approximately 60-200 vehicles in each direction along Kula Highway during the peak hours, or about 1-3 vehicles per minute in each direction, on average. As a result, turning movements from Thompson Road and Kaʻamana Street experienced little difficulty finding adequate gaps in Kula Highway traffic.

During both peak hours, all movements at both study intersections are anticipated to operate acceptably at LOS B[3] or better.

POTENTIAL IMPACTS AND MITIGATION MEASURES

For planning purposes, a 20-year horizon, to Year 2042, was selected to reflect the Project completion year. The Base Year 2042 scenario represents the traffic conditions within the study area without the Project. Traffic projections were formulated by applying a de facto growth rate to the traffic count volumes as well as trips generated by known future developments in the vicinity of the Project.

As a result of de facto growth and trips generated by background projects, traffic volumes along Kula Highway are anticipated to increase by 15-45 vehicles in each direction during each of the AM and PM peak hours. With Base Year conditions, volumes are anticipated to continue to be very low, with approximately 95-200 vehicles in each direction in each of the AM and PM peak hours.

[3] Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual (HCM), 6th Edition, includes methods for calculating volume to capacity ratios, delays, and corresponding Levels of Service that were utilized in this study. Based on the vehicular delay at each intersection, a LOS is assigned to each approach and intersection movement as a qualitative measure of performance.

Operations at both study intersections are anticipated to continue to be acceptable and similar to existing conditions, with all movements operating at LOS B or better across both peak hours.

The Project is forecast to generate approximately 240(372) trips in the AM(PM) peak hours at full build-out. When distributed across study intersections, the Project is anticipated to add approximately 215(342) trips in both directions combined along Kula Highway during the AM(PM) peak hours.

With the addition of Project traffic, it is anticipated that all movements at the Kula Highway/Kaʻamana Street and Kula Highway/Thompson Road at LOS C or better across both peak hours, with all movements operating significantly under capacity.

At the new four-way Kaʻamana Street/Project Access intersection, which was assumed to provide single-lane, stop-controlled Project driveways, all movements are anticipated to operate at LOS B or better across both peak hours.

At the ingress-only Project driveway along Kula Highway, which serves the adult daycare and schools, it is anticipated that the majority of traffic will arrive in an approximately 15–20-minute window near the start and end of the school day.

Table 4-1: Comparison of Intersection Level of Service for Existing Traffic Conditions, Base Year 2042 Traffic Conditions, and Base Year 2042 Conditions with Project Traffic

Intersection	***Existing Traffic Conditions AM Peak Hour***	***Existing Traffic Conditions PM Peak Hour***	***Base Year 2042 Traffic Conditions AM Peak Hour***	***Base Year 2042 Traffic Conditions PM Peak Hour***	***Base Year 2042 Conditions With Project Traffic AM Peak Hour***	***Base Year 2042 Conditions With Project Traffic PM Peak Hour***
Kula Highway & Driveway/Thompson Road						
Northbound Left Turn	A	A	A	A	A	A
Eastbound Left Turn/ Through/ Right Turn	B	B	B	B	B	C
Eastbound Left Turn	A	A	A	A	A	B
Southbound Left Turn	A	A	A	A	A	A
Kula Highway & Kaʻamana Street						

Intersection	*Existing Traffic Conditions AM Peak Hour*	*Existing Traffic Conditions PM Peak Hour*	*Base Year 2042 Traffic Conditions AM Peak Hour*	*Base Year 2042 Traffic Conditions PM Peak Hour*	*Base Year 2042 Conditions With Project Traffic AM Peak Hour*	*Base Year 2042 Conditions With Project Traffic PM Peak Hour*
Northbound Left Turn	A	A	A	A	A	A
Eastbound Left Turn/ Through/ Right Turn	A	A	A	B	B	B
Kula Highway & Project Driveway						
Northbound Left Turn					A	A
Ka'amana Street & Project Driveway						
Northbound Left Turn/ Through/ Right Turn					A	A
Eastbound Left Turn					A	A
Westbound Left Turn					A	A
Southbound Left Turn/ Through/ Right Turn					B	B

While a few intersection movements at a couple of intersections will have a lower LOS than currently experienced, some of that can be attributed to the impact of the growth of regional traffic that is expected to occur over the next 20 years. No intersection is anticipated to reach an undesirable LOS (D or E).

4.4 Sound

The Project area is surrounded mostly by agricultural, residential and well-vegetation vacant land, as well as Kula Highway to the south. Traffic traveling along Kula Highway is the primary source of noise, but as noted in Section 4.3 of this EA, traffic volumes are expected to continue to be low for the foreseeable future. Other sources of sound include wind through vegetation,

animals vocalizing and operation of agricultural machinery. Many surrounding uses are separated from the Project site by existing mature vegetation.

POTENTIAL IMPACTS AND MITIGATION MEASURES

A mitigable impact is anticipated with respect to sound. The Project will comply with all applicable rules and provisions including those of Chapter 11-46, HAR, "Community Noise Control".

Construction noise will likely be audible during the entire construction period. If noise created during the construction phase of the proposed action is expected to exceed the maximum allowable levels, then a noise permit will be obtained before the commencement of work. The use of properly muffled construction equipment will be required on all job sites. The incorporation of DOH construction noise limits and curfew times, which are applicable throughout the State, is another noise mitigation measure. Loud construction activities are not allowed on Sundays and holidays, during the early morning, and during the late evening and nighttime periods under the DOH permit procedures. While there are lots abutting the Project site, however there is existing vegetation that will likely attenuate noise from the Project area. Therefore, risks of adverse noise impacts at existing residences during construction activity are expected to be relatively low.

Noise impacts from ongoing operations at the Project area are not anticipated. By existing DOH regulations, fixed noise machinery on buildings within the Project area may emit sound levels continuously during the day and night, as long as their sound levels do not exceed 70 dBA at or beyond the lots' Project area boundaries. Risks of adverse noise impacts from onsite noise sources are considered to be minimal.

To mitigate against any potential noise impacts, measures to limit the noise from fixed mechanical equipment to those allowed by the DOH will be required of all tenants within the community, educational and commercial areas, as needed.

4.5 Air Quality

Air quality on Maui, as throughout the State, is considered to be good due to the presence of northeasterly trade winds that tend to disperse pollutants seaward. On the Leeward side (Southeast side) of Maui, the conditions are generally dry and sunny. Air quality in the area is impacted primarily by air pollutants from vehicular, natural and/or agricultural sources. Because of ongoing active agricultural activities, the Project site is subject to dust and equipment emissions.

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set National Ambient Air Quality Standards (NAAQS) for six common air pollutants. These commonly found air pollutants (also known as "criteria pollutants") are found throughout the United States. They are particle pollution (often referred to as particulate matter), ground-level ozone, carbon monoxide, sulfur oxides, nitrogen oxides, and lead. These pollutants can harm public health and the environment, as well as cause property damage. Another set of limits intended to prevent environmental and property damage is called secondary standards. The EPA designates areas as

meeting (attainment) or not meeting (nonattainment) the aforementioned "standards." The Clean Air Act requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. Hawai'i has no areas designated as a "nonattainment" area.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No significant impacts are anticipated. Construction activity will be the main source of short-term, mitigable air quality impacts. Construction vehicle activity will temporarily increase automotive emissions along existing roadways as well as on the Project site. Site preparation, earthmoving, and building construction will create temporary particulate emissions. Site preparation (e.g., grading) activities could result in fugitive dust emissions. Nitrogen oxide emissions would primarily result from the use of construction equipment (vehicle exhaust). Construction emissions may vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions. A large portion of the emissions would result from equipment traffic over temporary roads at construction sites. To mitigate construction emissions particularly fugitive dust, the following Best Management Practices (BMPs) will be implemented by contractors throughout any construction phases:

- KHFLA will require its contractors to meet the requirements of the DOH Air Pollution Rules, Chapter 11-60.1 for fugitive dust control.
- The construction contractor should use water or suitable chemicals to control fugitive dust in the demolition of any existing buildings or structures, construction operations, the grading of roads, or the clearing of land.
- The construction contractor should apply asphalt, water, or suitable chemicals on roads, material stockpiles, and other surfaces which may result in fugitive dust.
- The construction contractor should cover all moving, open-bodied trucks transporting materials which may result in fugitive dust.
- The construction contractor should maintain roadways in a clean manner.
- The construction contractor should promptly remove earth or other materials from paved streets which have been transported there by trucking, earth-moving equipment, erosion, or other means.
- Staging areas should be located away from nearby residences.
- Onsite electricity should be obtained from the electrical grid rather than temporary diesel or gasoline generators, whenever possible.
- Equipment and vehicle engines should be maintained in good condition and in proper tune per manufacturers' specifications.
- All construction equipment and delivery vehicles should be turned off when not in use or prohibit idling in excess of five minutes. Haul trucks in particular that stage waiting to be called to remove dirt from construction sites should not be allowed to idle while queuing.

Additional dust control measures to be considered include:

- Planning the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing onsite vehicular traffic routes;

- Providing an adequate water source at construction sites prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase; and
- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities

Operational-Related Localized Emissions

It is not anticipated that onsite emissions will affect local land uses. The Project does not include a source of direct pollutant emissions. Indirect sources of emissions include off-site electrical generation activities (if the energy source is non-renewable) and emissions from on-road vehicles. Although the proposed action includes development within the Project site, the anticipated land uses include 66.2 acres for open space across much of the (96 percent) Project site. KHFLA will consider ways to incorporate state-of-the-art energy conservation and green practices in the development of the Project. Development will not interfere with the development of clean energy supplies.

4.6 Visual Resources

The Project area is primarily surrounded by agricultural and vacant or fallow land uses and is bordered to the south by Kula Highway. The County of Maui's Maui Island Plan includes a Character & Context Map[4], which identifies Scenic Corridors throughout Maui. Scenic Corridors are categorized as either Exceptional, High, or Medium. The section of Kula Highway fronting the Project site is categorized as High.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The proposed Project will introduce new buildings and facilities to a site that is mostly vacant. However, KHFLA will ensure the architectural design of the new facilities are in keeping with the general architectural character of the Kula area.

4.7 Infrastructure and Utilities

Austin, Tsutsumi & Associates, Inc. (ATA) prepared a Preliminary Engineering & Drainage Report (Appendix H) which is summarized below in sections 4.7.1, 4.7.2 and 4.7.3 below.

4.7.1 Water System

The project site is located within the Kamaole Aquifer system, part of the Central sector, with a sustainable yield of 11 million gallons per day (mgd) and reported pumpage of 2.85 mgd. There is no existing water infrastructure servicing the site. There is an existing 8-inch, high pressure

[4] https://www.mauicounty.gov/DocumentCenter/View/110183/Map_Other_MIP?bidId=

waterline within Kaʻamana Street to the north of the site, the source of which is an 0.25-million-gallon, concrete reservoir, that was constructed as part of the Kēōkea-Waiohuli Development – Phase I, based on available record drawings. The reservoir is owned and was developed by DHHL in 2009.

POTENTIAL IMPACTS AND MITIGATION MEASURES

During the pre-Assessment consultation process, the DLNR Engineering Division wrote:

> *"The applicant should include water demands and infrastructure required to meet project needs. Please note that State projects requiring water serve from their local Department/Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.*
>
> *The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections."*

During the pre-Assessment consultation process, the County Department of Planning wrote:

> *"Please consider that in the Upcountry area, water availability is a major concern. We are uncertain about the water source for the proposed uses; however, we would like to note that Ordinance 5313 was passed, effective December 10, 2021, that exempts DHHL development from Maui County Code, Chapter 14.12 on Water Availability. Exemptions for industrial, business, hotel and resort or other commercial use projects intended to generate revenue requires Council review. We recommend that you consult with the Department of Water Supply to verify their requirements for the proposed uses."*

As requested by the DLNR Engineering Division and the County Department of Planning, the Project civil engineering consultant has consulted with the MDWS to verify their requirements for the proposed uses. The KHFLA and DHHL will coordinate with the MDWS on water supply and availability now that Ordinance 5313 was passed by the Council that exempts DHHL projects

In response to the Engineering Division, it is acknowledged that the Applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections. The Maui Island Water Use and Development Plan Draft includes Regional Plans, including the Central Aquifer Sector Area (which is the area that the Project area lies). Refer to discussion in section 3.4 of this EA.

According to ATA (Appendix H), providing water service to the Project site requires extending the existing Kaʻamana Street 8-inch water main by approximately 1,000 feet from the north and will require installation of a new water meter and backflow preventer for each parcel. TMK (2) 2-2-032:067 will require a 2-inch water meter and TMK (2) 2-2-032:068 will require a 1-inch water meter. The sizes of the water meters are determined by using the anticipated plumbing fixture units, estimated by using building descriptions in the master plan. Preliminary Water Demand Calculations by building are included in the table below. Refer to Appendix H for additional water demand breakdown and calculations.

Table 4-2: Preliminary Water Demand Calculations

TMK: (2) 2-032:067	
Proposed Use	**Total Fixture Units (FU) by Building**
Multipurpose Building	35.4
Amphitheater	8
Preschool Immersion	41.8
Preschool Immersion	161
Senior Day Care	36.8
Total FU	***283***
Total Flow (GPM)*	***120***
TMK: (2) 2-032:068	
Proposed Use	**Total Fixture Units (FU) by Building**
Healing Center	42.6
Total FU	***42.6***
Total Flow (GPM)*	***47***

* Fixture Units (FU) converted to flow in gallons per minute (GPM) based on Chart A-2.1(1) of the Uniform Plumbing Code, Appendix A

No adverse, long-term, and cumulative effects to the municipal water supply are anticipated.

4.7.2 Wastewater System

There is no existing sewer infrastructure servicing the site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

During the pre-Assessment consultation process, the State Department of Health, Maui District Office wrote: "*Please provide the wastewater disposal method including the site plan for the proposed projects.*"

According to ATA (Appendix H), the Project will require the installation of a septic tank and treatment bed systems for each parcel to provide individual onsite wastewater treatment. The proposed septic tank system for TMK (2) 2-2-032:067 should be designed to handle 8,700 gallons per day (gpd) and the septic tank system for TMK (2) 2-2-032:068, should be to handle 3,060 gpd. These flows represent the approximate wastewater demand at full development and operation

and are estimated using information provided in the master plan as well as contained in Appendix H, Table 1 of Individual Wastewater Standards. Refer to Appendix H for Preliminary Wastewater Demand Calculations and Exhibit 2 of Appendix H for proposed areas for the new septic tank and treatment bed systems.

The DOH will review and approve the septic system design to ensure that the system will not cause public health or environmental impacts.

4.7.3 Drainage System

Stormwater runoff generated from the Project site sheet-flows towards adjacent properties to the north. There is no existing underground drainage system nor any retention system onsite. Drainage area E-1 accounts for runoff generated by TMK (2) 2-2-032:067 and E-2 accounts for runoff from TMK (2) 2-2-032:068.

Existing onsite runoff is estimated using the Rational Method since the Project area is less than 100 acres. The existing runoff flow rates for a 50-year, 1 hour design storm, are approximately 32.4 cubic feet per second (cfs) and 16.6 cfs for drainage areas E-1 and E-2, respectively. Total existing runoff flow is 49.0 cfs. Refer to Exhibit 6 of Appendix H for Drainage Area Map: Pre-Development Conditions.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The Project with its buildings, walkways, and parking area will increase the area of impervious surfaces. Under the proposed design, the existing flow pattern and size of the drainage areas will remain the same. Drainage area P-1 accounts for runoff generated by TMK (2) 2-2-032:067 and P-2 accounts for runoff from TMK (2) 2-2-032:068.

Proposed runoff flow rates for a 50-year, 1 hour design storm, are approximately 38.5 cfs and 18.8 cfs for drainage areas P-1 and P-2, respectively. The proposed total runoff is 57.3 cfs. Refer to Appendix H for Preliminary Hydrology Calculations and Exhibit 7 of Appendix H for Drainage Area Map: Post-Development Conditions.

The Maui County Department of Public Works and Environmental Management Drainage Standards requires retention of the increase in stormwater runoff between the post-development flows and pre-development flows. The Project post-development stormwater runoff flow is 8.3 cfs greater than pre-development conditions, therefore, a stormwater retention system is required. To retain the difference, TMK (2) 2-2-032:067 and TMK (2) 2-2-032:068 will each require a retention basin. See Exhibit 2 for proposed location of each retention basin.

The Project will comply with the Maui County's "Rules for the Design of Storm Water Treatment Best Management Practices". In accordance with the rules, runoff mitigation and treatment are required to maintain water quality. Temporary erosion controls are required to minimize pollution during and after construction.

The proposed improvements for this Project will be designed in accordance with the applicable rules and regulations of the County of Maui. Based on the preceding information, the Project is expected to have no adverse effects on existing facilities or the surrounding environment.

4.7.4 Solid Waste

The County of Maui Solid Waste Division operates and maintains four County-owned landfills (including two on Maui Island). The Central Maui Landfill is located approximately 11 miles from the Project site and is the largest municipal landfill in the State of Hawaiʻi. This facility accepts refuse from commercial and residential customers as well as provides recycling services. The Central Maui Landfill also accepts green waste and construction waste from demolition and construction activities.

POTENTIAL IMPACTS AND MITIGATION MEASURES

The uses proposed for the Project site will not significantly impact the capacity of the Central Maui Landfill.

4.7.5 Utilities

The Kula Lots subdivision has overhead lines for electrical, street lighting, telephone, and cable television services that will be available to serve the Project site.

POTENTIAL IMPACTS AND MITIGATION MEASURES

During the pre-Assessment consultation process, Hawaiian Electric Company – Maui County wrote:

> *"Hawaiian Electric Company has no objection to the project at this time. However, we highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as practical so that any service upgrade or new service can be provided on a timely basis."*

No short- or long-term adverse effects to utilities are anticipated. Adequate capacity of power and communication systems are available from poles along Kula Highway.

4.8 Socio-Economic Characteristics

The County of Maui includes the islands of Maui, Molokaʻi, Lānaʻi, and Kahoʻolawe, with an estimated 95 percent of the County's residents living on Maui Island in 2017. As a whole, Maui County is the third most populous of the four counties of Hawaiʻi, with an estimated 167,210 persons in 2018, up 7.9 percent from the 154,924 persons counted at the 2010 Census. (UHERO, 2019)

While population continues to grow, the rate of increase is slowing. County population increased 21.0 percent between 2000 and 2010, at annual rates of 2.1 percent between 2000 and 2005,

and 1.6 percent between 2005 and 2010. Going forward, the State expects the County population will increase at 1.1 percent per annum to 2020, with annual rates of increase declining to 0.7 percent between 2035 and 2040. (DBEDT, 2018) This would result in a total County population of some 205,040 persons in 2040. The Maui County Department of Planning periodically updates its General Plan and Community Plans, and produces socio-economic forecasts for the County, Islands and Community Plan (CP) areas. The latest materials available remain in draft form as of this writing and were prepared prior to the release of the State projections referenced above. However, this latest County study (Draft County Forecast) sheds light on qualitative aspects of Maui's growth and offers insights to trends for Maui Island and its CP areas. (Planning Department, 2014)

Demographic trends described in the Draft County Forecast include:

- De facto population, including visitors present but excluding residents temporarily absent, is expected to increase to 270,285 by 2035, a gain of more than 60 percent since 2010.
- The population is aging: the median age increased from 33.5 to 39.6 years between 1990 and 2010.
- County households are becoming smaller: The County average declined from 2.99 persons per household in 1990 to 2.87 persons per household in 2010, although it the report notes it is unclear how the coincidence of aging and smaller households will interact in the coming years.

As previously noted, DHHL's Kula lands cover nearly 6,112 acres on the slopes of Haleakalā offering tremendous homesteading opportunities. There are currently three homestead areas under development: 1) the Kula Residence Lots subdivision; 2) the Waiohuli Undivided Interest subdivision; and 3) the Kēōkea Farm Lots. Together, these areas include about 800 homestead lots. With adequate water and funding, this area has the potential to be the largest homestead region on Maui. The proposed Project is intended to serve the Kēōkea-Waiohuli homestead areas, and surrounding communities.

The KHFLA originally planned to conduct several homestead planning meetings; they would use the updating of their Vision Plan as a community-building activity. Unfortunately, due to the 2020-2021 COVID pandemic, the homestead planning meetings could not be conducted. Instead, input from Kēōkea lessees on the Master Plan was gathered through a written survey. Self-addressed return envelopes were provided to invitees to participate in the survey. The Lessee Survey and the Survey Results are provided in Appendix C of this EA. Additionally, in March 2022, a recorded presentation was made available via a StoryMap (https://arcg.is/0mKf9j) **.**

The StoryMap included an on-line questionnaire to allow viewers an opportunity to comment on KHFLA's Vision Plan. As of this writing, approximately 33 viewers provided responses to the on-line questionnaire embedded in the StoryMap. The results are provided in Appendix C-1.

POTENTIAL IMPACTS AND MITIGATION MEASURES

Beneficial long-term impact. Through its planning efforts, KHFLA members and other respondents expressed support for various cultural uses, including a cultural education center, Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, and a native forest (as well as a multipurpose/meeting/entertainment complex, and a local small business and food venue). The proposed Project would provide opportunities for economic development, cultural education, and social gathering at a convenient location.

During the pre-Assessment consultation process, Ms. Blossom Feiteria wrote:

> *"As a long time supporter of the Kēōkea Homestead community, I am so happy to see that their vision for their community is finally gaining ground!! I believe that the plan they have envisioned will provide the much needed economic engine for this community to succeed in their endeavors."*

4.9 Public Services and Facilities

4.9.1 Public Schools

School-aged children in the Kēōkea area are served by King Kekaulike High School district, which include Kalama Intermediate, Kula Elementary (and Pukalani and Makawao Elementary schools).

POTENTIAL IMPACTS AND MITIGATION MEASURES

During the pre-Assessment consultation process, the Department of Education wrote: "*Based upon the information provided, the proposed Project will not impact Department facilities.*" It is anticipated that the proposed Project will have a beneficial long-term impact as the proposed Project includes a Kindergarten to 6th grade Hawaiian language immersion school could supplement the public education system.

4.9.2 Police, Fire and Medical Services

Police Protection

According to the Community Crime Map[5], Kēōkea is located in the Maui Police Department's (MPD) Wailuku District, Beat: 1-33, Police Response area: 29. Compared with Lahaina, Wailuku/Kahului, Kīhei/Wailea, or even Pukalani/Makawao, Kēōkea was relatively crime-free between February 3, 2022 and March 5, 2022, with only two incidents reported, both involving abuse of a family member).

[5] https://communitycrimemap.com/?address=Maui,%20HI

Fire Protection

Fire protection services for the Upcountry region are provided by the Maui Department of Fire & Public Safety's Kula and Makawao Fire Stations. The Kula facility is situated approximately 4.5 miles to the northeast of the Project site, while the Makawao station is approximately 10.2 miles to the north.

Medical Services

Kula Hospital is located approximately 0.7 mile from the Project site and provides both inpatient and outpatient medical services (including an emergency room) for the Kula region. In addition, several medical and dental care facilities are located in Makawao and Pukalani to serve Upcountry residents. The Fire Department co-responds with Emergency Medical Services to various medical emergencies. Both Kula and Makawao fire stations provide paramedic services.

POTENTIAL IMPACTS AND MITIGATION MEASURES

As requested by the County Department of Fire & Public Safety Fire Prevention Bureau during the pre-Assessment consultation process, the Fire Prevention Bureau will be on consulted on fire protection and water supply requirements upon design, development and use of the proposed buildings.

During the pre-Assessment consultation process, the MPD wrote:

> *"In review of the submitted documents, we have no objection to the upcoming construction project if it meets the minimal standards set forth by county codes and state laws. If the roads will be temporarily closed due to alternating traffic, we recommend utilizing flag men to conduct traffic control and have proper signage posted along the routes during construction. We also recommend steps be taken to control noise levels, dust, and run off to minimize the inconvenience to neighboring residences and businesses."*

To address the potential for construction noise, dust and runoff (and the potential for complaints to the MPD), these issues are addressed in sections 4.4, 4.5 and 4.7.3, respectively. As noted in Section 2.3, the KHFLA proposes that office space within the future health center building be set aside for the MPD as a sub-station for check ins and report filings, as a means to provide MPD with additional access to this region of Maui County.

No short- or long-term, or cumulative adverse impacts to police protection, fire protection or medical services are anticipated as a result of implementing the proposed Project. If required during construction, contractors will utilize flag men to conduct traffic control. Also warning signs will be posted along area major roadways during construction.

4.9.3 Recreational Facilities

County parks in the Upcountry area include five neighborhood parks (Hāliʻimaile Park, Kula Community Center, Waiakoa Gym, Harold Rice Memorial Park, and Kēōkea Park) and three

district parks (Eddie Tam Memorial Center, Pukalani Park and Community Center, and Kula Community Center). Polipoli State Park and Haleakalā National Park are located along higher elevations of Haleakalā. Other recreational facilities in the Upcountry area include four tennis courts, nine sports fields, three sports courts, five community centers, and three gymnasiums.

Kēōkea Park contains one multi-purpose field for soccer and baseball, and Kula Community Center includes two multi-purpose fields for soccer and baseball.

POTENTIAL IMPACTS AND MITIGATION MEASURES

No short- or long-term, or cumulative adverse impacts to public recreational facilities are anticipated as a result of implementing the proposed Project. The proposed Project does not involve new residential development and will not generate any new population or demand for public recreational facilities. During the pre-Assessment consultation process, the County Department of Parks and Recreation wrote:

> *"Kēōkea Park, which is a community park, is located to the northeast vicinity of the subject project. The Department would request that vehicular and bicycle traffic and access, pedestrian access along street sidewalks with crosswalks as well as sufficient onsite parking for the cultural and community center complex be considered when preparing the Environmental Assessment."*

It is DHHL's understanding, that funding for such improvements would best be funded by the County's or State's CIP programs.

5 LAND USE CONFORMANCE

5.1 DHHL Planning System

The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawaiʻi State Constitution, vests DHHL with exclusive authority to control its lands, and the anticipated land uses are generally consistent with the Department's existing Maui Island Plan.

In 2004, DHHL adopted the (DHHL) *Maui Island Plan* which examined all DHHL land in terms of development constraints and opportunities and other criteria, in order to assign appropriate Land Use Designations to each parcel. The *DHHL Maui Island Plan* designated the Project area for "General Agriculture" as shown on Figure 8.

2010 Kēōkea – Waiohuli Regional Plan

In 2010, DHHL commissioned the Kēōkea – Waiohuli Regional Plan (1 of 20 regional plans developed in the statewide DHHL system) to provide DHHL and the homestead community associations to assess land use development factors, identify issues and opportunities, and identify the region's top priority projects slated for implemented in the next three years at the time of publication. The Regional Plan also identified regional development characteristics and trends, available infrastructure, regional services and public facilities, and homestead issues and priorities.

Establishing a community site to be utilized by the Kēōkea Farmers Association for a farmer's market is a key item listed among the issues and priorities discussed in the Regional Plan. The need for a "Mini Community Center" for Kēōkea farmers is also listed. Developing water source related infrastructure for agricultural and residential lots is listed as a priority project in the Regional Plan.

2016 Kēōkea Master Plan Planning Documents

The 2016 Kēōkea Master Plan Planning Documents package is the core of the KHFLA's mission and long-range vision for the KHFLA Project parcels. The KHFLA submitted master plan planning documentation for the 70 acres of the Kēōkea Farm Lot Subdivision located in the upper most portion of their lots for uses including a Cultural Education Center, Native Food and Medicinal Plant gardens, Keiki and Kūpuna daycare, a multipurpose / meeting / entertainment complex, and local small business and food venues with a native forest.

Refer to Section 2.3 for a description of the current master plan.

5.2 State of Hawaiʻi

5.2.1 Chapter 343, Hawaiʻi Revised Statutes

This document has been prepared in accordance with the provisions Chapter 343, HRS (Environmental Impact Statement Law) and Title 11, Department of Health, Chapter 200.1, Hawaiʻi Administrative Rules (Environmental Impact Rules).

Section 343-5, HRS, establishes nine "triggers" that require compliance with the State's EIS law. The triggers for the proposed action/Project include:

- Propose the use of state or county lands or the use of state or county funds.

The use of State or County lands or funds is an action that "triggers" the preparation of an EA or EIS. As plans advance, the Master Plan may further involve or effect State and/or County lands or funds relating to infrastructure improvements for public facilities, roadways, water, sewer, electrical utilities, drainage, and/or other facilities. While the precise nature or scale of these future improvements is not fully known at this time, the EA is intended to address current and future instances involving the use of State and/or County lands and funds relating to the Master Plan.

To determine whether the implementation of the Master Plan may have a significant impact on the physical and human environment, all phases and expected consequences of the Master Plan have been evaluated, including potential primary, secondary, short-range, long-range, and cumulative impacts. Based on this evaluation, DHHL anticipates issuing a Finding of No Significant Impact (FONSI). The supporting rationale for this finding is based on a review of the significance criteria set forth in Hawaiʻi Administrative Rules §11-200.1-13. An action shall be determined to have a significant impact on the environment if it may:

1. *Irrevocably commit a natural, cultural, or historic resource;*
2. *Curtail the range of beneficial uses of the environment;*
3. *Conflict with the state's environmental policies or long-term environmental goals established by law;*
4. *Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;*
5. *Have a substantial adverse effect on public health;*
6. *Involve adverse secondary impacts, such as population changes or effects on public facilities;*
7. *Involve a substantial degradation of environmental quality;*
8. *Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;*
9. *Have a substantial adverse effect on a rare, threatened, or endangered spcies, or its habitat;*

10. *Have a substantial adverse effect on air or water quality or ambient noise levels;*
11. *Have a sunstantial 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;*
12. *Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or*
13. *Require substantial energy consumption or emit substanial greenhouse gases.*

Please refer to Section 7.1 for further discussion.

5.2.2 State Land Use Law, Chapter 205, Hawai‘i Revised Statutes

The State Land Use Law (Chapter 205, HRS) establishes the State LUC and authorizes this body to designate all lands in the State into one of four Districts: Urban, Rural, Agricultural, or Conservation.

The property is in the Agricultural District. The Hawaiian Homes Commission has ultimate land use authority over Hawaiian Home Lands per the Hawaiian Homes Commission Act, as amended.

5.2.3 Coastal Zone Management Act, Chapter 205A, Hawai‘i Revised Statutes

The State oversees protection of natural, cultural, and economic resources within the coastal zone, which is defined as all lands of the State and the area extending seaward from the shoreline to the limit of the State’s police power and management authority, including the United States territorial sea. As such, the Project area lies within the CZM Area.

The relevant objectives and policies of the Hawai‘i CZM Program, along with a detailed discussion of how the Master Plan conforms with these objectives and policies, is discussed below.

Table 5-1: Coastal Zone Management Act, Chapter 205A, Hawai‘i Revised Statutes

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
RECREATIONAL RESOURCES			
Objective: (A) Provide coastal recreational opportunities accessible to the public.			
Policies:			
(A) Improve coordination and funding of coastal recreational planning and management; and			X
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			X
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;			X
(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;			X
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
(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;			X
(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;	X		
(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and			X
(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.			X
Discussion: The Project site is not located along the shoreline. However, it is acknowledged that all discharges related to Project construction or operation activities, whether or not National Pollutant Discharge Elimination System (NPDES) permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55. An application for a NPDES permit will be submitted to the State Department of Health (DOH) for review and approval as applicable. Pursuant to the “Clean Water Act,” a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that implementation of the Master Plan may result in any discharge into navigable waters or as otherwise triggered. All discharges related to the construction and operation of the Master Plan will comply with the State’s Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HISTORIC RESOURCES			
Objective: (A) 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.			
Policies:			
(A) Identify and analyze significant archaeological resources;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.	X		
Discussion: At the appropriate time in the development process, KHFLA will initiate a HRS Chapter 6E consultation for the Project site. SHPD will be consulted regarding the archaeological information for the Project site, prior to KHFLA applies for any permits for that property. Refer to Section 4.1.			
SCENIC AND OPEN SPACE RESOURCES			
Objective: (A) Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.			
Policies:			
(A) Identify valued scenic resources in the coastal zone management area;			X
(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;	X		
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and			X
(D) Encourage those developments that are not coastal dependent to locate in inland areas.	X		
Discussion: The Master Plan will not adversely affect any scenic resources. KHFLA and DHHL respect scenic resources identified in the County's Maui Island Plan, and will be generally consistent with its objectives regarding scenic resources. Development of the Project area will change the visual character of the property from vacant lands to that of a rural community center Since the Project site slopes downward away from Kula Highway/'Ulupalakua Road, and the proposed development will be low-rise, there should be little to no effect on views towards the West Maui Mountains and Lanai from Kula Highway/'Ulupalakua Road. The Project site is not coastal dependent and is located inland of the shoreline on the slopes of Haleakalā.			
COASTAL ECOSYSTEMS			
Objective: (A) Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.			
Policies:			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;			X

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(B) Improve the technical basis for natural resource management;			X
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;			X
(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			X
(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.			X
Discussion: The Project site is not located along the shoreline. However, it is acknowledged that all discharges related to Project construction or operation activities, whether or not National Pollution Discharge Elimination System (NPDES) permit coverage and/or Section 401 Water Quality Certification are required, must comply with the Water Quality Standards, specified in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55. An application for a NPDES permit will be submitted to the State Department of Health (DOH) for review and approval as applicable. Pursuant to the "Clean Water Act," a Section 401 Water Quality Certification from the State Department of Health, Clean Water Branch will be obtained if it is determined that implementation of the Master Plan may result in any discharge into navigable waters or as otherwise triggered. All discharges related to the construction and operation of the Master Plan will comply with the State's Water Quality requirements contained in Chapters 11-54 and 11-55, HAR.			
ECONOMIC USES			
Objective: (A) Provide public or private facilities and improvements important to the State's economy in suitable locations.			
Policies:			
(A) Concentrate coastal dependent development in appropriate areas;			X
(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			X
(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:			X
(i) Use of presently designated locations is not feasible;			X
(ii) Adverse environmental effects are minimized; and			X
(iii) The development is important to the State's economy.			X
Discussion: While implementation of the Master Plan will provide community and public facilities, it is not located along the shoreline or is coastal dependent.			

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
COASTAL HAZARDS			
Objective: (A) Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.			
Policies:			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;			X
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	X		
(D) Prevent coastal flooding from inland projects.	X		
Discussion: Flood hazards are identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, the entire Project site is designated Zone X, indicating "areas of minimal flood hazard" outside the 500-year (0.2 percent annual chance) floodplain. See Section 3.5. Otherwise, the Project site is not subject to hazards from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution. The Master Plan will be designed to ensure that stormwater runoff does not increase over pre-development quantities.			
MANAGING DEVELOPMENT			
Objective: (A) Improve the development review process, communication, and public participation in the management of coastal resources and hazards.			
Policies:			
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;			X
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and			X
(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.	X		
Discussion: Implementation of the Master Plan will not require a Special Management Area Use Permit; however, this EA is intended to facilitate the development review process, communication, and public participation in the management of the CZM area.			
PUBLIC PARTICIPATION			
Objective: (A) Stimulate public awareness, education, and participation in coastal management.			
Policies:			
(A) Promote public involvement in coastal zone management processes;	X		
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and	X		

COASTAL ZONE MANAGEMENT ACT, CHAPTER 205A, HRS (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
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.			X
Discussion: This EA is intended to facilitate public awareness, education, and participation in coastal management.			
BEACH PROTECTION			
Objective: (A) Protect beaches for public use and recreation.			
Policies:			
(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;			X
(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			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			X
(D) Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and			X
(E) Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.			X
Discussion: While implementation of the Master Plan will provide public facilities, the Project site is not located along the shoreline or affect beaches for public use and recreation.			
MARINE RESOURCES			
Objective: (A) Promote the protection, use, and development of marine and coastal resources to assure their sustainability.			
Policies:			
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;			X
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(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;			X
(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			X
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			X
Discussion: The Master Plan does not involve the use and development of marine and coastal resources.			

5.2.4 Hawai‘i State Plan, Chapter 226, Hawai‘i Revised Statutes

The Hawai‘i State Plan (Chapter 226, HRS), establishes a set of goals, objectives and policies that serve as long-range guidelines for the growth and development of the State. The Plan is divided into three parts: Part I (Overall Theme, Goals, Objectives and Policies); Part II (Planning, Coordination and Implementation); and Part III (Priority Guidelines). Part II elements of the State Plan pertain primarily to the administrative structure and implementation process of the Plan. As such, comments regarding the applicability of Part II to the Project area are not appropriate. The sections of the Hawai‘i State Plan directly applicable to the Project area, along with a discussion of how the Master Plan conforms to the State Plan are included below.

Table 5-2: Hawai‘i State Plan, Chapter 226, Hawai‘i Revised Statutes

HAWAI‘I STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES **(**Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-1: Findings and Purpose			
HRS § 226-2: Definitions			
HRS § 226-3: Overall Theme			
HRS § 226-4: State Goals. *In order to guarantee, for the present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:* *(1) A strong, viable economy, characterized by stability, diversity and growth that enables fulfillment of the needs and expectations of Hawaii's present and future generations.* *(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.* (3) *Physical, social and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring and of participation in community life.*			
Discussion: Implementation of the Master Plan addresses many of the KHFLA's expressed interests in community responsibility, of caring and of participation in community life.			
HRS § 226-5: Objectives and policies for population.			
Objective: *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.*			
Policies:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each County.			X
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			X
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.	X		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			X
Discussion: It is not DHHL's policy to attempt to manage population growth. However, implementation of the Project will address many of the KHFLA's expressed socio-economic aspirations in community responsibility or caring and of participation in community life.			
HRS § 226-6: Objectives and policies for the economy in general.			
Objectives: *Planning for the State's economy in general shall be directed toward achievement of the following objectives:*			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people.			X
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.			X
Policies:			
(1) Promote and encourage entrepreneurship within Hawaiʻi by residents and nonresidents of the State.			X
(2) Expand Hawaii's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawaiʻi as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			X
(4) Transform and maintain Hawaiʻi as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaiʻi.			X
(6) Seek broader outlets for new or expanded Hawaiʻi business investments.			X
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			X
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.			X
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.	X		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			X
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaiʻi.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.			X
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawaii's workers.			X
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawaiʻi, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			X
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.			X
(21) Foster a business climate in Hawaii--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Discussion: Before the COVID pandemic, the Kēōkea Homestead Hoʻolauleʻa and Farmers Market was a key economic activity in the region. Agriculturally based employment opportunities have the benefit of diversifying the economic base so that is not overly dependent on a few industries, such as the visitor industry.			
HRS § 226-7: Objectives and policies for the economy – agriculture			
Objectives: *Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:*			
(1) Viability of Hawaii's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.	X		
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.	X		
Policies:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.			X
(2) Encourage agriculture by making best use of natural resources.			X
(3) Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's food producers and consumers in the State, nation, and world.	X		
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
(12) In addition to the State's priority on food, expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.	X		
(13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			X
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko iʻa, māla, and irrigated loʻi, and growth of traditional Hawaiian crops, such as kalo, ʻuala, and ʻulu.	X		
(18) Increase and develop small-scale farms.	X		
Discussion: KHFLA's plans for the Project area are being developed with consultations with its stakeholders, native Hawaiian beneficiaries. The various components of the Master Plan will strengthen community ties among members of the KHFLA so that their agricultural products (traditional and non-traditional foods; ornamentals, etc.) can be collectively marketed.			
HRS § 226-8: Objectives and policies for the economy – visitor industry			
Objectives: *Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.*			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies:			
(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			X
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			X
Discussion: The Hawaiʻi State Plan's objectives and policies for the visitor industry are not applicable to the proposed Project.			
HRS § 226-9: Objective and policies for the economy – federal expenditures			
Objective: *Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaii's economy.*			
Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaiʻi that generates long-term government civilian employment.			X
(2) Promote Hawaii's supportive role in national defense in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy.			X
(3) Promote the development of federally supported activities in Hawaiʻi that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment.			X
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service.			X
(5) Promote federal use of local commodities, services, and facilities available in Hawaiʻi.			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaiʻi.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(7) Pursue the return of federally controlled lands in Hawaiʻi that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Discussion: The Hawaiʻi State Plan's objectives and policies for federal expenditures are not applicable to the proposed Project.			
HRS § 226-10: Objectives and policies for the economy – potential growth activities.			
Objective: *Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawaii's economic base.*			
Policies:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors.			X
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawaiʻi through the export of services or products or substitution of imported services or products.			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements.			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity.			X
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus.			X
(6) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people.			X
(7) Enhance and promote Hawaii's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts.			X
(8) Accelerate research and development of new energy- related industries based on wind, solar, ocean, and underground resources and solid waste.			X
(9) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State.			X
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawaii's social, economic, physical, and environmental objectives.			X
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research.			X
(12) Develop, promote, and support research and educational and training programs that will enhance Hawaii's ability to attract and develop economic activities of benefit to Hawaiʻi.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaiʻi.			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives.			X
(15) Increase research and development of businesses and services in the telecommunications and information industries.			X
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: The Hawaiʻi State Plan's objectives and policies for potential growth activities are not applicable to the proposed Project.			
HRS § 226-10.5: Objectives and policies for the economy – information industry			
Objective: *Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaiʻi as a leader in broadband and wireless communications and applications in the Pacific Region.*			
Policies:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaiʻi and between Hawaiʻi and the world, and make high speed communication available to all residents and businesses in Hawaii;			X
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaiʻi to accommodate future growth and innovation in Hawaii's economy;			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii;			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaiʻi, using technology to communicate with their headquarters, offices, or customers located out-of-state;			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well- designed information industry;			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people;			X
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;			X
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy; and			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(9) Assist in the promotion of Hawaiʻi as a broker, creator, and processor of information in the Pacific.			X
Discussion: The Hawaiʻi State Plan's objectives and policies for information industry are not applicable to the proposed Project.			
HRS § 226-11: Objectives and policies for the physical environment – land-based, shoreline, and marine resources.			
Objectives: *Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives.*			
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.	X		
(2) Effective protection of Hawaii's unique and fragile environmental resources.			X
Policies:			
(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.			X
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	X		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	X		
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.	X		
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaiʻi.			X
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities, and natural resources.			X
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.			X
Discussion: The Project site includes lands are neither unique nor fragile or contain rare or endangered plant and animal species and habitats native to Hawaiʻi. Moreover, the alternative of no action (leaving the lands in its mostly fallow state) would not represent prudent use of DHHL and Hawaiʻi 's land-based resources. Any potential short-term effects of runoff from the Project site during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the Project site has considered any existing streams or areas of potential flooding, and to avoid development (including gardening) in these areas.			
HRS § 226-12: Objectives and policies for the physical environment – scenic, natural beauty, and historic resources.			
Objective: *Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.*			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies:			
(1) Promote the preservation and restoration of significant natural and historic resources.	X		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			X
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	X		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.	X		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	X		
Discussion: At the appropriate stage in the development process, KHFLA will initiate HRS Chapter 6E consultation for the Project site. SHPD will be consulted regarding the archaeological information for the Project site, prior to KHFLA applies for any permits for the Project site. The Master Plan will not adversely affect any scenic resources. KHFLA and DHHL respect scenic resources identified in the County's Maui Island Plan, and will be generally consistent with its objectives regarding scenic resources. Development of the Project area will change the visual character of the property from vacant lands to that of a rural community center Since the Project site slopes downward away from Kula Highway/ʻUlupalakua Road, and the proposed development will be low-rise, there should be little to no effect on views towards the West Maui Mountains and Lanai from Kula Highway/ʻUlupalakua Road.			
HRS § 226-13: Objectives and policies for the physical environment – land, air, and water quality.			
Objectives: *Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:*			
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.			X
Policies:			
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.			X
(2) Promote the proper management of Hawaii's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.	X		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.	X		
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	X		
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.	X		
(7) Encourage urban developments in close proximity to existing services and facilities.	X		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.			X
Discussion: Any potential effects of runoff from implementation of the Project site during construction and operation will be mitigated by best management practices to reduce runoff to existing levels and minimizing opportunities for soil erosion. Site planning for the Project site has considered any existing streams or areas of potential flooding, and to avoid development (including farming) in these areas. The operation of the proposed Project will comply with current aural and air quality public health standards. As noted in Section 3.5, flood hazards are primarily identified by the Flood Insurance Rate Map (FIRM) prepared by the Federal Emergency Management Agency (FEMA), National Flood Insurance Program. According to the FIRM, most of the Project site is designated Zone X, which denotes "areas of minimal flood hazard" See Figure 15. Otherwise, the Project site is not subject to hazards from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.			
HRS § 226-14: Objective and policies for facility systems – in general			
Objective: *Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.*			
Policies:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.			X
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.			X
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.			X
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			X
Discussion: The Hawaiʻi State Plan's objectives and policies for facility systems – in general are not applicable to the proposed Project.			
HRS § 226-15: Objectives and policies for facility systems – solid and liquid wastes.			
Objectives: *Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:*			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.	X		
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	X		
Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	X		
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Discussion: KHFLA's primary intent is to provide community-based facilities, and to support those uses with adequate infrastructure, including sanitary wastewater treatment and disposal.			
HRS § 226-16: Objectives and policies for facility systems – water.			
Objective: *Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.*			
Policies:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	X		
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.	X		
Discussion: KHFLA's primary intent is to provide community-based facilities, and to support those uses with adequate infrastructure, including both irrigation and drinking water.			
HRS § 226-17: Objectives and policies for facility systems – transportation.			
Objective: *Planning for the State's facility systems with regard to transportation shall be directed toward the achievement of the following objectives:*			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			X
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
Policies:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			X
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			X
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;			X
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			X
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			X
Discussion: While these objectives and policies would be better addressed by the State Department of Transportation, KHFLA and DHHL would be supportive of accommodations for bus stops for the County's public transportation system (Maui Bus).			
HRS § 226-18: Objectives and policies for facility systems – energy.			
Objectives: *Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:*			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;	X		
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation;	X		
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;	X		
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and	X		
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.	X		
Policies: *To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably priced, and dependable energy services to accommodate demand. To further achieve the energy objectives, it shall be the policy of this State to:*			
(1) Support research and development as well as promote the use of renewable energy sources;	X		

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;	X		
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;	X		
(4) Promote all cost-effective conservation of power and fuel supplies through measures including:			
(A) Development of cost-effective demand-side management programs;	X		
(B) Education; and	X		
(C) Adoption of energy-efficient practices and technologies;	X		
(D) Increasing energy efficiency and decreasing energy use in public infrastructure;	X		
(5) Ensure to the extent that new supply-side resources are needed, the development or expansion of energy systems utilizes the least-cost energy supply option and maximizes efficient technologies;	X		
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;	X		
(7) Promote alternate fuels and energy efficiency;	X		
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;	X		
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives.	X		
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaiʻi.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.Hawaiʻi.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf) that is consistent with HRS § 226-18.			
HRS § 226-18.5: Objectives and policies for facility systems—telecommunications.			
Objective: *Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.*			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies: *To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand. To further achieve the telecommunications objective, it shall be the policy of this State to:*			
(1) Facilitate research and development of telecommunications systems and resources;	X		
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;	X		
(3) Promote efficient management and use of existing telecommunications systems and services; and	X		
(4) Facilitate the development of education and training of telecommunications personnel.			X
Discussion: As an agency serving native Hawaiians, DHHL took early steps to ensure that its beneficiaries had equal access to the internet and other telecommunications by partnering with Sandwich Isles Communications (SIC). SIC was granted an exclusive license in 1995 to provide telecommunications services on more than 200,000 acres of Hawaiian Home Lands, and spent years building a fiber network to serve businesses and homes on Hawaiian Home Lands.			
HRS § 226-19: Objectives and policies for socio-cultural advancement – housing.			
Objectives: *Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:*			
(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaii's population.			X
(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			X
Policies:			
(1) Effectively accommodate the housing needs of Hawaii's people.			X
(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower-, moderate-, and above moderate-income households.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(7) Foster a variety of lifestyles traditional to Hawaiʻi through the design and maintenance of neighborhoods that reflect the culture and values of the community.			X
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaiʻi.			X
Discussion: Although the proposed Project is not directly applicable to this objective, it is DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities." It should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			
HRS § 226-20: Objectives and policies for socio-cultural advancement – health			
Objectives: *Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:*			
(1) Fulfillment of basic individual health needs of the general public.			X
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.			X
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
Policies:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.			X
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
reviewed every ten years and revised based on the best available epidemiological and public health data.			
Discussion: While most of the above objectives and policies are not directly applicable to the Master Plan, it is the desire of KHFLA to attract some health care providers to address some needs felt in this rural area, such as dialysis treatment.			
HRS § 226-21: Objectives and policies for socio-cultural advancement – education.			
Objectives: *Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.*			
Policies:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.	X		
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.	X		
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.	X		
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: Through its planning efforts, KHFLA members expressed support for community uses, including a cultural education center, and Keiki and Kūpuna daycare (as well as Native food and Medicinal Plant gardens, a multipurpose/meeting/entertainment complex, local small business and food venue and a native forest). it should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-22: Objective and policies for socio-cultural advancement – social services			
Objective: *Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being*.			
Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: The proposed Project will have an indirect, but positive, long-term impact on the State's objectives and policies for socio-cultural advancement – social services, if the desired Keiki and Kūpuna daycare programs can be implemented. However, it should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			
HRS § 226-23: Objectives and policies for socio-cultural advancement – leisure.			
Objective: *Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.*			
Policies:			
(1) Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	X		
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.	X		
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.			X
(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Discussion: Through its planning efforts, KHFLA members expressed support for community uses, including a cultural education center, Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, a native forest (as well as a multipurpose/meeting/entertainment complex, and a local small business and food venue).			
HRS § 226-24: Objective and policies for socio-cultural advancement – individual rights and personal well-being.			
Objective: *Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.*			
Policies:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Discussion: While the objective and policies for socio-cultural advancement – individual rights and personal well-being are not applicable to the proposed Project; it is the desire of KHFLA to provide a police sub-station on the Project site.			
HRS § 226-25: Objectives and policies for socio-cultural advancement – culture.			
Objective: *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.*			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Policies:			
(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaiʻi.	X		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.	X		
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaiʻi.			X
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.			X
Discussion: Through its planning efforts, KHFLA members expressed support for various cultural uses, including a cultural education center, Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, and a native forest (as well as a multipurpose/meeting/entertainment complex, and a local small business and food venue).			
HRS § 226-26: Objectives and policies for socio-cultural advancement – public safety.			
Objectives: *Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:*			
(1) Assurance of public safety and adequate protection of life and property for all people.			X
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			X
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			X
Policies related to public safety:			
(1) Ensure that public safety programs are effective and responsive to community needs.			X
(2) Encourage increased community awareness and participation in public safety programs.			X
Policies related to criminal justice:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
Policies related to emergency management:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART I. OVERALL THEME, GOALS, OBJECTIVES AND POLICIES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(2) Enhance the coordination between emergency management programs throughout the State.			X
Discussion: While the objective and policies for socio-cultural advancement – public safety are not applicable to the proposed Project; it is the desire of KHFLA to provide a police sub-station on the Project site.			
HRS § 226-27: Objectives and policies for socio-cultural advancement – government.			
Objectives: *Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:*			
(1) Efficient, effective, and responsive government services at all levels in the State.			X
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			X
Policies:			
(1) Provide for necessary public goods and services not assumed by the private sector.			X
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			X
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaiʻi.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			X
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X
Discussion: Although the proposed Project is not directly applicable to the objectives and policies for socio-cultural advancement - government, KHFLA has been given the responsibility over the Project site for the benefit of lessees of the Kēōkea, Waiohuli and Kahikinui Homesteads. The lands would be used for Cultural education center, Native food and Medicinal Plant gardens, Keiki and Kūpuna daycare, a multipurpose/meeting/entertainment complex, local small business and food venue and a native forest. Also, a Kēōkea Farmers Co-op be established with an association Produce Processing Plant. These facilities would be built from funding through grants, partnerships with educational organizations, Senior and Childcare organizations and federal and state organizations. These services, facilities cultural educational opportunities would directly benefit the growing populations of the three nearby homesteads.			

PART III. PRIORITY GUIDELINES

The purpose of this part of the Hawai‘i State Plan is to establish overall priority guidelines to address areas of statewide concern. The Hawai‘i State Plan notes that the State shall strive to improve the quality of life for Hawai‘i’s present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: 1) economic development; 2) population growth and land resource management; 3) affordable housing; 4) crime and criminal justice; and 5) quality education (§226-102). The priority guidelines applicable to the Project site are discussed below.

HAWAI‘I STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-101: Purpose. *The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.*			
HRS § 226-102: Overall direction. *The State shall strive to improve the quality of life for Hawaii’s present and future present and future population through the pursuit of desirable courses of action in five major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, and quality education.*			
HRS § 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii’s people and achieve a stable and diversified economy:			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			X
(A) Encourage investments which:			
(i) Reflect long term commitments to the State;			X
(ii) Rely on economic linkages within the local economy;			X
(iii) Diversify the economy;			X
(iv) Reinvest in the local economy;			X
(v) Are sensitive to community needs and priorities; and			X
(vi) Demonstrate a commitment to provide management opportunities to Hawai‘i residents.			X
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			X
(i) Present or former residents acting as entrepreneurs or principals;			X
(ii) Academic support from an institution of higher education in Hawaii;			X
(iii) Investment interest from Hawai‘i residents;			X
(iv) Resources unique to Hawai‘i that are required for innovative activity; and			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(v) Complementary or supportive industries or government programs or projects.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			X
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the processes for building and development permit and review and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety, and welfare would not be adversely affected.			X
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawaiʻi from transportation interruptions between Hawaiʻi and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			X
(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.			X
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			X
(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.			X
(D) An industry that would provide reasonable income and steady employment.			X
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaiʻi business.			X
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			X
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			X
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			X
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			X
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			X
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the-job training opportunities.			X
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawaii's residents and visitors.			X
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			X
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			X
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			X
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			X
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			X
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaiʻi.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			X
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			X
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			X
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawaii's agricultural community.			X
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.	X		
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			X
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(10) Support the continuation of land currently in use for diversified agriculture.			X
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			X
(e) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			X
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			X
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			X
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			X
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(g) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability, that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawaiʻi.			X
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development, the development of new information systems and peripherals, data conversion and data entry services, and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawaii's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X
Discussion: Before the COVID pandemic, the Kēōkea Homestead Hoʻolauleʻa and Farmers Market was a key economic activity in the region. Agriculturally based employment opportunities have the benefit of diversifying the economic base so that is not overly dependent on a few industries, such as the visitor industry.			

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
HRS § 226-104: Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution:			
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.			X
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.			X
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.	X		
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.	X		
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			X
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			X
(7) Support the development of high technology parks on the neighbor islands.			X
(b) Priority guidelines for regional growth distribution and land resource utilization:			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.			X
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			X
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			X
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			X
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			X
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			X
(7) Pursue rehabilitation of appropriate urban areas.			X
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			X
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			X
(10) Identify critical environmental areas in Hawaiʻi to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.			X
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			X
Discussion: The proposed Project is located on an established Hawaiian Homestead on Maui, and involves proposing a number of services that would attract beneficiaries to farm, build and live on Maui (and not on Oahu), Thus, helping to better distribute the resident population within the State.			
HRS § 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Discussion: While the State's priority guidelines for crime and criminal justice are not applicable to the proposed Project, it is the desire of KHFLA to provide a police sub-station on the Project site.			
HRS § 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land, urban land, and public land to meet housing needs of extremely low-, very low-, lower-, moderate-, and above moderate-income households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's extremely low-, very low-, lower-, and moderate-income households and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner- occupied housing.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaiʻi.			X
Discussion: Although the proposed Project is not directly applicable to this objective, it is DHHL's mission "to manage the Hawaiian Home Lands trust effectively and to develop and deliver lands to native Hawaiians. We will partner with others towards developing self-sufficient and healthy communities." it should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			
HRS § 226-107: Quality education.			
Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			
• *The electronic exchange of information;*			X
• *Statewide electronic mail; and*			X
• *Access to the Internet.*			X
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			X
(6) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			X
(7) Develop resources and programs for early childhood education;			X
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			X
(9) Strengthen and expand educational programs and services for students with special needs.			X

HAWAIʻI STATE PLAN, CHAPTER 226, HRS – PART III. PRIORITY GUIDELINES (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: Through its planning efforts, KHFLA has determined that in addition to the existing DHHL land use designation, KHFLA members expressed support for community uses, including a cultural education center, and Keiki and Kūpuna daycare (as well as Native food and Medicinal Plant gardens, a multipurpose/meeting/entertainment complex, local small business and food venue and a native forest). It should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.			
HRS § 226-108: Sustainability			
Priority guidelines and principles to promote sustainability shall include:			
(1) Encouraging balanced economic, social, community, and environmental priorities;	X		
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;	X		
(3) Promoting a diversified and dynamic economy;	X		
(4) Encouraging respect for the host culture;	X		
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations	X		
(6) Considering the principles of the ahupuaʻa system; and	X		
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaiʻi.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.Hawaiʻi.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf) that is consistent with HRS § 226-108.			

5.2.5 State Functional Plans

The Hawaiʻi State Plan directs State agencies to prepare functional plans for their respective program areas. There are 14 state functional plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the Hawaiʻi State Plan. The functional plans applicable to the Project area, along with each plan's applicable objectives, policies, and actions, are discussed below.

Table 5-3: State Functional Plans

Hawai'i State Functional Plans		S	N/S	N/A
AGRICULTURE FUNCTIONAL PLAN				
Objective A:	Achievement of increased agricultural production and growth through cultural and management practices.			X
Objective B:	Achievement of an orderly agricultural marketing system through product promotion and industry organization.	X		
Objective C:	Achievement of increased consumption of and demand for Hawaii's agricultural products through consumer education and product quality.			X
Objective D:	Achievement of optimal contribution by agriculture to the State's economy.	X		
Objective E:	Achievement of adequate capital, and knowledge of its proper management, for agricultural development.			X
Objective F:	Achievement of increased agricultural production and growth through pest and disease controls.			X
Objective G:	Achievement of effective protection and improved quality of Hawaii's land, water, and air.			X
Objective H:	Achievement of productive agricultural use of lands most suitable and needed for agriculture.			X
Objective I:	Achievement of efficient and equitable provision of adequate water for agricultural use.			X
Objective J:	Achievement of maximum degree of public understanding and support of agriculture in Hawai'i.			X
Objective K:	Achievement of adequate supply of properly trained labor for agricultural needs.			X
Objective L:	Achievement of adequate transportation services and facilities to meet agricultural needs.			X
Objective M:	Achievement of adequate support services and infrastructure to meet agricultural needs.			X
Discussion: Before the COVID pandemic, the Kēōkea Homestead Hoolaulea and Farmers Market was a key economic activity in the region. Agriculturally based employment opportunities have the benefit of diversifying the economic base so that is not overly dependent on a few industries, such as the visitor industry. DHHL contracts with the University of Hawai'i College of Tropical Agriculture and Human Resources (CTAHR) to provide educational and technical assistance programs to Hawaiian Home Lands agricultural and pastoral homestead lessees, including agricultural diagnostic services, disease control and pesticide use. Refer to https://www.ctahr.Hawai'i.edu/site/ExtHHL.aspx				

Hawai'i State Functional Plans		S	N/S	N/A
CONSERVATION LANDS FUNCTIONAL PLAN				
Objective IA:	Establishment of data bases for inventories of existing lands and resources.			X
Objective IB:	Establishment of criteria for management of land and natural resources.			X
Objective IIA:	Establishment of plans for natural resources and land management.			X
Objective IIB:	Protection of fragile or rare natural resources.			X
Objective IIC:	Enhancement of natural resources.			X
Objective IID:	Appropriate development of natural resources.			X
Objective IIE:	Promotion and marketing of appropriate natural resources designated for commercial development.			X
Objective IIF:	Increase enforcement of land and natural resource use laws and regulations.			X
Objective IIIA:	Develop and implement conservation education programs for the general public and visitors.			X
Objective IIIB:	Increase access to land and natural resource data by the public and increase cooperation between agencies by making access to land and natural resource information more efficient.			X
Discussion: Not applicable. The Project area does not involve lands within the State Conservation Land Use District boundaries.				
EDUCATION FUNCTIONAL PLAN				
Objective A(1):	**Academic Excellence.** Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X
Objective A(2):	**Basic Skills.** Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning. Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement.			X
Objective A(3):	**Education Workforce.** Initiate efforts to improve the quality of education by improving the capabilities of the education workforce.			X
Objective A(4):	**Services and Facilities.** Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X

Hawai'i State Functional Plans		S	N/S	N/A
Objective B(1):	**Alternatives for Funding and Delivery.** Explore alternatives for funding and delivery of educational services to improve the overall quality of education.			X
Objective B(2):	**Autonomy and flexibility.** Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities.			X
Objective B(3):	**Increased Use of Technology.** Increase and improve the use information technology in education and encourage programs which increase the public's awareness and understanding of the impact of information technologies on our lives.			X
Objective B(4):	**Personal Development.** Support education programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X
Objective B(5):	**Students with Special Needs.** Provide appropriate educational opportunities for groups with special needs.			X
Objective C(1):	**Early Childhood Education.** Develop resources and programs for early childhood education.			X
Objective C(2):	**Hawaii's Cultural Heritage.** Promote educational programs which enhance understanding of Hawaii's cultural heritage.	X		
Objective C(3):	**Research Programs and [Communication] Activities.** Support research programs and activities that enhance the education programs of the State.			X
Discussion: Through its planning efforts, KHFLA members expressed support for cultural uses, including a cultural education center, Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, and native forest (as well as a multipurpose/meeting/entertainment complex, and local small business and food venue).				
EMPLOYMENT FUNCTIONAL PLAN				
Objective A:	Improve the qualifications of entry-level workers and their transition to employment.			X
Objective B:	Develop and deliver education, training and related services to ensure and maintain a quality and competitive workforce.			X
Objective C:	Improve labor exchange.			X
Objective D:	Improve the quality of life for workers and families.			X
Objective E:	Improve planning of economic development, employment and training activities			X
Discussion: The objectives of the State Employment Functional Plan are not applicable to the proposed Project.				

Hawai'i State Functional Plans		S	N/S	N/A
ENERGY FUNCTIONAL PLAN				
Objective A:	Moderate the growth in energy demand through conservation and energy efficiency.			X
Objective B:	Displace oil and fossil fuels through alternate and renewable energy resources.			X
Objective C:	Promote energy education and legislation.			X
Objective D:	Support and develop an integrated approach to energy development and management.	X		
Objective E:	Ensure State's abilities to implement energy emergency actions immediately in event of fuel supply disruptions. Ensure essential public services are maintained and provisions are made to alleviate economic and personal hardships which may arise.			X
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.Hawai'i.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf).				
HEALTH FUNCTIONAL PLAN				
Objective 1:	Health promotion and disease prevention. Reduction in the incidence, morbidity and mortality associated with preventable and controllable conditions.			X
Objective 2:	Prevention and control of communicable diseases. Reduction in the incidence, morbidity, and mortality associated with infectious and communicable diseases.			X
Objective 3:	Health needs of special populations with impaired access to health care. Increased availability and accessibility of health services for groups with impaired access to health care programs.			X
Objective 4:	Community hospitals system. Development of a community hospital system which is innovative, responsive and supplies high quality care to the constituencies it serves.			X
Objective 5:	Environmental programs to protect and enhance the environment. Continued development of new environmental protection and health services programs to protect, monitor, and enhance the quality of life in Hawai'i.			X
Objective 6:	DOH leadership. To improve the Department of Health's ability to meet the public health need of the State of Hawai'i in the most appropriate, beneficial and economical way possible.			X
Discussion: While most of the above objectives and policies are not directly applicable to the Master Plan, it is the desire of KHFLA to attract some health care providers to address some needs felt in this rural area, such as dialysis treatment.				

Hawai'i State Functional Plans		S	N/S	N/A
HIGHER EDUCATION FUNCTIONAL PLAN				
Objective A:	A number and variety of postsecondary education institutions sufficient to provide the diverse range of programs required to satisfy individual and societal needs and interests.			X
Objective B:	The highest level of quality, commensurate with its mission and objectives, of each educational, research, and public service program offered in Hawai'i by an institution of higher education.			X
Objective C:	Provide appropriate educational opportunities for all who are willing and able to benefit from postsecondary education.			X
Objective D:	Provide financing for postsecondary education programs sufficient to ensure adequate diversity, high quality, and wide accessibility.			X
Objective E:	Increase program effectiveness and efficiency through better coordination of educational resources.			X
Discussion: The State's Higher Education Functional Plan objectives are not applicable to the proposed Project.				
HISTORIC PRESERVATION FUNCTIONAL PLAN				
Objective A:	Identification of historic properties.	X		
Objective B:	Protection of historic properties.	X		
Objective C:	Management and treatment of historic properties.	X		
Objective D:	Provision of adequate facilities to preserve historic resources.			X
Objective E:	The establishment of programs to collect and conserve historic records, artifacts, and oral histories and to document and perpetuate traditional arts, skills, and culture.			X
Objective F:	Provision of better access to historic information.			X
Objective G:	Enhancement of skills and knowledge needed to preserve historical resources.			X
Discussion: At the appropriate stage in the development process, KHFLA will initiate a HRS Chapter 6E consultation for the Project site. SHPD will be consulted regarding the archaeological reconnaissance survey for the Project site, prior to KHFLA applying for any permits for that property.				
HOUSING FUNCTIONAL PLAN				
Objective A:	Increase and sustain the supply of permanent rental housing that is affordable and accessible to Hawai'i residents, particularly those with incomes at or below 80% AMI. Attain the legislative goal of 22,500 rental housing units by 2026.			X

Hawai'i State Functional Plans		S	N/S	N/A
Objective B:	Increase the homeownership rate.			X
Objective C:	Address barriers to residential development			X
Objective D:	Maintain a statewide housing data system for use by public and private agencies engaged in the provision of housing.			X
Discussion: The objectives of the State's Housing Functional Plan are not applicable to the proposed Project. However, it should be noted that the HALE Program, established in 2014 by DHHL, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of Hawai'i.				
HUMAN SERVICES FUNCTIONAL PLAN				
Objective A:	To sustain and improve current elder abuse and neglect services.			X
Objective B:	To increase cost-effective, high quality home and community based services.	X		
Objective C:	To increase home-based services to keep children in their homes and to increase placement resources for those children who must be temporarily or permanently removed from their homes, due to abuse or neglect.			X
Objective D:	To address factors that contribute to child abuse and other forms of family violence.			X
Objective E:	To provide affordable, accessible, and quality child care.	X		
Objective G:	To provide AFDC recipients with a viable opportunity to become independent of the welfare system.			X
Objective H:	To facilitate client access to human services.			X
Objective I:	To eliminate organizational barriers which limit client access to human services.			X
Discussion: Through its planning efforts, KHFLA members expressed support for community uses, including a multipurpose/meeting/entertainment complex, a cultural education center, and Keiki and Kūpuna daycare (as well as Native food and Medicinal Plant gardens, local small business and food venue and a native forest).				
RECREATION FUNCTIONAL PLAN				
Objective I.A:	Address the problem of saturation of the capacity of beach parks and nearshore waters.			X
Objective I.B:	Reduce the incidence of ocean recreation accidents.			X
Objective I.C:	Resolve conflicts between different activities at heavily used ocean recreation areas.			X

Hawai'i State Functional Plans		S	N/S	N/A
Objective I.D:	Provide adequate boating facilities. Balance the demand for boating facilities against the need to protect the marine environment from potential adverse impacts.			X
Objective II.A:	Plan, develop, and promote recreational activities and facilities in mauka and other areas to provide a wide range of alternatives.			X
Objective II.B:	Meet special recreation needs of the elderly, the disabled, woman, single-parent families, immigrants, and other groups.			X
Objective II.C:	Improve and expand the provision of recreation facilities in urban areas and local communities.			X
Objective III.A:	Prevent the loss of access to shoreline and upland recreation areas due to new developments.			X
Objective III.B:	Resolve the problem of landowner liability that seriously hampers public access over private lands.			X
Objective III.C:	Increase access to State Forest Reserve lands over federal property, leased State lands, and other government lands.			X
Objective III.D:	Acquire, develop, and manage additional public accessways.			X
Objective IV.A:	Promote a conservation ethic in the use of Hawaii's recreational resources.			X
Objective IV.B:	Prevent degradation of the marine environment.			X
Objective IV.C:	Improve the State's enforcement capabilities.			X
Objective IV.D:	Mitigate adverse impacts of tour helicopters on the quality of recreational experiences in wilderness areas.			X
Objective V.A:	Properly maintain existing parks and recreation areas.			X
Objective V.B:	Promote interagency coordination and cooperation to facilitate sharing of resources, joint development efforts, clarification of responsibilities and jurisdictions, and improvements in enforcement capabilities.			X
Objective V.C:	Assure adequate support for priority outdoor recreation programs and facilities.			X
Objective VI.A:	Increase recreational access and opportunities in Hawaii's wetlands.			X
Objective VI.B:	Develop an adequate information base to assist the County planning departments and other regulatory agencies in make decisions regarding wetlands.			X
Objective VI.C:	Assure the protection of the most valuable wetlands in the state.			X

Hawai'i State Functional Plans		S	N/S	N/A
Discussion: The objectives of the State's Recreation Functional Plan are not applicable to the proposed Project.				
TOURISM FUNCTIONAL PLAN				
Objective I.A:	Development, implementation and maintenance of policies and actions which support the steady and balanced growth of the visitor industry.			X
Objective II.A:	Development and maintenance of well-designed visitor facilities and related developments which are sensitive to the environment, sensitive to neighboring communities and activities, and adequately serviced by infrastructure and support services.			X
Objective III.A:	Enhancement of respect and regard for the fragile resources which comprise Hawaii's natural and cultural environment. Increased preservation and maintenance efforts.			X
Objective IV.A:	Support of Hawaii's diverse range of lifestyles and natural environment.			X
Objective IV.B:	Achievement of mutual appreciation among residents, visitors, and the visitor industry.			X
Objective V.A:	Development of a productive workforce to maintain a high quality visitor industry.			X
Objective V.B:	Enhancement of career and employment opportunities in the visitor industry.			X
Objective VI.A:	Maintenance of a high customer awareness of Hawai'i as a visitor destination in specific desired market segments.			X
Discussion: The objectives of the State's Tourism Functional Plan are not applicable to the proposed Project.				
TRANSPORTATION FUNCTIONAL PLAN				
Objective I.A:	Expansion of the transportation system.			X
Objective I.B:	Reduction of travel demand through zoning and decentralization initiatives.			X
Objective I.C:	Management of existing transportation systems through a program of transportation systems management (TSM).			X
Objective I.D:	Identification and reservation of lands and rights-of-way required for future transportation improvements.			X
Objective I.E:	Planning and designing State highways to enhance inter-regional mobility.			X
Objective I.F:	Improving and enhancing transportation safety.			X

Hawai'i State Functional Plans		S	N/S	N/A
Objective I.G:	Improved transportation maintenance programs.			X
Objective I.H:	Ensure that transportation facilities are accessible to people with disabilities.			X
Objective II.A:	Development of a transportation infrastructure that supports economic development initiatives.			X
Objective III.B:	Expansion of revenue bases for transportation improvements.			X
Objective IV.A:	Providing educational programs.			X
Discussion: The objectives of the State's Transportation Functional Plan are not applicable to the proposed Project.				
WATER RESOURCES DEVELOPMENT FUNCTIONAL PLAN				
Objective A:	Enunciate State water policy and improve management framework.			X
Objective B:	Maintain the long-term availability of freshwater supplies, giving consideration to the accommodation of important environmental values.			X
Objective C:	Improve management of floodplains.			X
Objective D:	Assure adequate municipal water supplies for planned urban growth.			X
Objective E:	Assure the availability of adequate water for agriculture.			X
Objective F:	Encourage and coordinate with other water programs the development of self-supplied industrial water and the production of water-based energy.			
Objective G:	Provide for the protection and enhancement of Hawaii's freshwater and estuarine environment.			X
Objective H:	Improve State grant and loan procedures for water program and projects.			X
Objective I:	Pursue water resources data collection and research to meet changing needs.			X
Discussion: The objectives of the State's Water Resources Development Functional Plan are not applicable to the proposed Project, as these objectives may be better directed to the State Department of Land and Natural Resources (Commission of Water Resources Management, Engineering Division) and County of Maui Departments of Water Supply and Public Works).				

5.2.6 Hawai'i State Environmental Policy and Guidelines, Chapter 344-3 and 344-4, HRS

The State Environmental Policy provides guidelines for agencies to create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i. The environmental guidelines (§344-4, HRS) suggest that insofar as practical, in the development of programs consider: population; land, water, mineral, visual, air, and other natural resources; flora and fauna; parks, recreation, and open space; economic development; transportation; energy; community life and housing; education and culture; and, citizen participation.

Table 5-4: Hawai'i State Environmental Policy and Guidelines, Ch. 344-3 and 344-4, HRS

State Environmental Policy, Chapter 344, Hawai'i Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
STATE ENVIRONMENTAL POLICY			
§344-3 Environmental policy. It shall be the policy of the State, through its programs, authorities, and resources to:			
(1) Conserve the natural resources, so that land, water, mineral, visual, air and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of the people of Hawai'i.			X
(2) Enhance the quality of life by:			
(A) Setting population limits so that the interaction between the natural and artificial environments and the population is mutually beneficial;			X
(B) Creating opportunities for the residents of Hawai'i to improve their quality of life through diverse economic activities which are stable and in balance with the physical and social environments;			X
(C) Establishing communities which provide a sense of identity, wise use of land, efficient transportation, and aesthetic and social satisfaction in harmony with the natural environment which is uniquely Hawaiian; and	X		
(D) Establishing a commitment on the part of each person to protect and enhance Hawaii's environment and reduce the drain on nonrenewable resources.			X
Discussion: Through its planning efforts, KHFLA members expressed support for community uses, including a multipurpose/meeting/entertainment complex, a cultural education center, and Keiki and Kūpuna daycare (as well as Native food and Medicinal Plant gardens, local small business and food venue and a native forest).			

State Environmental Policy, Chapter 344, Hawai'i Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
GUIDELINES			
§344-4 Guidelines. In pursuance of the state policy to conserve the natural resources and enhance the quality of life, all agencies, in the development of programs, shall, insofar as practicable, consider the following guidelines:			
(1) Population.			
(A) Recognize population impact as a major factor in environmental degradation and adopt guidelines to alleviate this impact and minimize future degradation;			X
(B) Recognize optimum population levels for counties and districts within the State, keeping in mind that these will change with technology and circumstance, and adopt guidelines to limit population to the levels determined.			X
Discussion: The guidelines of the State's Environmental Policy on Population are not applicable to the proposed Project,			
(2) Land, water, mineral, visual, air, and other natural resources.			
(A) Encourage management practices which conserve and fully utilize all natural resources;			X
(B) Promote irrigation and waste water management practices which conserve and fully utilize vital water resources;			X
(C) Promote the recycling of waste water;			X
(D) Encourage management practices which conserve and protect watersheds and water sources, forest, and open space areas;			X
(E) Establish and maintain natural area preserves, wildlife preserves, forest reserves, marine preserves, and unique ecological preserves;			X
(F) Maintain an integrated system of state land use planning which coordinates the state and county general plans;			X
(G) Promote the optimal use of solid wastes through programs of waste prevention, energy resource recovery, and recycling so that all our wastes become utilized.			X
Discussion: The guidelines of the State's Environmental Policy on land, water, mineral, visual, air, and other natural resources, are not applicable to the proposed Project,			
(3) Flora and fauna.			

State Environmental Policy, Chapter 344, Hawai'i Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(A) Protect endangered species of indigenous plants and animals and introduce new plants or animals only upon assurance of negligible ecological hazard;			X
(B) Foster the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.	X		
Discussion: Based on biological surveys conducted for the Project site, no significant, adverse impacts on biological resources are expected. Through its planning efforts, KHFLA members expressed support for a native forest as part of the proposed Project. Where feasible, any new landscaping for the Project site will include planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment.			
(4) Parks, recreation, and open space.			
(A) Establish, preserve and maintain scenic, historic, cultural, park and recreation areas, including the shorelines, for public recreational, educational, and scientific uses;			X
(B) Protect the shorelines of the State from encroachment of artificial improvements, structures, and activities;			X
(C) Promote open space in view of its natural beauty not only as a natural resource but as an ennobling, living environment for its people.	X		
Discussion: The Master Plan will not adversely affect any scenic resources. KHFLA and DHHL respect scenic resources identified in the County's Maui Island Plan, and will be generally consistent with its objectives regarding scenic resources. Development of the Project site will change the visual character of the property from vacant lands to that of a rural community center. Since the Project site slopes downward away from Kula Highway/'Ulupalakua Road, and the proposed development will be low-rise, there should be little to no effect on views towards the West Maui Mountains and Lanai from Kula Highway/'Ulupalakua Road.			
(5) Economic development.			
(A) Encourage industries in Hawai'i which would be in harmony with our environment;			X
(B) Promote and foster the agricultural industry of the State; and preserve and conserve productive agricultural lands;	X		
(C) Encourage federal activities in Hawai'i to protect the environment;			X
(D) Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment;			X
(E) Establish visitor destination areas with planning controls which shall include but not be limited to the number of rooms;			X
(F) Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands.			X

State Environmental Policy, Chapter 344, Hawai'i Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
Discussion: Before the COVID pandemic, the Kēōkea Homestead Ho'olaule'a and Farmers Market was a key economic activity in the region. Agriculturally based employment opportunities have the benefit of diversifying the economic base so that is not overly dependent on a few industries, such as the visitor industry.			
(6) Transportation.			
(A) Encourage transportation systems in harmony with the lifestyle of the people and environment of the State;			X
(B) Adopt guidelines to alleviate environmental degradation caused by motor vehicles;			X
(C) Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.			X
Discussion: The guidelines of the State's Environmental Policy on transportation are not applicable to the proposed Project.			
(7) Energy.			
(A) Encourage the efficient use of energy resources.	X		
Discussion: DHHL has developed and is implementing its own renewable energy policy (https://dhhl.Hawai'i.gov/wp-content/uploads/2011/09/DHHL-Energy-Policy.pdf).			
(8) Community life and housing.			
(A) Foster lifestyles compatible with the environment; preserve the variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods which reflect the culture and mores of the community;	X		
(B) Develop communities which provide a sense of identity and social satisfaction in harmony with the environment and provide internal opportunities for shopping, employment, education, and recreation;	X		
(C) Encourage the reduction of environmental pollution which may degrade a community;			X
(D) Foster safe, sanitary, and decent homes;			X
(E) Recognize community appearances as major economic and aesthetic assets of the counties and the State; encourage green belts, plantings, and landscape plans and designs in urban areas; and preserve and promote mountain-to-ocean vistas.	X		
Discussion: Through its planning efforts, KHFLA members expressed support for community uses, including a multipurpose/meeting/entertainment complex, a cultural education center, and Keiki and Kūpuna daycare (as well as Native food and Medicinal Plant gardens, local small business and food venue and a native forest).			

State Environmental Policy, Chapter 344, Hawai'i Revised Statutes (Key: S = Supportive, N/S = Not Supportive, N/A = Not Applicable)	**S**	**N/S**	**N/A**
(9) Education and culture.			
(A) Foster culture and the arts and promote their linkage to the enhancement of the environment;	X		
(B) Encourage both formal and informal environmental education to all age groups.	X		
Discussion: Through its planning efforts, KHFLA has determined that KHFLA members expressed support for community uses, including a cultural education center, and Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, a native forest (as well as a multipurpose/meeting/entertainment complex, and local small business and food venue).			
(10) Citizen participation.			
(A) Encourage all individuals in the State to adopt a moral ethic to respect the natural environment; to reduce waste and excessive consumption; and to fulfill the responsibility as trustees of the environment for the present and succeeding generations; and			X
(B) Provide for expanding citizen participation in the decision making process so it continually embraces more citizens and more issues.	X		
Discussion: Through this EA and through public meetings, KHFLA has sought input on the Master Plan from its beneficiaries, as well as the general public.			

5.3 County of Maui

County-specific land use plans and ordinances pertaining to the Project site include the Countywide Policy Plan, Draft Maui Island Plan, and the West Maui Community Plan.

5.3.1 Countywide Policy Plan

The *Countywide Policy Plan* was adopted in March 2010 and is a comprehensive policy document for the islands of Maui County to the year 2030. The plan replaces the *General Plan of the County of Maui 1990 Update* and provides the policy framework for the development of the County's *Maui Island Plan* as well as for updating the nine detailed Community Plans.

The *Countywide Policy Plan* provides broad goals, objectives, policies and implementing actions that portray the desired direction of the County's future. Goals are intended to describe a desirable condition of the County by the year 2030 and are intentionally general. Objectives tend to be more specific and may be regarded as milestones to achieve the larger goals. Policies are not intended as regulations, but instead provide a general guideline for County decision makers, departments, and collaborating organizations toward the attainment of goals and objectives.

Implementing actions are specific tasks, procedures, programs, or techniques that carry out policy.

Discussions of how the Master Plan conforms to the relevant goals of the *Countywide Policy Plan* are provided below.

A. PROTECT THE NATURAL ENVIRONMENT

Goal: *Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.*

Discussion: The Project site are lands that have been utilized for pasturage and ranching. These lands are neither unique nor fragile or contain rare or endangered plant and animal species and habitats native to Hawaiʻi. Moreover, the alternative of no action (leaving the lands in its mostly fallow state) would not represent prudent use of DHHL and Hawaiʻi's land-based resources.

The Master Plan will not adversely affect any scenic resources. KHFLA and DHHL respect scenic resources identified in the County's Maui Island Plan, and will be generally consistent with its objectives regarding scenic resources. Development of the Project area will change the visual character of the property from vacant lands to that of a rural community center Since the Project site slopes downward away from Kula Highway/ʻUlupalakua Road, and the proposed development will be low-rise, there should be little to no effect on views towards the West Maui Mountains and Lanai from Kula Highway/ʻUlupalakua Road.

B. PRESERVE LOCAL CULTURES AND TRADITIONS

Goal: *Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents' multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.*

Discussion: Through its planning efforts, KHFLA members expressed support for cultural uses, including a cultural education center, Native food and Medicinal Plant gardens, a native forest, Keiki and Kūpuna daycare (as well as a multipurpose/meeting/entertainment complex, and local small business and food venue).

C. IMPROVE EDUCATION

Goal: *Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.*

Discussion: Through its planning efforts, KHFLA members expressed support for cultural and educational uses, including a cultural education center, Native food and Medicinal Plant gardens, a native forest, Keiki and Kūpuna daycare (as well as a multipurpose/meeting/entertainment complex, and local small business and food venue).

It should be noted that DHHL's HALE Program, established in 2014, aids beneficiaries with financial literacy services. HALE supports the department's primary mission of placing beneficiaries into homes within Hawaiian Homestead communities throughout the State of

Hawaiʻi. Currently HALE offers two types of services for beneficiaries. They include Homebuyer Education classes and Foreclosure Prevention Management. HALE services also support beneficiaries in times of need. DHHL acknowledges that beneficiaries may encounter life events that may negatively affect their financial situation such as unemployment, increased expenses due to the loss of a household member, an unexpected medical situation and other events.

E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS

Goal: *Quality, island-appropriate housing will be available to all residents.*

Discussion: Maui's *Countywide Policy Plan* goal on expanding housing opportunities for residents is not relevant to the proposed Project, however, as noted above the HALE Program, established in 2014 by DHHL aids beneficiaries with financial literacy services.

F. STRENGTHEN THE LOCAL ECONOMY

Goal: *Maui County's economy will be diverse, sustainable, and supportive of community values.*

Discussion: Before the COVID pandemic, the Kēōkea Homestead Hoolaulea and Farmers Market was a key economic activity in the region. Agriculturally based employment opportunities have the benefit of diversifying the economic base so that is not overly dependent on a few industries, such as the visitor industry.

G. IMPROVE PARKS AND PUBLIC FACILITIES

Goal: *A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.*

Discussion: Maui's *Countywide Policy Plan* goal on improving parks and public facilities is not relevant to the proposed Project.

H. DIVERSIFY TRANSPORTATION OPTIONS

Goal: *Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.*

Discussion: Maui's *Countywide Policy Plan* goal on diversifying transportation options is not relevant to the proposed Project, however, KHFLA and DHHL would be supportive of accommodations for bus stops for the County's public transportation system (Maui Bus).

I. IMPROVE PHYSICAL INFRASTRUCTURE

Goal: *Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.*

Discussion: Maui's *Countywide Policy Plan* goal on improving physical infrastructure is not relevant to the proposed Project.

J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT

Goal: *Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.*

Discussion: The Makawao-Pukalani-Kula Community Plan is one of nine community plans developed to address the unique aspects of each region. According to the Makawao-Pukalani-Kula Community Plan Land Use Map, the Project site is designated Agricultural. While the Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawaiʻi State Constitution, vests DHHL with exclusive authority to control its lands, Kēōkea was/is intended to be an agricultural community and is therefore consistent with the Makawao-Pukalani-Kula Community Plan. Implementation of the Project will address many of the KHFLA's expressed socio-economic aspirations in community responsibility or caring and of participation in community life.

K. STRIVE FOR GOOD GOVERNANCE

Goal: *Government services will be transparent, effective, efficient, and responsive to the needs of residents.*

Discussion: The Project does not impede this objective and as a government service itself, DHHL strives to be transparent, effective, efficient, and responsive to the needs of the public in the interest of its beneficiaries (KHFLA) and mission.

5.3.2 County's Maui Island Plan

The Maui Island Plan derives its framework from Maui County's Countywide Policy Plan adopted in 2010. The Maui Island Plan establishes urban and rural growth areas in order to promote future growth while preserving natural resources and character. There are three Growth Boundary types: Urban, Small Town, and Rural.

The Hawaiian Homes Commission Act (§§204 and 206), which has been incorporated into Article XII of the Hawaiʻi State Constitution, vests DHHL with exclusive authority to control its lands, and the anticipated land uses are generally consistent with the Department's existing Maui Island Plan.

5.3.3 Makawao-Pukalani-Kula Community Plan

The Makawao-Pukalani-Kula Community Plan is one of nine community plans developed to address the unique aspects of each region. According to the Makawao-Pukalani-Kula Community Plan (CP) Land Use Map (Figure 6), the Project site is designated "Agriculture."

The Makawao-Pukalani-Kula Community Plan is currently undergoing an update, undertaken by the County of Maui Planning Department. The previous (currently the official) plan was completed in 1997. The designation of the Project area as shown in the draft update is generally

the same as that shown in 1997, and the draft update acknowledges DHHL's master planning efforts at Kēōkea. The CP is in the final phase of its update, review by the Maui County Council.

DHHL also notes that the Hawaiian Homes Commission Act (§§204 and 206) vests DHHL with exclusive authority to control its lands.

5.3.4 County of Maui Zoning

During the pre-Assessment consultation process, the County Department of Planning wrote:

> *"The subject parcels are in the State Agricultural District and are zoned Agricultural District. While these entitlements allow some of the proposed uses, such as the Native Food and Medicinal Plant Gardens and Native Forest Restoration, other uses will require charges to State and County land use designations*."

It is acknowledged that the Project site is in the County's AG Agriculture zoning district, and the Project includes other land uses (such as a cultural education center, and Keiki and Kūpuna daycare, a Native food and Medicinal Plant gardens, a multipurpose/meeting/entertainment complex, local small business and food venue and a native forest), however, the Hawaiian Homes Commission Act (§§204 and 206) vests DHHL with exclusive authority to control its lands.

5.3.5 Special Management Area

The Project area is not located within the Special Management Area (SMA).

5.4 Approvals and Permits

A listing of anticipated permits and approvals required for the proposed Project is presented below.

Table 5-5: Anticipated Permits and Approvals

RESPONSIBLE AGENCY	PERMIT/APPROVAL
State Department of Health – Clean Water Branch	National Pollutant Discharge Elimination System (NPDES) Permit
State Department of Health – Disability and Communication Access Board	Review
State Department of Health – Food Safety Branch	Food Establishment Permit
State Department of Health – Indoor and Radiological Health Branch	Community Noise Permit (if applicable)

RESPONSIBLE AGENCY	PERMIT/APPROVAL
State Department of Health – Wastewater Branch	Review, Individual Wastewater System approval
State Department of Land and Natural Resources – State Historic Preservation Division	Chapter 6E, HRS Compliance (and Section 106 compliance as needed)
County of Maui Department of Public Works	Grading/Building/Electrical Permits, plan review
County of Maui Department of Water Supply	Review

(This page left blank intentionally.)

6 ALTERNATIVES

This section identifies and evaluates a range of alternatives that could meet the purpose and need and possibly avoid, reduce, or minimize adverse environmental effects. The reference point to compare alternatives is the "no action" alternative.

As stated in section 2.2 of this EA, the KHFLA's mission statement for the Project site is:

> *"KHFLA to direct the use of the 70 plus acres located in the area long the Kula Hwy at the upper most portion of the Kēōkea Hawaiian Home Lands Farm Lots for the benefit of lessees of the Kēōkea, Waiohuli and Kahikinui Homesteads. The lands would be used for Cultural education center, Native food and Medicinal Plant gardens, Native Healing Center, Police Substation, Keiki immersion school/daycare and Kupuna daycare, a multipurpose/meeting/entertainment complex also to serve as an Emergency Evacuation Center for People and an area for their animals, local small business and food venue and a restored native forest. Also a Kēōkea Farmers Co-op be established with an association Produce Processing Plant. These facilities would be built from funding through grants, partnerships with educational organizations, Senior and Childcare organizations and federal and state organizations. These services, facilities cultural educational opportunities would directly benefit the growing populations of the three nearby homesteads..."*

6.1 No Action Alternative

The "no action" alternative would mean that the proposed Project was not implemented and the Project site remained in its mostly vacant state. However, the opportunities for community gathering, cultural education, etc. would not be available. Selecting this alternative would be contrary to the desires of the community that is the driving force behind this Project

(This page left blank intentionally.)

7 FINDINGS AND ANTICIPATED DETERMINATION

To determine whether the implementation of the Master Plan may have a significant impact on the physical and human environment, all phases and expected consequences of the Master Plan have been evaluated, including potential primary, secondary, short-term, long-term, and cumulative impacts. Based on this evaluation, DHHL anticipates issuing a Finding of No Significant Impact (FONSI). The supporting rationale for this finding is presented in this chapter.

7.1 Significance Criteria

This section evaluates the significance of the Project's impacts based on the Significance Criteria set forth in Hawaiʻi Administrative Rules §11-200.1-13.

The Significance Criteria in the Hawaiʻi Administrative Rules and discussed below, are considered in light of every phase of a proposed action, the expected impacts, and proposed mitigation measures. In most cases, an action shall be determined to have a significant impact on the environment if it may:

(1) Irrevocably commit a natural, cultural, or historic resource;

Discussion: The proposed Project is not anticipated to involve any construction activity that may lead to a loss or destruction of any sensitive natural or cultural resource. The Project area has been the subject of flora/fauna, archaeological and cultural studies, and the Master Plan has been developed to avoid key archaeological/cultural sites.

(2) Curtail the range of beneficial uses of the environment;

Discussion: The proposed Project expands the beneficial use of the Project area by providing community and cultural facilities meant to provide greater services to, and strengthen the Kēōkea community.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law;

Discussion: The proposed Project is not in conflict with the long-term environmental policies, goals, and guidelines of the State of Hawaiʻi. As presented earlier in this EA, the Project's potential adverse impacts are associated only with the short-term construction-related activities, and such impacts can be mitigated through adherence to standard construction mitigation practices.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

Discussion: The proposed Project is not expected to have a substantial adverse effect on the economic welfare, social welfare or cultural practices of the Kēōkea community. Through its planning efforts, KHFLA members expressed support for community uses, including a multipurpose/meeting/entertainment complex, a local small business and food venue, a cultural education center, Keiki and Kūpuna daycare, Native food and Medicinal Plant gardens, and a

native forest. These various aspects of the master plan are likely to have a positive effect on the economic welfare, social welfare and cultural practices of the residents of the KHFLA.

(5) Have a substantial adverse effect on public health;

Discussion: There is a potential for effects to noise and air quality levels during the construction phase of the Project; however, these potential effects will be short-term and are not expected to substantially affect public health. Wastewater disposal will occur in compliance with State Department of Health standards, through individual septic systems approved by the Department of Health.

(6) Involve adverse secondary impacts, such as population changes or effects on public facilities;

Discussion: The proposed facilities of the Master Plan involve day use only (and no new residents will be introduced through the implementation of the proposed Project). The proposed Project also includes elements that supplement the lack of availability of public facilities that are available to area residents.

(7) Involve a substantial degradation of environmental quality;

Discussion: Construction activities associated with the proposed Project are anticipated to result in negligible short-term effects to noise and air-quality in the immediate vicinity. With the incorporation of the recommended mitigation measures during the construction period, the Project will not result in a substantial degradation of environmental quality. No long-term negative effect is expected from Project implementation.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment, or involves a commitment for larger actions;

Discussion: The master plan for the proposed Project minimizes cumulative adverse effects to the environment. The Project with its buildings, walkways, and parking area will increase the amount of impervious surfaces. To the extent practicable, the Project will be designed to maintain post-development peak runoff rate and average volume at levels that are similar to pre-development levels. Any net increase of runoff from such impermeable surfaces as roads, driveways, parking lots and rooftops will be addressed by using drywells and/or one or more Low Impact Design (LID) site design measures, such as vegetated filter strips, open vegetated swales, bio-retention and rain gardens, infiltration trenches, and rain harvesting from rooftops. The aforementioned best management practices (BMPs) are intended to accomplish the following: (1) decrease the erosive potential of increased runoff volumes and velocities associated with development-induced changes in hydrology; (2) remove suspended solids and associated pollutants entrained in runoff that result from activities occurring during and after development; and (3) retain hydrological conditions to closely resemble those of the pre-disturbance condition.

(9) Have a substantial adverse effect on a rare, threatened or endangered species or its habitat;

Discussion: The Project is not anticipated to have a substantial adverse effect to rare, threatened, or endangered species. Opportunities for a beneficial effect on botanical resources are created by the portion of the proposed Project that includes the establishment of a native forest area, and incorporation of native species in landscaping.

Mitigation measures to avoid adverse effects to seabirds, Hawaiian hoary bat, and Blackburn's Sphynx Moth are included in this EA.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels;

Discussion: Construction activities for development of the Project have the potential for adversely affecting noise and air and water quality levels. However, these effects will be of a short-term duration and mitigatable. All construction activities will comply with applicable regulations and will implement appropriate mitigation measures as necessary. After construction, the development is not expected to have a long-term adverse effect on ambient noise levels or water and air quality. There will be an increase in impervious surfaces over the Project area's former undeveloped use; however, any increase in runoff will be accommodated by proposed low-impact drainage improvements and will not detrimentally affect water quality.

(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;

Discussion: The development will not affect any environmentally sensitive areas (as listed above).

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or,

Discussion: The Project area is not specifically listed as a scenic vista or view plane. No adverse effect is expected, as Kula Highway/'Ulupalakua Road is at a higher elevation than the Project site.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

Discussion: The Project will increase energy consumption over the current use, vacant land. However, energy consumption of the proposed uses is not considered to be "substantial". DHHL has developed and is implementing its own renewable energy policy and works within a variety of programs to assist Beneficiaries with financing solar or other renewable sources of energy as a means to reduce household utility costs.

Based on the analysis of the above Significance Criteria set forth in Hawai'i Administrative Rules §11-200.1-13, DHHL does not expect that activities associated with the proposed Project would have a significant effect on the environment.

7.2 Anticipated Determination

Pursuant to Chapter 343, HRS, the determining agency, the Department of Hawaiian Home Lands anticipates issuing a Finding of No Significant Impact (FONSI) for this environmental assessment. This finding is based on analysis of impacts and mitigation measures examined in this document, public comments received during the pre-assessment consultation, and analyzed under the above criteria.

8 CONSULTATION

8.1 Pre-Assessment Consultation

Prior to preparation of the Draft EA, the agencies, organizations and individuals listed below were sent pre-assessment consultation letters. The purpose of the pre-assessment consultation was to identify environmental issues and concerns to be addressed in the Draft EA. Those that provided written comments (either by hardcopy or email) are highlighted in ***bold***. Copies of the written comments and responses are reproduced in Appendix B.

8.1.1 State of Hawai‘i

- ***Department of Accounting and General Services***
- *Department of Business, Economic Development & Tourism (DBEDT)*
- *DBEDT – Energy Office*
- *DBEDT – Office of Planning & Sustainable Development*
- ***Department of Defense***
- ***Department of Education***
- *Department of Health*
- ***Department of Health - Maui District Office***
- ***Department of Human Services***
- *Department of Labor and Industrial Relations*
- ***Department of Land and Natural Resources (DLNR)***
- ***DLNR – Engineering Division***
- ***DLNR – Division of Forestry & Wildlife***
- ***DLNR – Land Division - Maui District***
- ***Department of Transportation***
- *Environmental Review Program*
- *Hawai‘i State Library – Hawai‘i Documents Center*
- *Hawaiian Homes Commissioner Randy Awo*
- *Kahului Public Library*
- *Kihei Public Library*
- *Legislative Reference Bureau*
- *Office of Hawaiian Affairs*
- *State Representative Troy Hashimoto*
- *State Senator Gilbert Keith-Agaran*
- *Wailuku Public Library*

8.1.2 Federal

- *U.S. Army Corps of Engineers – Regulatory Branch*
- *U.S. Federal Emergency Management Agency*
- *U.S. Fish and Wildlife Service*

8.1.3 County of Maui

- *County Councilmember Tasha Kama*
- *Department of Environmental Management*
- ***Department of Fire and Public Safety***
- *Department of Housing and Human Concerns*
- ***Department of Parks & Recreation***
- ***Department of Planning***
- ***Police Department***
- *Department of Public Works*
- *Department of Transportation*
- *Department of Water Supply*

8.1.4 Private Organizations & Individuals

- *Ala Lani Church*
- *Association of Hawaiians for Homestead Lands*
- *Catholic Charities Hawaii*
- *Family Life Center*
- *Hale Mahaolu*
- ***Hawaiian Community Assets (Blossom Feiteria)***
- ***Hawaiian Electric Company – Maui County***
- *Hawaiian Telcom*
- *Hui no Ke Ola Pono*
- *Ka Hale A Ke Ola*
- *Ka Ohana O Kahikinui, Inc.*
- *Kahikinui Hawaiian Homestead Association*
- *Kamehameha Schools Maui Campus*
- *Kēōkea Homestead Farm Lots Association*
- *Maui Adult Day Care*
- *Maui Homestead Farmers & Ranchers Association*
- *Maui Metropolitan Planning Organization*
- *Maui Mokupuni Council*
- *Maui Nui Botanical Gardens*
- *Maui Tomorrow Foundation*
- *Maui United Way*
- *Mental Health Kokua*
- *Paukūkalo Hawaiian Homestead Community Association*
- *Pāʻupena Community Development Corporation*
- *Salvation Army*
- *Spectrum*
- *Villages of Leialiʻi Phase 1A Association*

- *Waiehu Kou Community Homestead Association*
- *Waiehu Kou Phase 3 Association, Inc*
- *Waiehu Kou Residence Lots, Phase II Association, Inc.*
- *Waiehu Kou Residence Lots, Phase III Association Inc.*
- *Waiohuli Hawaiian Homesteaders Association, Inc.*
- *Waiohuli Undivided Interest Lessees*

(This page left blank intentionally.)

9 REFERENCES

County of Maui. (2010). *2030 General Plan, Countywide Policy Plan.* County of Maui.

DBEDT. (2018). *Population and Economic Projections for the State of Hawaii to 2045.* Research and Economic Analysis Division, Department of Business, Economic Development and Tourism.

DHHL. (2004). *Maui Island Plan.*

DHHL. (2010). *Kēōkea-Waiohuli Regional Plan.*

Hawaiʻi Climate Change Mitigation and Adaptation Commission. (2017). *Hawaiʻi Sea Level Rise Vulnerability and Adaptation Report.* Retrieved from Prepared by Tetra Tech, Inc. and the State of Hawaiʻi Department of Land and Natural Resources, Office of Conservation and Coastal Lands, under the State of Hawaiʻi Department of Land and Natural Resources Contract No: 64064: https://climateadaptation.hawaii.gov/wp-content/uploads/2017/12/SLR-Report_Dec2017.pdf

Munekiyo & Arakawa, Inc. (April 1996). *Final Enviornmental Assessment for DHHL Kula Residential Lots, Unit 1.* Retrieved from Office of Environmental Quality Control: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Maui/1990s/1996-05-08-MA-FEA-KULA-RESIDENCE-LOTS-UNIT-1.pdf

Natural Resources Conservation Service, United States Department of Agriculture. (Accessed April 2015). *Web Soil Survey*. Retrieved from http://websoilsurvey.nrcs.usda.gov/

PBR HAWAII & Associates, Inc. (August 2005). *Waiohuli Homestead Community Final Environmental Assessment.* Retrieved from OEQC: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Maui/2000s/2005-09-08-MA-FEA-WAIOHULI-HOMESTEAD-COMMUNITY.pdf

PBR HAWAII & Associates, Inc. (September 2004). *Maui Island Plan.* Prepared for State of Hawaiʻi Department of Hawaiian Home Lands.

Planning Department. (2014). *Socio-Economic Forecast Report 2014 final draft; subject to review and finalization by LRD.* Wailuku: County of Maui.

Scientific Consultant Services, Inc. (Michael Dega, Ph.D.). (January 2001). *Preservation Plan for DHHL Kula Residential Lots, Unit 1 of Waiohuli Subdivision, Waiohuli Ahupuaʻa, Kula District, Maui Island, Hawaiʻi.* Prepared for Department of Hawaiian Home Lands.

SSFM International. (2001). *Final Environmental Assessment for the Department of Hawaiian Home Lands Keokea Agricultural Lots - Unit 1.*

SSFM International. (2001). *Keokea Agricultural Lots- Unit 1 Final Environmental Assessment.* Retrieved from OEQC:

http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Maui/2000s/2001-12-08-MA-FEA-KEOKEA-AGRICULTURAL-LOTS.pdf

U.S. EPA. (2017, February 22). *Climate Change Indicators*. Retrieved from United States Environmental Protection Agency: https://www.epa.gov/climate-indicators/

UH Sea Grant. (2014). *Climate Change Impacts in Hawaiʻi - A summary of climate change and its impacts to Hawaiʻi's ecosystems.* Honolulu: University of Hawaiʻi at Mānoa Sea Grant College Program.

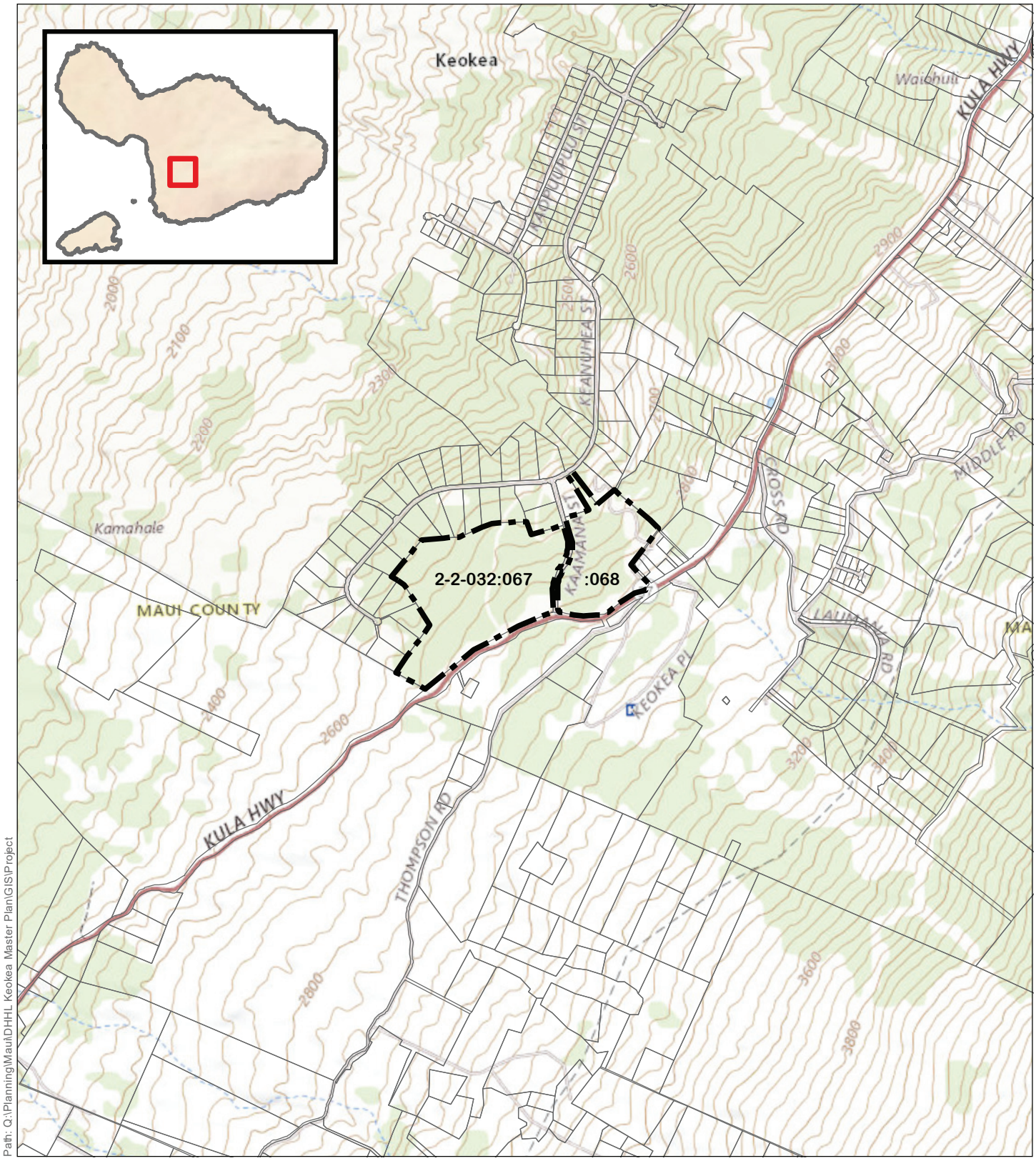
UHERO. (2019). *Data Portal*. Retrieved from The Economic Research Organization at the University of Hawaiʻi: https://data.uhero.hawaii.edu/#/

USGS. (2018). *2018 Update to the U.S. Geological Survey National Volcanic Threat Assessment: : U.S. Geological Survey Scientific Investigations Report 2018–5140.* Reston: U.S. Geological Survey.

Waiohuli Hawaiian Homesteaders Association, Inc. (June 2009). *Waiohuli Development Project.*

Appendix A

FIGURES



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Legend

Project Site

Tax Map Key Parcels

Figure 1

Regional Location

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

Linear Scale (Feet)

0 375 750 1,500

Source: County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 3/16/2022

Legend

Project Site

Figure 2
Tax Map Key Map

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

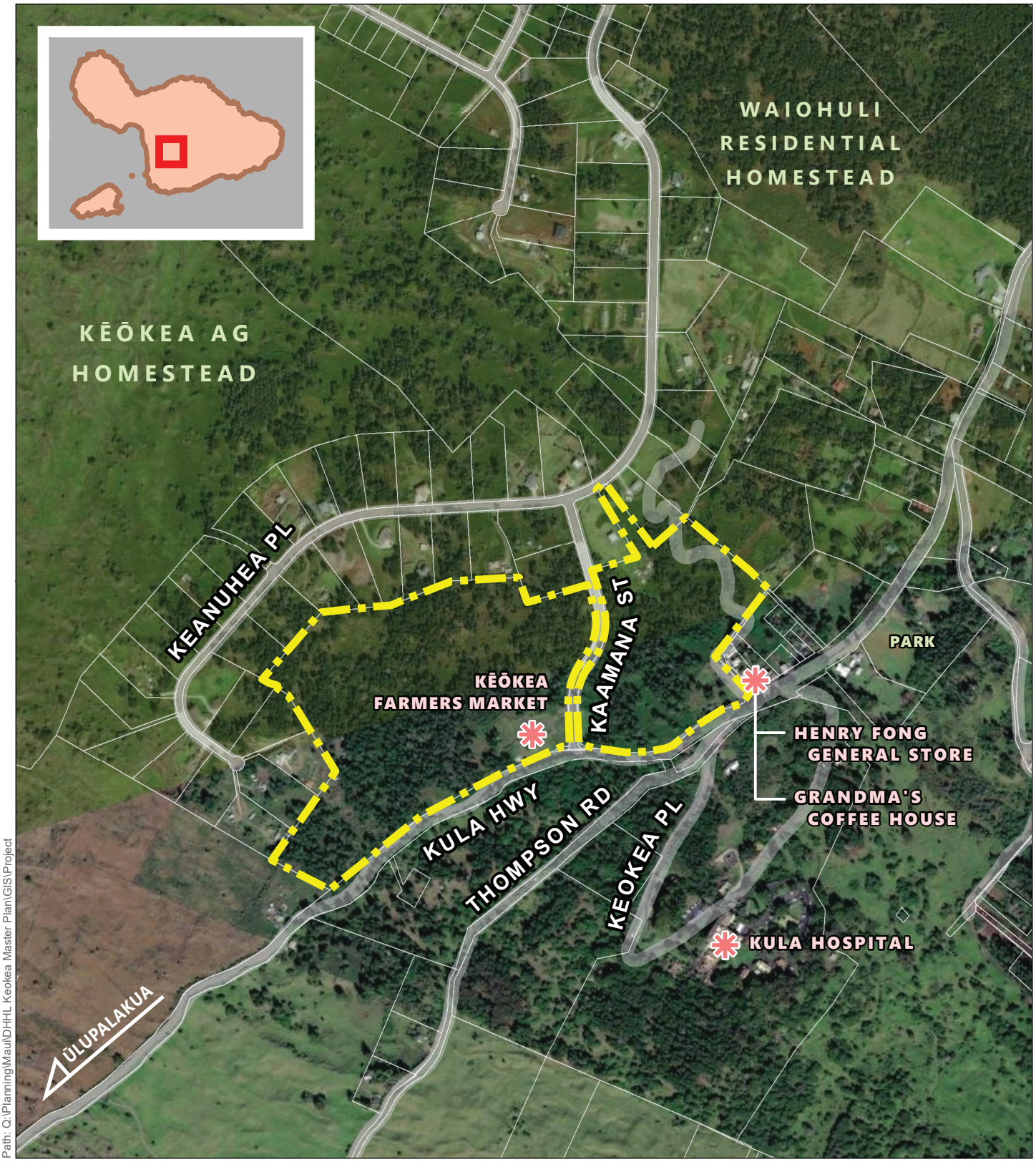
Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.

Source: County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 6/21/2021

Legend

Project Site

Figure 3
Aerial Photograph

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

Linear Scale (Feet)

0 200 400 800

PBR HAWAII & ASSOCIATES, INC.

Source: County of Maui, 2018 & 2020. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.

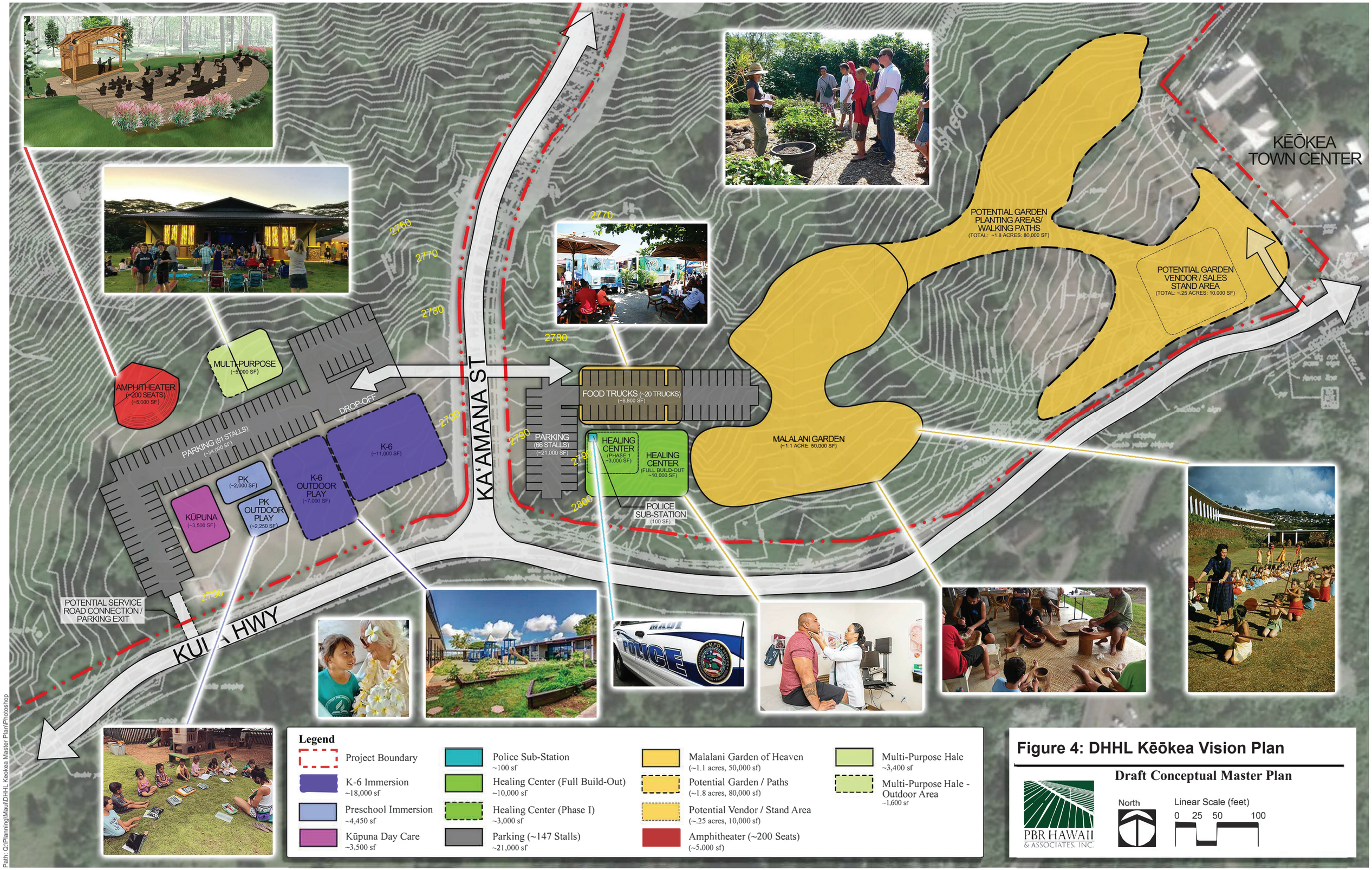


Figure 4: DHHL Kēōkea Vision Plan

Draft Conceptual Master Plan

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\Photoshop

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 6/21/2021

Legend

Project Site

Land Use Districts

- Agricultural
- Urban
- Rural

Figure 5
State Land Use Districts

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

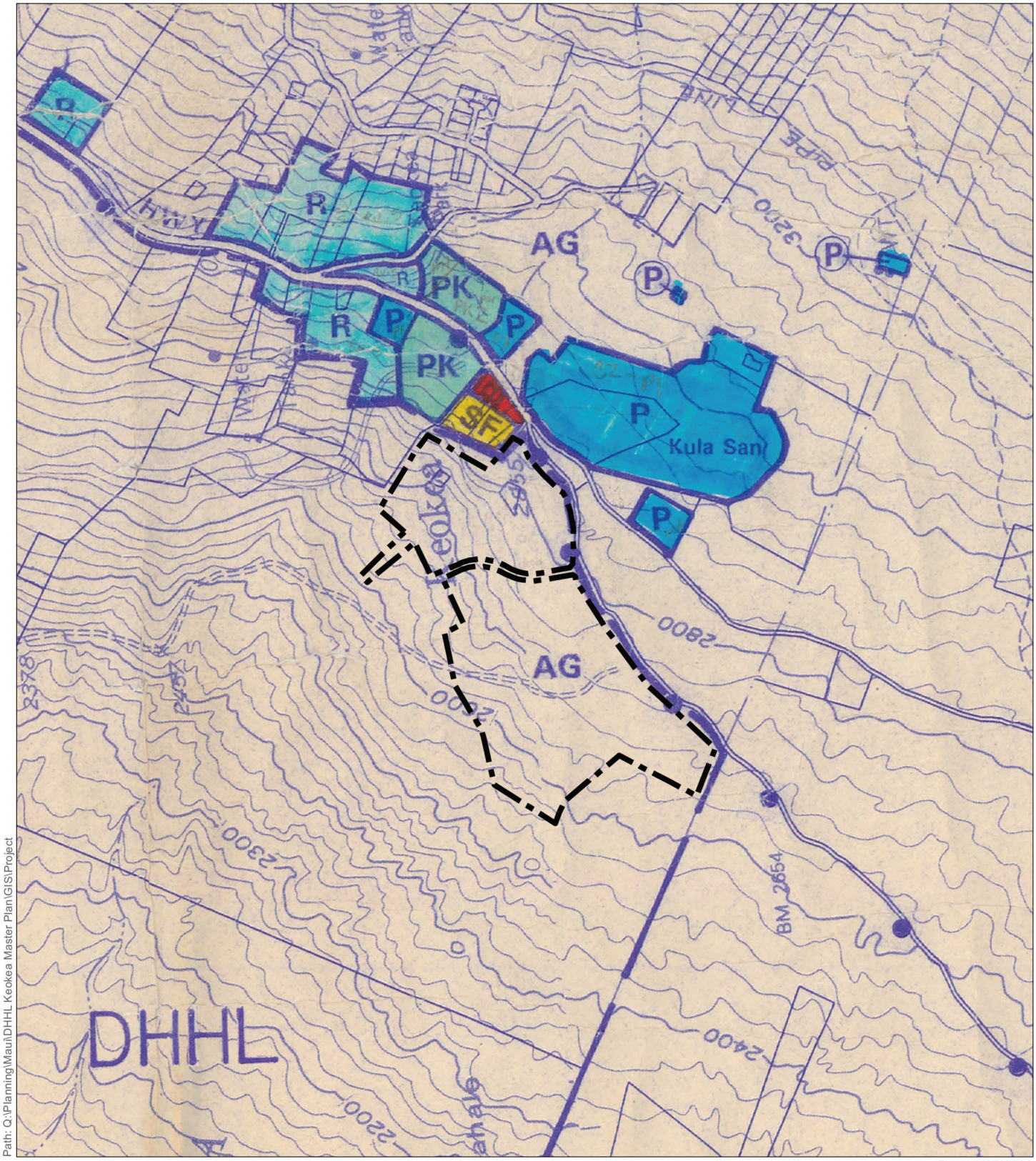
Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.

Source: State Land Use Commission, 2016. County of Maui, 2019.

Disclaimer: This graphic has been prepared for general planning purposes only.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/25/2020

Legend

- Project Site
- AG Agriculture
- P Public/Quasi-Public
- PK Park
- R Rural
- SF Single Family Residential
- B Business/Commercial
- Bicycle Route

Source: County of Maui, 1997 & 2019.

Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 6
Makawao-Pukalani-Kula Community Plan

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

Linear Scale (Feet)

0 250 500 1,000

PBR HAWAII & ASSOCIATES, INC.

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 6/21/2021

Legend

Project Site

Zones

- AG Agriculture
- R-3 Residential
- P-1 Public/Quasi-Public
- Interim
- PK Park
- RU-0.5 Rural - 1/2 Acre
- UR Urban Reserve

Source: County of Maui, 2018 & 2019.

Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 7
Maui County Zoning

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

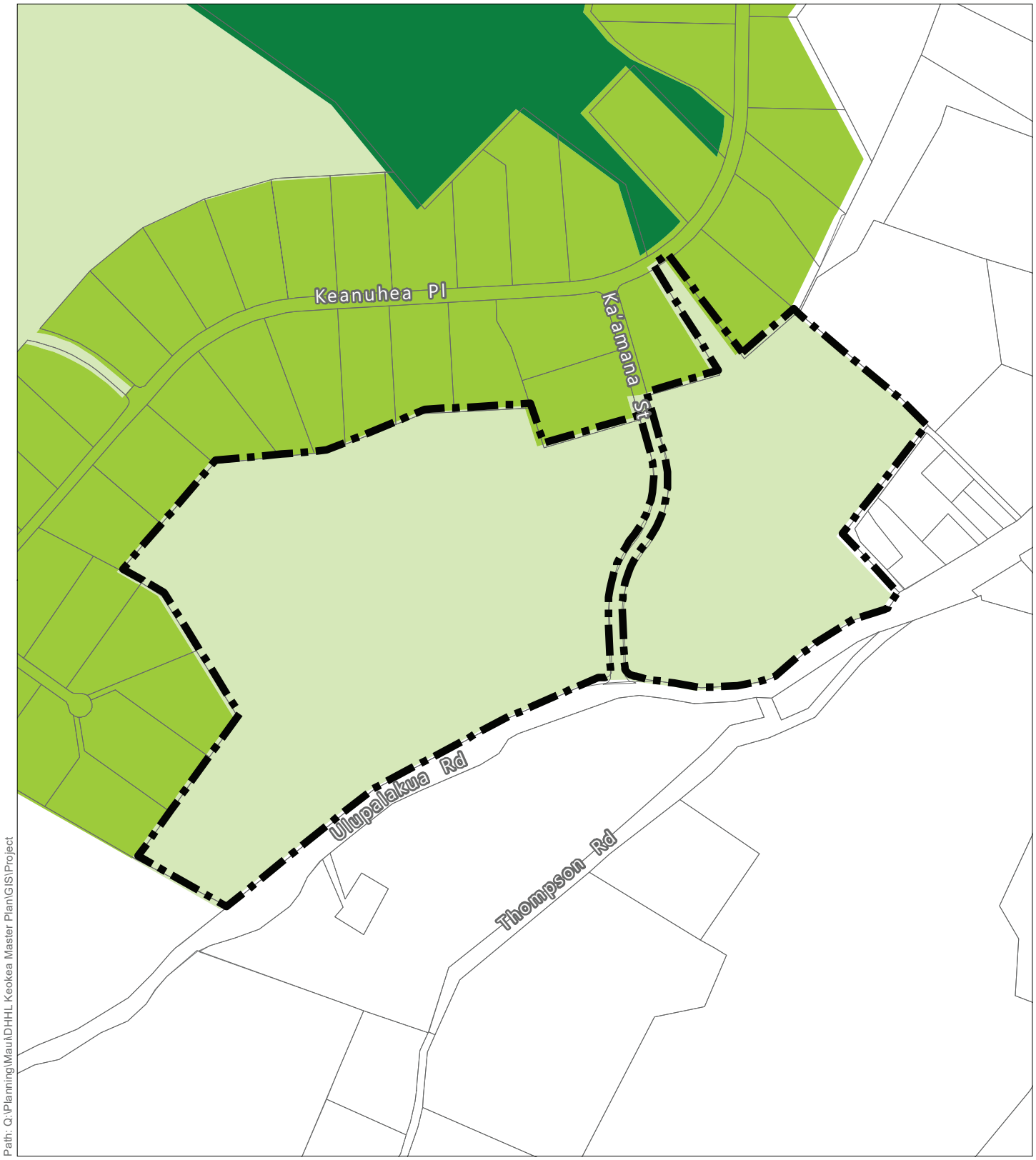
Island of Maui

North

Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/21/2020

Legend

Project Site

Land Use Designations

- General Agriculture
- Subsistence Agriculture
- Conservation

Figure 8
DHHL Maui Island Plan
Land Use Designations

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.

Source: Department of Hawaiian Home Lands, 2019. County of Maui, 2019.

Disclaimer: This graphic has been prepared for general planning purposes only.

1. View southeast from Kaʻamana Street towards entrance of the Farmer's Market site

2. View mauka of the project area (east of Kaʻamana Street)

3. View mauka of the project area towards Kula Highway (east of Kaʻamana Street)

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 2/2/2022

Figure 9
Site Photos

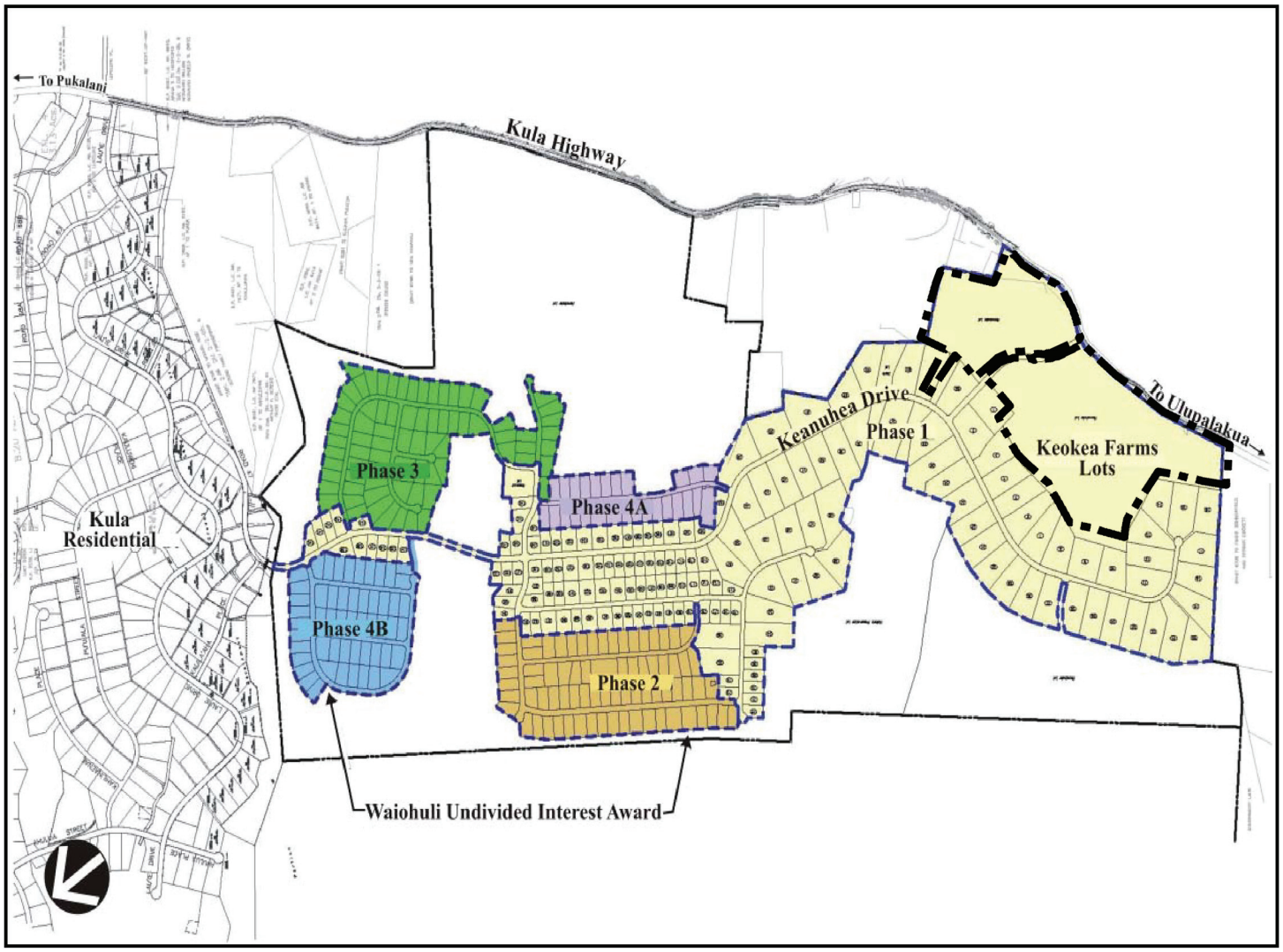
DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

PBR HAWAII & ASSOCIATES, INC.

Disclaimer: This graphic has been prepared for general planning purposes only.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/14/2020

Legend

Project Site

Figure 10
DHHL Kēōkea-Waiohuli
Long-Range Conceptual Plan

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands — Island of Maui

North

(NOT TO SCALE)

Source: DHHL, 2010. ESRI Online Basemap.
Disclaimer: This graphic has been prepared for general planning purposes only.

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/15/2020

Legend

Project Site

Tax Map Key Parcels

NRCS Soil Classification

- KCXD: Kaimu extremely stony peat, 7 to 25 percent slopes
- KDIE: Kaipoioi loam, 7 to 40 percent slopes
- KGKC: Kamaole very stony silt loam, 3 to 15 percent slopes
- KnaD: Keahua cobbly silty clay loam, 15 to 25 percent slopes
- KxC: Kula loam, 4 to 12 percent slopes
- KxD: Kula loam, 12 to 20 percent slopes
- KxbE: Kula - Rock outcrop complex, 12 to 40 percent slopes, MLRA 160

Source: NRCS, 2017. County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.

Figure 11
U.S. Department of Agriculture National Resource Conservation Service Soil Classification

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

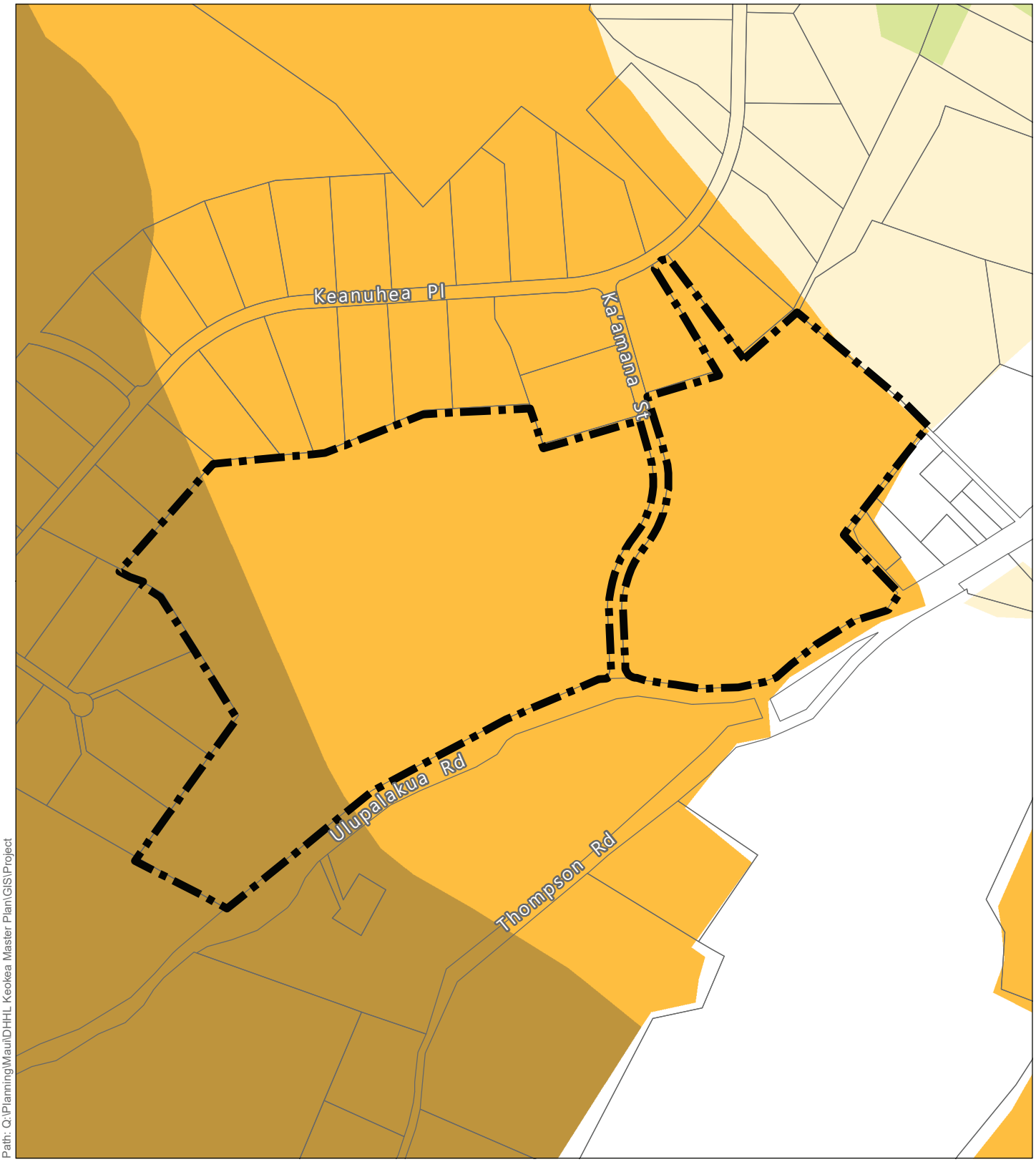
Island of Maui

North

Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/11/2020

Legend

Project Site

Tax Map Key Parcels

LSB Land Classification

- A - Very Good
- B - Good
- C - Fair
- D - Poor
- E - Very Poor
- Not classified

Figure 12
Land Study Bureau
Detailed Land Classification

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.

Source: Land Study Bureau, 1967. County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.

Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/11/2020

Legend

Project Site

ALISH Classification

- Prime ALISH
- Unique ALISH
- Other ALISH
- Unclassified

Figure 13
Agricultural Lands of Importance to the State of Hawaii

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands

Island of Maui

North

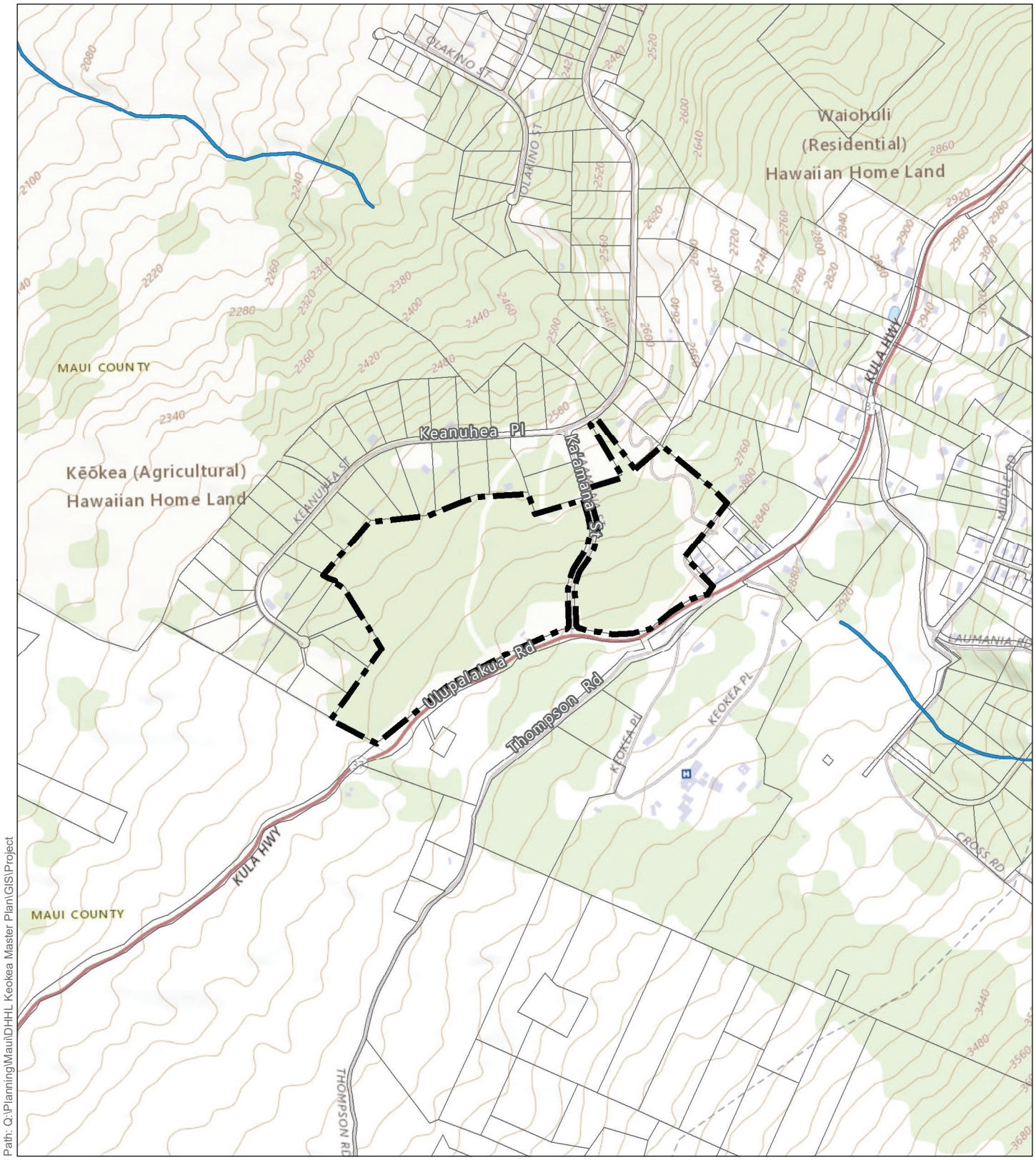
Linear Scale (Feet)

0 125 250 500

PBR HAWAII & ASSOCIATES, INC.

Source: State Department of Agriculture, 1977. County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/15/2020

Legend

- Project Site
- Tax Map Key Parcels
- Riverine

Figure 14
U.S. Fish & Wildlife Service Wetlands

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands — Island of Maui

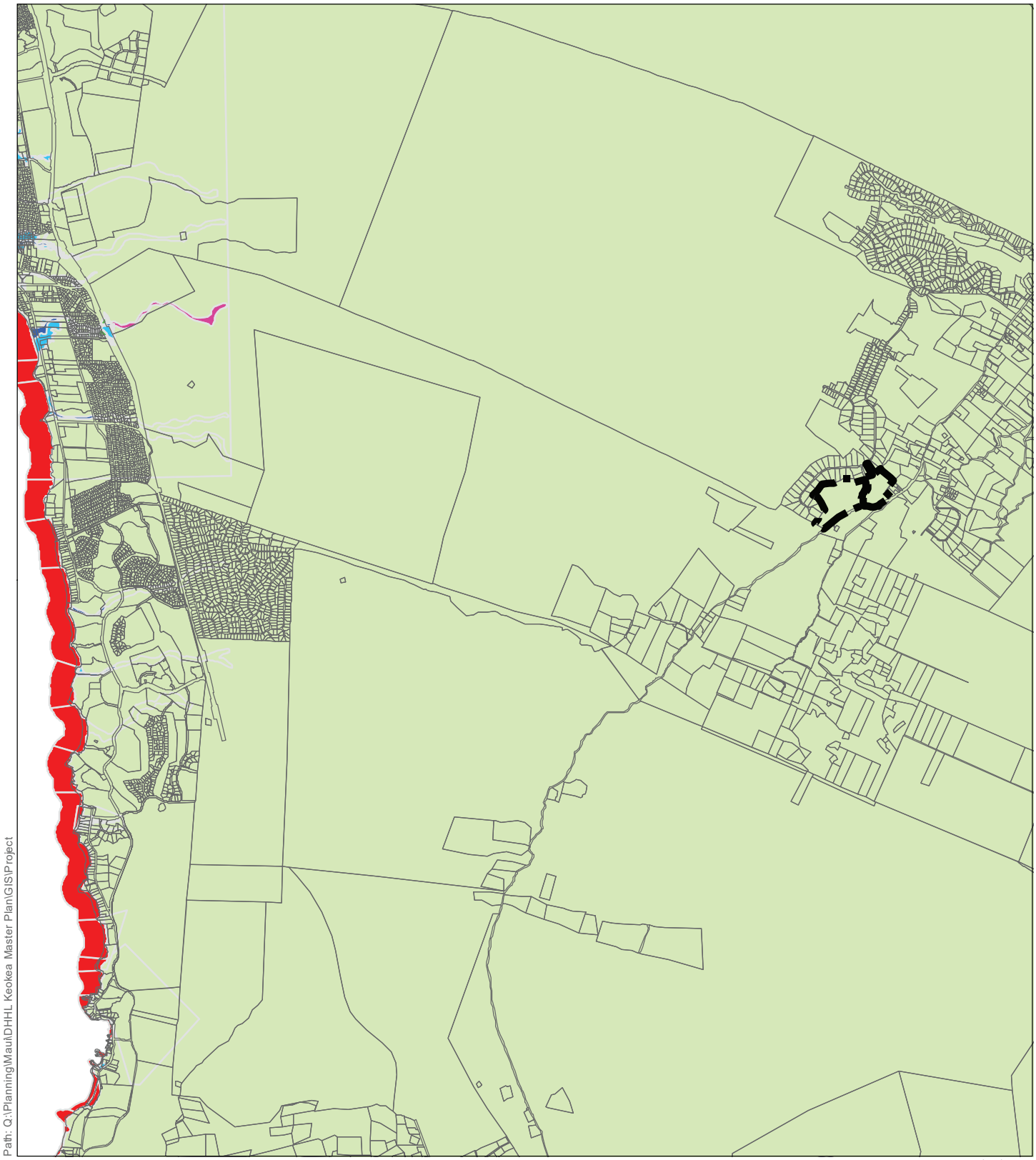
North

Linear Scale (Feet)
0 250 500 1,000

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Fish & Wildlife Service's National Wetlands Inventory, 2019. County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.



Date: 9/15/2020

Legend

Project Site

Tax Map Key Parcels

Flood Hazard Areas

- A: 1% annual chance flood, no BFE
- AE: 1% annual chance flood, with BFE
- VE: 1% annual chance coastal flood, with BFE
- Floodway areas in AE
- XS: 0.2% annual chance flood
- X: Minimal flood areas

Figure 15
Flood Insurance Rate Map

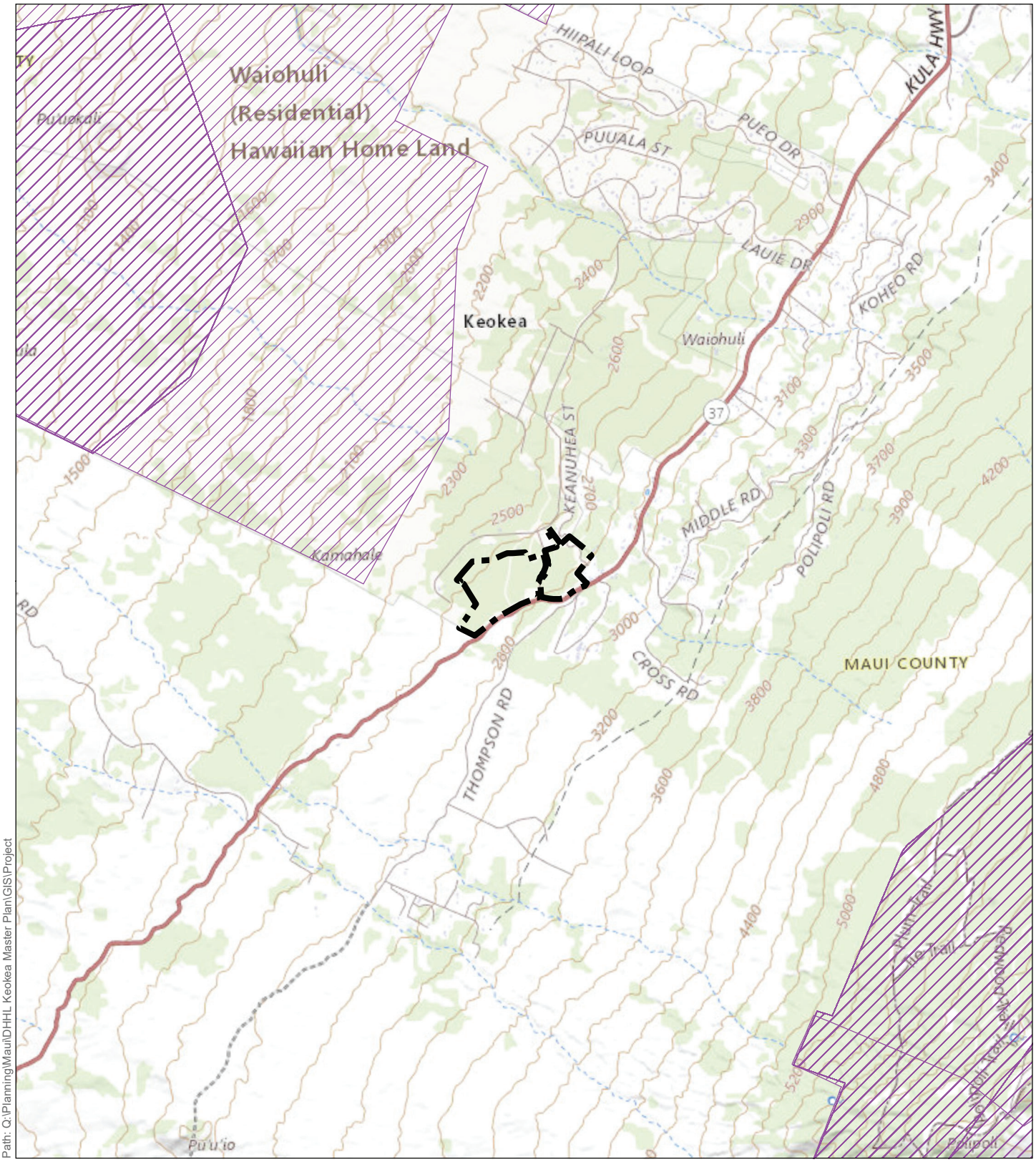
DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands — Island of Maui

North

Linear Scale (Feet)
0 1,250 2,500 5,000

Source: FEMA, 2017. County of Maui, 2019. ESRI Online Basemap.
Disclaimer: This graphic has been prepared for general planning purposes only.



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 9/15/2020

Legend

Project Site Critical Habitats

Figure 16
U.S. Fish & Wildlife Service Mapped Critical Habitats

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands Island of Maui

North

Linear Scale (Feet)
0 750 1,500 3,000

PBR HAWAII & ASSOCIATES, INC.

Source: U.S. Fish & Wildlife Service, 2019. County of Maui, 2019. ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.

Appendix B

PRE-ASSESSMENT CONSULTATION

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)21.227

JAN - 4 2022

Vincent Shigekuni
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Shigekuni:

Subject: Pre-Assessment Consultation for HRS Chapter 343
Environment Assessment for the
DHHL Keokea Homestead Farm Lots Association Master Plan in
Keokea, Kula, Maui, Hawaii
TMK: (2) 2-2-032: 067 & 068

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.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at 586-0584.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

GT:mo
c: MDO

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Ms. Christine L. Kinimaka
Public Works Administrator
State of Hawai‘i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai‘i 96810-0119

Attn: Ms. Gayle Takasaki

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Ms. Kinimaka,

Thank you for your letter dated January 4, 2022 (reference code: [P]21.227), regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that DAGS has no comments to at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

DAVID Y. IGE
GOVERNOR

KENNETH S. HARA
MAJOR GENERAL
ADJUTANT GENERAL

STEPHEN F. LOGAN
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

January 11, 2022

PBR HAWAII & Associates, Inc.
Attn: Mr. Vincent Shigekuni
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

SUBJECT: Environmental Assessment for the Department of Hawaiian Home Lands (DHHL) Keokoa Homestead Farm Lots Association (KHFLA). TMKS (2) 2-2-032:067 and :068

Dear Mr. Shigekuni:

Thank you for the opportunity to comment on the above project. The State of Hawaii Department of Defense recommends that the developer install an emergency siren to cover the area.

Should there be any questions, please contact Mr. Scott J. Kawamoto at 808-369-3500 or scott.j.kawamoto@hawaii.gov.

Sincerely,

Shaoyu L. Lee
Captain, Hawaii National Guard
Engineering Officer

c: HIEMA

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice President / Principal

VINCENT SHIGEKUNI
Senior Vice President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

SELENA PANG
Associate

NICOLE SWANSON
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

December 21, 2021

Cpt Shao Yu Lee
Contracting and Engineering Officer
State of Hawai'i
Department of Defense
3949 Diamond Head Road
Honolulu, HI 96816

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Cpt Lee,

The Department of Hawaiian Home Lands (DHHL) Kēōkea Homestead Farm Lots Association (KHFLA) is proposing a new master plan that includes a Cultural Education Center, Native Food and Medicinal Plant Gardens, Child and Senior Care Complex, Multi-Purpose Community Center Complex, Amphitheater, local small business and food venue, and native forest restoration efforts, on a portion of two parcels with an overall area of roughly 69 acres identified as Tax Map Keys (TMKs) (2) 2-2-032:067 and :068. The project site is located adjacent to the intersection of Kula Highway and Ka'amana Street in Kēōkea, Maui. An aerial map showing the location of the project site is attached with this letter. The majority of the project site is currently vacant land, with the exception of the temporary structures and grading at the existing Kēōkea Marketplace area.

With this letter, we seek your input as to whether the proposed master plan project may have an impact on any of your existing or proposed projects, plans, policies, or programs that we should consider when preparing the Environmental Assessment. Please send us any comments you may have by **January 22, 2022** to:

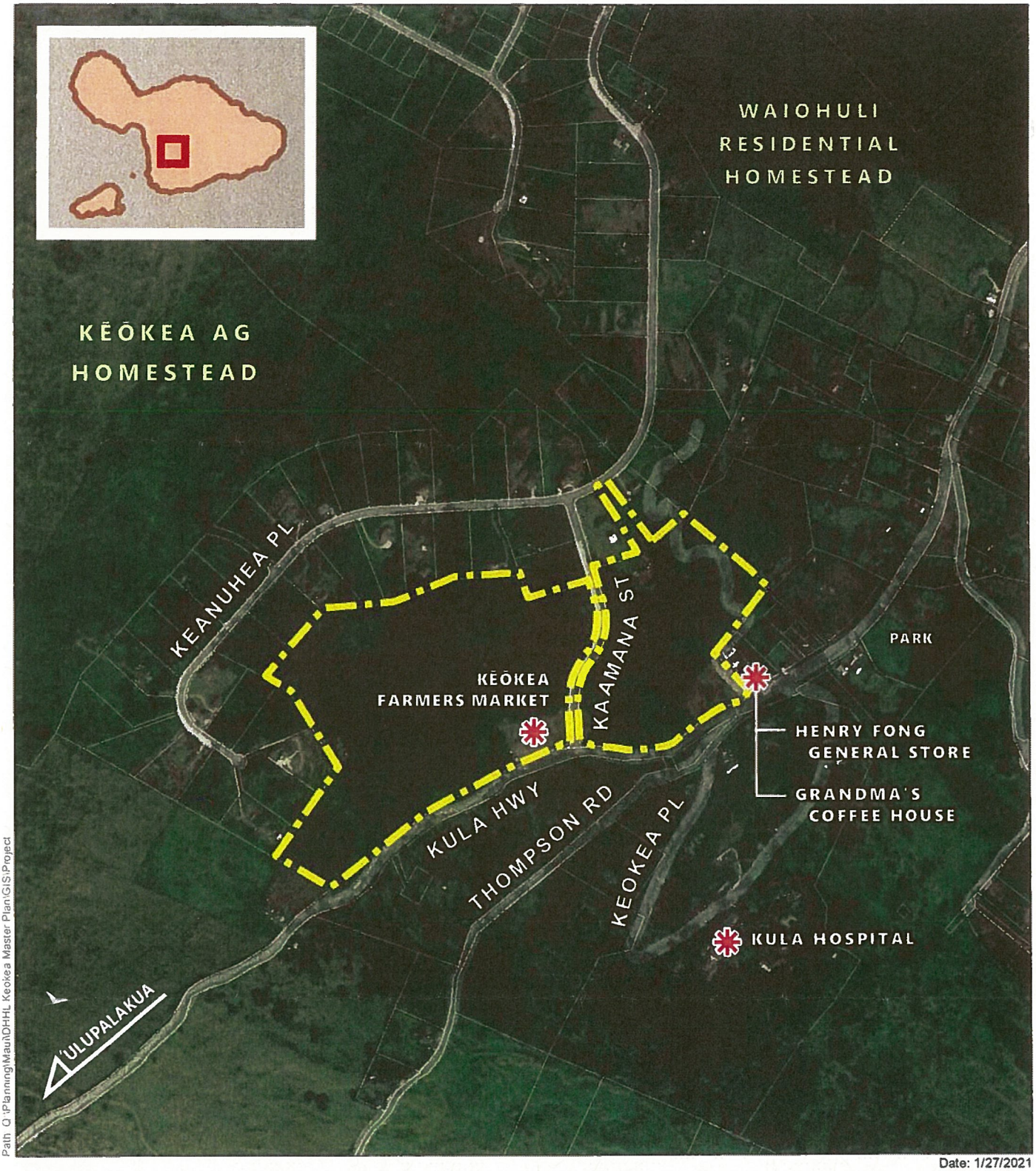
PBR HAWAII & Associates, Inc.
Attn: Vincent Shigekuni
1001 Bishop Street, Suite 650
Honolulu, HI 96813-3484

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

Attachment: Regional Location Map



Path: Q:\Planning\Maui\DHHL Keokea Master Plan\GIS\Project

Date: 1/27/2021

Legend

Project Site

Regional Location Map

DHHL Kēōkea Master Plan

Dept. of Hawaiian Home Lands — Island of Maui

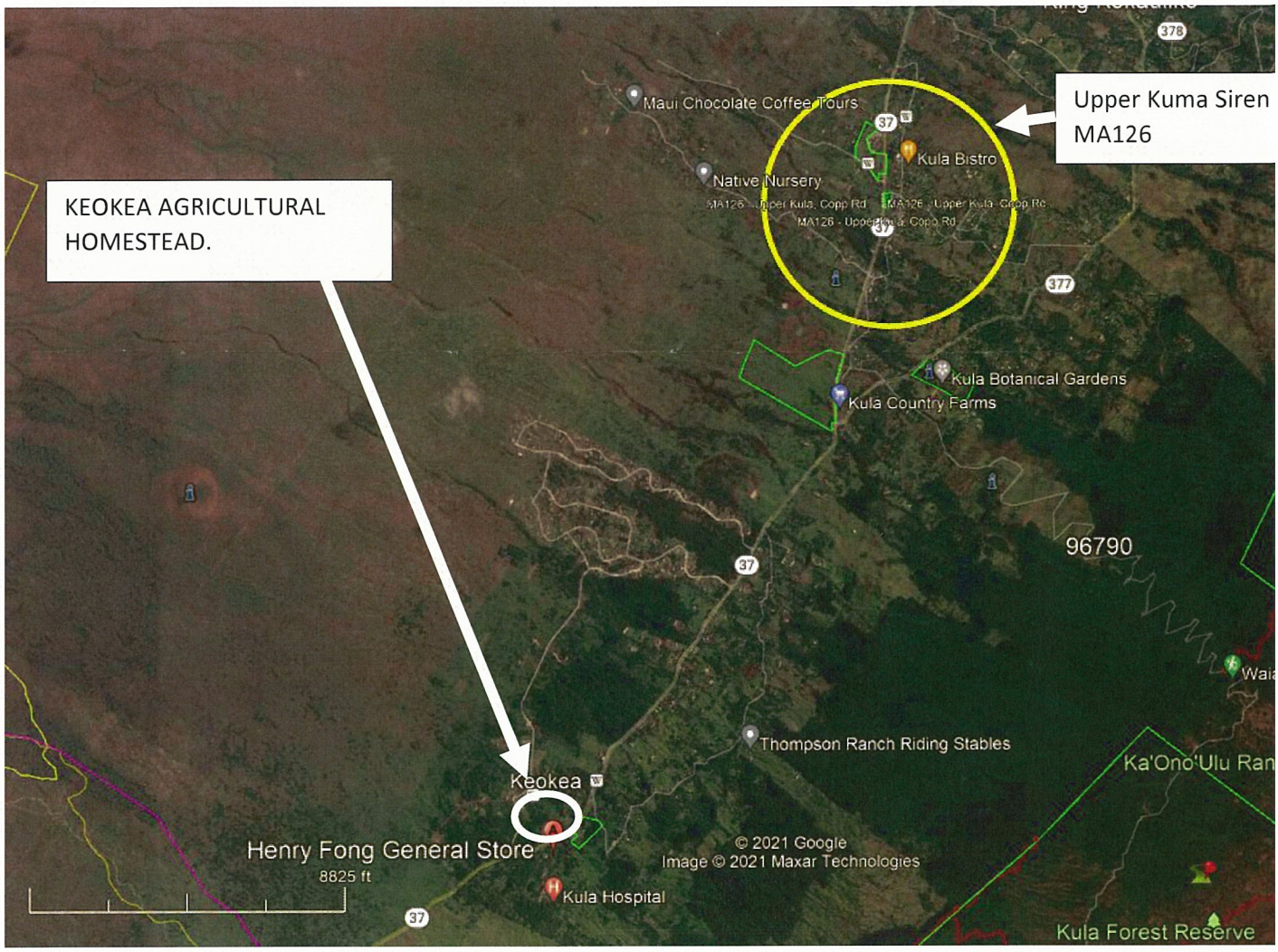
North

Linear Scale (Feet)

0 200 400 800

Source: County of Maui, 2018 & 2020 ESRI Online Basemap.

Disclaimer: This graphic has been prepared for general planning purposes only.


Upper Kuma Siren
MA126
KEOKEA AGRICULTURAL
HOMESTEAD.
Maui Chocolate Coffee Tours
Kula Bistro
Native Nursery
Kula Botanical Gardens
Kula Country Farms
96790
Thompson Ranch Riding Stables
Keokea
Henry Fong General Store
8825 ft
© 2021 Google
Image © 2021 Maxar Technologies
Kula Hospital
Ka'Ono'Ulu Ran
Kula Forest Reserve

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Captain Shaoyu L. Lee
Chief Engineering Officer
State of Hawai‘i
Department of Defense
3949 Diamond Head Road
Honolulu, Hawai‘i 96816-4495

Attn: Mr. Scott J. Kawamoto

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Captain Lee,

Thank you for your letter dated January 11, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that the Department of Defense recommends that the developer install an emergency siren to cover the area.

We were able to speak with Mr. Scott Kawamoto, who then referred us to Mr. Carlos Rowe. We have not been able to speak with Mr. Rowe. DHHL will consider the Department of Defense recommendation for the installation of the siren as long as it is funded by the Legislature.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

DAVID Y. IGE
GOVERNOR

KEITH T. HAYASHI
INTERIM SUPERINTENDENT

STATE OF HAWAI`I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI`I 96804

OFFICE OF FACILITIES AND OPERATIONS

January 18, 2022

Vincent Shigekuni
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Re: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for the DHHL Keokea Homestead Farm Lots Association Master Plan in Keokea, Kula District, Island and County of Maui, TMKS (2)2-2-032:067 and:068

Dear Mr. Shigekuni:

Thank you for your letter dated December 21, 2021. The Hawaii State Department of Education (Department) has the following comment for the Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for the DHHL Keokea Homestead Farm Lots Association Master Plan in Keokea (Project).

Based upon the information provided, the proposed Project will not impact Department facilities.

Thank you for the opportunity to comment. Should you have questions, please contact Robyn Loudermilk, School Lands and Facilities Specialist with the Facilities Development Branch, Planning Section, at (808) 784-5093 or via email at robyn.loudermilk@k12.hi.us.

Sincerely,

Roy Ikeda
Interim Public Works Manager
Planning Section

RI:ctc

c: Facilities Development Branch

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Roy Ikeda
Interim Public Works Manager
State of Hawai‘i
Department of Education
P.O. Box 2360
Honolulu, Hawai‘i 96804

Attn: Ms. Robyn Loudermilk

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Mr. Ikeda,

Thank you for your letter dated January 18, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that the proposed Project will not impact Department of Education facilities.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
Maui District Health Office
54 South High St. Rm. #301
Wailuku, HI 96793

Lorrin W. Pang, M.D., M.P.H.
District Health Officer

January 12, 2022

Mr. Vincent Shigekuni
Senior Vice-President
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite, 650
Honolulu, HI 96813-3484

Dear Mr. Shigekuni:

Subject: Pre-assessment consultation for a HRS Chapter 343 Environmental Assessment for the DHHL Keokea Homestead Farm Lots Association Master Plan in Keokea, Kula District, Island and County of Maui
TMK: (2) 2-2-032:067 and 068

Thank you for the opportunity to review this project. We have the following comments to offer:

1. The wastewater disposal method was not satisfactorily addressed for review. Please provide the wastewater disposal method including the site plan for the proposed projects. If you have any questions regarding the above comments, please contact Roland Tejano, Environmental Engineer, at 808 984-8232.

2. The applicant shall comply with Hawaii Administrative Rules, Chapter 11-50, "Food Safety Code." Please contact the Food Safety Branch at 808 984-8230 to discuss areas that might need a permitted kitchen.

It is strongly recommended that you review the department's website at https://health.hawaii.gov/epo/landuse/ and contact the appropriate program that concerns your project.

Should you have any questions, please contact me at 808 984-8230 or email me at patricia.kitkowski@doh.hawaii.gov.

Sincerely,

Patti Kitkowski

Patti Kitkowski
District Environmental Health Program Chief

c Joanne Seto, EMD Chief {Via Email}

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Ms. Patti Kitkowski
District Environmental Health Program Chief
State of Hawai‘i
Department of Health
Maui District Office
54 South High Street., Room #301
Wailuku, Hawai‘i 96793

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Ms. Kitkowski,

Thank you for your letter dated January 12, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we are providing the following response to your comments:

1. The forthcoming Draft Environmental Assessment (EA) will provide the wastewater disposal method including the site plan for the proposed projects.
2. A Food Establishment Permit will be added to the list of anticipated permits and approvals in the Draft EA,

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

DAVID Y. IGE
GOVERNOR

CATHY BETTS
DIRECTOR

JOSEPH CAMPOS II
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
BENEFIT, EMPLOYMENT AND SUPPORT SERVICES DIVISION
1010 Richards Street, Suite 512
Honolulu, Hawaii 96813

Re: 21-0767

January 4, 2022

Vincent Shigekuni
Senior Vice-President
PBR HAWAII & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Shigekuni:

Subject: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for the DHHL Keokea Homestead Farm Lots Association Master Plan in Keokea, Kula District, Island and County of Maui, TMK (2) 2-2-032:067 and :068

This is in response to your letter dated December 21, 2021 requesting the Department of Human Services (DHS) review and comment on the above-named project.

The DHS has reviewed the map of the project area. At this time, DHS has no comments.

If you should have any questions regarding this matter, please contact Ms. Lisa Galino, Child Care Program Specialist at (808) 586-5712.

Sincerely,

Scott Nakasone

Scott Nakasone
Assistant Division Administrator

c: Cathy Betts, Director

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Scott Nakasone
Assistant Division Administrator
State of Hawai‘i
Department of Human Services
Benefit, Employment and Support Services Division
1010 Richards Street, Suite 512
Honolulu, Hawai‘i 96813

Attn: Ms. Lisa Galino

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Mr. Nakasone,

Thank you for your letter dated January 4, 2022 (reference code: 21-0767), regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that DHS has reviewed the map of the project area, and at this time, has no comments.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

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

January 21, 2022

PBR HAWAII & Associates, Inc.
Attn: Mr. Vincent Shigekuni
Senior Vice-President
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

via email: vshigekuni@pbrhawaii.com

Dear Mr. Shigekuni:

SUBJECT: Pre-Assessment Consultation for the Proposed DHHL **Keokea Homestead Farm Lots Association Master Plan** located at Keokea, Kula District, Island of Maui; TMK: (2) 2-2-032:067 and 068 on behalf of the Department of Hawaiian Home Lands

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 and (b) Land Division-Maui 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

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

January 4, 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 – Maui District (daniel.l.ornellas@hawaii.gov)

TO:

~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for the Proposed DHHL **Keokea Homestead Farm Lots Association Master Plan**
LOCATION: Keokea, Kula District, Island of Maui; TMK: (2) 2-2-032:067 and 068
APPLICANT: PBR Hawaii & associates, Inc. on behalf of the Department of Hawaiian Home Lands (DHHL)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **January 20, 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: *CSCh*
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Jan 14, 2022

Attachments
cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Pre-Assessment Consultation for the Proposed DHHL Keokea Homestead Farm Lots Association Master Plan
Location: Keokea, Kula District, Island of Maui
TMK(s): (2) 2-2-032:067 and 068
Applicant: PBR Hawaii & Associates, Inc. on behalf of the Department of Hawaiian Home Lands (DHHL)

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). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. 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 Hazard Zones are designated 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) 241-4896.

The applicant should include water demands and infrastructure required to meet project needs. Please note that all State projects requiring water service from their local Department/Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.

The applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: Jan 14, 2022

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

January 4, 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 – Maui District (daniel.l.ornellas@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for the Proposed DHHL **Keokea Homestead Farm Lots Association Master Plan**
LOCATION: Keokea, Kula District, Island of Maui; TMK: (2) 2-2-032:067 and 068
APPLICANT: PBR Hawaii & associates, Inc. on behalf of the Department of Hawaiian Home Lands (DHHL)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **January 20, 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.
(X) We have no comments.
( ) We have no additional comments.
( ) Comments are included/attached.

Signed: [signature]
Print Name: Daniel Ornellas
Division: MDLO
Date: 1/7/22

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

January 28, 2022

PBR HAWAII & Associates, Inc.
Attn: Mr. Vincent Shigekuni
Senior Vice-President
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

via email: vshigekuni@pbrhawaii.com

Dear Mr. Shigekuni:

SUBJECT: Pre-Assessment Consultation for the Proposed DHHL **Keokea Homestead Farm Lots Association Master Plan** located at Keokea, Kula District, Island of Maui; TMK: (2) 2-2-032:067 and 068 on behalf of the Department of Hawaiian Home Lands

Thank you for the opportunity to review and comment on the subject matter. In addition to our previous comments dated January 21, 2022, enclosed are comments from the Division of Forestry & Wildlife 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

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

January 4, 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 – Maui District (daniel.l.ornellas@hawaii.gov)

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Pre-Assessment Consultation for the Proposed DHHL **Keokea Homestead Farm Lots Association Master Plan**
LOCATION: Keokea, Kula District, Island of Maui; TMK: (2) 2-2-032:067 and 068
APPLICANT: PBR Hawaii & associates, Inc. on behalf of the Department of Hawaiian Home Lands (DHHL)

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **January 20, 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: DAVID G.SMITH,Administrator
Division: Division of Forestry and Wildlife
Date: Jan 26, 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

January 26, 2022

MEMORANDUM *Log no. 3482*

TO: RUSSELL Y. TSUJI, Land Administrator
Land Division

FROM: DAVID G. SMITH, Administrator
Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments for the Pre-Assessment Consultation for the Proposed Department of Hawaiian Home & Lands (DHHL) Kēōkea Homestead Farm Lots Association Master Plan, Maui

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comment for a pre-assessment consultation on the proposed DHHL Kēōkea Homestead Farm Lots Association Master Plan in Kēōkea in the Kula District of the island of Maui; TMKs: (2) 2-2-032:067 & 2-2-032:068. The project is proposed for roughly 69 acres across two parcels and will consist of the development of a cultural education center, native food and medicinal plant gardens, a child and senior care complex, a multipurpose community center complex, an amphitheater, a local small business, and food venue, and a restored native forest on a portion of both parcels.

The State listed Hawaiian Hoary Bat or ʻŌpeʻapeʻa (*Lasiurus cinereus semotus*) could potentially occur in the vicinity of the project area 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 during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disorientated. This disorientation can result in a 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 impacts. 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. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawaiʻi please visit: https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

The project area falls within or is encompassed by the historic range of the State listed Blackburn's Sphinx Moth (BSM; *Manduca blackburni*). Larvae of BSM feed on many nonnative hostplants that include tree tobacco (*Nicotiana glauca*) which grows in disturbed soil. We recommend contacting our Maui Branch DOFAW office at (808) 984-8100 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.

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 this species. If any Hawaiian Geese are present during construction activities, all activities within 100 feet (30 meters) should cease, and the birds should not be approached. Work may continue after birds leave the area of their own accord. If a nest is discovered at any point, please contact the Maui DOFAW Branch Office at 808-984-8100.

DOFAW recommends minimizing the movement of plant or soil material between worksites, such as in fill. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid ʻŌhiʻa Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coqui Frogs), or invasive plant parts that could harm our native species and ecosystems. We recommend consulting the Maui Invasive Species Committee (MISC) at (808) 573-6472 in planning, design, and construction of the project to learn of any high-risk invasive species in the area and ways to mitigate spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species. Gear that may contain soil, such as work boots and vehicles, should be thoroughly cleaned with water and sprayed with 70% alcohol solution to prevent the spread of Rapid ʻŌhiʻa Death and other harmful fungal pathogens.

To prevent the spread of Rapid ʻŌhiʻa Death (ROD), if ʻōhiʻa trees are present and will be removed, trimmed, or potentially injured DOFAW requests that the information and guidance at the following website be reviewed and followed: https://cms.ctahr.hawaii.edu/rod.

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 recommends consulting the Hawaiʻi-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). We recommend that you refer to www.plantpono.org for guidance on selection and evaluation for landscaping plants.

We appreciate your efforts to work with our office for the conservation of our native species. 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,

DAVID G. SMITH
Administrator

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Russell Y. Tsuji
Land Administrator
State of Hawai'i
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, Hawai'i 96809

Attn: Ms. Darlene Nakamura

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Mr. Tsuji,

Thank you for your letters dated January 21 and 28, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we appreciate the correspondence from: 1) Land Division – Maui District; 2) Engineering Division; and 3) Division of Forestry & Wildlife. We note the DLNR Land Division – Maui District had no comments.

As noted by the Engineering Division, the Draft EA will include the Flood Hazard Zone designations for the Property shown on FEMA's Flood Insurance Rate Maps. The Draft EA will include water demands and infrastructure required to meet Project needs. In response to the Engineering Division, it is acknowledged that the Applicant is required to provide water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update projections.

We appreciate the information provided on: the Hawaiian Hoary Bat; the impact of outdoor lighting on seabirds; the Blackburn's Sphinx Moth; the Hawaiian Goose; soil contamination; Rapid Ohia Death; and the use of native plant species in project landscaping. The information, including DOFAW recommended mitigation measures will be included in the Draft EA.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

Deputy Directors
ROSS M. HIGASHI
EDUARDO P. MANGLALLAN
PATRICK H. MCCAIN
EDWIN H. SNIFFEN

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
DIR 1215
HWY-PS 2.7152

February 1, 2022

VIA EMAIL: vshigekuni@pbrhawaii.com

Mr. Vincent Shigekuni
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Shigekuni:

Subject: Request for Comments
Pre-Assessment Consultation for Draft Environmental Assessment
Keokea Homestead Farm Lots Association Master Plan
Keokea, Kula District, Maui
Tax Map Key No. (2) 2-2-032: 067 and 068

Thank you for your letter dated December 21, 2021, requesting our review in preparation of a Draft Environmental Assessment (DEA) required by Chapter 343, Hawaii Revised Statutes, due to the use of State lands and funds.

The Department of Hawaiian Home Lands proposes a master plan totaling 69 acres on 2 parcels. The proposed development on the vacant land will include a Cultural Educational Center, Native Plant Garden, Daycare Complex for children and seniors, Multi-Purpose Community Center, business and food venues, and an Amphitheater.

As an early consultation, there is no detailed site plan included. However, the proposed site appears to be off Kula Highway (State Route 37), nearest to the intersection with Kaamana Street, a County road.

The Hawaii Department of Transportation has the following comments:

1. A Transportation Assessment or a Traffic Impact Analysis Report should be prepared by a traffic engineer licensed in the State of Hawaii and should be included in the DEA.

2. Both the DEA and the traffic study should fully evaluate whether the day-to-day operations, special events, and drainage patterns will have any impacts on the nearby State highways.

If you have any questions, please contact Jeyan Thirugnanam, Systems Planning Engineer, Highways Division, Planning Branch at (808) 587-6336 or by email at jeyan.thirugnanam@hawaii.gov. Please reference file review number PS 2022-006.

Sincerely,

JADE T. BUTAY
Director of Transportation

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Jade T. Butay
Director of Transportation
State of Hawai‘i
Department of Transportation
869 Punchbowl Street
Honolulu, Hawai‘i 96813-5097

Attn: Mr. Jeyan Thirugnanam

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Mr. Butay,

Thank you for your letter dated January 1, 2022 (reference code: DIR 1215, HWY-PS 2.7152), regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we are providing the following responses to your comments:

1. The Draft EA will include a Transportation Impact Analysis Report prepared by a traffic engineer licensed in the State of Hawaii.
2. Both the DEA and traffic study will evaluate whether the day-to-day operations, special events, and drainage patterns will have any impacts on the nearby State highways.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

MICHAEL P. VICTORINO
Mayor

BRADFORD K. VENTURA
Fire Chief

GAVIN L.M. FUJIOKA
Deputy Fire Chief

DEPARTMENT OF FIRE & PUBLIC SAFETY
FIRE PREVENTION BUREAU
COUNTY OF MAUI
313 MANEA PLACE
WAILUKU, HI 96793

January 12, 2022

VIA EMAIL: sysadmin@pbrhawaii.com

PBR Hawaii & Associates, Inc.
Attn: Vincent Shigekuni
1001 Bishop Street, Suite 650
Honolulu, HI 96813

SUBJECT: PRE-ASSESSMENT FOR ENVIRONMENTAL ASSESMENT FOR THE DHHL KEOKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN TMKS: (2) 2-2-032:067 AND: 068

Dear Vincent,

Thank you for the opportunity to review your project. At this time Fire Prevention Bureau has no comments.

Please consult with us on your fire protection and water supply requirements upon design, use and developed of buildings that may be involved.

If there are any questions or comments, please feel free to contact our office at (808) 876-4690 or by email at fire.prevention@mauicounty.gov.

Sincerely,

Plans Review - Fire Prevention Bureau

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Bradford Ventura
Fire Chief
County of Maui
Department of Fire & Public Safety
Fire Prevention Bureau
313 Manea Place
Wailuku, Hawai'i 96793

Attn: Plans Review – Fire Prevention Bureau

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Chief Ventura,

Thank you for your letter dated January 12, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that the Fire Prevention Bureau has no comments at this time.

As requested, the Plans Review – Fire Prevention Bureau will be on consulted on fire protection and water supply requirements upon design, development and use of the proposed buildings.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

MICHAEL P. VICTORINO
Mayor

KARLA H. PETERS
Director

MARCI M. SATO
Deputy Director

DEPARTMENT OF PARKS AND RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawai'i 96793
Main Line (808) 270-7230 / Facsimile (808) 270-7942

January 13, 2022

Vincent Shigekuni, Senior Vice President
PBR HAWAII & ASSOCIATES, INC.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Dear Mr. Shigekuni:

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS: (2) 2-2-032:067 AND :068

Thank you for the opportunity to review and comment on the subject project. Kēōkea Park, which is a community park, is located to the northeast vicinity of the subject project. The Department would request that vehicular and bicycle traffic and access, pedestrian access along street sidewalks with crosswalks as well as sufficient onsite parking for the cultural and community center complex be considered when preparing the Environmental Assessment.

Should you have any questions, please feel free to contact me or Samual Marvel, Chief of Planning and Development at samual.marvel@co.maui.hi.us or (808) 270-6173.

Sincerely,

KARLA H. PETERS
Director of Parks and Recreation

c: Sam Marvel, Chief of Parks Planning and Development

KHP:SM:as

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Ms. Karla H. Peters
Director
County of Maui
Department of Parks and Recreation
700 Halia Nakoa Street, Unit 2
Wailuku, Hawai‘i 96793

Attn: Samual Marvel, Chief of Planning & Development

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Ms. Peters,

Thank you for your letter dated January 13, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge your Department’s request that vehicular and bicycle traffic and access and pedestrian access along street sidewalks with crosswalks, as well as sufficient onsite parking for the project be considered when preparing the Environmental Assessment. It is DHHL’s understanding, that funding for such improvements would best be funded by the County’s or State’s CIP programs.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP
Director

JORDAN E. HART
Deputy Director

DEPARTMENT OF PLANNING
COUNTY OF MAUI
ONE MAIN PLAZA
2200 MAIN STREET, SUITE 315
WAILUKU, MAUI, HAWAII 96793

January 19, 2022

Mr. Vincent Shigekuni
Senior Vice-President
PBR Hawaii Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Dear Mr. Shigekuni:

SUBJECT: PRE-ASSESSMENT CONSULTATION COMMENTS FOR PREPARATION OF A DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE DEPARTMENT OF HAWAIIAN HOME LANDS (DHHL) KEOKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KEOKEA, ISLAND OF MAUI, HAWAII; TMK: (2) 2-2-032:067 AND 068 (RFC 2021/0205)

The Department of Planning (Department) is in receipt of the request for pre-assessment consultation comments for preparation of the Draft EA for the DHHL Keokea Farm Lots Master Plan. The Department understands that the Master Plan will consist of the following:

- Cultural Education Center
- Native Food and Medicinal Plant Gardens
- Child and Senior Care Complex
- Multi-Purpose Community Center Complex
- Amphitheater
- Local Small Business and Food Establishments
- Native Forest Restoration Efforts

The Department thinks that the mix of uses in such a remote area will be well-appreciated by the Upcountry area residents. For preparation of the Draft EA, we offer the following comments:

1) Please consider that in the Upcountry area, water availability is a major concern. We are uncertain about the water source for the proposed uses; however, we would like to note that Ordinance 5313 was passed, effective December 10, 2021, that exempts DHHL development from Maui County

Code, Chapter 14.12 on Water Availability. Exemptions for industrial, business, hotel and resort or other commercial use projects intended to generate revenue requires Council review. We recommend that you consult with the Department of Water Supply to verify their requirements for the proposed uses.

2) The subject parcels are in the State Agricultural District and are zoned Agricultural District. While these entitlements allow some of the proposed uses, such as the Native Food and Medicinal Plant Gardens and Native Forest Restoration, other uses will require charges to State and County land use designations.

We look forward to reviewing the Draft EA. Should you require further clarification, please contact Staff Planner Tara Furukawa by email at tara.furukawa@mauicounty.gov or by phone at (808) 270-8205.

Sincerely,

MICHELE MCLEAN, AICP
Planning Director

Copy to: Clayton I. Yoshida, Planning Program Administrator (PDF)
Jacky Takakura, Acting Planning Program Administrator (PDF)
Pam Eaton, Planning Program Administrator (PDF)
Kathleen Aoki, Planning Program Manager (PDF)
Paul Fasi, Staff Planner (PDF)
Tara K. Furukawa, Staff Planner (PDF)
Project File

MCM:TKF:rma
K:\WP_DOCS\Planning\RFC\2021\0205_DHHLKeokeaFarmLotsInquiry\Pre-ConsultationComments.doc

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Ms. Michele McLean, AICP
Director
Department of Planning
County of Maui
One Main Plaza
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

Attn: Tara Furukawa

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Ms. McLean,

Thank you for your letter dated January 19, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we are providing the following responses to your comments:

1. The Keokea Farmers Association and DHHL will coordinate with the County DWS on water supply and availability now that Ordinance 5313 was passed by the Council that exempts DHHL projects.

2. In response to your Department's comments that the non-agricultural uses will require changes to State and County land use designations, we understood that DHHL is exempt from various land use controls for lands developed for homesteading purposes and that the Hawaiian Homes Commission Act (Sections 204 and 206) vests DHHL with exclusive authority to control its lands. However, DHHL does consider conformance with land use controls (regardless of being exempt) to facilitate interagency coordination and planning. This will be mentioned in the Draft EA.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

MICHAEL P. VICTORINO
MAYOR

OUR REFERENCE

YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

55 MAHALANI STREET
WAILUKU, HAWAII 96793
(808) 244-6400
FAX (808) 244-6411

JOHN PELLETIER
CHIEF OF POLICE

CHARLES L. HANK III
DEPUTY CHIEF OF POLICE

January 19, 2022

Mr. Vincent Shigekuni
Senior Vice-President
PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Re: Pre-Assessment Consultation for a HRS Chapter 343 Environmental Assessment for the DHHL Keokea Homestead Farm Lots Association Master Plan in Keokea, Kula District, Island and County of Maui TMK: (2) 2-2-032:067 & :068

Dear Mr. Shigekuni:

This is in response to your letter dated December 21, 2021 requesting comments on the proposed new master plan that includes a Cultural Education Center, Native Food and Medicinal Plant Gardens, Child and Senior Care Complex, Multi-purpose Community Center Complex, Amphitheater, local small business and food venue, and native forest restoration efforts.

In review of the submitted documents, we have no objection to the upcoming construction project if it meets the minimal standards set forth by county codes and state laws. If the roads will be temporarily closed due to alternating traffic, we recommend utilizing flag men to conduct traffic control and have proper signage posted along the routes during construction. We also recommend steps be taken to control noise levels, dust, and run off to minimize the inconvenience to neighboring residences and businesses.

Thank you for giving us the opportunity to comment on this project.

Sincerely,

Assistant Chief Clyde Holokai
for: JOHN PELLETIER
Chief of Police

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. John Pelletier
Chief of Police
Police Department
County of Maui
55 Mahalani Street, Suite 315
Wailuku, Hawai'i 96793

Attn: Assistant Chief Clyde Holokai

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Chief Pelletier,

Thank you for your letter dated January 19, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we are providing the following responses to your comments:

1. We acknowledge that your Department has no objection to the proposed Project if it meets the minimal standards set forth by County codes and State laws.
2. We will notify the Applicant, the Keokea Homestead Farm Lots Association, that if the roads will be temporarily closed due to alternating traffic, flag men be utilized to conduct traffic control and proper signage be posted along the routes during construction.
3. To address the potential for construction noise, dust and runoff (and the potential for complaints to the Police Department), these issues will be addressed in the Draft EA

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

January 25, 2022

PBR Hawaii & Associates, Inc.
Attn: Vincent Shigekuni, Senior Vice-President
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813-3484

Subject: Department of Hawaiian Homelands (DHHL) Keokea Homestead Farm Lots Association (KHFLA)
Pre-Assessment Consultation
Kula Highway and Ka'amana Street
Keokea, Maui, Hawaii
Tax Map Key: (2) 2-2-032:067 and 068

Dear Mr. Shigekuni,

Thank you for allowing us to comment on the subject project.

In reviewing our records and the information received, Hawaiian Electric Company has no objection to the project at this time. However, we highly encourage the customer's electrical consultant to submit the electrical demand requirements and project time schedule as soon as practical so that any service upgrade or new service can be provided on a timely basis.

Should you have any other questions or concerns, please feel free to contact me at ray.okazaki@hawaiianelectric.com (as we continue to work remotely) or leave a message at 808-871-2340 (office).

Sincerely,

Ray Okazaki
Engineer II, Engineering
Hawaiian Electric Company – Maui County

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Mr. Ray Okazaki
Engineer II, Engineering
Hawaiian Electric Company - Maui County
PO Box 398
Kahului, Hawai‘i 96733-6898

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Okazaki,

Thank you for your letter dated January 25, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge that Hawaiian Electric Company has no objection to the project at this time. As noted, we will let the Applicant know that their electrical consultant should submit the electrical demand requirements and project time schedule as soon as practical so that any service upgrade or new service can be provided on a timely basis.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

Vincent Shigekuni

From: Blossom Feiteira <blossom96708@yahoo.com>
Sent: Tuesday, January 4, 2022 3:04 PM
To: Vincent Shigekuni
Cc: Robin Newhouse
Subject: Keokea Master Plan

Aloha Mr. Shigekuni;

I apologize for the inconvenience regarding the returned mail. The Department of Hawaiian Homelands has my current address on file; not sure why they were not able to forward that to you.

For your records, my new address is:

Blossom Feiteira
P.O. Box 2963
Wailuku, Hawaii. 96793
Phone: 808-446-5572

As for comments relating to the Keokea Master Plan:

As a long time supporter of the Keokea Homestead community, I am so happy to see that their vision for their community is finally gaining ground!! I believe that the plan they have envisioned will provide the much needed economic engine for this community to succeed in their endeavors.

The work that will take place as the plan moves forward will certainly inform us of what may be needed in terms of what may be necessary to amend, and I look forward to having that conversation as the process moves forward.

Please keep me in kind for future activities.

Aloha,

Blossom Feiteira

Sent from my iPhone

PBR HAWAII
& ASSOCIATES, INC.

R. STAN DUNCAN, ASLA
President / Chairman

RUSSELL Y. J. CHUNG, FASLA, LEED® AP BD+C
Executive Vice-President / Principal

VINCENT SHIGEKUNI
Senior Vice-President / Principal

GRANT T. MURAKAMI, AICP, LEED® AP BD+C
Senior Vice-President / Principal

KIMI MIKAMI YUEN, LEED® AP BD+C
Vice-President / Principal

TOM SCHNELL, AICP
Principal

CATIE CULLISON, AICP
Principal

THOMAS S. WITTEN, FASLA
Chairman Emeritus

W. FRANK BRANDT, FASLA
Founding Partner

RAYMOND T. HIGA, ASLA
Associate Principal

MARC SHIMATSU, ASLA
Associate Principal

DACHENG DONG, LEED® AP
Associate Principal

ANN MIKIKO BOUSLOG, PhD
Project Director

RAMSAY R. M. TAUM
Cultural Sustainability Planner

MICAH McMILLEN, ASLA, LEED® AP
Senior Associate

NATHALIE RAZO
Senior Associate

GRACE ZHENG, ASLA, LEED® GA, SITES® AP
Senior Associate

ETSUYO KILA
Associate

GREG NAKAI
Associate

NICOLE SWANSON, ASLA
Associate

1001 Bishop Street, Suite 650
Honolulu, Hawai'i 96813-3484
Tel: (808) 521-5631
Fax: (808) 523-1402
E-mail: sysadmin@pbrhawaii.com

printed on recycled paper

April 18, 2022

Ms. Blossom Feiteira
P.O. Box 2963
Wailuku, Hawai'i 96793

SUBJECT: PRE-ASSESSMENT CONSULTATION FOR A HRS CHAPTER 343 ENVIRONMENTAL ASSESSMENT FOR THE DHHL KĒŌKEA HOMESTEAD FARM LOTS ASSOCIATION MASTER PLAN IN KĒŌKEA, KULA DISTRICT, ISLAND AND COUNTY OF MAUI, TMKS (2) 2-2-032:067 AND :068

Dear Ms. Feiteira,

Thank you for your email dated January 4, 2022, regarding the subject project. As the planning consultant for the Applicant, the Department of Hawaiian Home Lands (DHHL), we acknowledge your supportive comments.

We value your participation in the environmental review process. Your letter will be reproduced in the forthcoming Draft EA.

Sincerely,

PBR HAWAII

Vincent Shigekuni
Senior Vice-President

Appendix C

SURVEY RESULTS

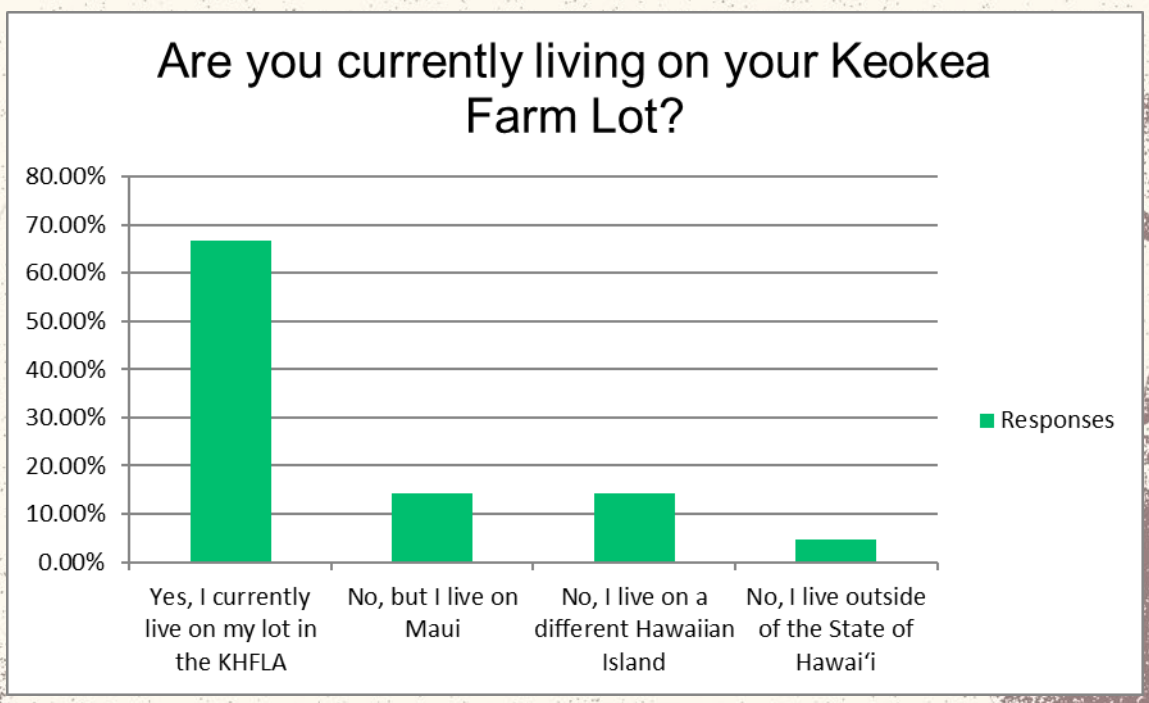
DHHL Kēōkea Master Plan Update Survey Results Report

DECEMBER 2020 - JANUARY 2021

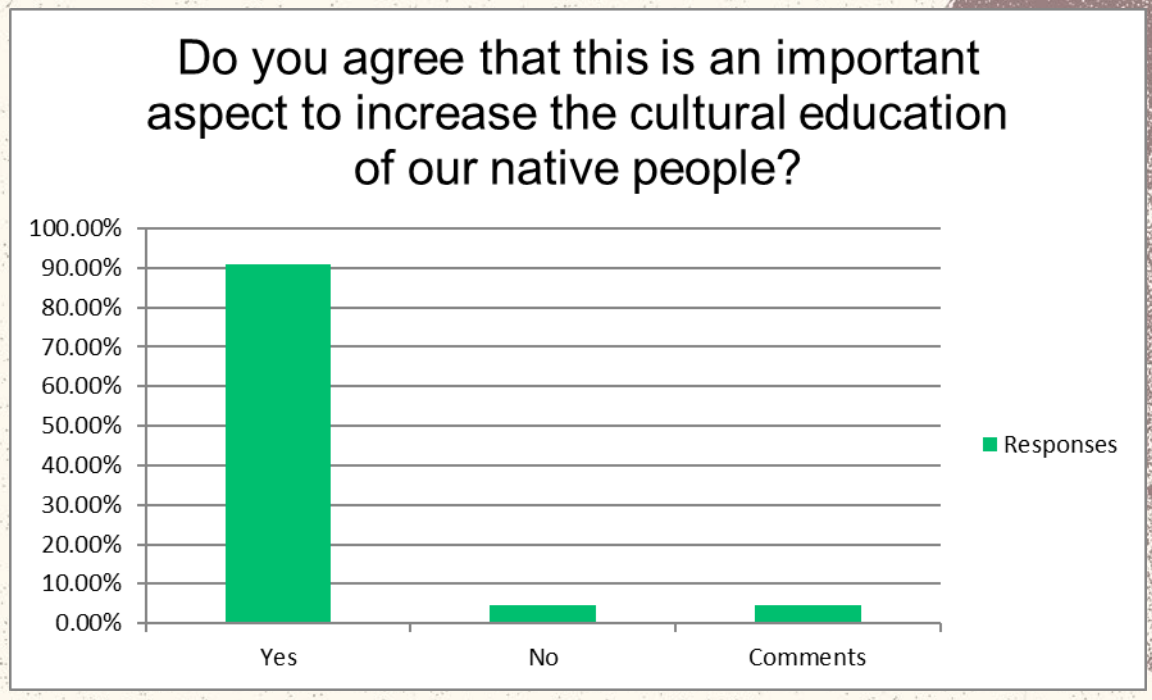
DHHL Kēōkea Master Plan Update Survey Results Report

December 2020 – January 2021

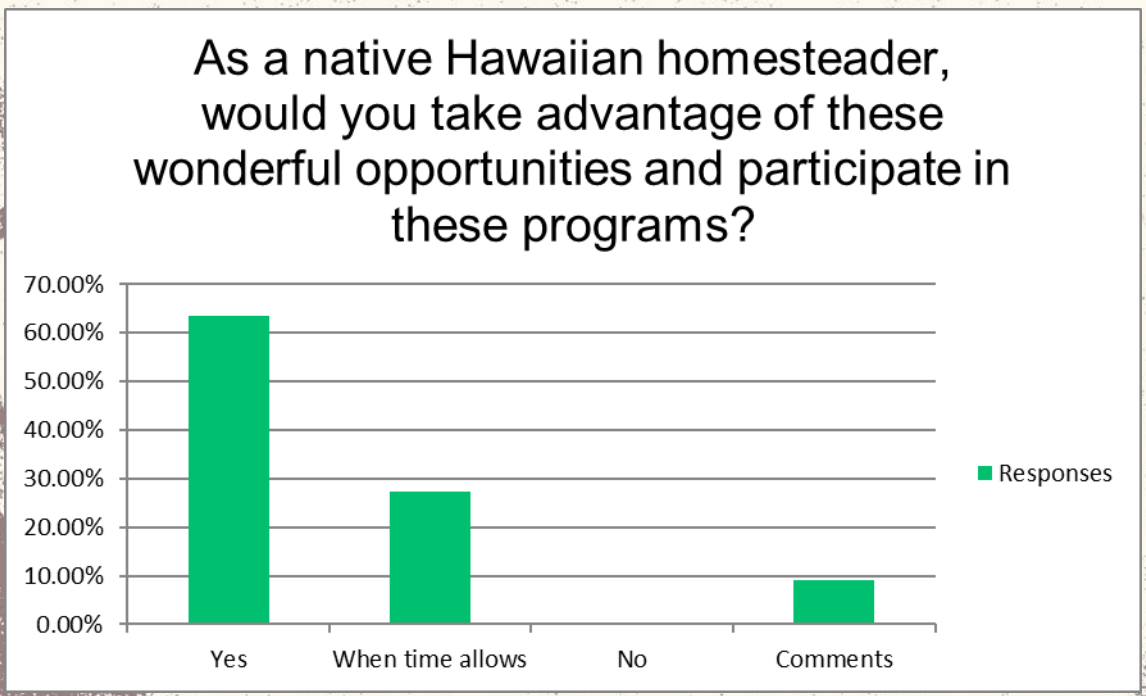
Question 1



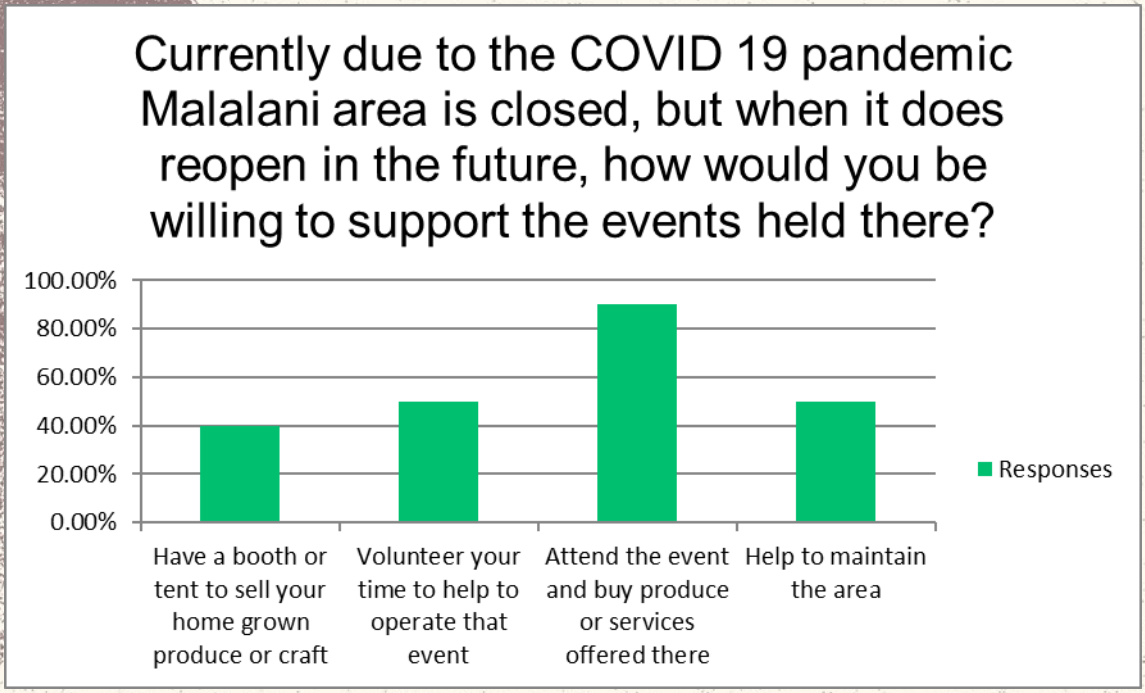
Question 2



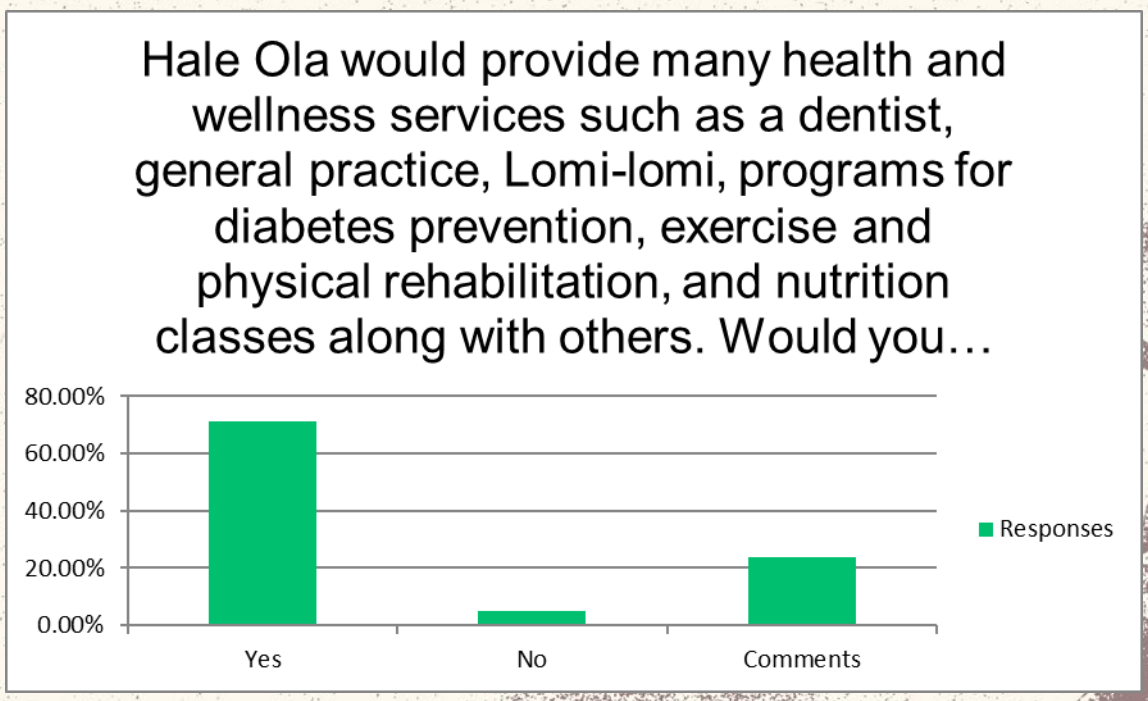
Question 3



Question 4



Question 5

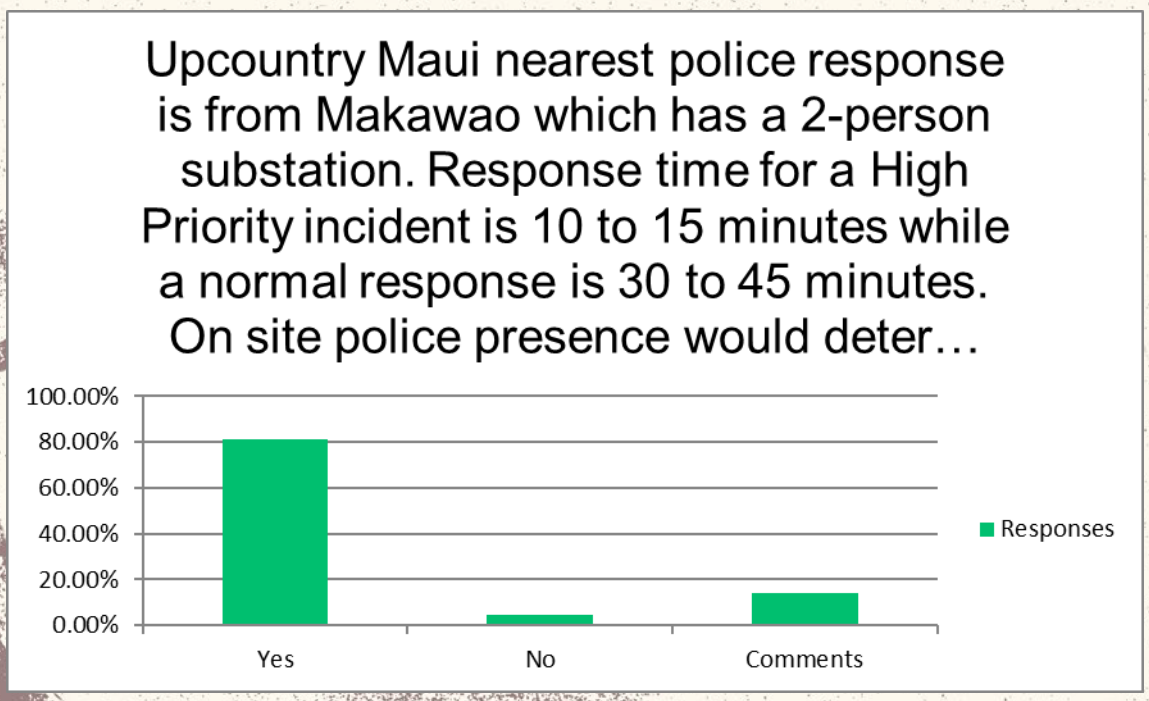


Question 6

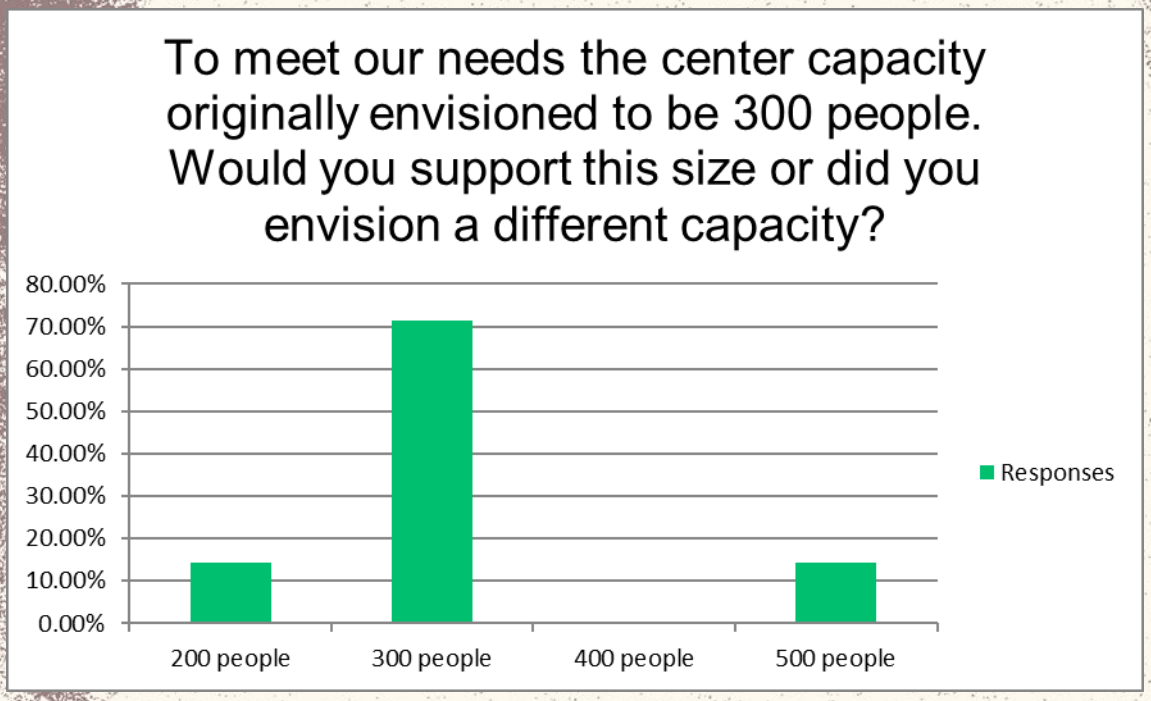
What health programs would you most like to have provided?	
Answered	13
Skipped	9

What health programs would you most like to have provided?
Open-Ended Response
HMA (9)
Cultural classes (1)
Wellness services (2)
native Hawaiian healthy foods (3)
Hospice care (9)
Health, wellness, services & program (2)
Blood pressure, free COVID test (2)
Health & Fitness Exercise Programs (2,4)
nutrition, exercise. (3,4)
Dentist (5)
Wellness programs (2)
health education and wellness programs (2)
Dental, vision and urgent care (5, 9)
Health, wellness, exercise programs and services (2, 4)

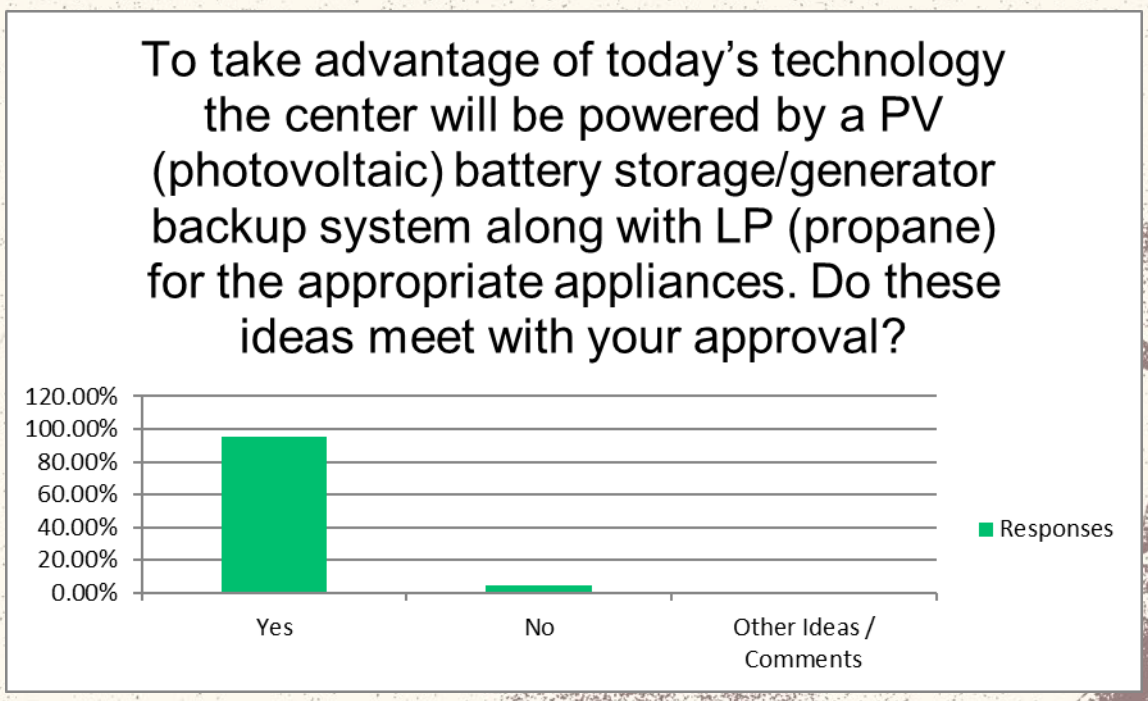
Question 7



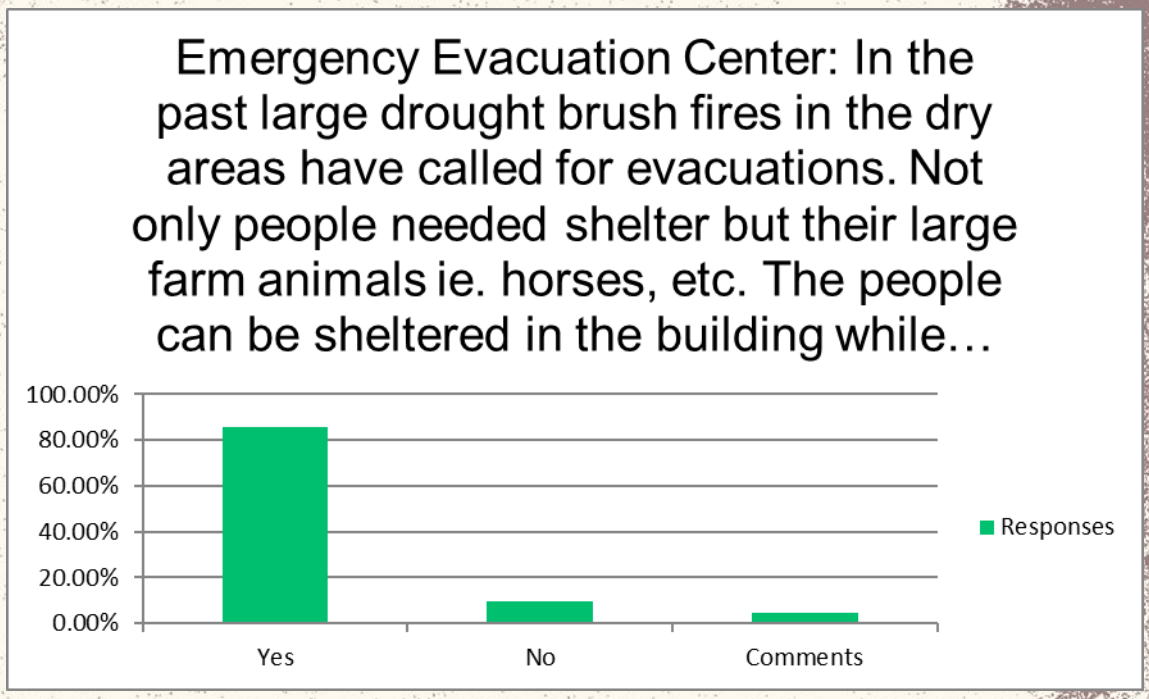
Question 8



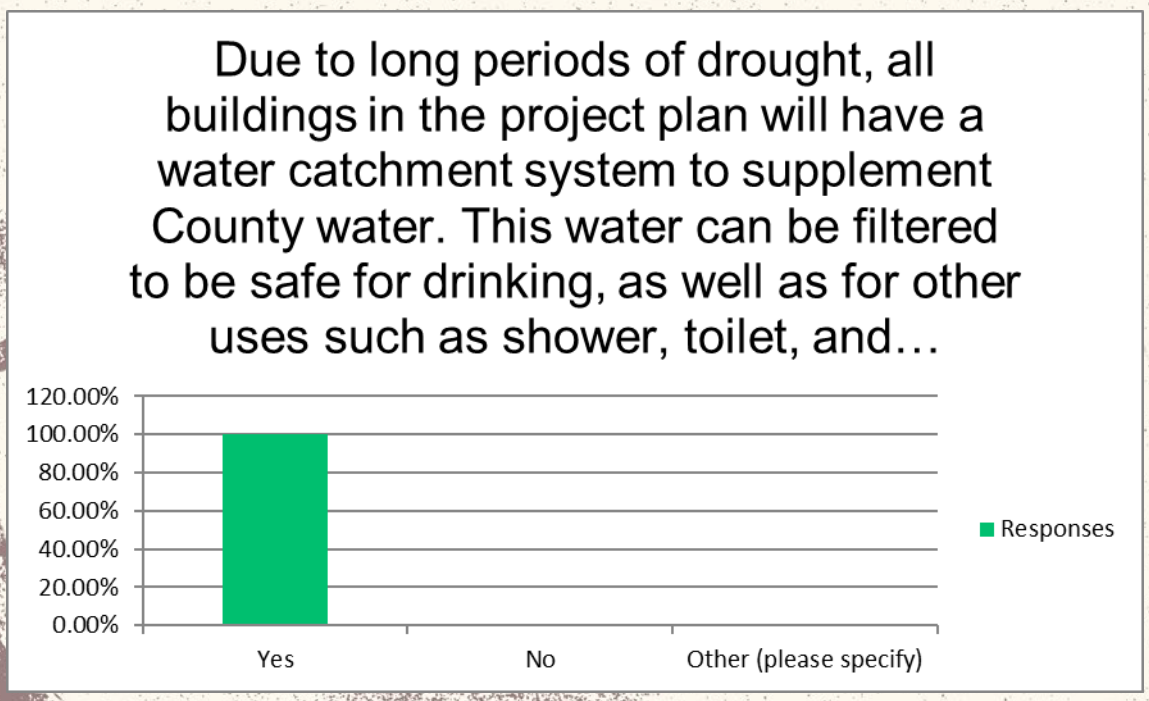
Question 9



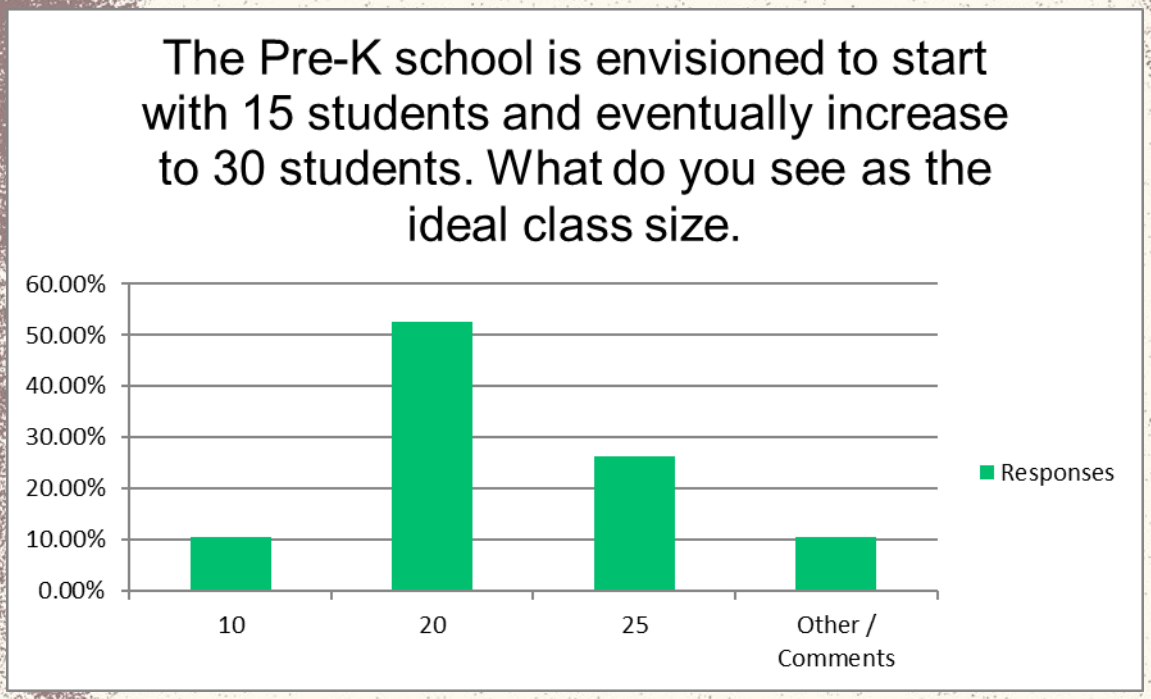
Question 10



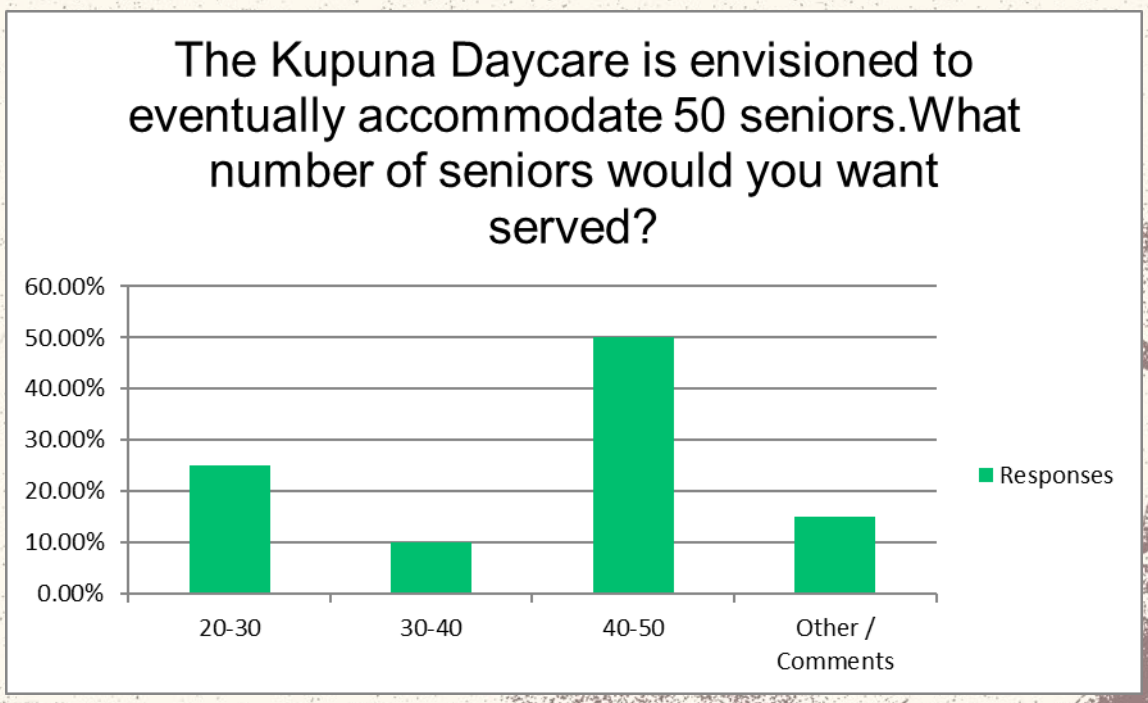
Question 11



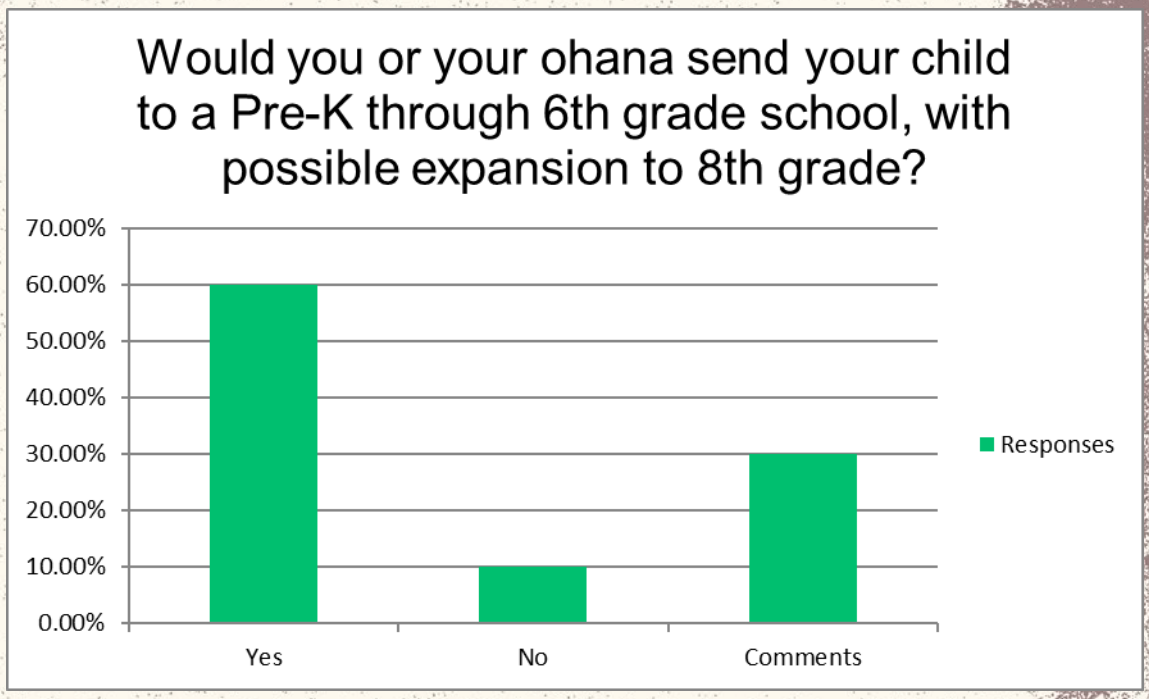
Question 12



Question 13



Question 14



Appendix C-1

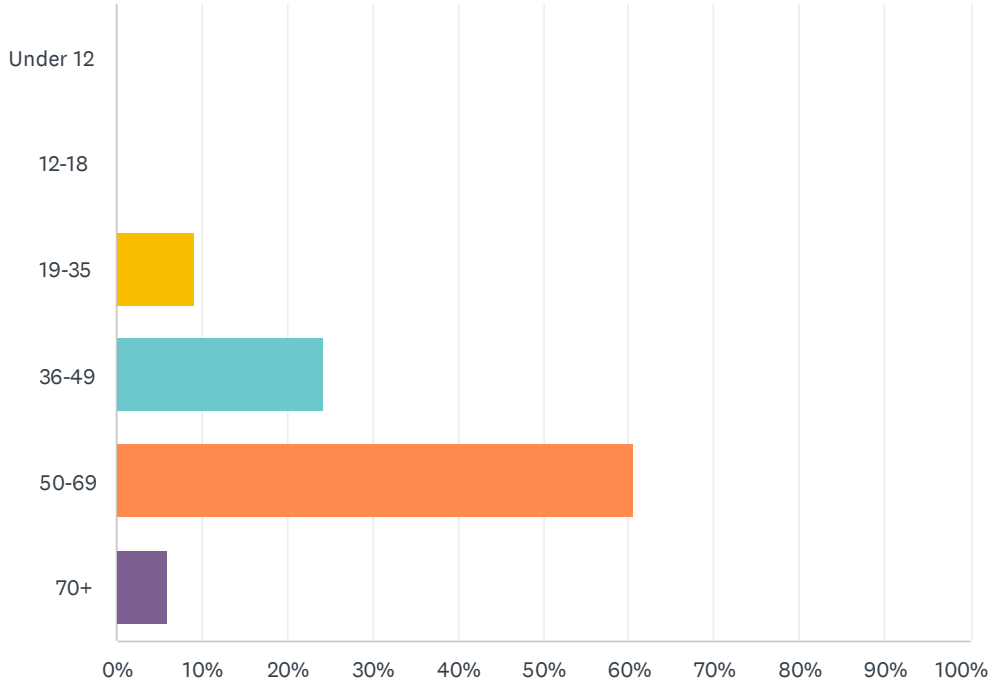
STORYMAP SURVEY RESULTS

2022 Proposed Kēōkea Homestead Farm Lots Association Master Plan Survey Results Report

MARCH 2022

Q1 Please select your age:

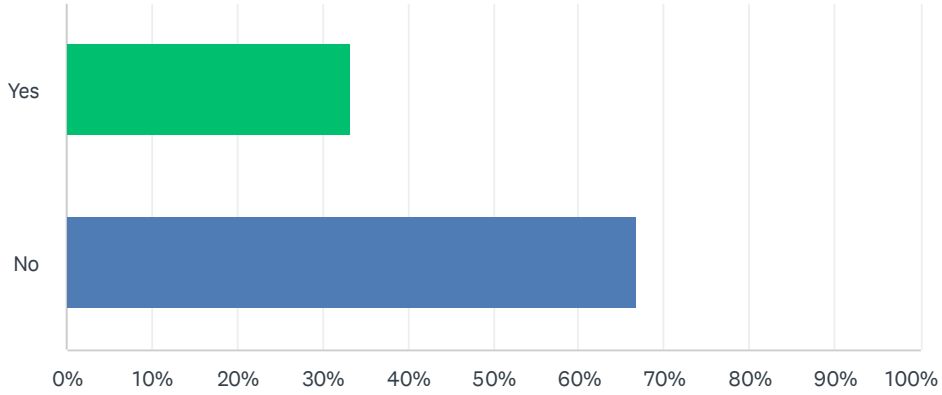
Answered: 33 Skipped: 0



ANSWER CHOICES	RESPONSES	
Under 12	0.00%	0
12-18	0.00%	0
19-35	9.09%	3
36-49	24.24%	8
50-69	60.61%	20
70+	6.06%	2
TOTAL		33

Q2 Do you currently live in Kēōkea?

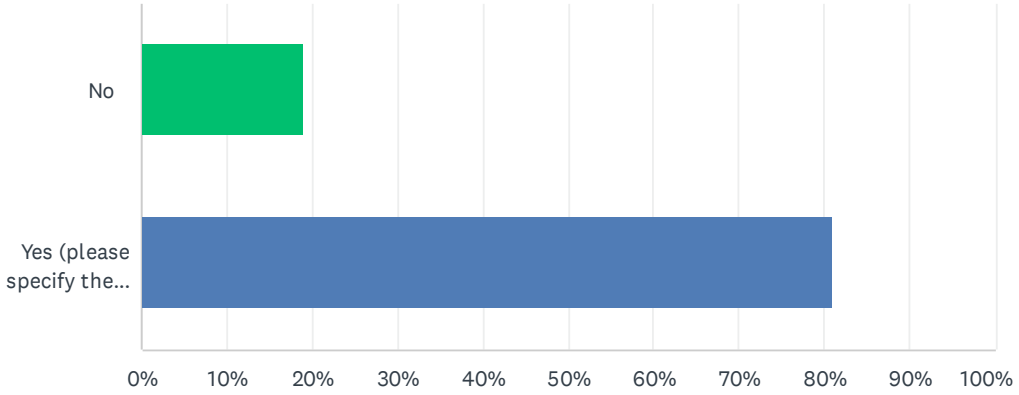
Answered: 33 Skipped: 0



ANSWER CHOICES	RESPONSES	
Yes	33.33%	11
No	66.67%	22
TOTAL		33

Q3 If not, do you live elsewhere on Maui?

Answered: 21 Skipped: 12



ANSWER CHOICES	RESPONSES	
No	19.05%	4
Yes (please specify the town or area on Maui)	80.95%	17
TOTAL		21

#	YES (PLEASE SPECIFY THE TOWN OR AREA ON MAUI)	DATE
1	Waiehu Kou4, Wailuku DHHL	3/14/2022 2:30 PM
2	wailuku	3/12/2022 3:48 PM
3	Kihei	3/12/2022 7:05 AM
4	Haiku	3/11/2022 10:18 PM
5	Waiohuli	3/11/2022 1:04 PM
6	Ha'iku	3/10/2022 6:19 PM
7	Wailuku	3/10/2022 3:06 PM
8	Waiohuli Homestead	3/8/2022 11:17 AM
9	Waiohuli	3/8/2022 9:01 AM
10	Makawao	3/7/2022 7:14 PM
11	waiehu	3/7/2022 3:21 PM
12	Waiehu and Waiohuli	3/7/2022 1:54 PM
13	Waiohuli	3/7/2022 9:52 AM
14	None	3/7/2022 8:12 AM
15	kahului	3/6/2022 7:42 PM
16	Makawao	3/5/2022 8:47 PM
17	Wailuku	3/5/2022 8:13 PM

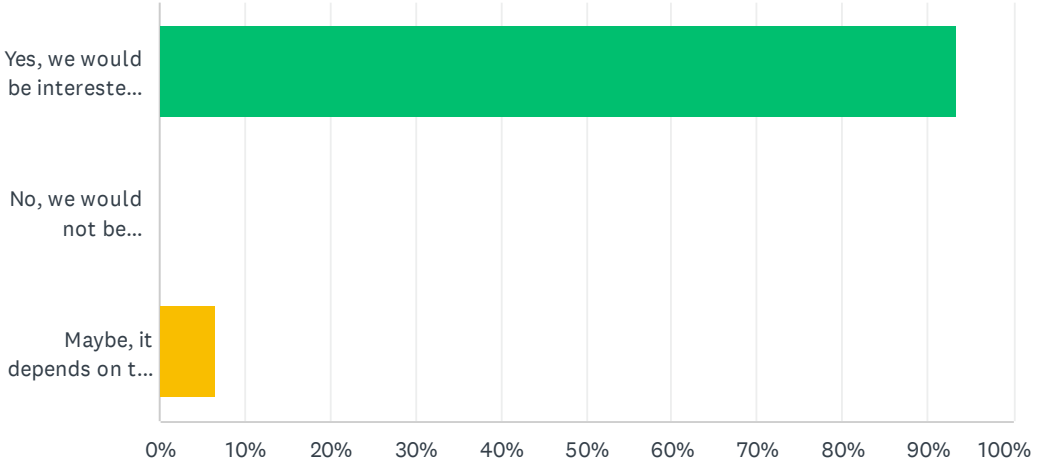
Q4 If you don't live on Maui, where do you live now?

Answered: 4 Skipped: 29

#	RESPONSES	DATE
1	Waimānalo	3/6/2022 8:53 PM
2	Waimanalo	3/6/2022 6:10 PM
3	Oakland, California	3/6/2022 1:09 PM
4	Kaneohe	2/28/2022 12:58 PM

Q5 In our Health Center we will have potential services such as, Dialysis Center, Dental, General medical services, diet & exercise , native Hawaiian health practices (Lomi-lomi, la'au lapa'au, Ho'oponopono) etc. Would you or anyone in your household make use of these services?

Answered: 30 Skipped: 3

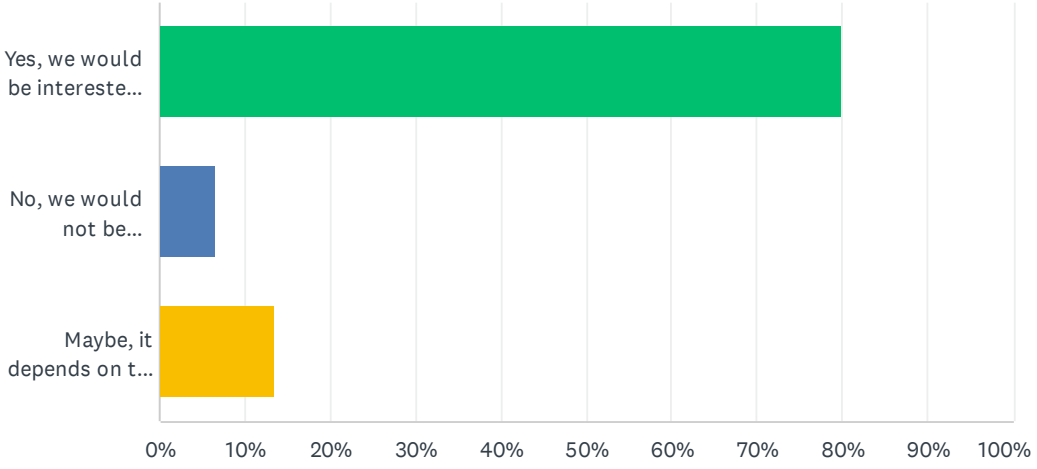


ANSWER CHOICES	RESPONSES	
Yes, we would be interested in these services	93.33%	28
No, we would not be interested in these services	0.00%	0
Maybe, it depends on the following:	6.67%	2
TOTAL		30

#	MAYBE, IT DEPENDS ON THE FOLLOWING:	DATE
1	No immediate need, however, depends on health status as stime progresses.	3/8/2022 11:26 AM
2	Cost at these facilities, as our coverage plans are at a specific company only	3/7/2022 11:29 AM

Q6 We are currently in discussions with Maui Adult Care for their partnership in providing services for Kupuna Day care for the community. Would you or anyone in your household make use of this service now or in the future?

Answered: 30 Skipped: 3

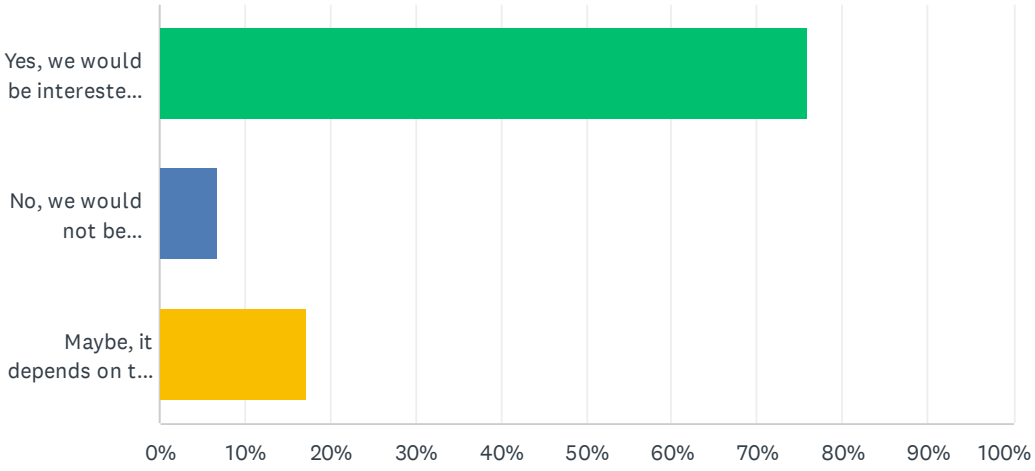


ANSWER CHOICES	RESPONSES	
Yes, we would be interested in this service	80.00%	24
No, we would not be interested in this service	6.67%	2
Maybe, it depends on the following:	13.33%	4
TOTAL		30

#	MAYBE, IT DEPENDS ON THE FOLLOWING:	DATE
1	Maybe when my parents become Kupuna	3/7/2022 2:02 PM
2	If we, as kupuna, would require daycare at some point in our lives	3/7/2022 11:29 AM
3	If I am on Maui when this happens	3/6/2022 6:12 PM
4	Kinds of care and cost	3/5/2022 8:17 PM

Q7 In this vision plan there is a Pre K school planned for potential Hawaiian immersion. Would you or anyone in your household make use of this service?

Answered: 29 Skipped: 4

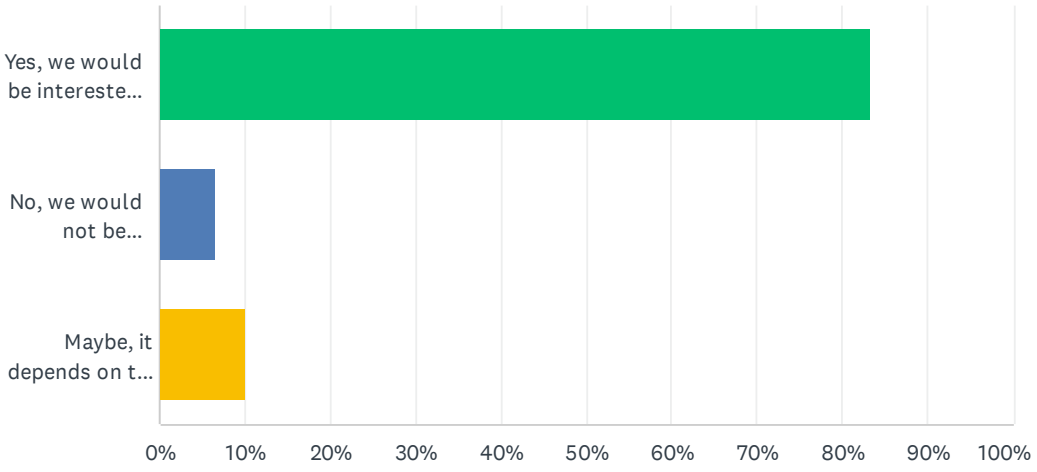


ANSWER CHOICES	RESPONSES	
Yes, we would be interested in this service	75.86%	22
No, we would not be interested in this service	6.90%	2
Maybe, it depends on the following:	17.24%	5
TOTAL		29

#	MAYBE, IT DEPENDS ON THE FOLLOWING:	DATE
1	Have no children, but would volunteer where can.	3/10/2022 2:28 PM
2	If I had young children in my family that would qualify for the program at the time it is established	3/7/2022 7:19 PM
3	Depends if I have more mo'opuna born	3/7/2022 3:58 PM
4	Grandchildren	3/6/2022 10:03 AM
5	Moopuna	3/5/2022 8:17 PM

Q8 With the growing community there is always a need for schools for our keiki. The plan calls for a K-6 to later expand to 7-8 school. This school could possible be a charter school focused on learning all the basics but with an Hawaiian value prospective of hands on , outdoor learning. Would you or anyone in your household make use of this service?

Answered: 30 Skipped: 3

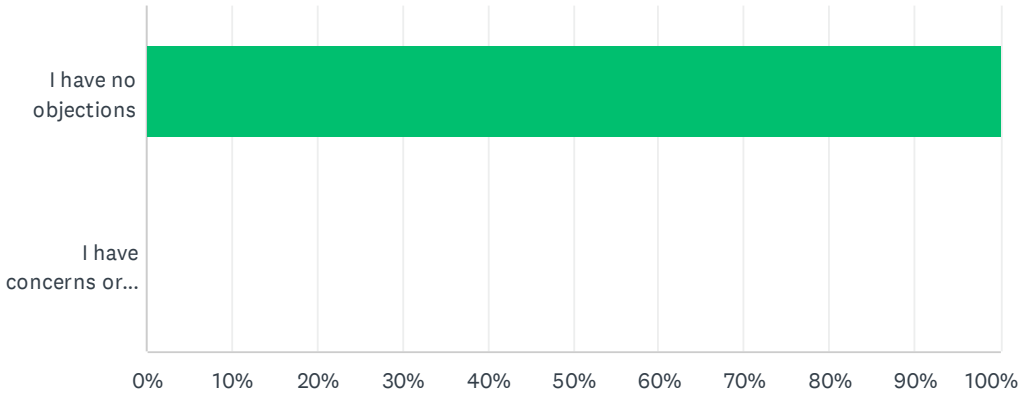


ANSWER CHOICES	RESPONSES	
Yes, we would be interested in this service	83.33%	25
No, we would not be interested in this service	6.67%	2
Maybe, it depends on the following:	10.00%	3
TOTAL		30

#	MAYBE, IT DEPENDS ON THE FOLLOWING:	DATE
1	no children, but I support for the schools for benefit of others.	3/10/2022 2:28 PM
2	Plan already has hopes for an ‘oleo school. TWO schools?? A’ole. Pick ONE	3/7/2022 11:29 AM
3	Our kids ages when built or moopuna	3/5/2022 8:17 PM

Q9 The Multi-Purpose Community Center and adjoining Amphitheater are to be used to hold events for the benefit of the Keokea Homestead Farm Lots Association. These events will only be scheduled on weekends, not to last longer than 10 pm and have appropriate security and traffic controls in place. Would you have any objections to that?

Answered: 29 Skipped: 4

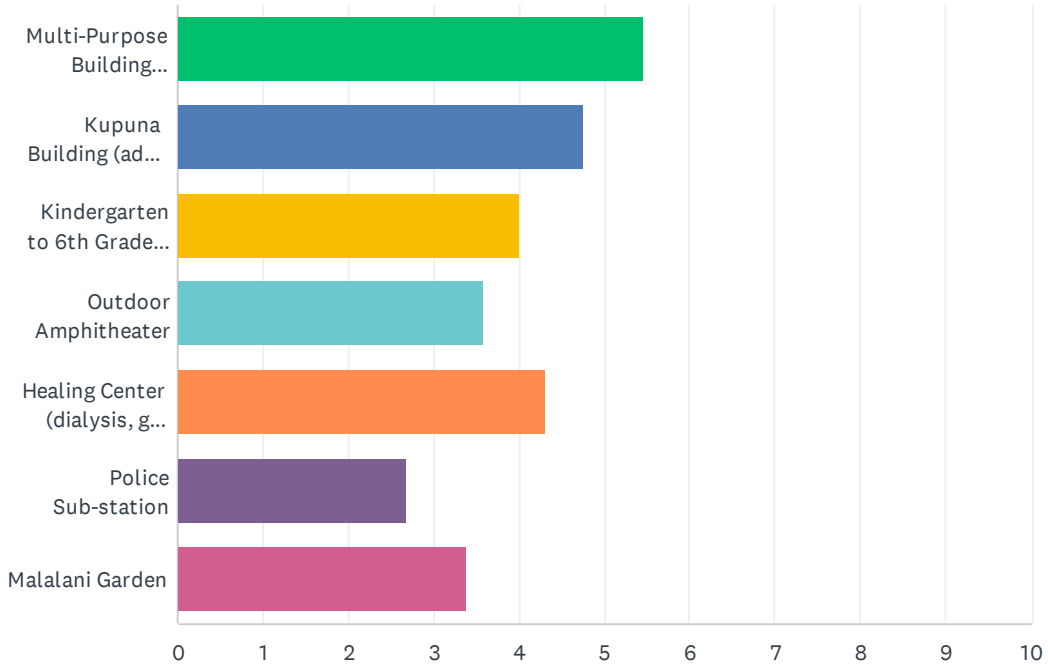


ANSWER CHOICES	RESPONSES	
I have no objections	100.00%	29
I have concerns or other comments, including:	0.00%	0
TOTAL		29

#	I HAVE CONCERNS OR OTHER COMMENTS, INCLUDING:	DATE
	There are no responses.	

Q10 Which of the following elements of the Vision Plan do you think should be funded first (by public or private sources) ? (Please rank topics from first to last.)

Answered: 30 Skipped: 3



	1	2	3	4	5	6	7	TOTAL	SCORE
Multi-Purpose Building (gatherings such as hula practice, weddings, birthday parties, meetings, etc.)	31.03% 9	20.69% 6	31.03% 9	6.90% 2	3.45% 1	3.45% 1	3.45% 1	29	5.45
Kupuna Building (adult day-care, etc.)	17.24% 5	20.69% 6	6.90% 2	34.48% 10	17.24% 5	3.45% 1	0.00% 0	29	4.76
Kindergarten to 6th Grade School	6.90% 2	13.79% 4	27.59% 8	6.90% 2	20.69% 6	17.24% 5	6.90% 2	29	4.00
Outdoor Amphitheater	10.34% 3	13.79% 4	6.90% 2	13.79% 4	24.14% 7	10.34% 3	20.69% 6	29	3.59
Healing Center (dialysis, gym, etc.)	13.33% 4	13.33% 4	16.67% 5	20.00% 6	23.33% 7	10.00% 3	3.33% 1	30	4.30
Police Sub-station	10.34% 3	6.90% 2	3.45% 1	6.90% 2	6.90% 2	24.14% 7	41.38% 12	29	2.69
Malalani Garden	14.29% 4	10.71% 3	7.14% 2	10.71% 3	3.57% 1	32.14% 9	21.43% 6	28	3.39

Q11 Do you have any other comments on the Kēōkea Vision Plan?

Answered: 23 Skipped: 10

#	RESPONSES	DATE
1	Please Help in any way to bring this plan into reality, Malama na poe 'O Kanaka Maoli, Kupuna, Makua, Opio, keiki, pepe..... Ke AKUA Ka Mua!!! Aloha!!	3/14/2022 3:03 PM
2	We really really need this for keokea.	3/14/2022 1:56 PM
3	Yes. I believe this is a great vision plan. But, In the meantime we should make use of the garden area next to grandmas coffee. Such as food venues and markets. Also the field area next to mailbox should also do more concerts and ho'olauleas. Covid restrictions are almost over and we would just be wasting opportunities for our community members if not used. Mahalo	3/13/2022 8:04 PM
4	Excited that this is taking place	3/12/2022 7:08 AM
5	Sounds like great plan!	3/11/2022 10:20 PM
6	I wanted to congratulate just the idea of having a plan like this for the betterment of the community. E'o	3/11/2022 1:07 PM
7	What a great vision. If you are serious about the Health Care Center - Look into the HRSA grant.	3/10/2022 6:22 PM
8	Terrific job by the Akanas to articulate this plan. An awesome vision for our future.. I feel so fortunate to be a part of this community.	3/10/2022 2:28 PM
9	this is a good beginning.	3/8/2022 11:26 AM
10	Mahalo for all of the hard work! I would like to see a flow of income of revenues to help finance operating expenses while grants etc will provide for the larger projects. Again Mahalo for all of the energy and foresight!	3/7/2022 3:58 PM
11	build hale for people	3/7/2022 3:22 PM
12	My mana'o as being in the construction industry would to build the ourdoor amphitheater or multi purpose building first to begin generating revenue for the future projects. The school should come shortly after, there are a lot of ohana's moving to waiohuli/keokea which we could all benefit from. Then the kupuna building and healing center. The police station should be last, because there is a sub station at Kulamalu complex. Mahalo	3/7/2022 2:02 PM
13	Instead of a plan for 2 schools, would love to see an Alu Like site for kupuna to gather, talk story, learn Hawaiian crafts, take classes ('Olelo, gardening, cooking, ukulele & poi board making, etc.) Waimanalo has one in their homestead and it's wonderful. Keeps community kupuna engaged, while still keeping minds sharp and spirits up. Never to old to learn!	3/7/2022 11:29 AM
14	This is an excellent plan and me and my `ohana are in full support of it. Mahalo nui!	3/7/2022 9:56 AM
15	Having commercial space available for (grocery store, gas station, laundromat). This would be very convenient for beneficiaries and the community-at-large.	3/7/2022 1:28 AM
16	I love the plan and would love to see some of these ares to be considered in Waimānalo!!	3/6/2022 8:56 PM
17	I would like to have data on the potential growth expected in the Keokea farm lots. How many more leases does the DHHL intend on issuing? How many more students are we expecting to reside in the homesteads? Will a Pre-K /6 with an additional 2 grade levels be sufficient? As opposed to developer more, can the homestead partner with existing services in the immediate Keokea area? If a lessee seeks to expand will land be available for such?	3/6/2022 7:53 PM
18	Make it happen Gang. ALOHA!	3/6/2022 6:12 PM
19	While I currently live in California, my home is Honolulu. My mom currently lives in Honolulu and will be transitioning to Maui Hawaiian Homes in the next few years and has been approved	3/6/2022 1:13 PM

	to pick a lot. Eventually, I anticipate moving back to Hawaii and possibly Maui to be closer to family.	
20	Wonderful plan that would serve the needs of the Hawaiian community now and in the future.	3/6/2022 1:01 PM
21	This is a detailed community plan that has a lot thought taken into account. This plan will be of a monumental task that will probably take 10-15 years, perhaps 20 years to raise the finances/monies. There should be a Finance + Fundraising Committee to support these infrastructures & buildings. Also, along with the Police Sub-station, there should be an Attorney's Office.	3/6/2022 10:03 AM
22	This is an excellent vision. I hope we can protect and preserve the iwi kupuna, the archeological remnants and cultural sites in honor of our kupuna and for the education and practices for future generations. Mahalo.	3/6/2022 9:51 AM
23	This is ambitious and very interesting. I am a La’au lapa’au & Ho’oponopono Practitioner	3/5/2022 8:57 PM

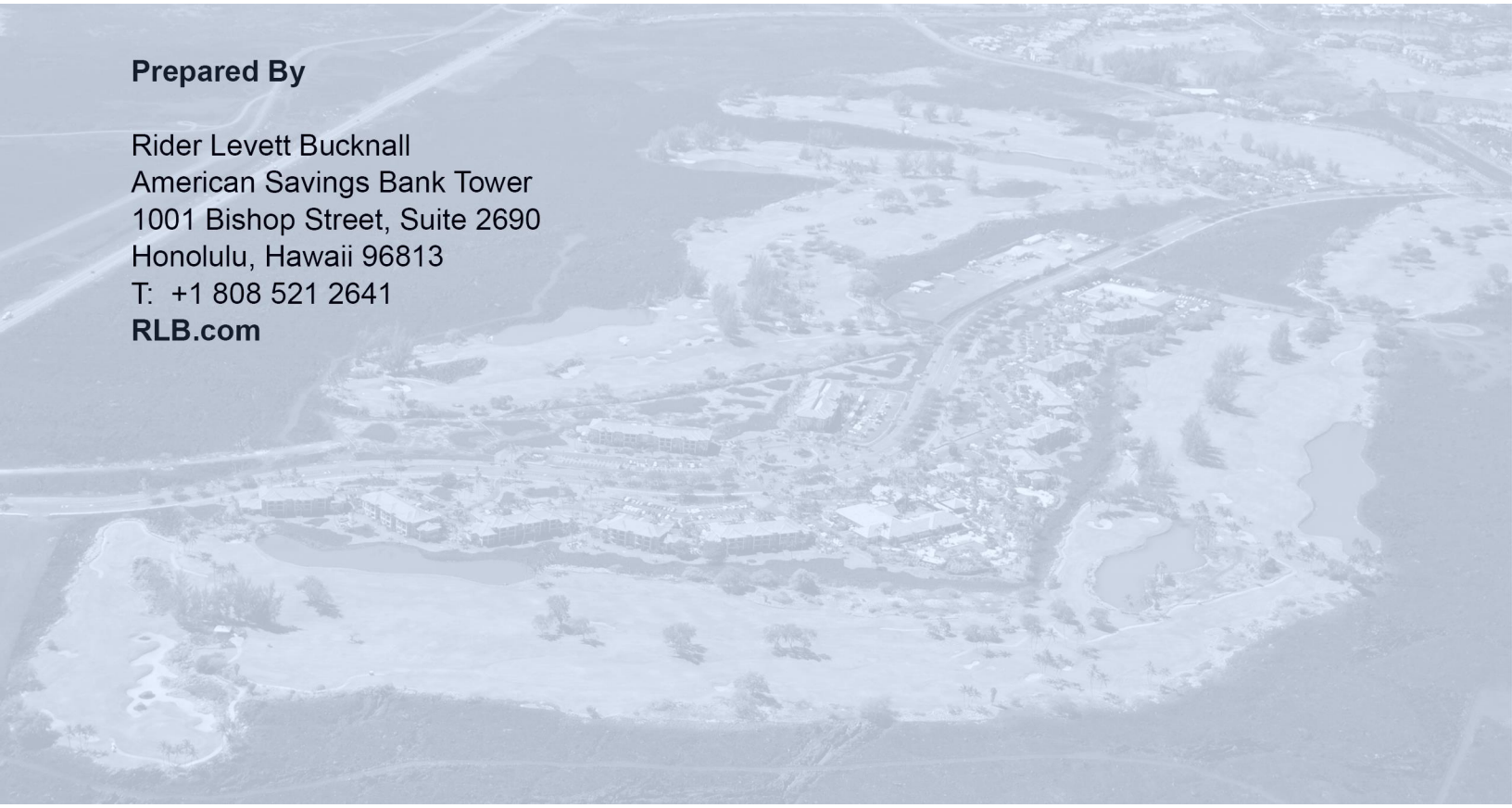
Appendix D

ROM COST ESTIMATE

MASTERPLAN ROM ESTIMATE (NO ESCALATION) October 2021

DHHL KEOKEA

MAUI, HAWAII
PBR HAWAII



Prepared By

Rider Levett Bucknall
American Savings Bank Tower
1001 Bishop Street, Suite 2690
Honolulu, Hawaii 96813
T: +1 808 521 2641
RLB.com

RLB Rider Levett Bucknall

DHHL KEOKEA

MASTERPLAN ROM ESTIMATE (NO ESCALATION)

PROJECT DETAILS

Basis of estimate

This report has been prepared at the request of PBR Hawaii and is to provide a ROM cost estimate for the proposed masterplan improvements at Kula, Upcountry Maui, Hawaii.

The project includes

- Kupuna daycare; Hawaiian language immersion school (Pre-K)
- Multipurpose Hale with commercial kitchen; Outdoor amphitheater
- Native healing/health center (build-out) with medical offices and police sub-station
- Outdoor native plant garden area; Food truck area
- Hawaiian language immersion school (K-6)

The estimate is based upon advised quantities and benchmarked rates prepared from the following documents:

- Drawings DHHL Keokea Site Analysis, draft conceptual master plan provided by PBR Hawaii, received 10/21/2021
- Market and bus plan 2021-0630 Concept for costing from RFP (reference only)

The building design anticipates slab on grade, wood frame construction and cost efficient finishes.

The following vendor quotes have been included in this estimate:

- Solar pole lighting and 3-phase power to food truck area ballpark budget pricing provided by Maui Solar Project received 29 September 2021, $1,200,000

Please note that escalation has been excluded from this estimate. Projected future annual escalation rates for Hawaii neighbour islands:

- 2022 - 6-8%
- 2023 - 8-9%
- 2024 - 10%
- 2025 - 6-8%
- 2026 - 4-6%

It is assumed that the method of procurement for the scope of work will be via a competitive bid method to at least 3-4 reputable, non-union general contractors and the prime contractor will be required to pay market wage rates.

PROJECT DETAILS

Please note that the estimate includes for those additional costs arising from the typical on-site measures implemented to curb the transmission of the COVID-19 virus (such as daily temperature checks, health questionnaires, mask wearing, provision of hand sanitizer, procedures to maintain social distancing, etc), However, the estimate does not include any allowance for future cost impacts resulting from the evolution of the pandemic, such as those that may arise from disruptions to the supply chain or that may increase the cost of labor, materials, equipment, subcontractors, general conditions, etc.

The impacts on the construction industry from COVID-19 are being monitored closely. Where possible, known impacts relevant to this project have been considered in this estimate.

Items specifically excluded

- Future / potential garden areas
- Demolition, except as specifically noted
- Contaminated ground
- Hazardous materials abatement, except as specifically noted
- Piled foundation system and other special foundation systems
- Rock excavation
- Dewatering
- Mock-ups
- Sub-station
- Main Site Utilities Diversion
- Work outside the site boundaries unless otherwise noted
- **Escalation**

- Owner Furnished Items
- Medical Equipment
- Murals and works of art
- Construction Management Fees
- Archaeological findings
- Land and Legal costs

- Items marked as “Excl” in the estimate

DHHL KEOKEA

MASTERPLAN ROM ESTIMATE (NO ESCALATION)

LOCATION SUMMARY (MARGINS & ADJUSTMENTS INCLUDED)

Rates Current At September 2021

Ref	Location	Total Cost USD
1	Kupuna and School Pre-K	8,496,000
2	Multi-purpose Hale and Amphitheater	8,026,000
3	Healing Center	8,673,000
4	Malalani Garden and Food Truck area	5,579,000
5	School K-6	10,448,000
	ESTIMATED NET COST	**41,222,000**

MARGINS & ADJUSTMENTS	
Construction Sub-total	41,222,000
ESTIMATED TOTAL COST	**41,222,000**

DHHL KEOKEA

MASTERPLAN ROM ESTIMATE (NO ESCALATION)

LOCATION SUMMARY

Rates Current At September 2021

Ref	Location	Total Cost USD
1	Kupuna and School Pre-K	4,699,500
2	Multi-purpose Hale and Amphitheater	4,088,000
3	Healing Center	4,392,000
4	Malalani Garden and Food Truck area	3,339,200
5	School K-6	5,375,400
	ESTIMATED NET COST	**21,894,100**

MARGINS & ADJUSTMENTS	
Contractor's General Conditions, Overheads, Insurances and Tax (20%)	4,381,900
Estimating and Design Contingency (15%)	3,943,000
Escalation - excluded	Excl.
Construction Sub-total	30,219,000
Architectural, engineering and other professional fees (10%)	3,024,000
Furniture, Fixtures and Equipment (allowance - 20% of Building Construction)	4,230,000
Project Contingency (10%)	3,749,000
ESTIMATED TOTAL COST	**41,222,000**

LOCATION ELEMENTS ITEM

1 Kupuna and School Pre-K

GFA: 5,500 SF Cost/SF: 854
Rates Current At September 2021

Ref	Description	Unit	Qty	Rate USD	Total Cost USD
F1020	**Building Construction**				
42	Kupuna day care facility	SF	3,500	325.00	1,137,500
43	Preschool Immersion - classrooms, restrooms, administration	SF	2,000	400.00	800,000
	Building Construction			**352/SF**	**1,937,500**
G2040	**Site Development**				
1	Clearing and light grading	SF	50,900	2.00	101,800
4	Parking on grade - preparation and gravel surface	SF	35,600	15.00	534,000
5	Premium for seal coat to gravel parking surface, incl line marking	SF	35,600	15.00	534,000
6	Connecting road from street to parking area, asphalt	SF	1,500	40.00	60,000
7	Entry drive to Kula Hwy including deceleration lane and culvert	LS	1	100,000.00	100,000
20	Sitework around building, including walkways and landscaping to 10' perimeter	SF	6,050	20.00	121,000
34	Site retaining wall, stacked rock, 2'-5' high	SF	450	200.00	90,000
24	Preschool outdoor play area	SF	2,250	100.00	225,000
26	Play equipment to school play area	EA	1	75,000.00	75,000
33	Exterior fire hydrant including pipe and connection back to water main	EA	2	40,000.00	80,000
32	Rainwater catchment tank, assume steel above ground, including pump (30,000 gal)	EA	2	50,000.00	100,000
31	Stormwater - overground - minimal scope, say retention system	LS	1	50,000.00	50,000
30	Sanitary drainage - onsite management, say septic tank system	LS	1	50,000.00	50,000
17	Solar powered light and pole	EA	12	10,000.00	120,000
15	Supplementary exterior lighting to parking areas	SF	35,600	2.00	71,200
29	Utilities connection and site distribution - water, including backflow preventer	LS	1	140,000.00	140,000
27	Utilities connection and site distribution - electrical, including overhead power line	LS	1	220,000.00	220,000
28	Utilities connection and site distribution - telcom, including conduit	LS	1	90,000.00	90,000
	Site Development			**502/SF**	**2,762,000**
	KUPUNA AND SCHOOL PRE-K			**854/SF**	**4,699,500**

LOCATION ELEMENTS ITEM

2 Multi-purpose Hale and Amphitheater

GFA: 6,500 SF Cost/SF: 629
Rates Current At September 2021

Ref	Description	Unit	Qty	Rate USD	Total Cost USD
F1020	**Building Construction**				
38	Multi-purpose Hale	SF	3,400	320.00	1,088,000
45	Commercial kitchen equipment to Hale	LS	1	100,000.00	100,000
39	Covered lanai to Hale	SF	1,600	200.00	320,000
47	Premium for solar power to Hale	SF	5,000	90.00	450,000
40	Outdoor Amphitheater - including stage, BOH, restrooms, electrical/AV (excluding equipment)	SF	1,500	450.00	675,000
41	Outdoor Amphitheater - concrete tiered ground seating for 200, including lighting	SF	3,500	100.00	350,000
46	Emergency back-up generator, allow 300 kW	LS	1	600,000.00	600,000
	Building Construction			**551/SF**	**3,583,000**
G2040	**Site Development**				
1	Clearing and light grading	SF	17,500	2.00	35,000
20	Sitework around building, including walkways and landscaping to 10' perimeter	SF	7,500	20.00	150,000
34	Site retaining wall, stacked rock, 2'-5' high	SF	400	200.00	80,000
8	Large animal kennels - fenced and covered, (10' x 15')	EA	20	5,000.00	100,000
33	Exterior fire hydrant including pipe and connection back to water main	EA	1	40,000.00	40,000
32	Rainwater catchment tank, assume steel above ground, including pump (30,000 gal)	EA	1	50,000.00	50,000
30	Sanitary drainage - onsite management, say septic tank system	LS	1	50,000.00	50,000
	Site Development			**78/SF**	**505,000**
	MULTI-PURPOSE HALE AND AMPHITHEATER			**629/SF**	**4,088,000**

DHHL KEOKEA

MASTERPLAN ROM ESTIMATE (NO ESCALATION)

LOCATION ELEMENTS ITEM

3 Healing Center

GFA: 7,000 SF Cost/SF: 627
Rates Current At September 2021

Ref	Description	Unit	Qty	Rate USD	Total Cost USD
F1020	**Building Construction**				
36	Native Healing and Health Center - Full Build-out	SF	10,000	400.00	4,000,000
37	Police sub-station office space (included in Native Healing and Health Center)	SF	100		Incl.
	Building Construction			**571/SF**	**4,000,000**
G2040	**Site Development**				
1	Clearing and light grading	SF	19,000	2.00	38,000
4	Parking on grade - preparation and gravel surface	SF	7,000	15.00	105,000
5	Premium for seal coat to gravel parking surface, incl line marking	SF	7,000	15.00	105,000
20	Sitework around building, including walkways and landscaping to 10' perimeter	SF	5,000	20.00	100,000
17	Solar powered light and pole	EA	3	10,000.00	30,000
15	Supplementary exterior lighting to parking areas	SF	7,000	2.00	14,000
	Site Development			**56/SF**	**392,000**
	HEALING CENTER			**627/SF**	**4,392,000**

LOCATION ELEMENTS ITEM

4 Malalani Garden and Food Truck area

GFA: 3,000 SF Cost/SF: 1,113
Rates Current At September 2021

Ref	Description	Unit	Qty	Rate USD	Total Cost USD
G2040	**Site Development**				
1	Clearing and light grading	SF	54,900	2.00	109,800
2	Remove and dispose of existing incinerator (hazmat)	EA	1	10,000.00	10,000
3	Malalani Garden of Heaven - cultivated garden area (0.5 acre)	SF	21,780	20.00	435,600
4	Parking on grade - preparation and gravel surface	SF	14,900	15.00	223,500
5	Premium for seal coat to gravel parking surface, incl line marking	SF	14,900	15.00	223,500
6	Connecting road from street to parking area, asphalt	SF	1,500	40.00	60,000
20	Sitework around building, including walkways and landscaping to 10' perimeter	SF	2,500	20.00	50,000
9	Malalani entry feature / ticketing booth and hardstand area	EA	1	50,000.00	50,000
11	Gazebo/shelter with seating	SF	600	250.00	150,000
10	Malalani pavilion/shelter	SF	600	200.00	120,000
12	Stage area	SF	600	200.00	120,000
13	Table and seating with umbrella	EA	6	2,000.00	12,000
19	Potential / future garden areas - excluded	LS	1		Excl.
18	Portable permanent amenities, eg port-a-potties	EA	5	3,000.00	15,000
16	Water supply points to food truck area (20 trucks)	LS	1	30,000.00	30,000
33	Exterior fire hydrant including pipe and connection back to water main	EA	1	40,000.00	40,000
32	Rainwater catchment tank, assume steel above ground, including pump (30,000 gal)	EA	1	50,000.00	50,000
31	Stormwater - overground - minimal scope, say retention system	LS	1	50,000.00	50,000
30	Sanitary drainage - onsite management, say septic tank system	LS	1	50,000.00	50,000
14	3-Phase power to food truck parking area (20 trucks) - solar/battery (allowance)	LS	1	1,000,000.00	1,000,000
17	Solar powered light and pole	EA	6	10,000.00	60,000
15	Supplementary exterior lighting to parking areas	SF	14,900	2.00	29,800
29	Utilities connection and site distribution - water, including backflow preventer	LS	1	140,000.00	140,000
27	Utilities connection and site distribution - electrical, including overhead power line	LS	1	220,000.00	220,000
28	Utilities connection and site distribution - telcom, including conduit	LS	1	90,000.00	90,000
	Site Development			**1,113/SF**	**3,339,200**
	MALALANI GARDEN AND FOOD TRUCK AREA			**1,113/SF**	**3,339,200**

DHHL KEOKEA

MASTERPLAN ROM ESTIMATE (NO ESCALATION)

LOCATION ELEMENTS ITEM

5 School K-6

GFA: 11,000 SF Cost/SF: 489
Rates Current At September 2021

Ref	Description	Unit	Qty	Rate USD	Total Cost USD
F1020	**Building Construction**				
44	K-6 Immersion - classrooms, restrooms, administration	SF	11,000	400.00	4,400,000
	Building Construction			**400/SF**	**4,400,000**
G2040	**Site Development**				
1	Clearing and light grading	SF	23,200	2.00	46,400
20	Sitework around building, including walkways and landscaping to 10' perimeter	SF	5,200	20.00	104,000
25	K-6 outdoor play area	SF	7,000	100.00	700,000
26	Play equipment to school play area	EA	1	75,000.00	75,000
32	Rainwater catchment tank, assume steel above ground, including pump (30,000 gal)	EA	1	50,000.00	50,000
	Site Development			**89/SF**	**975,400**
	SCHOOL K-6			**489/SF**	**5,375,400**

Appendix E

ARCHAEOLOGICAL LITERATURE REVIEW & FIELD INSPECTION REPORT

FINAL

ARCHAEOLOGICAL LITERATURE REVIEW & FIELD INSPECTION
KĒŌKEA MASTER PLAN PROJECT
KĒŌKEA AHUPUAʻA, MAKAWAO DISTRICT, MAUI ISLAND, HAWAIʻI

TMK (2) 2-2-032:067 & 068

Prepared for:
PBR HAWAII & Associates, Inc.
1001 Bishop Street. Ste. 650
Honolulu, HI 96813

Prepared by:
Christopher M. Monahan, Ph.D.
TCP Hawaiʻi, LLC
150 Hamakua Drive, #810
Kailua, HI 96734

View of the existing cleared and leveled area (Kēōkea Marketplace) near the center of the project area along the main highway, facing mauka to the upland slopes of Haleakalā

June 2021

MANAGEMENT SUMMARY - ABSTRACT

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai‘i, has completed this Archaeological Literature Review and Field Inspection (LRFI) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres located in Kēōkea Ahupua‘a, Makawao District, Island of Maui, Hawai‘i, TMK (2) 2-2-032:067 & 068. A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a Native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events. For the purposes of this LRFI, we focused our fieldwork *only* in locations where the community proposes to alter the ground surface, build structures and infrastructures, etc., and *not* on the entire 69-acre project area. The smaller area, designated the "proposed development area," measures about 15 acres. The objectives of this LRFI study include: (1) Documentation and description of the parcel's land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes; (2) Identification of any significant historic properties or component features in the project area and proposed development area; and (3) Providing information relevant to the likelihood of the proposed development plans adversely affecting any significant historic properties. The results of this LRFI are as follows: (1) The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are <u>not</u> located in the proposed development area; (2) one additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital; (3) the three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are <u>not</u> preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301); and (4) a modern rock wall along parts of Kula Highway and Ka‘amana St. is <u>not</u> a historic property.

The only unevaluated (new) site identified during this LRFI is the incinerator site. We have gathered sufficient evidence to obtain a formal State Inventory of Historic Places (SIHP) # if requested by the SHPD. This site is likely eligible for the Hawai‘i Register of Historic Places (HRHP) under criterion "d" for its informational value to the history of the twentieth century in Kula and Kēōkea, and possibly criterion "a" based on its association with the development of the nearby Kula Sanitorium (Hospital), whose structures are listed on the National Register of Historic Places (SIHP # 50-50-10-1540). Provided that the issue of the incinerator site is resolved (e.g., in consultation with the SHPD, see what additional information needs to be gathered), the proposed development project should have "no effect" on significant historic properties. Based on all available evidence, the following recommendations are offered: (1) From the community's perspective, in particular, the old incinerator site is primarily an environmental concern, and a health and safety hazard, rather than retaining heightened value as a historically-significant cultural resource. As discussed above, if the SHPD requests this resource be assigned a formal SIHP #, we have sufficient documentary evidence to complete this process; and (2) There are no other historic-preservation concerns associated with the proposed development area described and documented in this report.

TABLE OF CONTENTS

INTRODUCTION 1
Natural Environment 2
Built Environment 2

METHODS 8
Archival Research 8
Consultation 8
Field Inspection 8

CULTURAL AND HISTORICAL CONTEXT 11
Hawaiian Cultural Landscape 11
Historic Period 12
Incinerator Site – Associated with the Kula Sanitorium/Hospital 13

PREVIOUS ARCHAEOLOGICAL STUDIES 25
Overview of Previous Archaeology in and near the Project Area 25
Preservation Sites in Project Area but Outside of Proposed Development Area 25
Previously-Identified Sites in the Proposed Development Area 26
SIHP # 50-50-10-2301 26
SIHP # 50-50-10-2302 26
SIHP # 50-50-10-2307 26

RESULTS OF FIELD INSPECTION 33
Relationship between Preservation Sites & Proposed Development Area 33
Historic Property in Proposed Development Area – The Incinerator Site 33
Three Previously-Identified Historic Properties in the Proposed Development Area 34
Modern Features (Not Historic Properties) in Proposed Development Area 34

CONCLUSION 45
Preliminary Significance Assessment 45
Preliminary Project Effect Determination 46
Recommendations 46

REFERENCES CITED 47

APPENDIX A – *KA WAI OLA* NOTIFICATION A-1

LIST OF FIGURES

Figure 1. Project area location on a topographic map 3
Figure 2. Aerial image showing location of project area 4
Figure 3. TMK map of the project area (graphic created by TCP Hawai‘i) 5
Figure 4. Approximately 15-acre proposed development area depicted (yellow polygon) within the larger project area (TMK [2] 2-2-032:067 & 068) 6
Figure 5. Soil data map of the project area (soil data from Foote et al. 1972) 7
Figure 6. Pedestrian survey (GPS tracks) of field inspection by Chris Monahan on March, 19, 2021 (see text for discussion) 10
Figure 7. Population density estimates for Maui in 1853 by the demographer Coulter (1931), showing approximate project-area location; note, each symbol represents 100 people 15
Figure 8. Portion of 1903 Hawaiian Territorial Government map by Donn (Registered Map 1268A) with project area location; this map is based on 1885 base map; blue circle adjacent to project area denoted as a “school lot” 16
Figure 9. Portion of 1911 “Kanakanui, Waiohuli and Keokea Pastoral Lots” map with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAws) in and adjacent to the project area (see text) 17
Figure 10. Portion of 1915 map (by Newton), “Waiohuli-Keokea Homesteads, Kula, Maui,” HTS Plat 1029 map with project area, and inset/detail view in the lower right showing several kuleana parcels (LCAs) in and adjacent to the project area (see text) 18
Figure 11. Portion of 1915 map (by Newton), “Waiohuli-Keokea Homesteads” (Registered Map 2494) with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAws) in and adjacent to the project area (see text) 19
Figure 12. Portion of 1924 topographic map with project area location; inset in lower right (see text) 20
Figure 13. Portion of 1951 aerial photograph with project area location 21
Figure 14. Portion of 1954 topographic map with project area location 22
Figure 15. Portion of 1977 aerial photograph with project area location 23
Figure 16. Portion of 1983 topographic map with project area location 24
Figure 17. Previous archaeological studies in and within 1/2-mile of the project area 27
Figure 18. Previously-identified sites according to Brown et al. (1989) (see text for discussion) 28
Figure 19. Previous archaeological studies in and within 1/2-mile of the project area 29
Figure 20. Previously-identified sites in the project area (light red-colored polygon) and proposed development area (blue outline); preservation sites (SIHP # 2099 is Papakea Heiau; SIHP #s 2097, 2311 and 2339 are burials) in the project area are red symbols (see text for discussion). 30
Figure 21. Aerial image showing results of archaeological field inspection (see text for discussion) 35
Figure 22. View of the overgrown incinerator site structure; view south 36
Figure 23. View of the overgrown incinerator site structure; view southwest 36
Figure 24. View of the overgrown incinerator site structure; view northwest 37
Figure 25. View of hillslope around the incinerator site; view north 37
Figure 26. View of incinerator material at the base of the main structure 38
Figure 27. View of surface material around the incinerator site 39
Figure 28. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing northeast 40
Figure 29. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing south-southeast 41
Figure 30. Detail of part of SIHP # 2307 (arrows); view east 42
Figure 31. Portion of modern rock wall (arrows) along Ka‘amana St.; vie northeast 43
Figure 32. Portion of modern rock wall (arrows) near entrance to the farmers’ market along Ka‘amana St.; view southeast 44

LIST OF TABLES

Table 1. Summary of Community Outreach Efforts and Outcomes 9
Table 2. Site Types by Functional Interpretation identified by Brown et al. (1989) in Kēōkea 31
Table 3. Previously-identified Archaeological Sites in the Project Area* 32

INTRODUCTION

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai‘i, has completed an Archaeological Literature Review and Field Inspection (LRFI) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres located in Kēōkea Ahupua‘a, Makawao District, Island of Maui, Hawai‘i, TMK (2) 2-2-032:067 & 068 (Figure 1, Figure 2 and Figure 3). It is generally bounded by the Kula Highway (also known as Ulupalakua Rd.) on its upper (south-southeast) side and mostly undeveloped land on its other sides. Ka‘amana St., a mauka/makai (upslope/downslope)-oriented road runs through the east-central portion of the project area. Keanuhea St. is located a short distance to the north of the project area's northern boundary.

A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a Native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events. For the purposes of this LRFI, we focused our fieldwork *only* in locations where the community proposes to alter the ground surface, build structures and infrastructures, etc., and *not* on the entire 69-acre project area. The smaller area, designated the "proposed development area," measures about 15 acres, as depicted in Figure 4.

The objectives of this LRFI study include:

1. Documentation and description of the parcel's land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes;
2. Identification of any significant historic properties or component features in the project area and proposed development area; and
3. Providing information relevant to the likelihood of the proposed development plans adversely affecting any significant historic properties. Part of satisfying this objective is a review of the results of several previous archaeological and historic-preservation studies and mitigation plans (e.g., survey, data recovery, preservation and data recovery) completed for the project area (i.e., Brown et al. 1989; Dega et al. 2004; Dega 2005a, b).

This LRFI may be used to support consultation with the State Historic Preservation Division (SHPD) in accordance with Hawai‘i Revised Statutes (HRS) § 6E-8 and Hawai‘i Administrative Rules (HAR) § 13-275; and/or, consultation with other stakeholders such as Native Hawaiian organizations and individuals, and other community members.

Archival research and analysis includes discussion of historic maps and surveys dating from as early as the late 1880s, aerial images from the mid-1900s, previous archaeological studies and findings, oral-historical information, and other ephemera. Field inspection included a 100% pedestrian survey of the proposed development area as envisioned by the community and the Master Plan. The field inspection demonstrated the following main conclusions: (1) the four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are <u>not</u> located in the proposed development area; (2) one additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital; (3) the three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are <u>not</u> preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301); and (4) a modern rock wall along parts of Kula Highway and Ka‘amana St. is not a historic property.

Natural Environment

The project area is located on gently-sloping (down to the northwest) terrain on the southwestern flanks of the Haleakalā volcano comprising East Maui. Elevation varies from about 2,800 ft. (853 m) above mean sea level (amsl) along its upper (Kula Highway) side down to about 2,550 ft. (777 m) on its northwest side.

Rainfall in the project area is currently about 30 inches (in.) (762 millimeters [mm]) annually. Today, there are no through-flowing fresh-water streams in the project area, but historic maps indicate a seasonal drainage (for which no Hawaiian name has been found) may have once passed through or immediately adjacent to its east-northeastern end.

Soils in the project area consist of two types: Kaimu extremely stony peat (KCXD) and Kula very rocky loam (KxbE) (Figure 5). Neither of these soils is ideal for agricultural purposes. The former soil type is described by Foote et al. (1972:52-3) as typically occurring ". . . on rough, undulating, relatively young Aa lava flows . . . This soil is used for pasturage and wildlife habitat." The latter soil type (KxbE), typically formed on volcanic ash, is also described as used for pasturage and wildlife habitat (ibid.:77).

Built Environment

Minimal facilities (including an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure) associated with a farmers' market (also known as Kēōkea Marketplace) are currently located in a small level, rectangular area along the main highway, near the south-center of the project area, just south of Ka'amana St. Otherwise, the project area is mostly devoid of development or manmade structures or infrastructures.

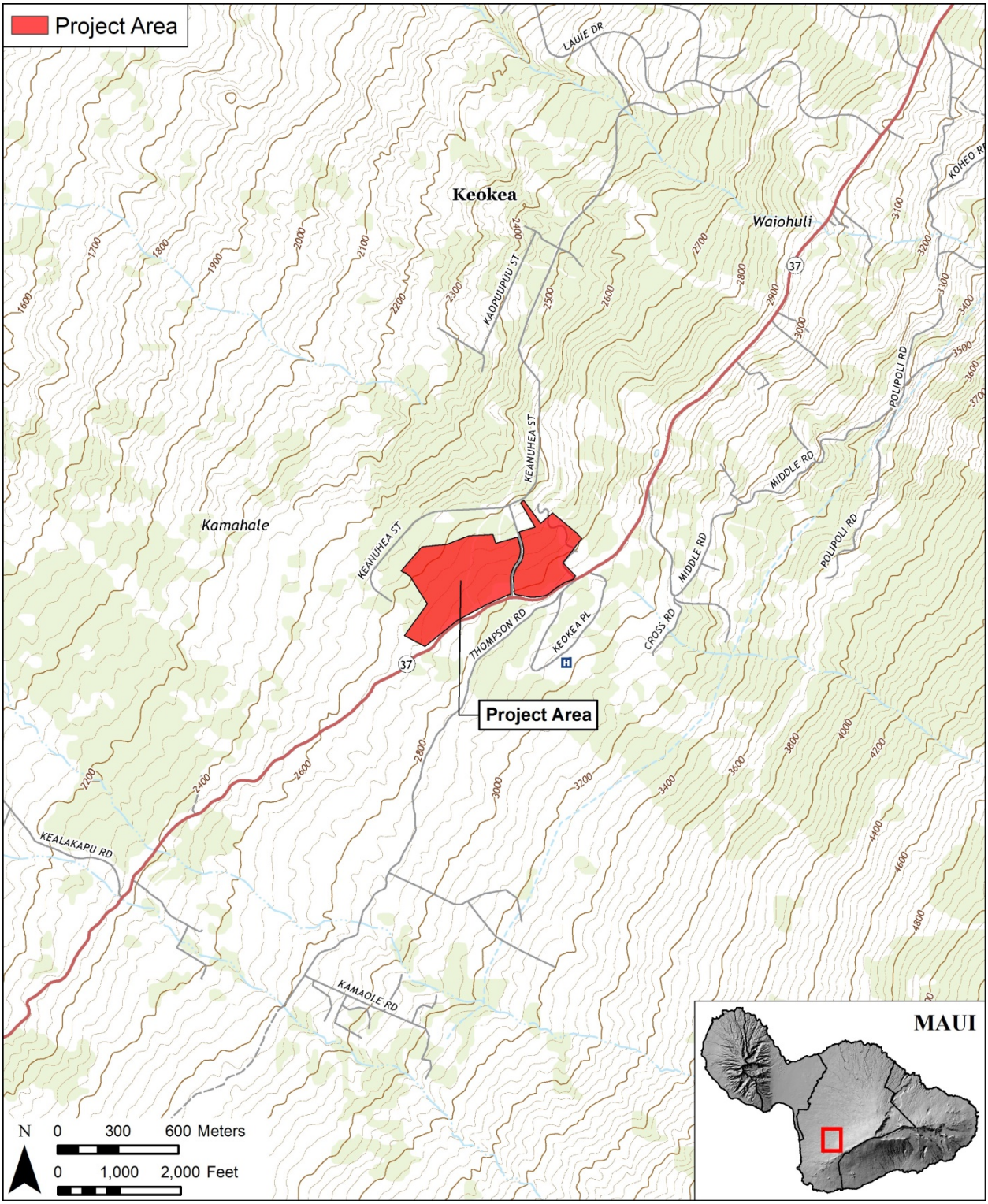


Figure 1. Project area location on a topographic map

Figure 2. Aerial image showing location of project area

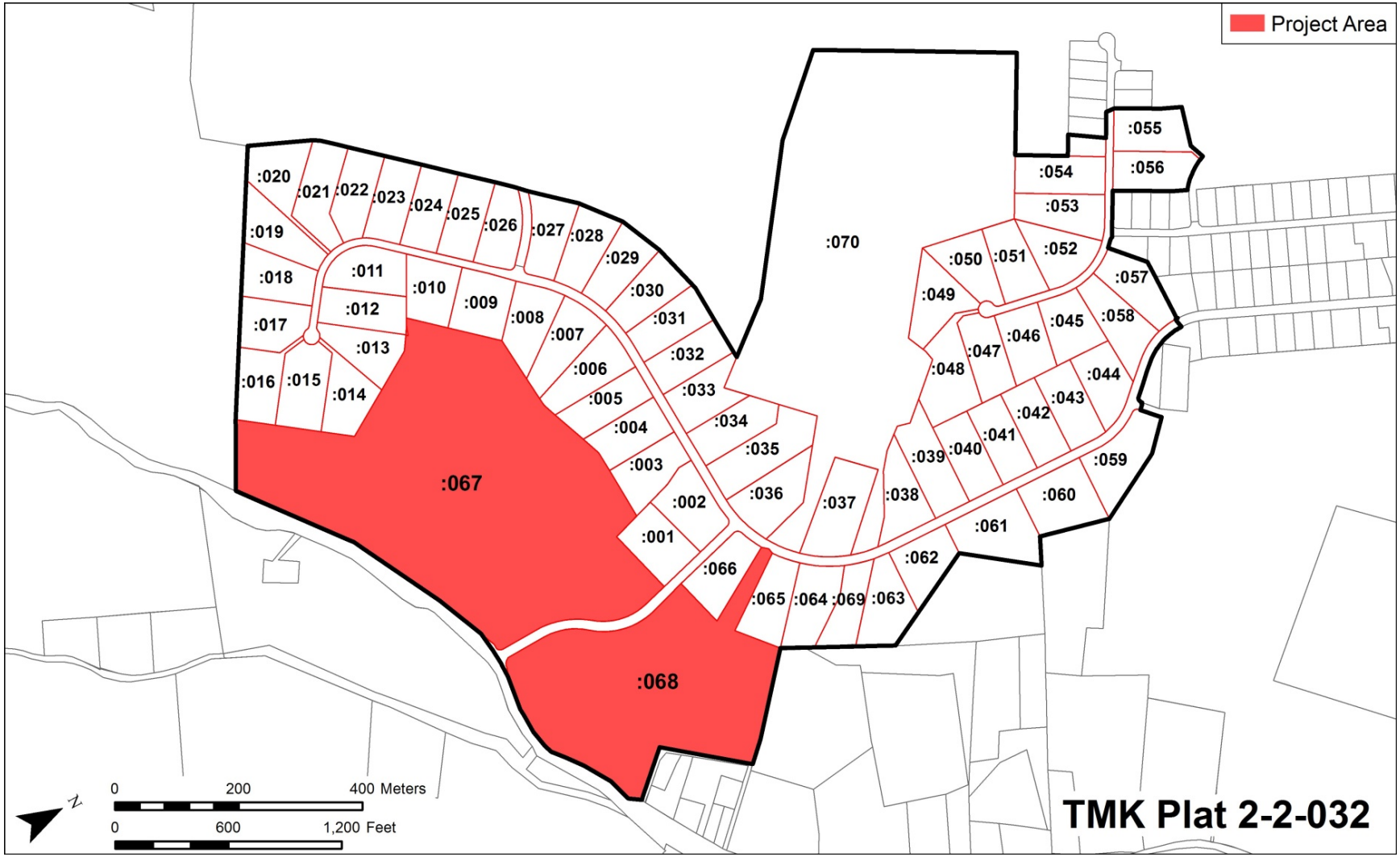


Figure 3. TMK map of the project area (graphic created by TCP Hawai‘i)

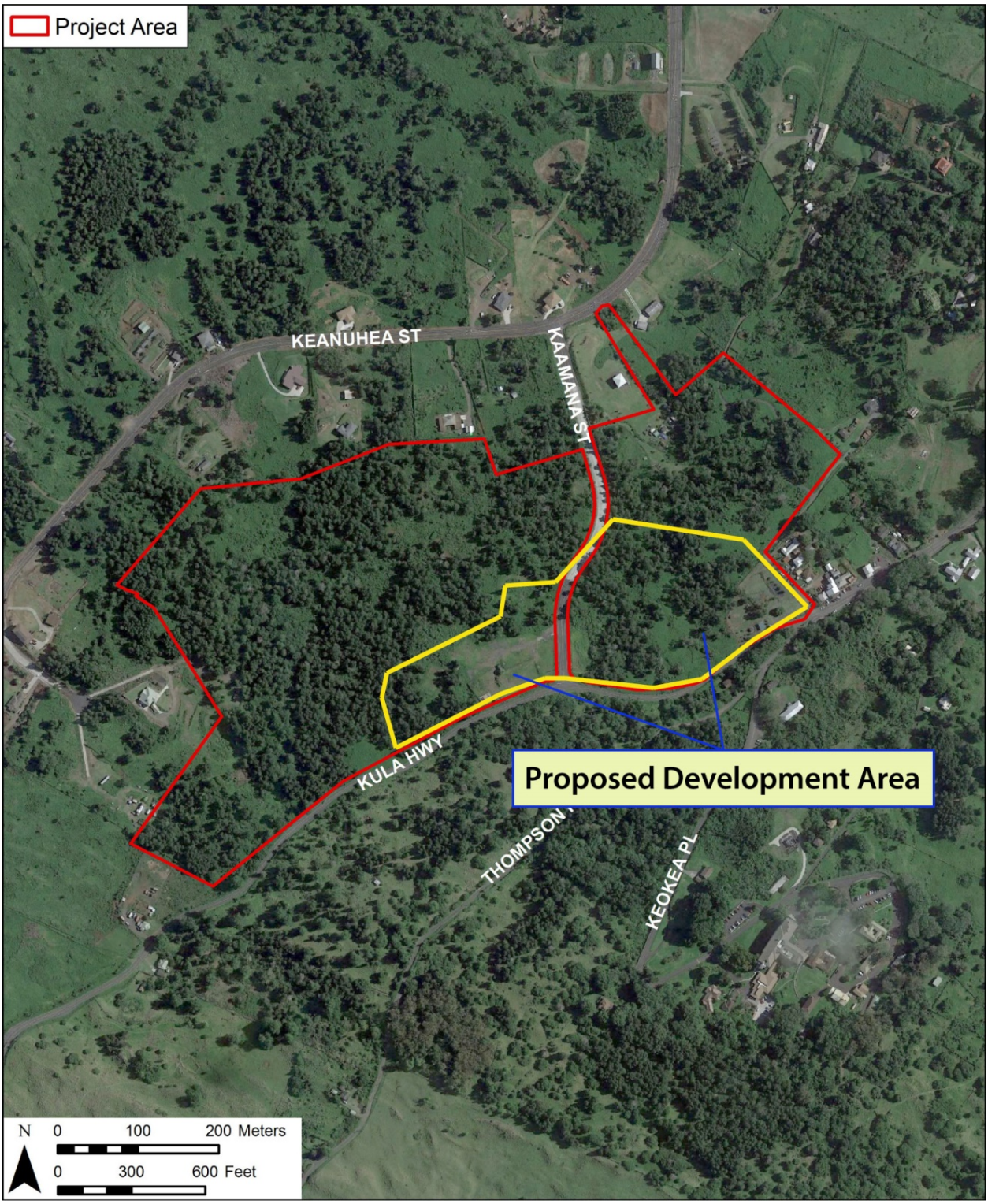


Figure 4. Approximately 15-acre proposed development area depicted (yellow polygon) within the larger project area (TMK [2] 2-2-032:067 & 068)

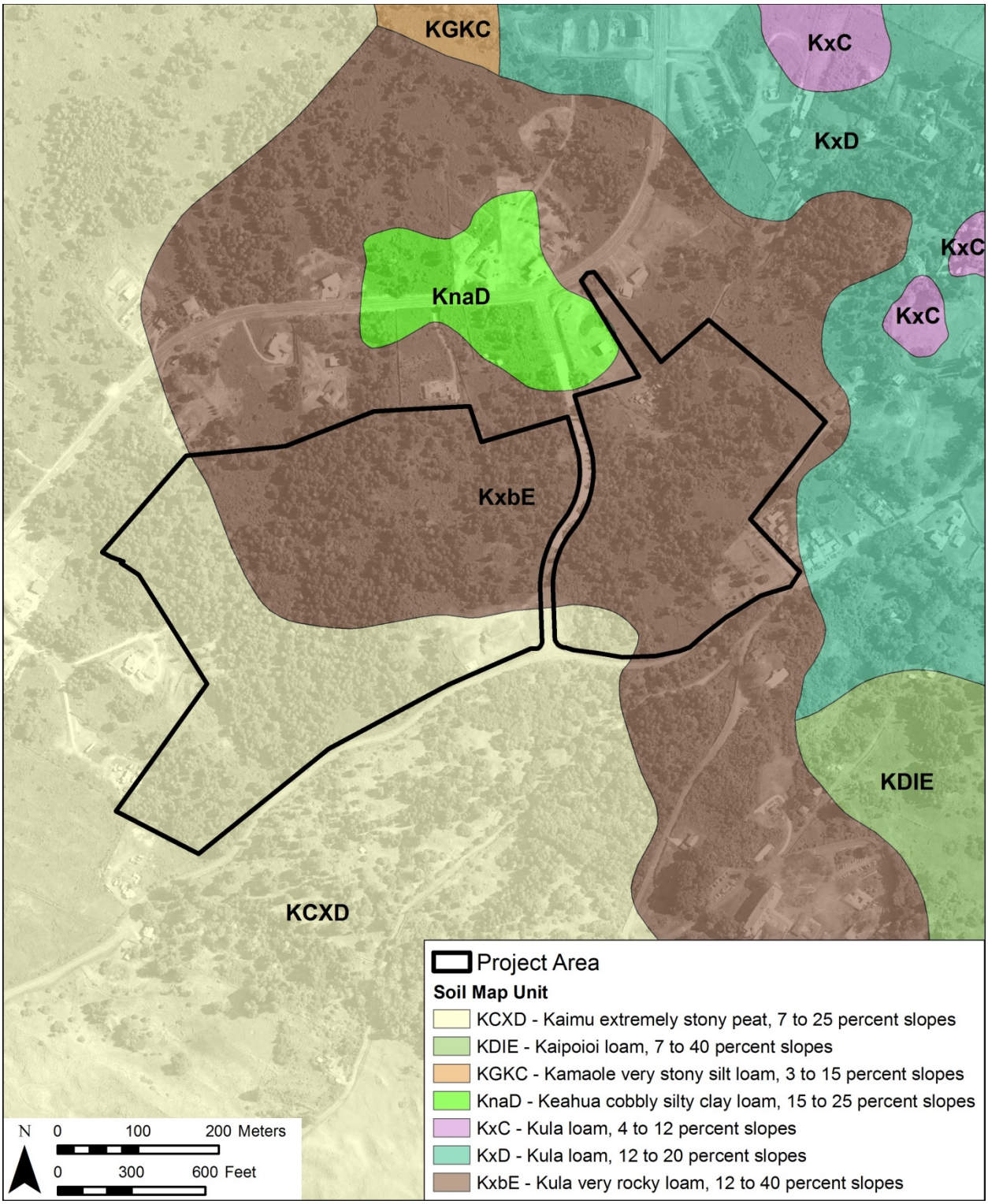


Figure 5. Soil data map of the project area (soil data from Foote et al. 1972)

METHODS

This section briefly explains the archival, consultation and fieldwork methods used in this study.

Archival Research

Archival research was conducted to systematically obtain relevant information for interpreting the project area's cultural, historical and archaeological context. Establishing this context provided an empirical basis for predicting the types of historic properties we expected to encounter, and for understanding potential historic properties found during fieldwork. In addition to conducting a records search at the State Historic Preservation Division's (SHPD) database, we also utilized these on-line databases to obtain cultural, historical and archaeological data:

- OHA's Papakilo database (http://papakilodatabase.com/main/main.php)
- OHA's Kipuka database (http://kipukadatabase.com/kipuka/)
- Bernice P. Bishop Museum archaeological site database (http://has.bishopmuseum.org/index.asp)
- Bishop's Hawaii Ethnological Notes (http://data.bishopmuseum.org/HEN/browse.php?stype=3)
- University of Hawai'i-Mānoa's digital maps (http://magis.manoa.hawaii.edu/maps/index.html)
- DAGS' State Land Survey (http://ags.hawaii.gov/survey/map-search/)
- Waihona 'Aina website (www.waihona.com)
- Digital newspaper archive "Chronicling America, Historic American Newspapers" (http://chroniclingamerica.loc.gov/lccn/sn82014681/)
- Hawai'i State Archives digital collections (http://archives1.dags.hawaii.gov/)
- U.S. Library of Congress digital map collections (https://www.loc.gov/maps/)
- USGS Information Service, including digital map collections (https://nationalmap.gov/historical/index.html)
- AVA Konohiki's website (http://www.avakonohiki.org/)

Consultation

A Cultural Impact Assessment (CIA) of the proposed project is in process by TCP Hawai'i, working in partnership with Nohopapa Hawai'i. Details of the methods and results of the CIA are being prepared under separate cover. A brief summary of consultation/outreach efforts in support of both the subject LRFI report and the CIA are as follows:

1. Notification was published in the Office of Hawaiian Affairs (OHA) monthly newspaper (December, 2020 issue) – see Appendix A.
2. Ongoing meeting and coordination with DHHL staff (Ms. Julie-Ann Cachola), site managers Alex (Alika) Akana and Pi'ilani Akana, and PBR representatives.
3. Community outreach and notification from November, 2020, to May, 2021 (Table 1).
4. Formal group interview by Kalama'ehu Takahashi, who was born and raised on Maui, with community members, Perry Artates, Richard Dancil, and Roderick Fong, on April 7, 2021. All three of these kama'āina were born and raised in Kēōkea. The specific results of the interviews are presented in the CIA report.

Field Inspection

On March 19, 2021, Chris Monahan met with Alex (Alika) Akana, site manager, and Richard Dancil, descendant and kama'āina to the project area, at the project site. Together we walked the portions of the property that are slated for development, according to the community's wishes. Richard, in particular, is intimately familiar with the project area, having grown up and lived in the immediate area his entire life. Richard is well aware of the multiple preservation sites, including burials and heiau located beyond the limits of where we walked. Our GPS tracks for this pedestrian inspection were recorded using a hand-held Garmin GPSMAP 64st that consistently obtained 2–3 meter accuracy; these tracks are depicted in Figure 6.

Table 1. Summary of Community Outreach Efforts and Outcomes

Individual/ Organization	Position/ Affiliation	Summary of Outreach Efforts, Results & Comments
Richard Dancil	Homesteader	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Les Takatani (Moki)		11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/13/21 fourth email sent with letter 1/17/21 fifth email sent with letter
Robin (Pikake) Newhouse	Association President	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 12/18/20 received email that she would like to participate; responded to her email to arrange a day/time that works for her to be interviewed via Zoom 1/04/21 second email sent to arrange a day/time for interview 1/13/21 third email sent to arrange a day/time for interview 1/17/21 fourth email sent to arrange a day/time for interview
Perry Artates	President, Waiohuli Homestead Association	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Roderick Fong	Classmate of Perry; Fong Store	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Keʻeaumoku Kapu	ʻAha Moku o Maui Inc	12/09/20, per Ikaika Nakahashi, included this community member to the list 12/09/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/13/21 fourth email sent with letter 1/17/21 fifth email sent with letter
OHA Compliance	OHA Compliance	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter
Vincent Hinano Rodrigues, JD	SHPD, History and Culture Branch Chief	11/24/20 emailed consultation letter 1/04/21 second email sent with consultation letter 1/13/21 third email sent with letter
Ikaika Nakahashi	SHPD, Cultural Historian – Maui	11/24/20 emailed consultation letter 12/09/20 received email from Ikaika recommending to add Keʻeaumoku Kapu to this list (see above)
Yvette Celiz (Chair)	Maui County Cultural Resources Commission	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/04/21 received email from Annalise Kehler *[Cultural Resources Planner, Long Range Planning Division]* referring ʻAha Moku rep. Timmy Bailey & Keʻeaumoku Kapu & Tanya Lee-Greig (ʻĀina Archaeology) who may be able to provide contact names/info. 1/05/21 received an email from Paul Fasi [*Senior Staff Planner*] that Maui Planning Dept. had no comment

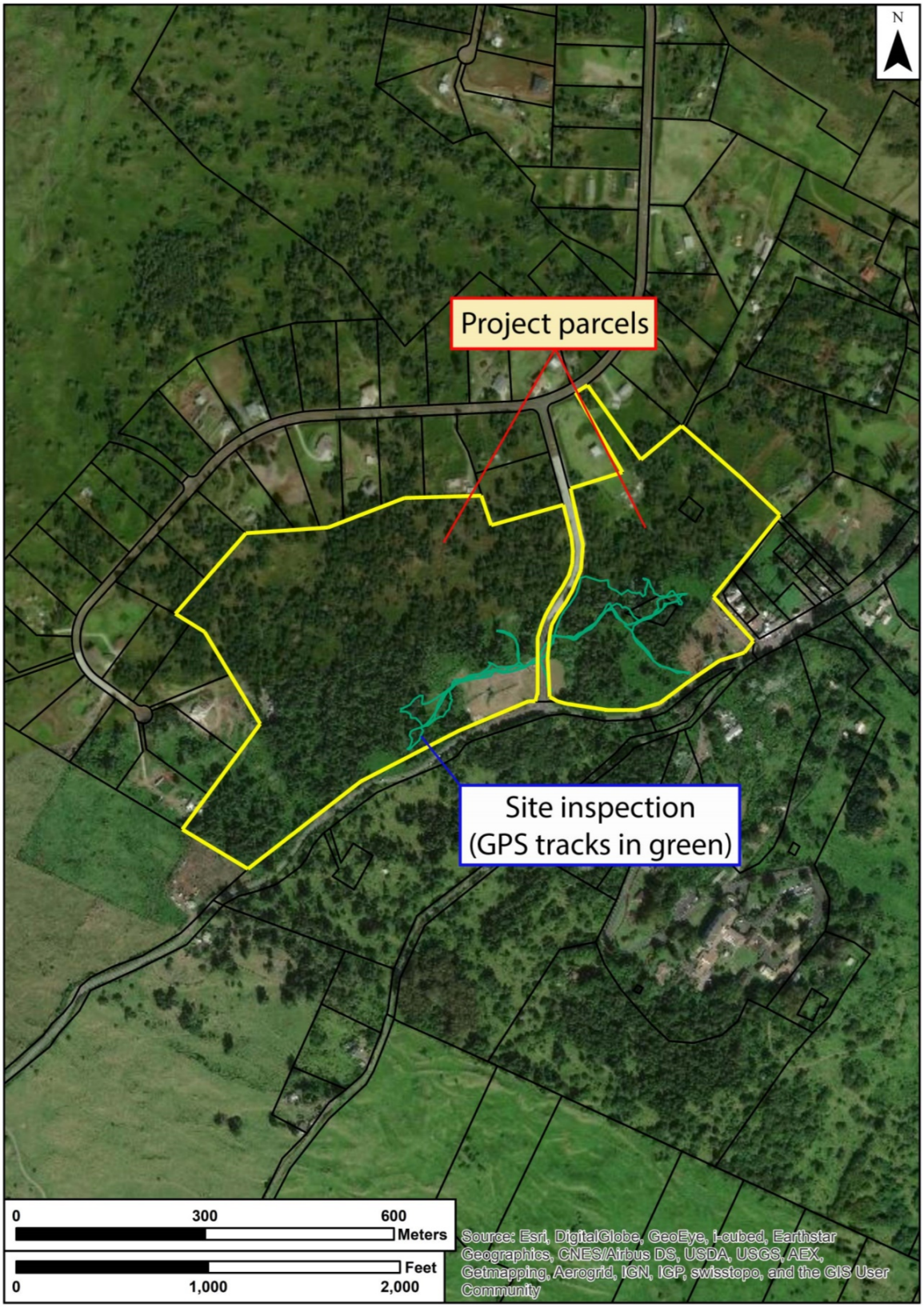


Figure 6. Pedestrian survey (GPS tracks) of field inspection by Chris Monahan on March, 19, 2021 (see text for discussion)

CULTURAL AND HISTORICAL CONTEXT

This section includes a brief synthesis of relevant cultural and historical information related to the types and character of land uses in and around the project area, specifically, as well as Kēōkea Ahupuaʻa, more generally, from pre-Contact times into the historic period and modern times. The main objective here, primarily through the analysis of historical documents, maps and aerial images, is to provide a project area-specific picture of land use and modification over time.

Hawaiian Cultural Landscape

The project area is in the traditional moku (district) of Kula, known today as Makawao District. Historian Helen Wong Smith's compilation of cultural and historical information about the project-area environs (Brown et al. 1989:4) describes Makawao, in general, as "kula-o-ka-maʻo-maʻo," or Land of Mirages, where lost souls once wandered until they found a place to rest. Pukui et al. (1974:142) interpret the place name Makawao as "forest beginning." [1]

Kēōkea, which is also a place name in at least three locations on Hawaiʻi Island (i.e., in Hilo, Puna and Kohala), is translated (for the Maui location) as "the white sand (*ō* is short for *one*). This place name may refer to its shoreline location at Kīhei, located several miles west-northwest of the current project area.

Puʻu-o-kali (literally, "hill of waiting") is a prominent hill (elevation 1,481 ft.) a couple miles northwest of the project area along the boundary between the ahupuaʻa of Kēōkea and Waiohuli. From the coastline, this puʻu (hill) is a major visual aid and landmark between these lands. It is also associated with the following moʻolelo (oral-historical accounts):

> [It was] . . . believed once [to be] a *moʻo*, the wife of nearby Puʻu-hele; their child, Puʻu-o-inaina (hill of wrath) was placed on Ka-hoʻolawe and later was a lover of Pele's sweetheart, Lohiʻau. (Pukui et al. 1974:203)

As depicted in Figure 7, population estimates and main settlement areas for Maui dating to around 1853 by the demographer Coulter (1931) show the project area in upland Kēōkea was not a primary settlement area. Schmitt's (1977) population estimates for all of Maui Island from 1831 to 1878 suggest a declining overall population from 35,062 to 12,109 during this time.

In general, Māhele documents memorialize the onset of western land ownership laws and practices in the mid-1800s. They can be useful for the purposes of reconstructing cultural and historical contexts—particularly the traditional customs and practices of Native Hawaiians, because they may include specific information on how the makaʻāinana (commoners) lived on the land and conducted their subsistence activities. Interestingly, Māhele data from the current project area show an atypical pattern compared with most of the Hawaiian Islands. As discussed and depicted on maps below, the project area is shown as part of *both* Crown land—that is, large tracts (such as entire ahupuaʻa) set aside for the monarchy's exclusive use—*as well as* kuleana (hoaʻāina, or commoner) parcels. Wong Smith (Brown et al. 1989:4) explains:

> Although there were many small parcels granted in Keokea and Waiohuli, the Indices states that Keokea was Crown Land from the beginning and that Waiohuli was approved as such in 1890 by Kalakaua. The numerous parcels may be a result of an experiment by the Kamehameha III's administration prior to the Great Mahele concerning trial fee ownership runs. In a report by Riford . . . 11 Land Commission Awards (LCA) either within or bordering the Keokea parcel [i.e., including the current project area] and eight LCAs within the Waiohuli parcel are listed. The bulk of the parcels are designated as <u>kula</u> land and houselots.

[1] All place name interpretations and translations hereafter are from Pukui et al. (1974) unless stated otherwise.

Historic Period

Wong Smith (ibid.), discussing the time of the California gold rush (1840s), noted that the Kula Moku (District) was a place of commercial agricultural operations and cash crops. In particular, Kula was a place where "Irish" (white) potatoes were grown and shipped to California for profit. Other crops, including "corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton," were also grown in Kula (Mark 1975), which into modern times supplied the state with up to 35% of its vegetables (Wong Smith in Brown 1989:4).

Figure 8, a portion of 1903 Hawaiian Territorial map that is based on an 1885 survey, shows a few general observations of interest:

1. From a landscape perspective, this 1885-1903 map indicates that Waiohuli (literally, "water of change"), the adjacent ahupuaʻa to the north, was home to major stream drainages that Kēōkea did not appear to have.
2. The lands of the current project area are depicted as suited for pasturage and ranching, rather than agriculture. The general limits of "good agricultural land" is located just mauka (upslope) of the project area.
3. Kēōkea Ahupuaʻa is labelled as Crown lands—as discussed above, this is unusual since other data indicate there were numerous kuleana parcels (Land Commission Awards [LCA]) in and near the project area.
4. A nearby boundary marker (place name) along Kēōkea's boundary with Kamaʻole Ahupuaʻa to the south, mostly likely based on Hawaiian testimony from the historic-period Boundary Commission, appears to read Kamaoale (or perhaps Kamaoole [?]). According to the Waihona ʻAina database, "The Hawaiian Legislature created the Boundary Commission and the position of Commissioner of Boundaries on August 23, 1862. The task of each Island Boundary Commissioner was to settle the boundaries of the larger lands on that island, particularly ahupua`a, which had been awarded in the Mahele without survey. Their task was not to confer title."[2]
5. A map symbol (green dot) just mauka (upslope) of the current project area indicates a "school lot." This general location is labelled "Maui County Farm" on a 1911 map (see below) and "Chinese Church" and "Board of Hawaiian Evangelical Association" on a 1915 map (see below).

Figure 9, a portion of 1911 map of the "Kanakanui, Waiohuli and Keokea Pastoral Lots," and including a detailed inset of the project area created by TCP Hawaiʻi, shows a number of noteworthy observations:

1. Two LCAs (#s 10639 to Pa [1.9 acres] and 6720-B: ʻāpana 4 to Nahelu [3.6 acres]) are entirely, or nearly so, contained within the project area; however, they are both well outside of the proposed development area. Interestingly, Nahelu's LCA contains two of the preservation sites identified in previous studies of the project area: SIHP #s 50-50-10-2099—a heiau known as Papakea—and 2311, a burial site. Pa's kuleana parcel is described as "kalo [taro] land" that he received in 1843. Nahelu received his parcel in 1823.
2. Several other LCAs are located around the north and northeast sides of the project area; most are a short distance away, but one (LCA # 6724 to Makakulani) includes a small portion of the project area. This and others (LCA #s 6179-B: ʻāpana 2 [to Kalama], 6480: ʻāpana 2 [to Halekahi], 6415: ʻāpana 1 [to Kakua], and at least a dozen more) suggest a fairly densely-populated area, at least in the mid-1800s.
3. An early version of the current Kula Highway is in place by this time (1911), running along the southeast side of the project area.

[2] https://waihona.com/boundarySearch.asp

4. A mauka/makai-oriented road (presumably unimproved) labelled "Kapuhau and Kalepolepo Road" is shown extending from just north of the project area (along Kalama's parcel) down to and past Pu'u-o-kali.
5. The area just southeast of the project area is labeled "Maui County Farm." According to the National Register of Historic Places (NRHP) form for the Kula Sanitorium (see below), the "Maui County Farm and Sanitorium" was established in 1910.
6. East of the project area, upslope a short distance, the "Kula pipeline" is depicted. According to Mark (1975:4), the pipeline was built in 1905 during a terrible drought. The water source was in Olinda.

Figure 10 and Figure 11, two maps dating from 1915 (and both with detailed insets created by TCP Hawai'i) show the entire area of Kēōkea and Waiohuli along both sides of the Kula Highway subdivided into dozens of Land Grants, which are private purchases of land parcels from the government. Closer to the project area, several specific features are shown:

1. In the location of the current Kula Hospital, several buildings are labelled "Sanitorium" (see Figure 10). According to Wong Smith (Brown et al. 1989:4), the "Kula Sanitorium was founded for the care of tuberculosis suffers. Initially the sanitorium consisted of two tent-houses which accommodated 12 patients." This site (SIHP # 50-50-10-1540) was listed on the NRHP in 2003. The NRHP form states that the hospital was a complex of wood-framed structures from 1910-1937; then, starting in 1937, the historic buildings that are on the NRHP were built.[3]
2. The site of Keokea School is shown just east of the east end of the project area (see Figure 10); several church lots are also located to the east (Episcopal) and south (Chinese/Evangelical).

Incinerator Site – Associated with the Kula Sanitorium/Hospital

Although there is not much specific information available on this issue, there is an area of the current project area known as the "incinerator site," which was a place used by the Kula Hospital (Sanitorium) to burn waste, presumably biohazardous materials. The general area of this site is depicted in the Results section of the report (below). According to an environmental assessment that included the current project area (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Other information (e.g., when it was built, and its current disposition at the time [2004]) was unknown. The hospital was searching for other records related to the incinerator site.

Figure 12, a portion of 1924 topographic map with a detailed inset created by TCP Hawai'i, shows a long rock wall along a portion of the southwest boundary of the current project area.

Figure 13 and Figure 14, a 1951 aerial photograph and 1954 topographic map, respectively, depict a few relevant details in the current project area:

1. Both images depict a new road in the western third of the project area, connecting the main Kula Highway with the Pu'uokali area downslope. This (presumably unimproved dirt) road continues to appear on a 1977 aerial—but looks partially overgrown by this time, and a 1983 topographic map (these are both included below).
2. The 1954 map includes a small square, which is most likely the incinerator structure we document in the Results below. The 1951 aerial shows activity around this area that appears to be related to the incinerator.

[3] See website of the Historic Hawai'i Foundation (https://historichawaii.org/2014/03/03/kula-sanatorium/) for this form

3. The 1951 aerial seems to depict an extremely denuded (of trees) landscape in the project area, compared with later and current aerials.

Figure 15, a 1977 aerial photograph, appears to show a reduction or cessation of activity in the area around the incinerator site. The landscape within the current project area, as well, appears to be less denuded than in the 1951 aerial.

Figure 16, a 1983 topographic map, does not include the square symbol at the incinerator site (that first appears on the 1954 map [see Figure 14]), which is consistent with information provided by the Kula Hospital that use of the incinerator ceased sometime before 1980.

According to Wong Smith (Brown et al. 1989:4), during the twentieth century, the current project area was used primarily for cattle grazing.

The Hawaii Chinese History Center (Mark 1975) published an oral history titled *The Chinese in Kula, Recollections of a Farming Community in Old Hawaii* that focuses on the time period between the 1890s and 1920s. The Cultural Impact Assessment (CIA) we are completing for the subject project summarizes Mark's (1975) study in greater detail, but a few observations that are specifically relevant to Kēōkea and the project area are relevant for this LRFI report:

1. Farmers from Kēōkea generally delivered their produce, or had middlemen do it for them, down to Makena Landing, which likely is one of the main purposes for the old road just northeast of the project area—which would have been a horse-drawn wagon road—discussed above (see 1911 map and discussion, above, and Figure 9).
2. Kēōkea had the largest public school in the Kula region, which was attended by many Chinese children, some of whom walked several miles to get there. This school had an enrollment of almost 100.

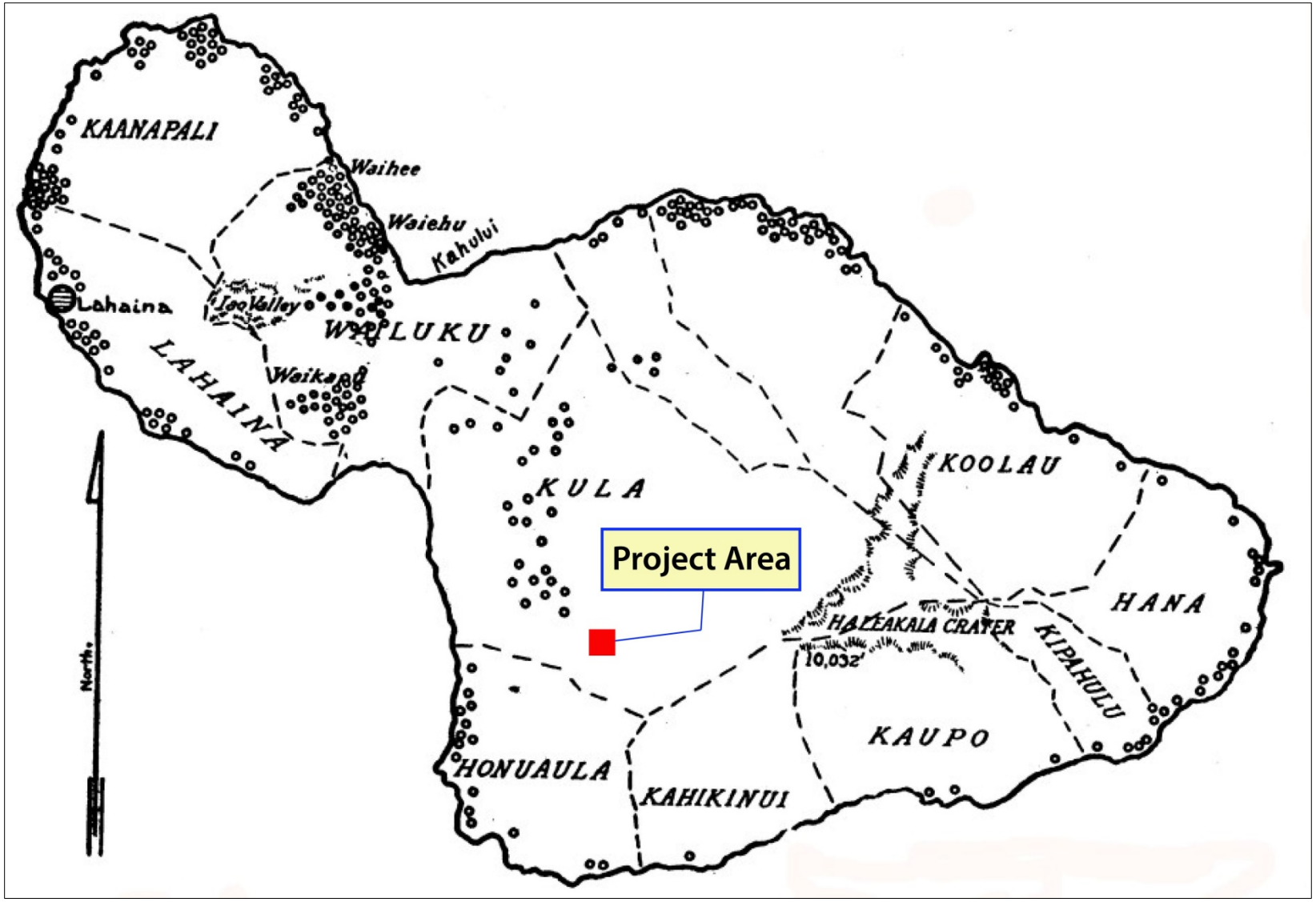


Figure 7. Population density estimates for Maui in 1853 by the demographer Coulter (1931), showing approximate project-area location; note, each symbol represents 100 people

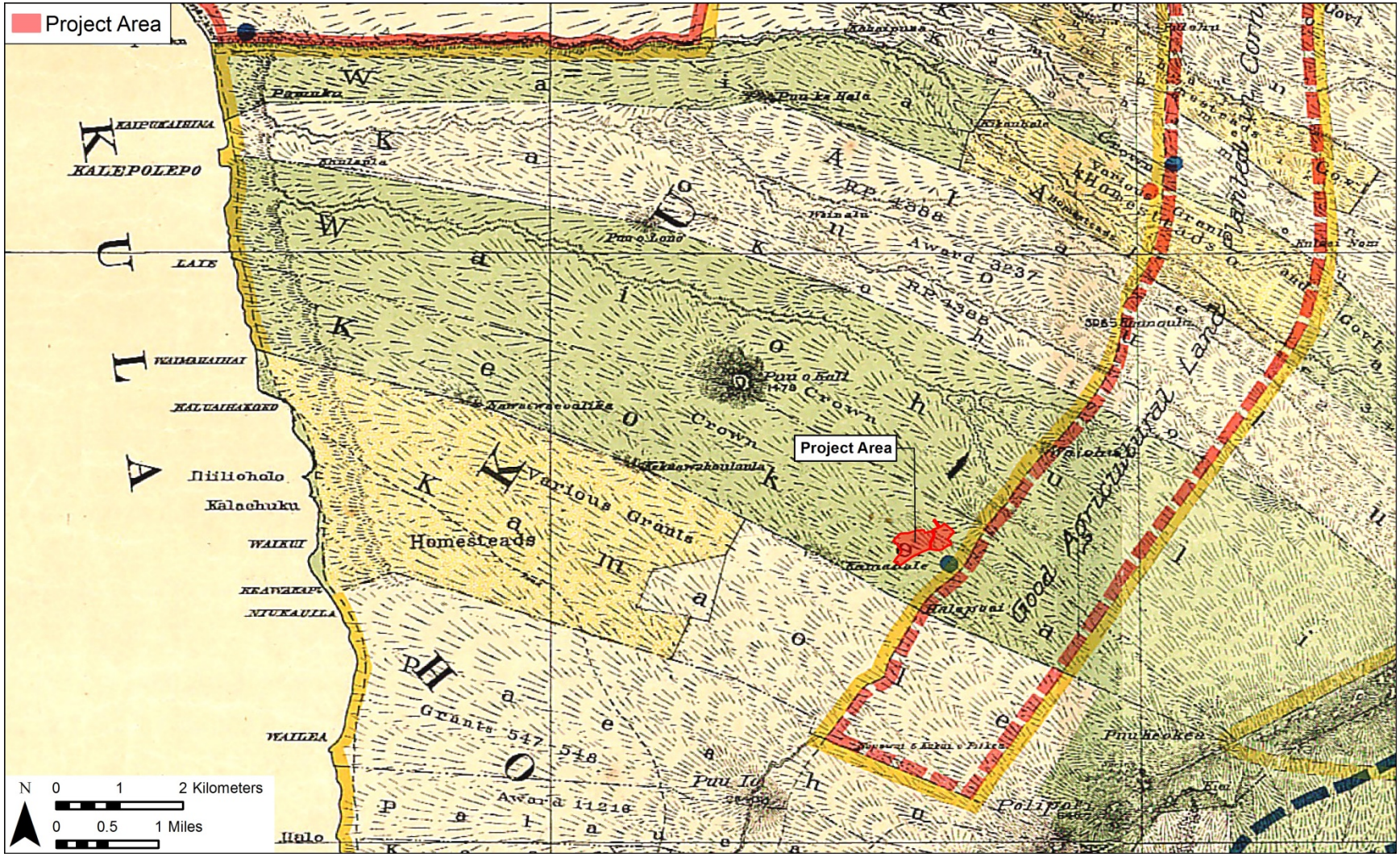


Figure 8. Portion of 1903 Hawaiian Territorial Government map by Donn (Registered Map 1268A) with project area location; this map is based on 1885 base map; <u>blue circle adjacent to project area denoted as a "school lot"</u>

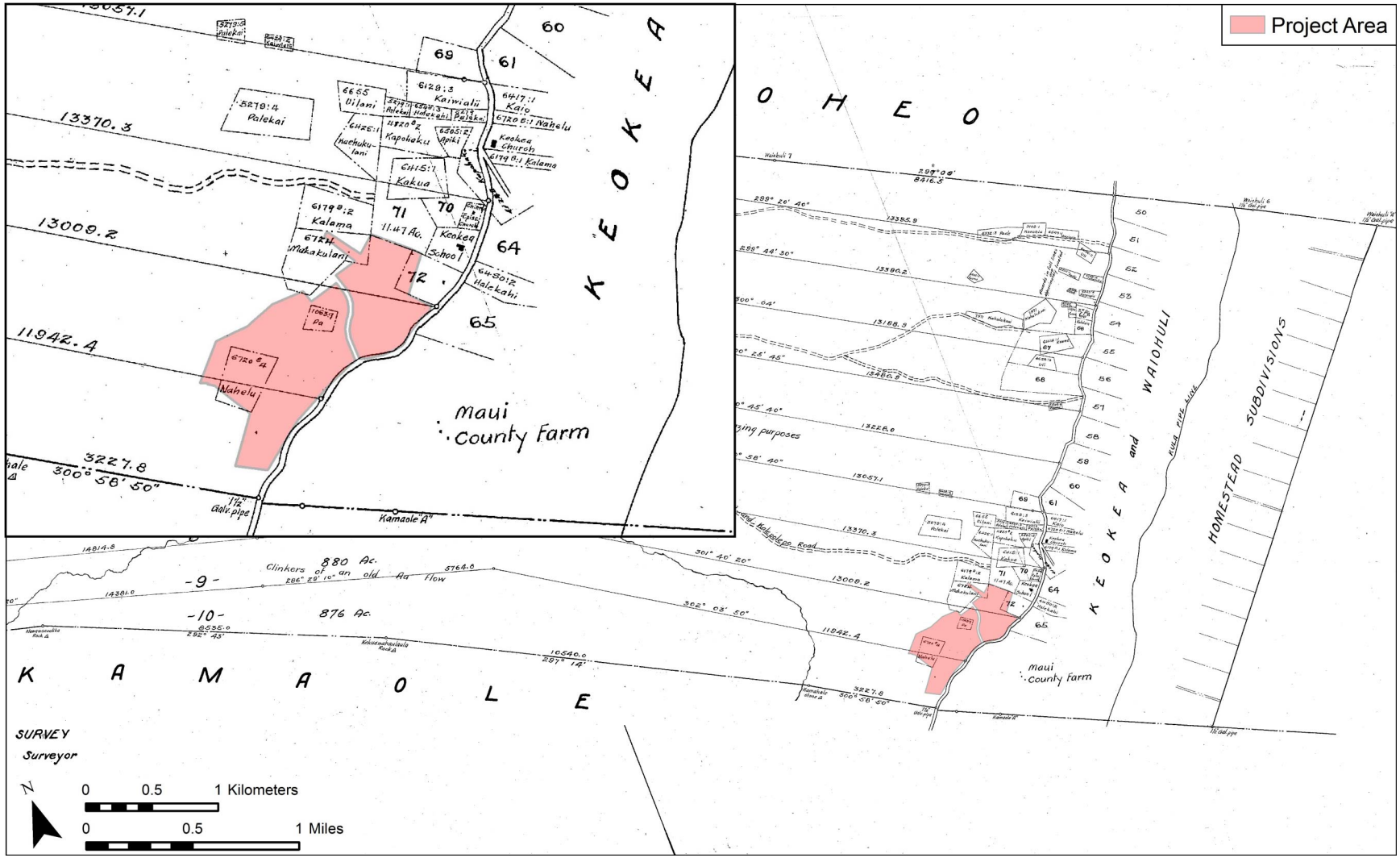


Figure 9. Portion of 1911 "Kanakanui, Waiohuli and Keokea Pastoral Lots" map with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAws) in and adjacent to the project area (see text)

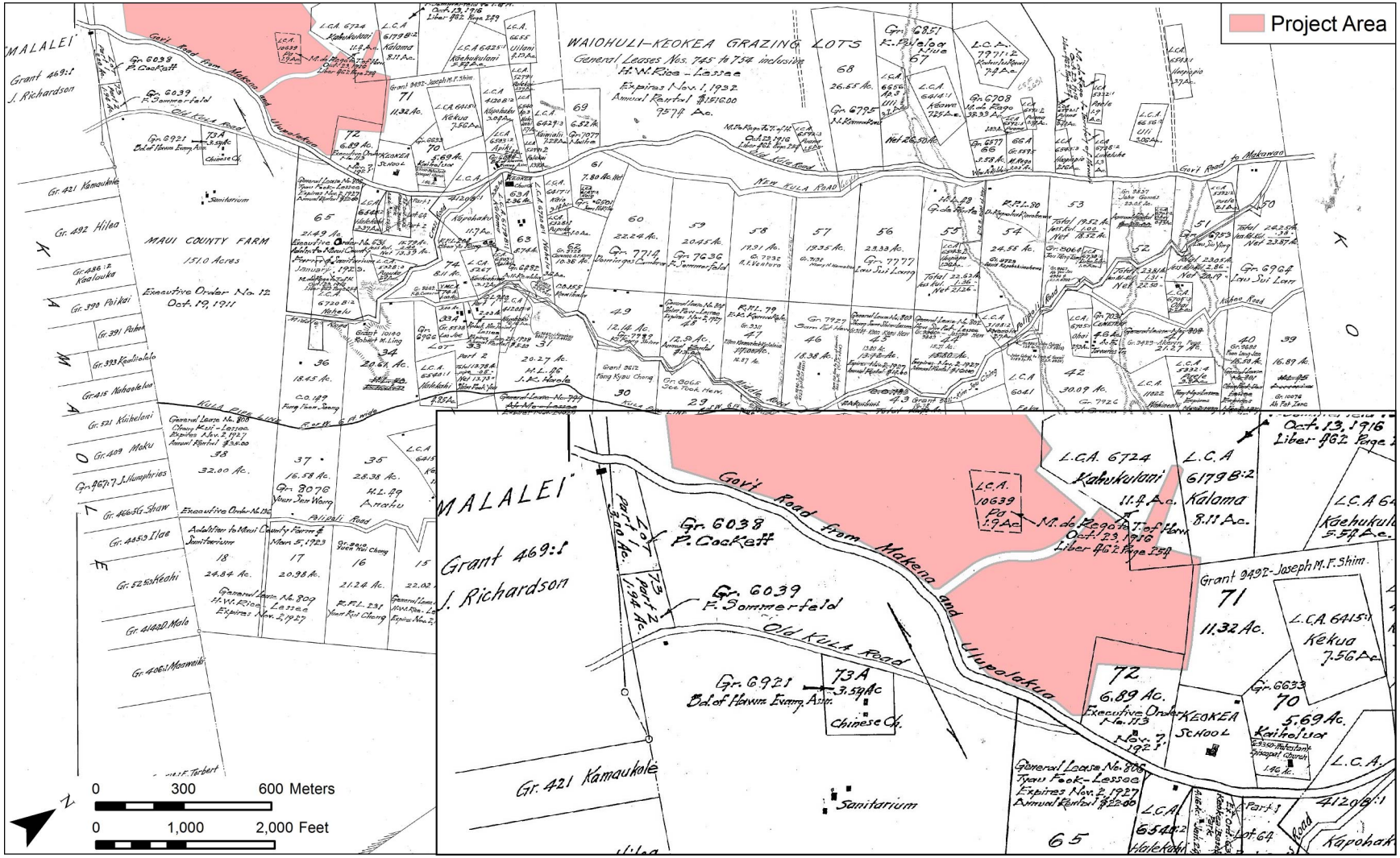


Figure 10. Portion of 1915 map (by Newton), "Waiohuli-Keokea Homesteads, Kula, Maui," HTS Plat 1029 map with project area, and inset/detail view in the lower right showing several kuleana parcels (LCAs) in and adjacent to the project area (see text)

Figure 11. Portion of 1915 map (by Newton), "Waiohuli-Keokea Homesteads" (Registered Map 2494) with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAs) in and adjacent to the project area (see text)

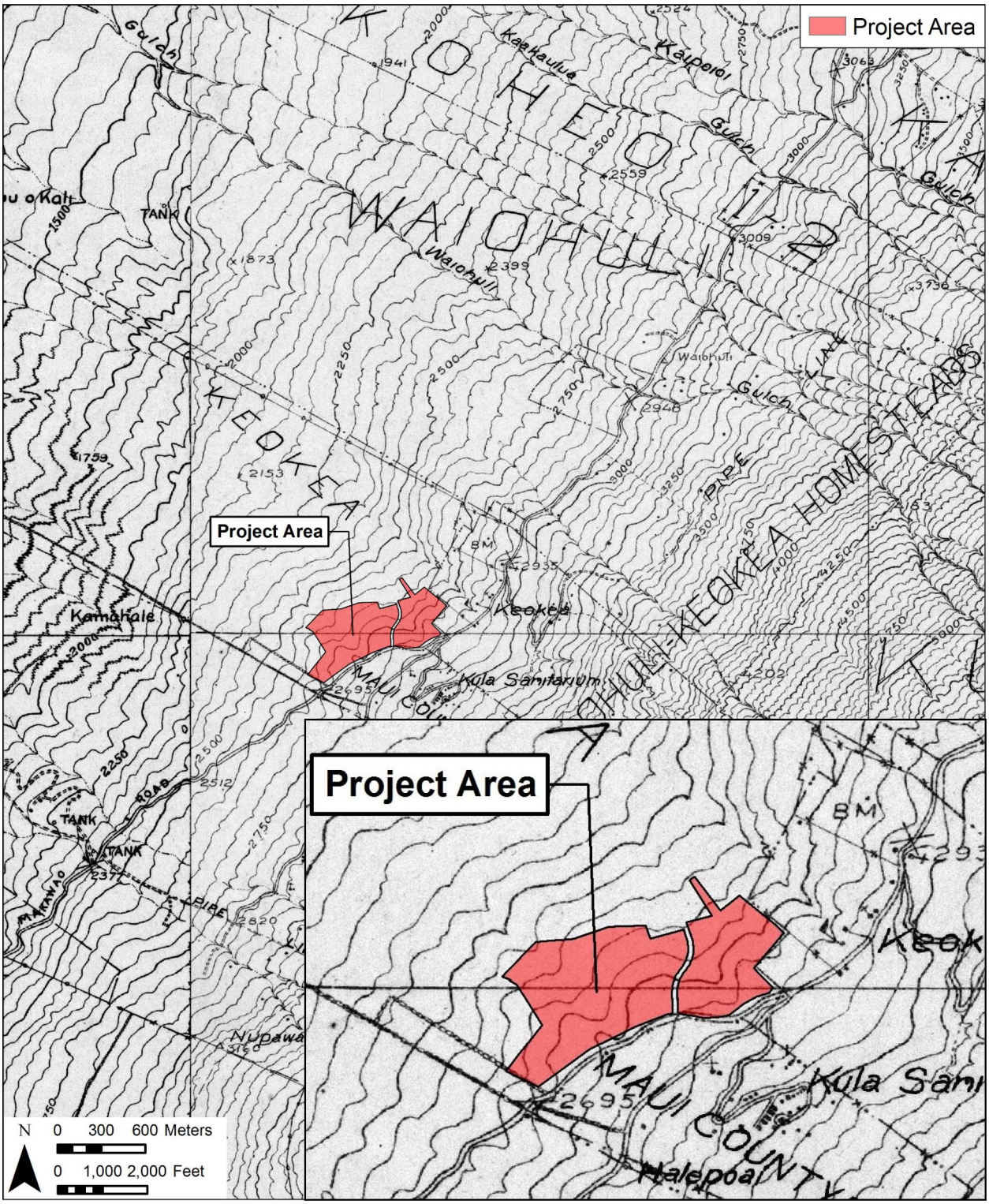


Figure 12. Portion of 1924 topographic map with project area location; inset in lower right (see text)

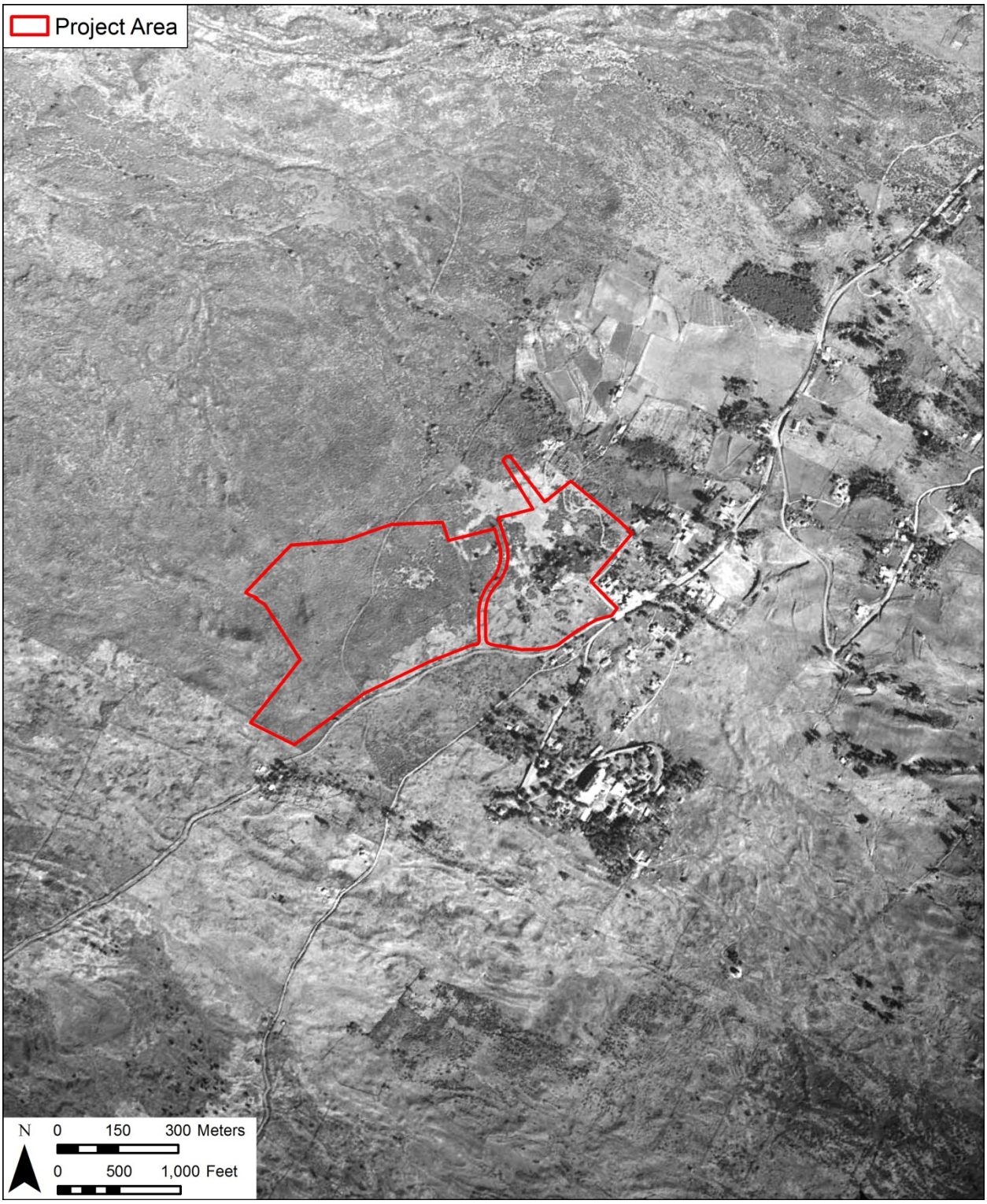


Figure 13. Portion of 1951 aerial photograph with project area location

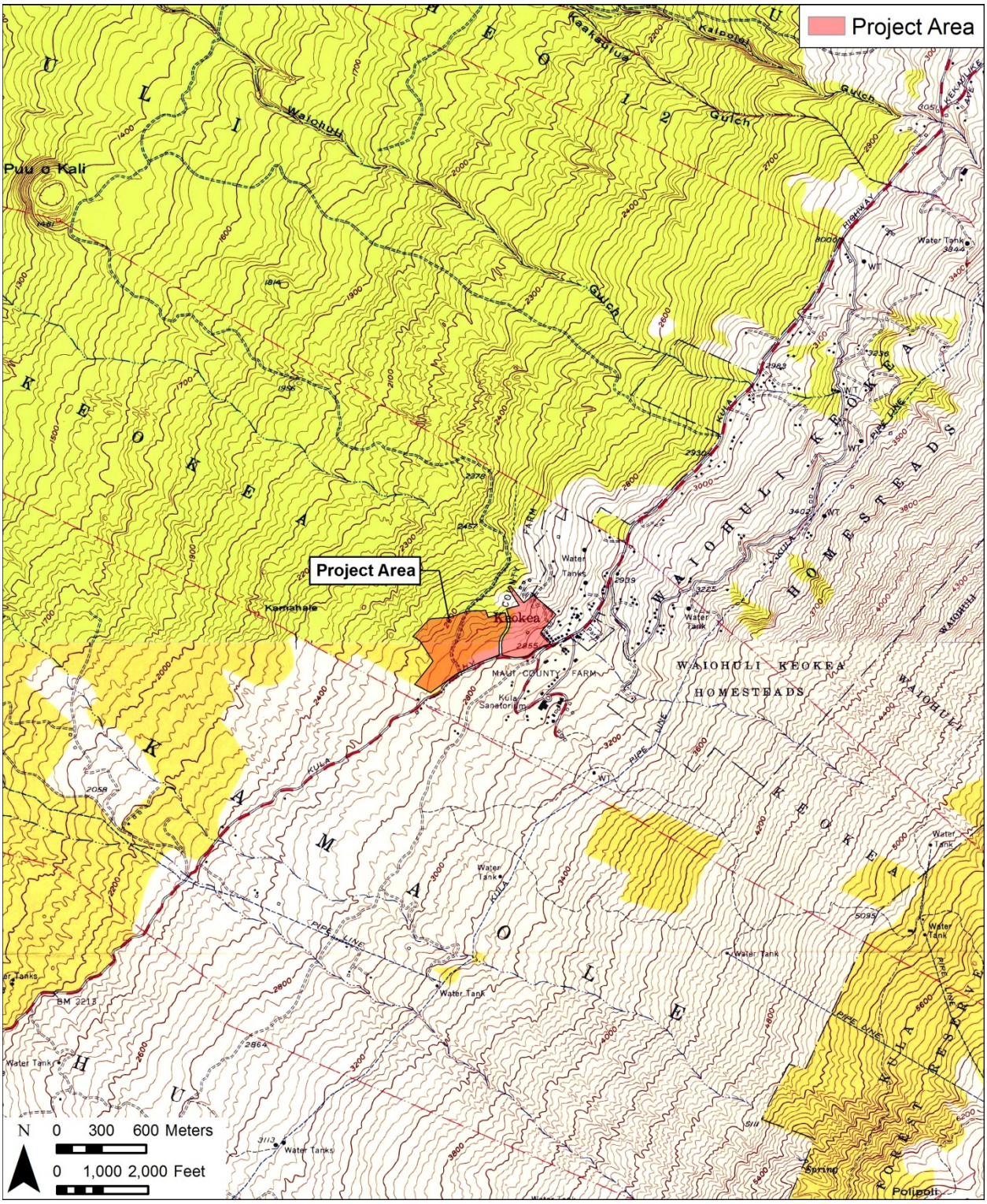


Figure 14. Portion of 1954 topographic map with project area location

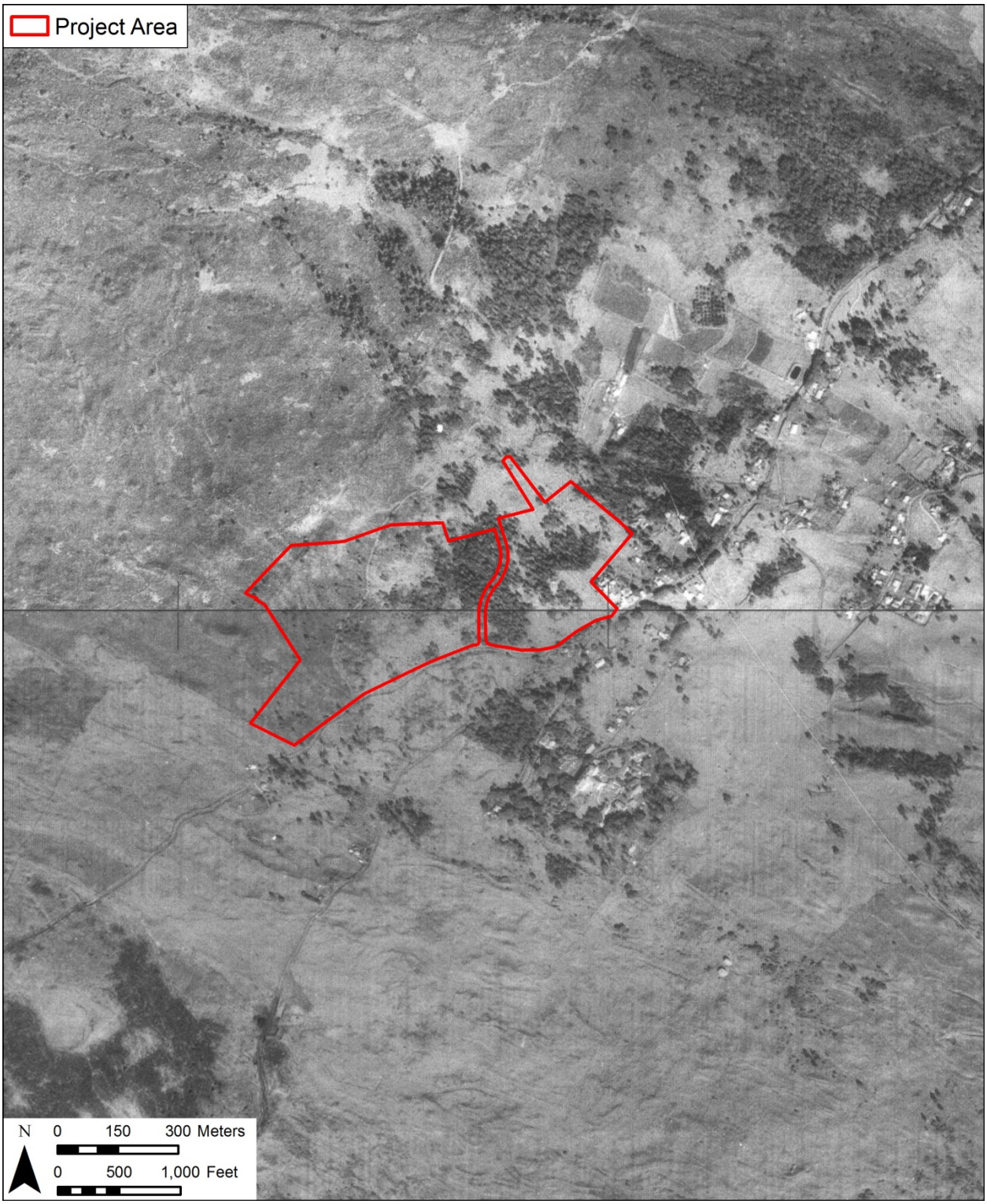
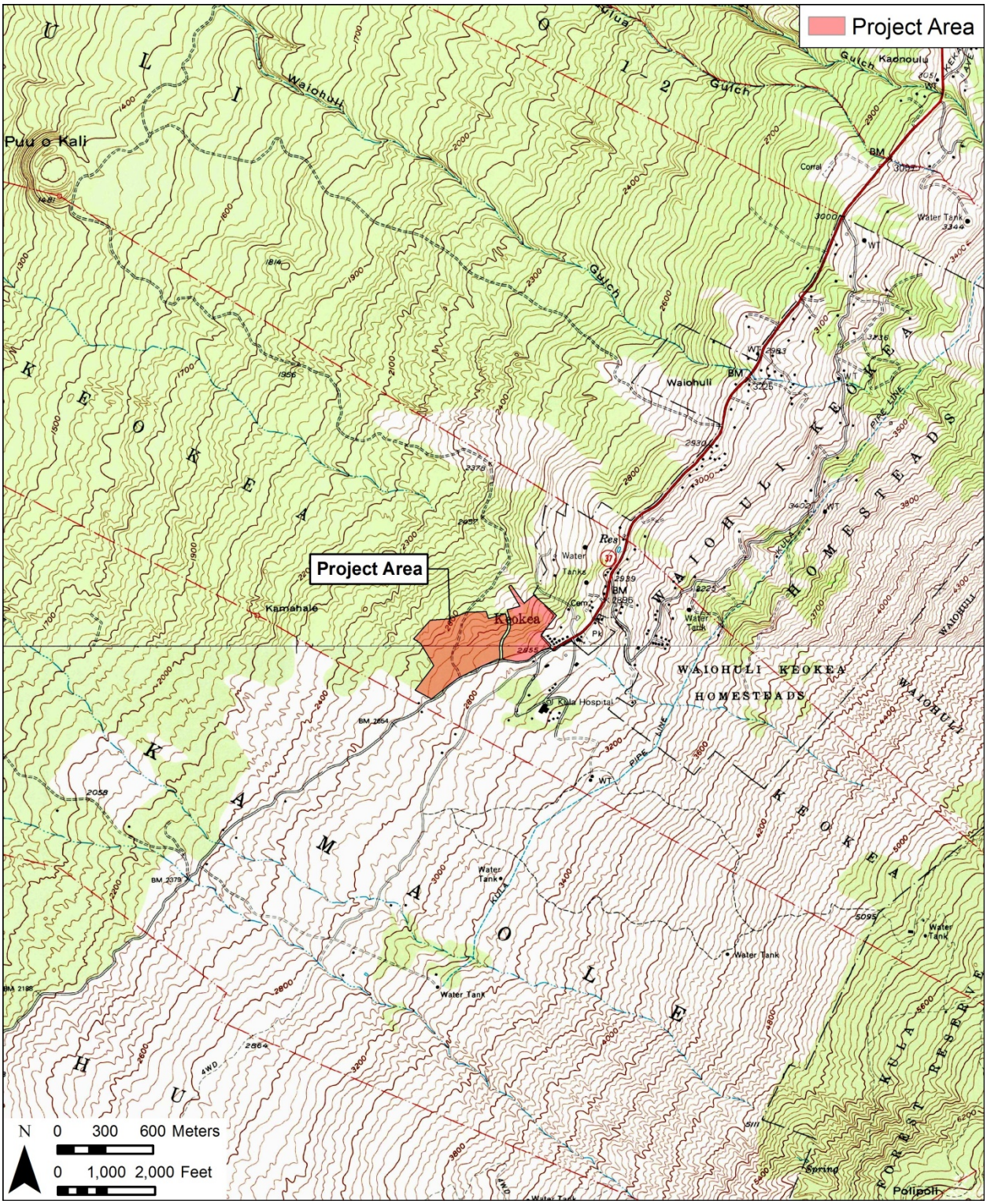


Figure 15. Portion of 1977 aerial photograph with project area location


Project Area
Project Area
Puu o Kali
Waiohuli
Kaohea Gulch
Kaohea Gulch
Kaohea Gulch
Kaohea Gulch
Kaohuli Gulch
Kaohuli Gulch
Kaohuli

PREVIOUS ARCHAEOLOGICAL STUDIES

This section summarizes relevant previous archaeological studies in and near the project area, in order to reconstruct human use and modification of the land. The main purpose of presenting this information is to develop predictive data about the types and distribution of historic properties and their component features we expected to encounter; and to assist interpretation of any new findings.

Figure 17 depicts previous archaeological studies in and within ½-mile of the project area, which includes both Kēōkea and Waiohuli Ahupuaʻa. Figure 18 shows archaeological sites identified by Brown et al. (1989) in Kēōkea Ahupuaʻa. This figure is reproduced from the original (1989) report, and is difficult to read. In addition, it does not include formal (SIHP) site numbers.

Figure 19 shows archaeological sites with formal (SIHP) site numbers identified within ½-mile of the project area. Figure 20 is a detail (zoomed-in) depiction of previously-identified sites in the proposed development area (blue outline), in relation to the larger project area. Note that preservation sites in the project area—which are all outside of the proposed development area—are shown as red symbols.

Overview of Previous Archaeology in and near the Project Area

Brown et al. (1989) conducted archaeological surveys of large sections of DHHL land in both Kēōkea and Waiohuli Ahupuaʻa (see Figure 17), including the entire current project area. In the Kēōkea portion, which measured 351 acres, they identified a total of 108 sites comprised of 211 component features. A wide variety of pre-Contact, traditional-style Hawaiian sites were identified, as summarized in Table 2, including heiau and burials (including possible heiau and possible burials). Most of the identified sites were habitations and agricultural features.

Kolb et al. (1997) conducted an archaeological survey of neighboring Waiohuli Ahupuaʻa (see Figure 17), which did not include the current project area. Seventy-nine (79) sites were identified, including a wide variety of pre-Contact, traditional-style Hawaiian sites.

Dega et al. (2004) conducted data recovery of the Kēōkea portion studied by Brown et al. (1989), including the entire current project area. Dega et al. (2004) documented and tested 21 previously-identified sites, and prepared preservation (Dega 2005b) and burial treatment plans (Dega et al. 2005a).

Dagher et al. (2010) conducted archaeological monitoring in DHHL lands of Kēōkea and Waiohuli, but did not identify any historic properties in or near the current project area.

Dega and Havel (2005) conducted supplemental (addendum) inventory survey work in Waiohuli, and documented additional sites. Dega (2007) conducted data recovery in Waiohuli. Finally, Lyman and Dega (2017) conducted archaeological monitoring in Waiohuli Ahupuaʻa.

Preservation Sites in Project Area but Outside of Proposed Development Area

As depicted in Figure 20 and summarized in Table 3, four preservation sites are located in the central-western portion of the project area. These four sites are *not* located in the "proposed development area." SIHP # 50-50-10-2097 is about 100 m (328 ft.) from the proposed development area. The other preservation sites—SIHP # 2099, 2311 and 2339—are approximately 200 m (656 ft.) to 300 m (984 ft.) from the proposed development area.

SIHP # 2097, 2311 and 2339 are burial sites preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). Additional details on these sites are provided in Table 3.

SIHP # 2099, first identified by Brown et al. (1989), was included in a preservation plan by Dega (2005b). The site has been described as follows:

> . . . large, notched enclosure measuring 17.0 m long by 10.0 m wide (170.0 m^2). The site is known as Papakea Heiau . . . The structure has been heavily disturbed and has no northwestern wall. A notch is present in the southern corner. Adjacent to the northwestern side are two paved terraces. This site . . . has been assessed as prehistoric in origin. (Dega 2005b:8)

The preservation plan calls for a 3-meter preservation buffer (ibid.:5) around the site to be maintained in perpetuity for a total site-preservation area measuring 260 m^2. Dega (2005b:23) also states:

> Preservation . . . will take the form of avoidance and protection, also referred to as *conservation.* There are no plans for installing signs. . . There will be special provisions accorded cultural and lineal descendants, members of the Keokea Homesteaders Association and/or DHHL, school groups, other Native Hawaiian organizations, and any other groups so permitted by the Keokea Homesteaders Association for allowing access . . . for cultural practices.

Previously-Identified Sites in the Proposed Development Area

As depicted in Figure 20 and summarized in Table 3, three previously-identified sites are in the proposed development area; none of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. Modern alterations to this area—within which SIHP #s 2302 and 2307 are located—include an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure). SIHP # 2301 can no longer be located or recognized due to heavy vegetation in this area.

SIHP # 50-50-10-2301

SIHP # 2301 was described as a circular enclosure measuring some 5.4 m (length) by 4.5 m (width) interpreted as an "animal control" (e.g., a pen) and/or possible habitation site dating from pre-Contact times. Its original description (Brown et al. 1989:E36) reads:

> Circular enclosure with unfaced walls. The southeast wall is built into a small outcrop of rock. Maximum wall height is 40 cm. Walls are comprised of stacked basalt boulders and cobbles. A small drainage is present c. 4.0 m west of the enclosure.

The physical condition of the site was listed as fair.

SIHP # 50-50-10-2302

SIHP # 2302 was described as a rock wall measuring some 7.0 m long by 0.6 m wide interpreted as an agricultural feature dating from pre-Contact times. Its original description (ibid.) reads:

> Modified bedrock wall c. 0.5 m high (maximum). Feature is probably agricultural. Small agricultural terraces present in the area.

The physical condition of the site was listed as fair.

SIHP # 50-50-10-2307

SIHP # 2307 was described as a rectangular terrace and rock wall occupying an area measuring some 18.0 m long by 6.0 m wide interpreted as a habitation/agricultural features also dating from pre-Contact times. Its original description (Brown et al. 1989:E37) reads:

> Rectangular terrace built on top of a knoll. The wall is built across a small steep-sided drainage situated 6.0 m south of the terrace. The south and north walls of the terrace are situated on the edge of the knoll. An alignment extends 4.0 m north from the northwest corner of the terrace.

The physical condition of the site was listed as fair.

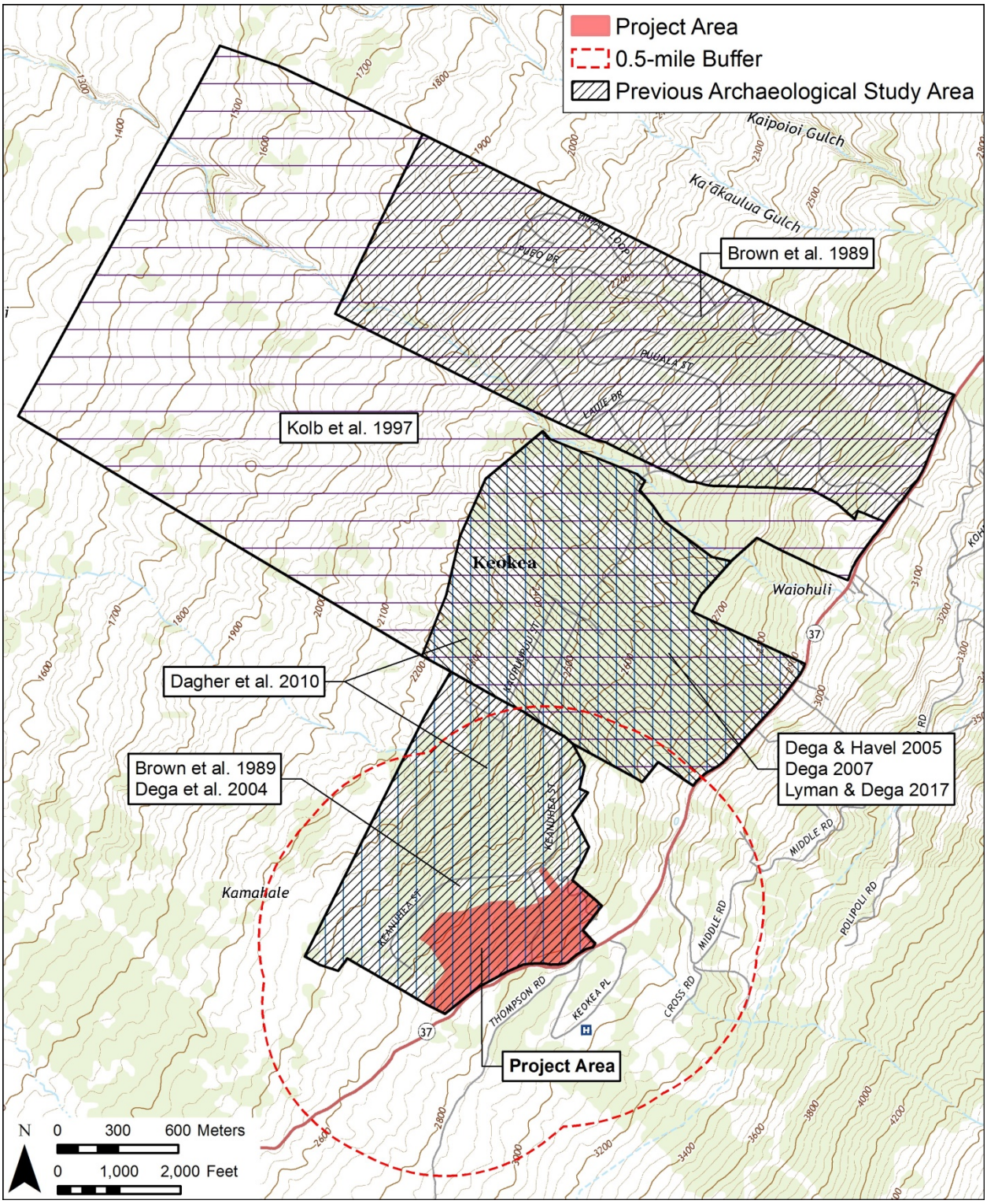


Figure 17. Previous archaeological studies in and within 1/2-mile of the project area

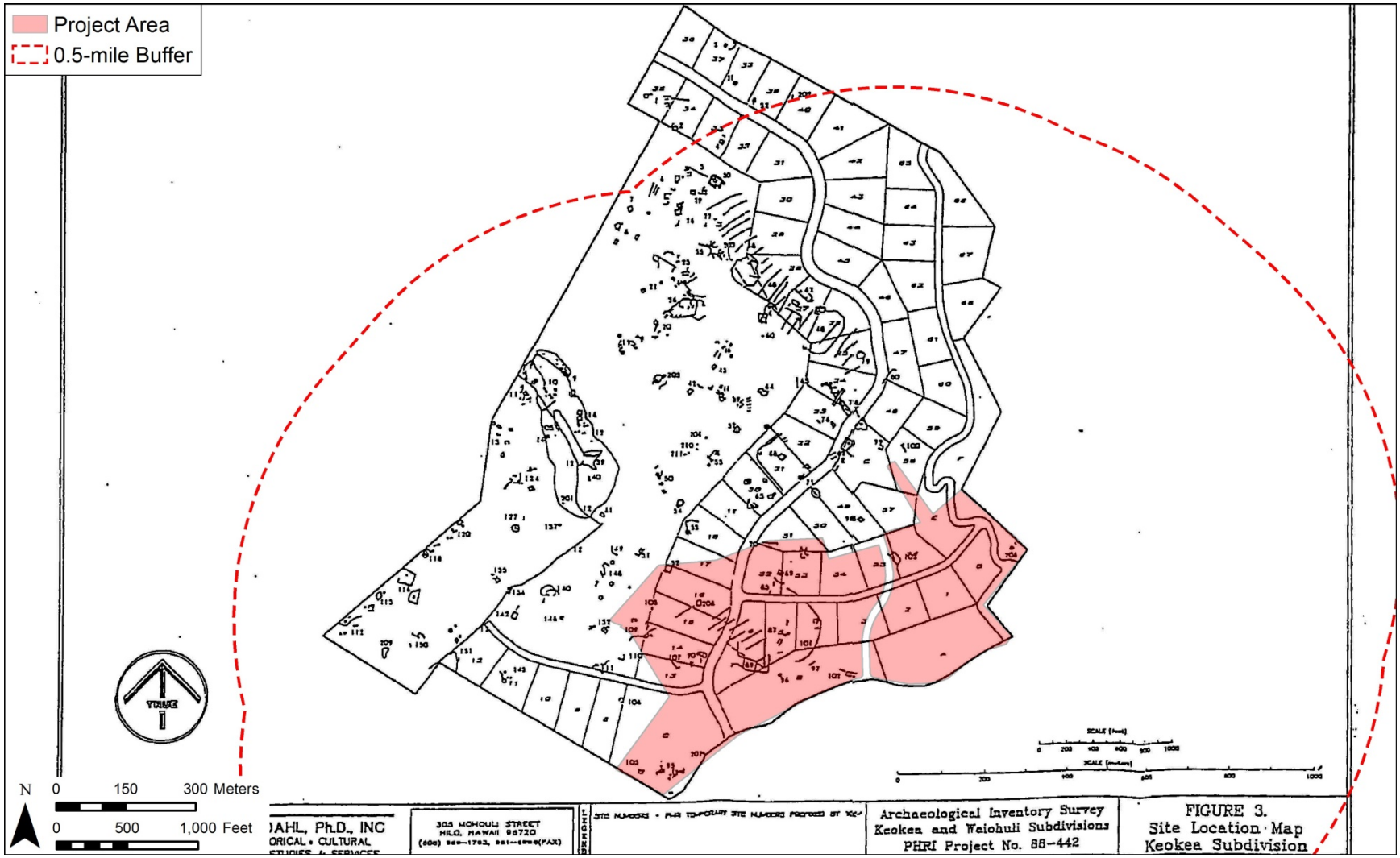


Figure 18. Previously-identified sites according to Brown et al. (1989) (see text for discussion)

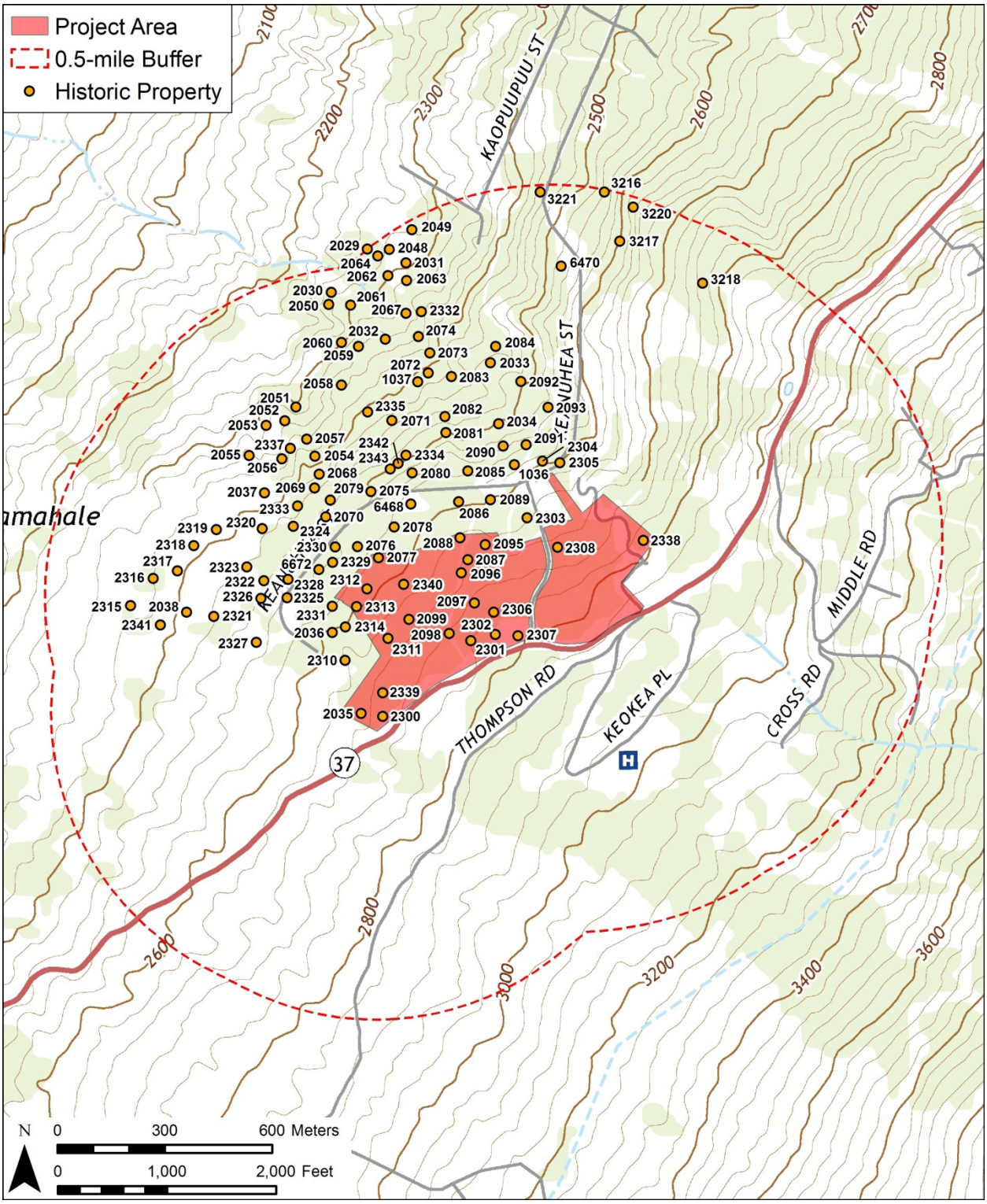


Figure 19. Previous archaeological studies in and within 1/2-mile of the project area

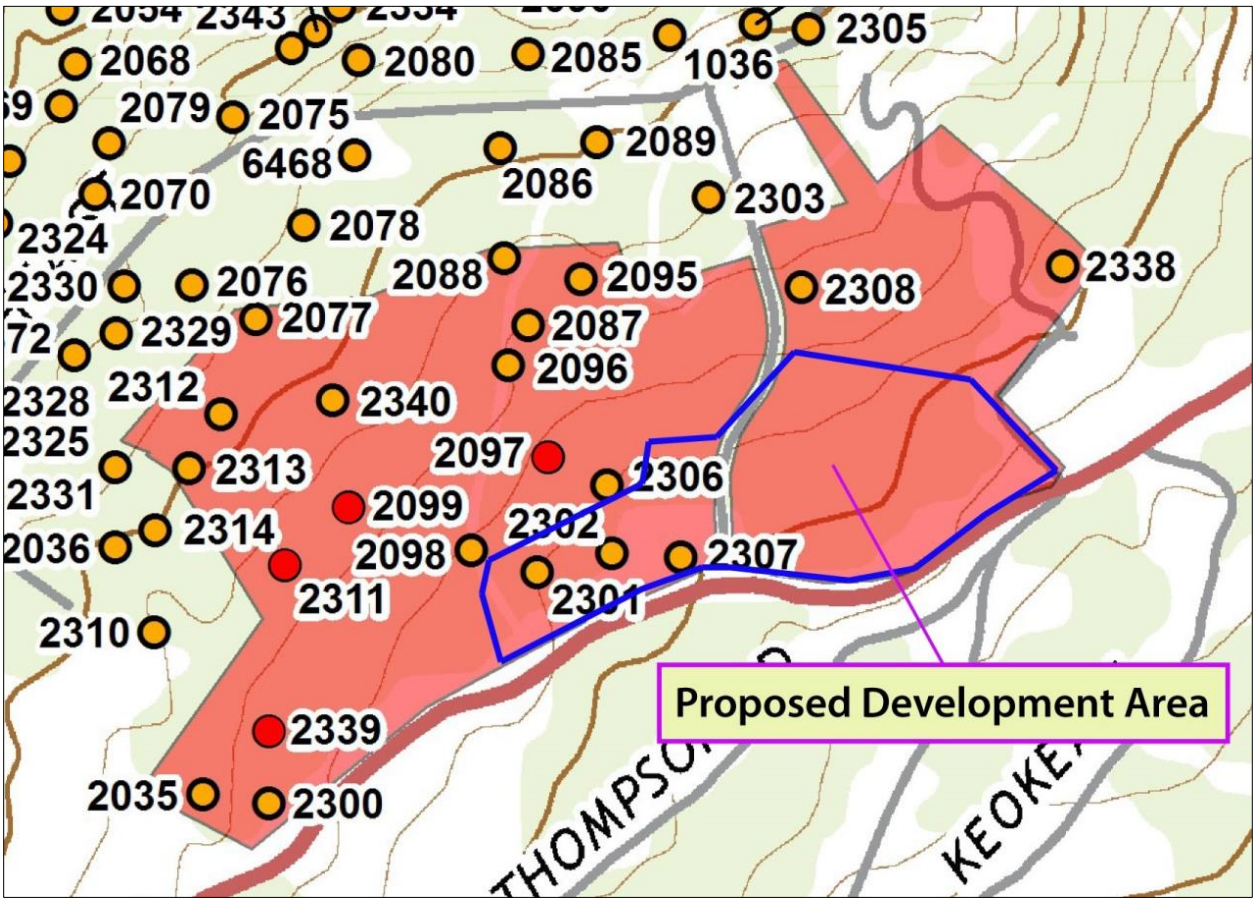


Figure 20. Previously-identified sites in the project area (light red-colored polygon) and proposed development area (blue outline); preservation sites (SIHP # 2099 is Papakea Heiau; SIHP #s 2097, 2311 and 2339 are burials) in the project area are red symbols (see text for discussion)

Table 2. Site Types by Functional Interpretation identified by Brown et al. (1989) in Kēōkea

Formal Type[1]	# of Sites	% of Total
Agricultural	5	4.63
Animal Control	6	5.55
Animal Control/Agriculture	3	2.78
Burial*/Habitation/Agriculture	3	2.78
Burial	1	0.93
Burial/Habitation	2	1.85
Burial/Agriculture	1	0.93
Tool Manufacturing	1	0.93
Habitation	22	20.37
Habitation*/Agriculture	1	0.93
Habitation/Agriculture	48	44.44
Habitation*/Animal Control	1	0.93
Habitation/Indeterminate	1	0.93
Habitation/Agriculture/Animal Control	4	3.84
Indeterminate	2	1.85
Religious*/Agriculture	1	0.93
Religious/Habitation/Agriculture	1	0.93
Religious*/Habitation/Agriculture	1	0.93
Religious	1	0.93
Temporary Habitation	1	0.93
Temporary Habitation/Agriculture	1	0.93
Water Tank	1	0.93
TOTAL	*108*	*100.00%*

[1] These categories are verbatim from Brown et al. (1989:15)
* These were described as tentative identifications.

Table 3. Previously-identified Archaeological Sites in the Project Area*

SIHP #[1]	Formal Type	Functional Interpretation	Temporal Interpretation	Status/Mitigation	Relationship w. Proposed Development Area (PDA)
2301	Circular enclosure	Animal control or possibly habitation	Pre-Contact	NFW	**Within the PDA**
2302	Rock wall	Agricultural	Pre-Contact	NFW	**Within the PDA**
2307	Rectangular terrace & rock wall	Habitation/agricultural	Pre-Contact	NFW	**Within the PDA**
2097	Mound & platform	Burial	Pre-Contact	**Preservation**	100 m (328 ft.) away from PDA
2099	Enclosure (remnant)	Papakea Heiau	Pre-Contact	**Preservation**	200 m (656 ft.) away from PDA
2311	Overhang/lava blister	Burial	Pre-Contact	**Preservation**	225 m (738 ft.) away from PDA
2339	Sink/lava tube	Burial	Pre-Contact	**Preservation**	300 m (984 ft.) away from PDA
2035	Enclosure	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2077	Enclosure w. paved area	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2087	Enclosure w. water tank	Water tank	Pre-Contact/Historic	NFW	Outside of the PDA
2088	Terrace	Agricultural	Pre-Contact	NFW	Outside of the PDA
2095	Rock wall	Indeterminate	Pre-Contact	NFW	Outside of the PDA
2096	Wall & terrace complex	Animal control/ Agricultural	Pre-Contact	NFW	Outside of the PDA
2098	Terrace	Agricultural/ Habitation/ Animal Control	Pre-Contact/Historic	NFW	Outside of the PDA
2300	Enclosure, wall terrace & wall segment	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2306	Mounds & wall	Animal control/ Agriculture	Pre-Contact/Historic	NFW	Outside of the PDA
2308	Overhang	Habitation	Pre-Contact	NFW	Outside of the PDA
2312	Enclosure	Habitation	Pre-Contact	NFW	Outside of the PDA
2313	C-shaped Terrace & agricultral features	Agricultural	Pre-Contact	NFW	Outside of the PDA
2338	Enclosure	Agriculture/ Possible Habitation	Pre-Contact	NFW	Outside of the PDA
2340	Enclosure	Habitation	Pre-Contact	NFW	Outside of the PDA
TOTAL	21 previously-identified sites in project area; 3 located in proposed developed area (PDA); 4 are preservation sites located outside of PDA				

[1] SIHP = State Inventory of Historic Places; complete, formal site #s in the column as preceded by "50-50-10-."
* Sites are arranged in the following order: (1) sites within the PDA are listed first; (2) preservation sites are ;isted next, and (3) all other sites in the project area but outside of the PDA are then listed in numerical order.

RESULTS OF FIELD INSPECTION

The pedestrian survey (field inspection) by Chris Monahan conducted on 3/19/21 demonstrated the following main conclusions, which are described in more detail below (note, the location, areal extent and orientation of the areas and resources discussed below are depicted in Figure 21):

1. The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are not located in the proposed development area (see Figure 20);
2. One additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital (see Figure 21);
3. The three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are not preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301).
4. A modern rock wall along parts of Kula Highway and Ka'amana St. is not a historic property.

Relationship between Preservation Sites & Proposed Development Area

The four previously-identified preservation sites in the central and western portion of the project area and not in the proposed development area. The closest of these sites, SIHP # 50-50-10-2097, is located about 100 m (328 ft.) away from the proposed development area. The other sites—SIHP #s 2099, 2311 and 2339—are approximately 200-300 m (656-984 ft.) away. SIHP #s 2097, 2311 and 2339 are all burial sites that are being preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). SIHP # 2099, first identified by Brown et al. (1989), was included in a preservation plan by Dega (2005b). The site—known as Papakea Heiau—has been described in the previous section of the report (see pp. 25-6). The preservation plan calls for a 3-meter preservation buffer (ibid.:5) around the site to be maintained in perpetuity for a total site-preservation area measuring 260 m^2. Other details of preservation of this site have been described above (see p. 26).

Historic Property in Proposed Development Area – The Incinerator Site

An area of historic- and modern-aged debris from an old (abandoned since at least 1980) incinerator site associated with the Kula Hospital is in the eastern portion of the project area (previously designated TMK [2] 2-2-004:070, measuring 0.38 acres, but now subsumed by TMK [2] 2-2-004:068) [see yellow-outlined site boundary in Figure 21]).

As described above (see p. 13), there is not much specific information on the "incinerator site," which was used by the hospital to burn waste. According to an environmental assessment (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Other information (e.g., when it was built, and its current disposition at the time [2004]) was unknown.

Site features include an abandoned and overgrown (with vegetation) small metal-frame structure; this is presumably the location of the incinerator proper. The surrounding landscape is littered with debris. We did not spend much time at this site, which likely contains hazardous materials that are a health and safety hazard.

Figure 22 to Figure 27 illustrate the incinerator site, including the main structure as well as the surrounding landscape that is littered with hazardous debris.

Three Previously-Identified Historic Properties in the Proposed Development Area

Three previously-identified sites are in the proposed development area (see Figure 21). None of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. Modern alterations to this area—within which SIHP #s 2302 and 2307 are located—include an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure).

Figure 28 to Figure 30 show views of SIHP #s 2302 and 2307.

SIHP # 2301 was not relocated due to heavy vegetation in the area.

Modern Features (Not Historic Properties) in Proposed Development Area

A low, informally-constructed, dry-stacked rock wall built of boulders along the Kula Highway and Ka'amana St. is a modern construction and not a historic property (see Figure 21).

Figure 31 to Figure 32 show portions of this modern boulder wall.

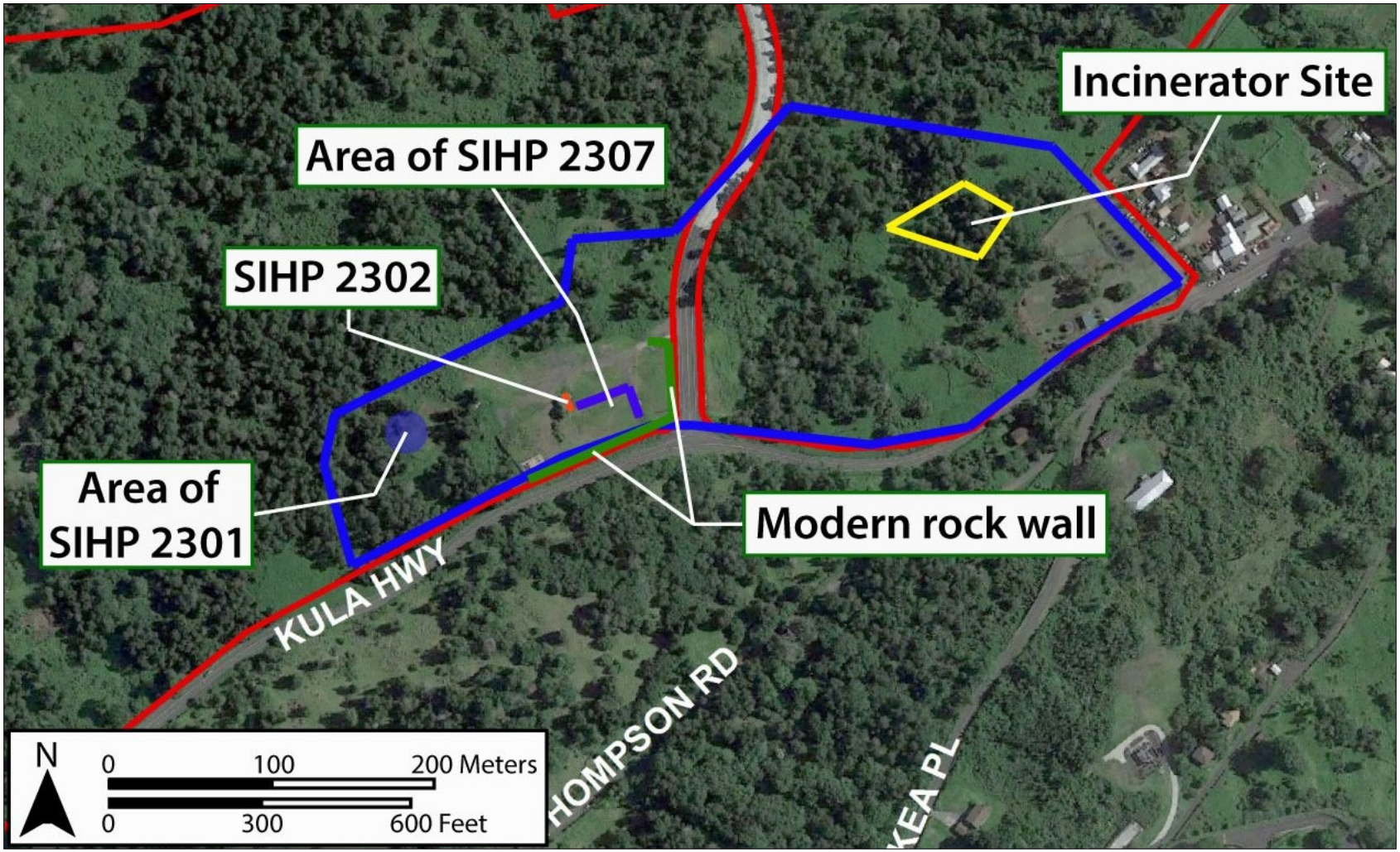


Figure 21. Aerial image showing results of archaeological field inspection (see text for discussion)

Figure 22. View of the overgrown incinerator site structure; view south

Figure 23. View of the overgrown incinerator site structure; view southwest

Figure 24. View of the overgrown incinerator site structure; view northwest

Figure 25. View of hillslope around the incinerator site; view north

Figure 26. View of incinerator material at the base of the main structure

Figure 27. View of surface material around the incinerator site

Figure 28. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing northeast

Figure 29. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing south-southeast

Figure 30. Detail of part of SIHP # 2307 (arrows); view east

Figure 31. Portion of modern rock wall (arrows) along Ka‘amana St.; vie northeast

Figure 32. Portion of modern rock wall (arrows) near entrance to the farmers' market along Ka'amana St.; view southeast

CONCLUSION

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai‘i, has completed this Archaeological Literature Review and Field Inspection (LRFI) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres located in Kēōkea Ahupua‘a, Makawao District, Island of Maui, Hawai‘i, TMK (2) 2-2-032:067 & 068.

A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a Native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events. For the purposes of this LRFI, we focused our fieldwork *only* in locations where the community proposes to alter the ground surface, build structures and infrastructures, etc., and *not* on the entire 69-acre project area. The smaller area, designated the “proposed development area,” measures about 15 acres.

The objectives of this LRFI study include: (1) Documentation and description of the parcel’s land-use history in the context of both its traditional Hawaiian character as well as its historic-period changes; (2) Identification of any significant historic properties or component features in the project area and proposed development area; and (3) Providing information relevant to the likelihood of the proposed development plans adversely affecting any significant historic properties.

This LRFI may be used to support consultation with the State Historic Preservation Division (SHPD) in accordance with Hawai‘i Revised Statutes (HRS) § 6E-8 and Hawai‘i Administrative Rules (HAR) § 13-275; and/or, consultation with other stakeholders such as Native Hawaiian organizations and individuals, and other community members.

The results of this LRFI are as follows:

1. The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are <u>not</u> located in the proposed development area (see Figure 20);
2. One additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the “incinerator site” associated with the historic Kula Hospital (see Figure 21);
3. The three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are <u>not</u> preservation sites and have been previously determined to be “no further work” sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers’ market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301).
4. A modern rock wall along parts of Kula Highway and Ka‘amana St. is <u>not</u> a historic property.

Preliminary Significance Assessment

The only unevaluated (new) site identified during this LRFI is the incinerator site. We have gathered sufficient evidence to obtain a formal State Inventory of Historic Places (SIHP) # if requested by the SHPD. This site is likely eligible for the Hawai‘i Register of Historic Places (HRHP) under criterion “d” for its informational value to the history of the twentieth century in Kula and Kēōkea, and possibly criterion “a” based on its association with the development of the nearby Kula Sanitorium (Hospital), whose structures are listed on the National Register of Historic Places (SIHP # 50-50-10-1540).

Preliminary Project Effect Determination

Provided that the issue of the incinerator site is resolved (e.g., in consultation with the SHPD, see what additional information needs to be gathered), the proposed development project should have "no effect" on significant historic properties.

Recommendations

Based on all available evidence, the following recommendations are offered:

1. From the community's perspective, in particular, the old incinerator site is primarily an environmental concern, and a health and safety hazard, rather than retaining heightened value as a historically-significant cultural resource. As discussed above, if the SHPD requests this resource be assigned a formal SIHP #, we have sufficient documentary evidence to complete this process.
2. There are no other historic-preservation concerns associated with the proposed development area described and documented in this report.

REFERENCES CITED

Brown, R.S., A. Haun, and H. Wong Smith (1989). *Archaeological Inventory Survey, Keokea and Waiohuli Subdivisions, Lands of Keokea and Waiohuli, Makawao District, Island of Maui (TMK:2-2-02:55,56).* Paul H. Rosendahl, Inc., Hilo, Hawai‘i.

Coulter, J.W. (1931). *Population and utilization of land and sea in Hawaii, 1853*. B.P. Bishop Museum, Honolulu.

Dagher, C.A., et al. (2010). *An Archaeological Monitoring Report for the Construction of Roadway Corridors . . .* Scientific Consultant Services, Inc., Honolulu.

Dega, M.F., L. Morawski, and C. Monahan (2004). *The Archaeology of Upland Keokea: Archaeological Data Recovery of the DHHL Kula Residential Lots, Unit 1 of the Keokea Subdivision, Keokea Ahupua`a, Makawao District, Maui Island, Hawai`i* (TMK:2-2-02:55). Scientific Consultant Services, Inc., Honolulu.

Dega, M.F. (2005a). *Burial Treatment Plan for The Department of Hawaiian Homelands (DHHL), Kula Residential Lots, Unit 1 of Keokea Subdivision, Keokea Ahupua`a, Makawao District, Maui Island, Hawai`i [TMK: 2-2-02: PORTION OF 55*] Scientific Consultant Services, Inc., Honolulu.

Dega, M.J. (2005b). *Preservation Plan for the Department of Hawaiian Homelands (DHHL), Kula Residential Lots, Unit 1 of Keokea Subdivision, Keokea Ahupua‘a, Kula District, Maui Island, Hawai‘i [TMK:2-2-02:por. of 055].* Scientific Consultant Services, Inc., Honolulu

Dega, M.J. (2007). *Archaeology of Upland Waiohuli: An Archaeological Data Recovery Report for the Department of Hawaiian Homelands* (DHHL) Phase I Waiohuli Residential Lots, Waiohuli Ahupua`a, Makawao District, Maui Island, Hawai`i. *[TMK: (2) 2-2-02:056 14].* Scientific *Consultant* Services, Inc., Honolulu.

Dega, M.F., and B. Havel (2005). *Waiohuli Road Corridor Survey: Revised Archaeological Inventory Survey Report for the Department of Hawaiian Home Lands (DHHL) in Waiohuli Ahupua`a, Kula District, Island of Maui, Hawai`i [TMK: 2-2-2: portion of 014].* Scientific Consultant Services, Inc., Honolulu.

Environet, Inc. (2004). *Phase I Environmental Site Assessment, Waiohuli – Keokea, Kula, Maui, Hawai‘i. Honolulu*. Environet, Inc., Honolulu.

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens **(**1972**).** *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai*. State of Hawaii, U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.

Kolb, M., J. Conte, and R. Cordy (1997). *Kula: The Archaeology of Upcountry Maui in Waiohuli and Keokea: An Archaeological and Historical Settlement Survey in the Kingdom on Maui. On file at SHPD, Kapolei, Hawai‘i.*

Lyman, K., and M.F. Dega (2017). *Archaeological Monitoring Report for the DHHL Keokea Project (Phase 1). Waiohuli Ahupua‘a, Makawao District, Maui Island, TMK (2) 2-2-033 (por) and (2) 2-2-034 (por).* Scientific Consultant Services, Inc., Honolulu.

Mark, D.M.L. (1975). *The Chinese in Kula, Recollections of a Farming Community in Old Hawaii.* Hawaii Chinese History Center, Honolulu.

Pukui, M.K., S.H. Elbert, and E.T. Mookini **(**1974**).** *Place Names of Hawaii.* University of Hawaii Press, Honolulu.

Schmitt, R.C. (1977). *Historic Statistics of Hawaii.* University of Hawaii Press, Honolulu.

APPENDIX A – *KA WAI OLA* NOTIFICATION

The notification below appeared in the December, 2020, issue of the Office of Hawaiian Affairs (OHA) newspaper.

CULTURAL IMPACT ASSESSMENT: KĒŌKEA AHUPUA'A, KULA DISTRICT, MAUI

On behalf of the Kēōkea Homestead Farm Lots Association (KHFLA), the Department of Hawaiian Homelands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai'i, LLC, in partnership with Nohopapa Hawai'i, LLC, is preparing a Cultural Impact Assessment (CIA) as part of the Kēōkea Master Plan for DHHL. The project area in Kēōkea Ahupua'a at TMK (2) 2-2-032:067 & 068 is 69 acres. These lands are located in Kula District, Maui, adjacent to the Kula Highway and just makai of Kula Hospital. Please contact Chris Monahan at (808) 754-0304 or mookahan@gmail.com if you would like to participate or contribute to this study by sharing your mana'o about any cultural or historical resources or other information you believe may be relevant. This could include mo'olelo (oral history) or any recollections about the project area in the past, or use of these lands that may include (in the past or currently) traditional and customary practices. Mahalo nui! ■

Appendix F

CULTURAL IMPACT ASSESSMENT

FINAL

CULTURAL IMPACT ASSESSMENT
KĒŌKEA MASTER PLAN PROJECT
KĒŌKEA AHUPUA‘A, MAKAWAO DISTRICT, MAUI ISLAND, HAWAI‘I

TMK (2) 2-2-032:067 & 068

Prepared for:
PBR HAWAII & Associates, Inc.
Honolulu

Prepared by:
Christopher M. Monahan, Ph.D.
TCP Hawai‘i, LLC (Kailua)
With Special Assistance from:
Nohopapa Hawai‘i, LLC (Hakalau)

View down to Mā‘alaea Bay and West Maui from the Kēōkea uplands (photo source: https://haleakalacrater.com/keokea/)

July 2021

HE LEO MAHALO / DEDICATION

Na keiki uneune māmane o Kula.
The lads of Kula, who tug and pull the māmane *up by the roots.*
An expression of admiration for the people of Kula, Maui, who accomplish whatever they set out to do.
[Mary Kawena Pukui 1983:245]

This report has been written to honor the wahi kūpuna (ancestral places) and families of Kēōkea, past, present and future. From the ancient times and Na Poe Kahiko (the people of old) who first cared for these kula lands, to the historic-period farmers and ranchers whose sweat and toil built the modern cultural landscape of greater Kula, Maui, this report is dedicated.

Special mahalo to those kamaʻāina who took the time to speak with us for this project. Your manaʻo is highly valued and most appreciated!

Finally, mahalo to Alika (Alex) Akana for helping to show us around.

MANAGEMENT SUMMARY – ABSTRACT

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc. (PBR), TCP Hawaiʻi, has completed a Cultural Impact Assessment (CIA) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres in Kēōkea Ahupuaʻa, Makawao District, Island of Maui, Hawaiʻi, TMK (2) 2-2-032:067 & 068. A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events. In addition to conducting community outreach and interviews, we also conducted a physical (field) inspection of the areas within the overall 69-acre project area where the community proposes to alter the ground surface, build structures and infrastructures, etc. This smaller area, designated the "proposed development area," measures about 15 acres. This CIA is designed to satisfy the Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997, and any applicable requirements under Hawaii Revised Statutes Chapter 343 and the related Hawaii Administrative Rules ("Environmental Impact Statement Rules") under HAR Chapter 11-200.1. **The following cultural resources, practices and beliefs are associated with the project area:** (1) The project area is part of the uplands of Kēōkea Ahupuaʻa, in the moku (traditional district) of Kula, known today as the district of Makawao. The project area is situated on the lower slopes of Haleakalā, known in Hawaiian traditions as the "House of the sun"; (2) Historian Helen Wong Smith's compilation of cultural and historical information about the project-area environs describes Makawao, in general, as "kula-o-ka-maʻo-maʻo," or Land of Mirages, where lost souls once wandered until they found a place to rest. Pukui et al. (1974:142) interpret the place name Makawao as "forest beginning"; (3) Puʻu-o-kali (literally, "hill of waiting") is a prominent hill (elevation 1,481 ft.) a couple miles northwest of the project area along the boundary between the ahupuaʻa of Kēōkea and Waiohuli. From the coastline, this puʻu (hill) is a major visual aid and landmark between these lands. It is also associated with the following moʻolelo (oral-historical accounts): [It was] . . . believed once [to be] a *moʻo*, the wife of nearby Puʻu-hele; their child, Puʻu-o-inaina (hill of wrath) was placed on Ka-hoʻolawe and later was a lover of Pele's sweetheart, Lohiʻau. (Pukui et al. 1974:203); (4) Māhele data from the project area show an atypical pattern compared with most of the Hawaiian Islands: the project area was part of *both* Crown land—that is, large tracts (such as entire ahupuaʻa) set aside for the monarchy's exclusive use—*as well as* kuleana (hoaʻāina, or commoner) parcels. Wong Smith explained: "Although there were many small parcels granted in Keokea . . . the Indices states that Keokea was Crown Land from the beginning. The numerous [small, kuleana] parcels may be a result of an experiment by the Kamehameha III's administration prior to the Great Mahele concerning trial fee ownership runs. In a report by Riford . . . 11 Land Commission Awards (LCA) either within or bordering the Keokea parcel [i.e., including the current project area] . . . are listed. The bulk of the parcels are designated as <u>kula</u> land and houselots"; (5) Two LCAs (#s 10639 to Pa [1.9 acres] and 6720-B: ʻāpana 4 to Nahelu [3.6 acres]) are entirely, or nearly so, contained within the project area; however, they are both well outside of the proposed development area. Interestingly, Nahelu's LCA contains two of the preservation sites identified in previous studies of the project area: SIHP #s 50-50-10-2099—a heiau known as Papakea—and 2311, a burial site. Pa's kuleana parcel is described as "kalo [taro] land" that he received in 1843. Nahelu received his parcel in 1823; (6) Several other LCAs are located around the north and northeast sides of the project area; most are a short distance away, but one (LCA # 6724 to Makakulani) includes a small portion of the project area. This and others (LCA #s 6179-B: ʻāpana 2 [to Kalama], 6480: ʻāpana 2 [to Halekahi], 6415: ʻāpana 1 [to Kakua], and at least a dozen more) suggest a fairly densely-populated area, at least in the mid-1800s; (7) Wong Smith, discussing the time of the California gold rush (1840s), noted that the Kula Moku (District) was a place of commercial agricultural operations and cash crops. In particular, Kula was a place where "Irish" (white) potatoes were grown and shipped to California for profit. Other crops, including "corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton," were also

grown in Kula (Mark 1975), which into modern times supplied the state with up to 35% of its vegetables (Wong Smith in Brown 1989:4); (8) In the late 1800s to early 1900s, the uplands of Kēōkea, in particular, were depicted as best suited for pasturage and ranching, rather than agriculture. The general limits of "good agricultural land" is located just mauka (upslope) of the project area (on a map dated 1885–1903). On a 1911 map, the area just southeast of the project area is labeled "Maui County Farm." According to the National Register of Historic Places (NRHP) form for the Kula Sanitorium (see below), the "Maui County Farm and Sanitorium" was established in 1910. This same (1911) map shows the "Kula pipeline" just east of the project area, upslope a short distance. According to Mark (1975:4), the pipeline was built in 1905 during a terrible drought. The water source was in Olinda; (9) Maps from 1915 depict several buildings labelled "Sanitorium" in the location of the current Kula Hospital. The "Kula Sanitorium" was founded for the care of tuberculosis suffers. Initially the sanitorium consisted of two tent-houses which accommodated 12 patients. This site (SIHP # 50-50-10-1540) was listed on the NRHP in 2003. The NRHP form states that the hospital was a complex of wood-framed structures from 1910-1937; then, starting in 1937, the historic buildings that are on the NRHP were built; (10) Although there is not much specific information available on this issue, there is an area of the current project area known as the "incinerator site," which was a place used by the Kula Hospital (Sanitorium) to burn waste, presumably biohazardous materials. According to an environmental assessment that included the current project area (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Smith's (2001) CIA interviewee, Mr. George Tanji, who worked at the Kula Hospital until his retirement, believes the incinerator ceased operation sometime in the late 1950s; (11) During the twentieth century, the current project area was used primarily for cattle grazing; (12) Regarding the influx of Chinese to the project area environs starting in the middle 1800s, Mark's (1975) oral-history study contains a multitude of relevant information about this important part of Kēōkea's history that is listed in the report; (13) Additional interviews gathered by others (i.e., Maxwell n.d.; Smith 2001; Kihara 2013) focus on Hawaiian perspectives, paniolo ("Hawaiian cowboys"), and small, family-owned stores in the area, such as Ching Store and Henry Fong Store. Relevant highlights from these interviews are in the report; (14) Previous archaeological studies demonstrate the following: (a) several dozen traditional Hawaiian sites have been identified in previous studies of DHHL's Kēōkea lands (Brown et al. 1989; Dega et al. 2004); (b) four preservation sites are located in the central-western portion of the project area. These four sites are not located in the "proposed development area." SIHP # 50-50-10-2097 is about 100 m (328 ft.) from the proposed development area. The other preservation sites—SIHP # 2099, 2311 and 2339—are approximately 200 m (656 ft.) to 300 m (984 ft.) from the proposed development area. SIHP # 2097, 2311 and 2339 are burial sites preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). SIHP # 2099, known as Papakea Heiau, was included in a preservation plan by Dega (2005b); (c) three previously-identified sites are in the proposed development area; none of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. SIHP # 2301 can no longer be located or recognized due to heavy vegetation in this area; (15) A field inspection of the proposed development area conducted in support of this CIA demonstrated the following: (a) The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are not located in the proposed development area; (b) One additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is the "incinerator site" associated with the historic Kula Hospital; (c) The three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are not preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301); and (d) A modern rock wall along parts of Kula Highway and Ka'amana St. is not a historic property; and (16) Finally, the most relevant results of the group interview conducted with three kama'āina (native—born) to this land (i.e., Perry Artates, Richard Dancil, and Roderick Fong) include the following: (a) all the different groups of people—

Hawaiian, Chinese, Portuguese, Filipino, etc., had to learn each other's culture and respect each other, living as they did far away from the major settlement areas along the coast—they had to practice self-reliance and sustainable ways of living—Kēōkea was a place where everyone took care of, and knew the business of, everyone else; (b) even the Kula Hospital (Sanitorium), which most people in the area have some kind of relationship with through family members or personally, was fully self-sufficient, including using some of DHHL's land (on lease) to grow food and raise animals; (c) these men know generally about the fact that old Hawaiian sites are in the area, but they were not familiar with specific sites because they were raised to not be nosy; (d) the importance of the availability of water for farming and subsistence and life was discussed in both historic and modern-day terms; (e) these men talked passionately about moving forward in Kēōkea carefully and slowly and with a good plan that does not turn the place into a city or a tourist destination, but one that works for those who live and work and garden there now; and (f) all of these men advocate for taking care of the archaeological sites that are in the project area/proposed development area. *Based on all available evidence, we have determined that the proposed development project will have no negative impacts on traditional and customary practices associated with the project area; cultural resources that support these practices; and/or other beliefs about the project area that relate to these resources and practices (see decision of the Hawaii Supreme Court in Ka Pa'akai O Ka 'Āina v. Land Use Commission, 94 Hawai'i 31, 74, 7 P.3d 1068, 1084 [2000]).* If planning for the proposed development project adheres to, and takes into consideration, the recommendations listed below, the existing valued cultural, historical and natural resources in the proposed development area will be enhanced, not negatively affected, by the project. **In order to ensure that the proposed development project enhances, rather than takes away from (i.e., adversely affects), the existing valued cultural, historical and natural resources in the proposed development area, we offer the following recommendations:** (1) The incinerator site needs to be cleaned up/remediated so that this portion of the proposed development area can be safely accessed and used now and in the future. In addition to possible soil contamination, this area is littered with broken glass, metal and other surface hazards; and (2) Interested parties, including those interviewed in this CIA, should be consulted during drafting of the Master Plan so that their input can be meaningfully integrated into the specific details of the proposed development plan.

TABLE OF CONTENTS

INTRODUCTION 1
Regulatory Context 1
Purpose and Content of Cultural Impact Assessments 1
Natural Environment 2
Built Environment 3

METHODS 9
Archival Research 9
Consultation 9
Field Inspection 9

CULTURAL AND HISTORICAL CONTEXT 12
Hawaiian Cultural Landscape 12
Māhele Documents in and around the Project Area 12
Historic Period 13
Incinerator Site – Associated with the Kula Sanitorium/Hospital 14

ORAL-HISTORICAL ACCOUNTS 26
Historic-Period Chinese Settlement in Kula & Kēōkea (Mark 1975) 26
Interviews from Cultural & Historical Assessment of Kēōkea (Maxwell n.d.) 27
David "Haha" Kalahanohano Fernandez 27
James K. Kapohakimohewa 27
Fredrick Ventura 27
Kenneth Ventura 28
Wayne Lu 28
Hokulani Holt-Padilla 28
Interviews from a Cultural Impact Assessment by Smith (2001) 28
William Poepoe 28
Henry Kekiwi 28
Mr. Harley Ching and Mrs. Florence Ching 29
Mr. George Tanji 29
Interview Excerpts from Kihara's (2013) Study of "Mom and Pop Stores" on Maui 29
Florence Ching 29
Kevin Kihara 29

ARCHAEOLOGICAL CONTEXT 31
Overview of Previous Archaeology in and near the Project Area 31
Preservation Sites in Project Area but Outside of Proposed Development Area 31
Previously-Identified Sites in the Proposed Development Area 32
SIHP # 50-50-10-2301 32
SIHP # 50-50-10-2302 32
SIHP # 50-50-10-2307 32
Results of Recent Field Inspection 39
Relationship between Preservation Sites & Proposed Development Area 39
Historic Property in Proposed Development Area – The Incinerator Site 39
Three Previously-Identified Historic Properties in the Proposed Development Area 40
Modern Features (Not Historic Properties) in Proposed Development Area 40

COMMUNITY FEEDBACK AND INTERVIEWS 51
Interview with Perry Artates, Richard Dancil and Roderick Fong 51
Narrators (Interviewees') Names, Background, Significance, Mālama, "Old" Ways 51
Cultural/Natural Landscape, Resources, Uses, & Practices 53
Vision, Recommendations, and Additional Manaʻo 55

CONCLUSION – CULTURAL IMPACT ANALYSIS 57
Cultural Resources, Practices and Beliefs Associated with the Project Area 57
Findings 60
Recommendations 61

REFERENCES CITED 62

APPENDIX A – State OEQC Guidelines for Assessing Cultural Impacts A-1
APPENDIX B – *KA WAI OLA* NOTIFICATION B-1
APPENDIX C – OUTREACH LETTER SENT TO COMMUNITY MEMBERS C-1
APPENDIX D – DOCUMENTS USED TO SUPPORT INTERVIEW PROCESS D-1
APPENDIX E – MARK'S (1975) ORAL HISTORY OF THE CHINESE IN KULA E-1
APPENDIX F – INTERVIEW WRITE-UP BY NOHOPAPA HAWAIʻI F-1

LIST OF FIGURES

Figure 1. Project area location on a topographic map 4
Figure 2. Aerial image showing location of project area 5
Figure 3. TMK map of the project area (graphic created by TCP Hawai‘i) 6
Figure 4. Approximately 15-acre proposed development area depicted (yellow polygon) within the larger project area (TMK [2] 2-2-032:067 & 068) 7
Figure 5. Soil data map of the project area (soil data from Foote et al. 1972) 8
Figure 6. Pedestrian survey (GPS tracks) of field inspection by Monahan 11
Figure 7. Population density estimates for Maui in 1853 by the demographer Coulter (1931), showing approximate project-area location; note, each symbol represents 100 people 16
Figure 8. Portion of 1903 Hawaiian Territorial Government map by Donn (Registered Map 1268A) with project area location; this map is based on 1885 base map 17
Figure 9. Portion of 1911 map with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAws) in and adjacent to the project area 18
Figure 10. Portion of 1915 with project area, and inset/detail view in the lower right showing several kuleana parcels (LCAs) in and adjacent to the project area 19
Figure 11. Portion of 1915 map (by Newton) with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAs) in and adjacent to the project area 20
Figure 12. Portion of 1924 topographic map with project area location; inset in lower right 21
Figure 13. Portion of 1951 aerial photograph with project area location 22
Figure 14. Portion of 1954 topographic map with project area location 23
Figure 15. Portion of 1977 aerial photograph with project area location 24
Figure 16. Portion of 1983 topographic map with project area location 25
Figure 17. Previous archaeological studies in and within 1/2-mile of the project area 33
Figure 18. Previously-identified sites according to Brown et al. (1989) (see text for discussion) 34
Figure 19. Previous archaeological studies in and within 1/2-mile of the project area 35
Figure 20. Previously-identified sites in the project area (light red-colored polygon) and proposed development area (blue outline); preservation sites (SIHP # 2099 is Papakea Heiau; SIHP #s 2097, 2311 and 2339 are burials) in the project area are red symbols 36
Figure 21. Aerial image showing results of archaeological field inspection 41
Figure 22. View of the overgrown incinerator site structure; view south 42
Figure 23. View of the overgrown incinerator site structure; view southwest 42
Figure 24. View of the overgrown incinerator site structure; view northwest 43
Figure 25. View of hillslope around the incinerator site; view north 43
Figure 26. View of incinerator material at the base of the main structure 44
Figure 27. View of surface material around the incinerator site 45
Figure 28. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing northeast 46
Figure 29. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 47
Figure 30. Detail of part of SIHP # 2307 (arrows); view east 48
Figure 31. Portion of modern rock wall (arrows) along Ka‘amana St.; view northeast 49
Figure 32. Portion of modern rock wall (arrows) near entrance to farmers’ market 50

LIST OF TABLES

Table 1. Summary of Community Outreach Efforts and Outcomes 10
Table 2. Site Types by Functional Interpretation identified by Brown et al. (1989) in Kēōkea 37
Table 3. Previously-identified Archaeological Sites in the Project Area 38

INTRODUCTION

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc. (PBR), TCP Hawaiʻi, has completed a Cultural Impact Assessment (CIA) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres located in Kēōkea Ahupuaʻa, Makawao District, Island of Maui, Hawaiʻi, TMK (2) 2-2-032:067 & 068 (Figure 1, Figure 2 and Figure 3). It is generally bounded by the Kula Highway (also known as Ulupalakua Rd.) on its upper (south-southeast) side and mostly undeveloped land on its other sides. Kaʻamana St., a mauka/makai (upslope/downslope)-oriented road runs through the east-central portion of the project area. Keanuhea St. is located a short distance to the north of the project area's northern boundary.

A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events.

In addition to conducting community outreach and interviews, we also conducted a physical (field) inspection of the areas within the overall 69-acre project area where the community proposes to alter the ground surface, build structures and infrastructures, etc. This smaller area, designated the "proposed development area," measures about 15 acres, as depicted in Figure 4. The CIA effort, however, includes consideration of the overall 69-acre project area within the even larger context of the encompassing cultural and historical landscape of upcountry Kula.

The subject CIA was developed in collaboration with DHHL, PBR, and the community to learn more about the traditional and customary practices and beliefs relating to the project area, and the cultural and historical resources that once or currently support them, which may be impacted by the proposed project.

The scope and extent of effort to reach out to the community, including native Hawaiian organizations and individuals, as well as other ethnic groups, as well as agencies and other organizations and individuals, is described in detail in the Methods portion of this CIA (below).

Regulatory Context

The information in this document has been gathered to support permitting approvals for the proposed project. This CIA may also be used to support consultation with other stakeholders such as native Hawaiian organizations and individuals, and other community members.

As described in more detail below (see "Purpose and Content of Cultural Impact Assessments"), the subject report satisfies the state Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997; and is designed to provide decision-makers, planners, land managers, and other stakeholders with sufficient information on (1) the identity and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary native Hawaiian rights are exercised in the project area; (2) the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and (3) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist (see Ka Paʻakai O Ka ʻĀina v. Land Use Commission, 94 Hawaiʻi 31, 74, 7 P.3d 1068, 1084 [2000]).

Purpose and Content of Cultural Impact Assessments

This CIA is designed to satisfy the Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997 (see Appendix A for a relevant excerpt) and

any applicable requirements under Hawaii Revised Statutes Chapter 343 and the related Hawaii Administrative Rules ("Environmental Impact Statement Rules") under HAR Chapter 11-200.1.

Interestingly, cultural resources valued by individuals and communities with historical and genealogical ties to a given project area, or by recent arrivals to an area, may be different than those deemed significant by "outsiders," including scientists, anthropologists, and other researchers not from the area.[1] Likewise, the same resource may be valued in different ways by "insiders" and "outsiders," or by native Hawaiians versus other ethnic groups with different historical experiences and connections to the land. A specific example from the subject project area—as discussed in this CIA—is the "old incinerator site." To some people (e.g., historians), it may represent a significant contributing resource to the nearby Kula Sanitorium (Hospital), evoking feelings and associations with the early twentieth century development of the area. To others (e.g., locals wanting to use the area to garden or farm), it may represent primarily an environmental hazard in need of remediation and cleanup, evoking a time when the community was not consulted on such matters as the appropriate location and method of disposing of medical waste. In CIA work, we are interested in *both* of these perspectives. Our objectives are to identify *all* the various types of cultural resources in and near the project area, to explain why they are important to different individuals or groups, and to recommend ways they can be preserved or protected, if appropriate. We are also interested in expressing the intangible values people attribute to specific places and times. Maly and Maly (2005), citing Kent et al. (1995), use the term "cultural attachment" to describe this important class of phenomenon:

> "Cultural Attachment" embodies the tangible and intangible values of a culture—how a people identify with, and personify the environment around them. It is the intimate relationship (developed over generations of experiences) that people of a particular culture feel for the sites, features, phenomena, and natural resources etc., that surround them—their sense of place. This attachment is deeply rooted in the beliefs, practices, cultural evolution, and identity of a people. The significance of cultural attachment in a given culture is often overlooked by others whose beliefs and values evolved under a different set of circumstances. (Maly and Maly 2005:3)

In Hawaiʻi, commonly identified cultural resources include archaeological sites; burial sites and cemeteries; wahi pana (legendary places associated with oral history); natural landscape features[2] such as puʻu (e.g., hills, outcrops and other promontories), ridges, and water sources and courses; natural phenomena such as characteristic weather patterns, winds and rain (many of which have place-specific names); and other place names and landscape features that are important to local families. Such resources need not necessarily refer to Hawaiian culture but may also include other ethnic groups. In the current CIA project area, there are important cultural connections with different ethnic groups and communities, including Chinese. Traditional and customary practices can include activities conducted in or near the project area such as gathering of plants for lei making, lāʻau lapaʻau (medicinal use) or subsistence; hunting and fishing; ceremonial or religious uses (e.g., visiting and caring for burial sites); hula, and so on. Access rights to carry out these practices—even if they do not necessarily take place in a given project area (but which must be traversed to reach a valued site or location)—can also be recognized, evaluated and recommended for protection in CIA documents.

Natural Environment

The project area is located on gently-sloping (down to the northwest) terrain on the southwestern flanks of the Haleakalā volcano comprising East Maui. Elevation varies from about 2,800 ft. (853 m) above mean

[1] Anthropologists have long recognized the value in studying both "insider" and "outsider" perspectives, called "emic" and "etic," respectively, when trying to understand cultural values and significance.

[2] In Hawaiian culture, there is no hard and fast distinction between cultural and natural resources; thus, for example, a clean and healthy kahawai (stream) is just as much a cultural resource—because its existence is crucial to carrying out traditional and customary practices such as irrigated (pond-field) agriculture—as a natural one.

sea level (amsl) along its upper (Kula Highway) side down to about 2,550 ft. (777 m) on its northwest side.

Rainfall in the project area is currently about 30 inches (in.) (762 millimeters [mm]) annually. Today, there are no through-flowing fresh-water streams in the project area, but historic maps indicate a seasonal drainage (for which no Hawaiian name has been found) may have once passed through or immediately adjacent to its east-northeastern end.

Soils in the project area consist of two types: Kaimu extremely stony peat (KCXD) and Kula very rocky loam (KxbE) (Figure 5). Neither of these soils is ideal for agricultural purposes. The former soil type is described by Foote et al. (1972:52-3) as typically occurring ". . . on rough, undulating, relatively young Aa lava flows . . . This soil is used for pasturage and wildlife habitat." The latter soil type (KxbE), typically formed on volcanic ash, is also described as used for pasturage and wildlife habitat (ibid.:77).

Built Environment

Minimal facilities (including an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure) associated with a farmers' market (also known as Kēōkea Marketplace) are currently located in a small level, rectangular area along the main highway, near the south-center of the project area, just south of Ka'amana St. Otherwise, the project area is mostly devoid of development or manmade structures or infrastructures.

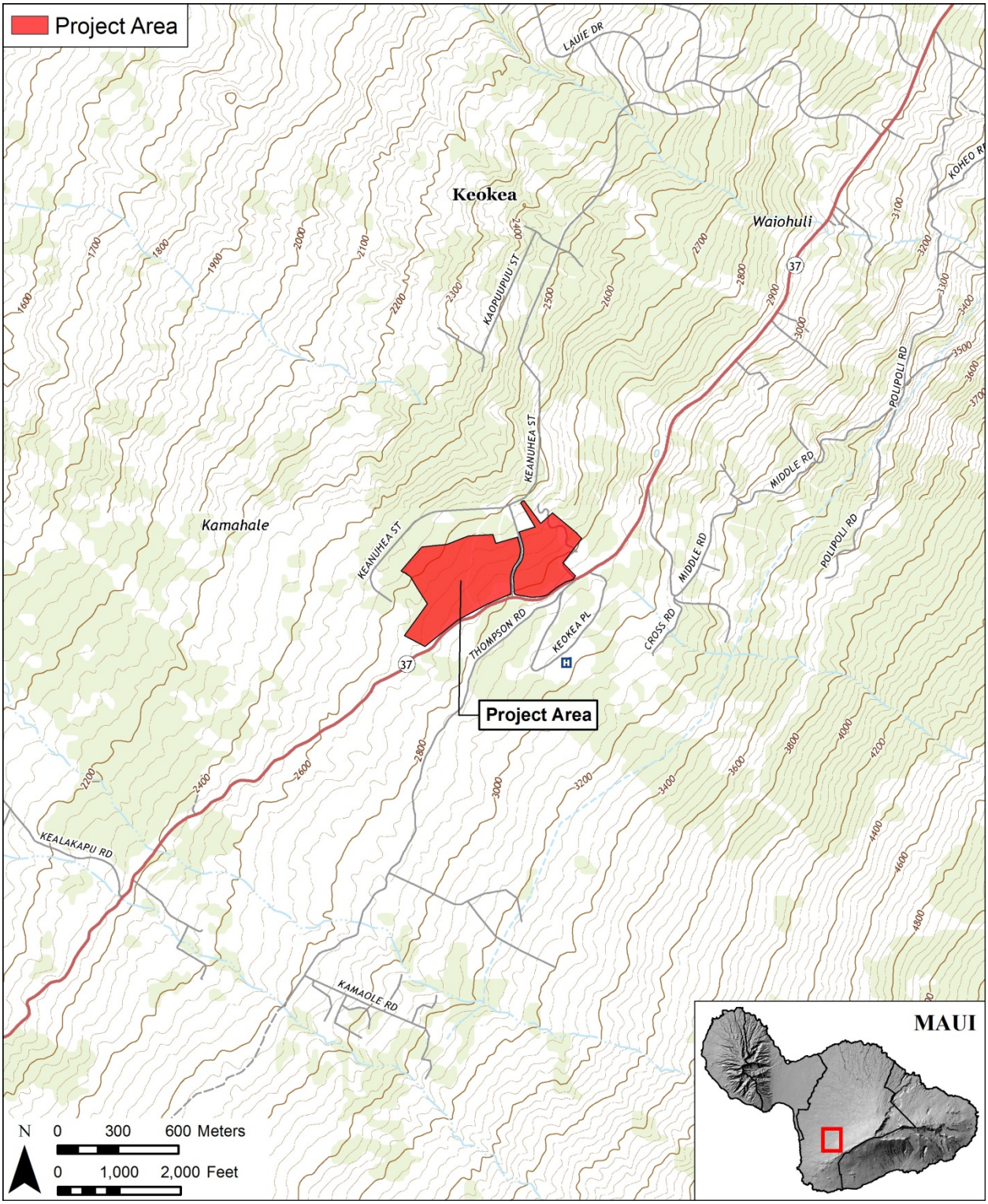


Figure 1. Project area location on a topographic map

Figure 2. Aerial image showing location of project area

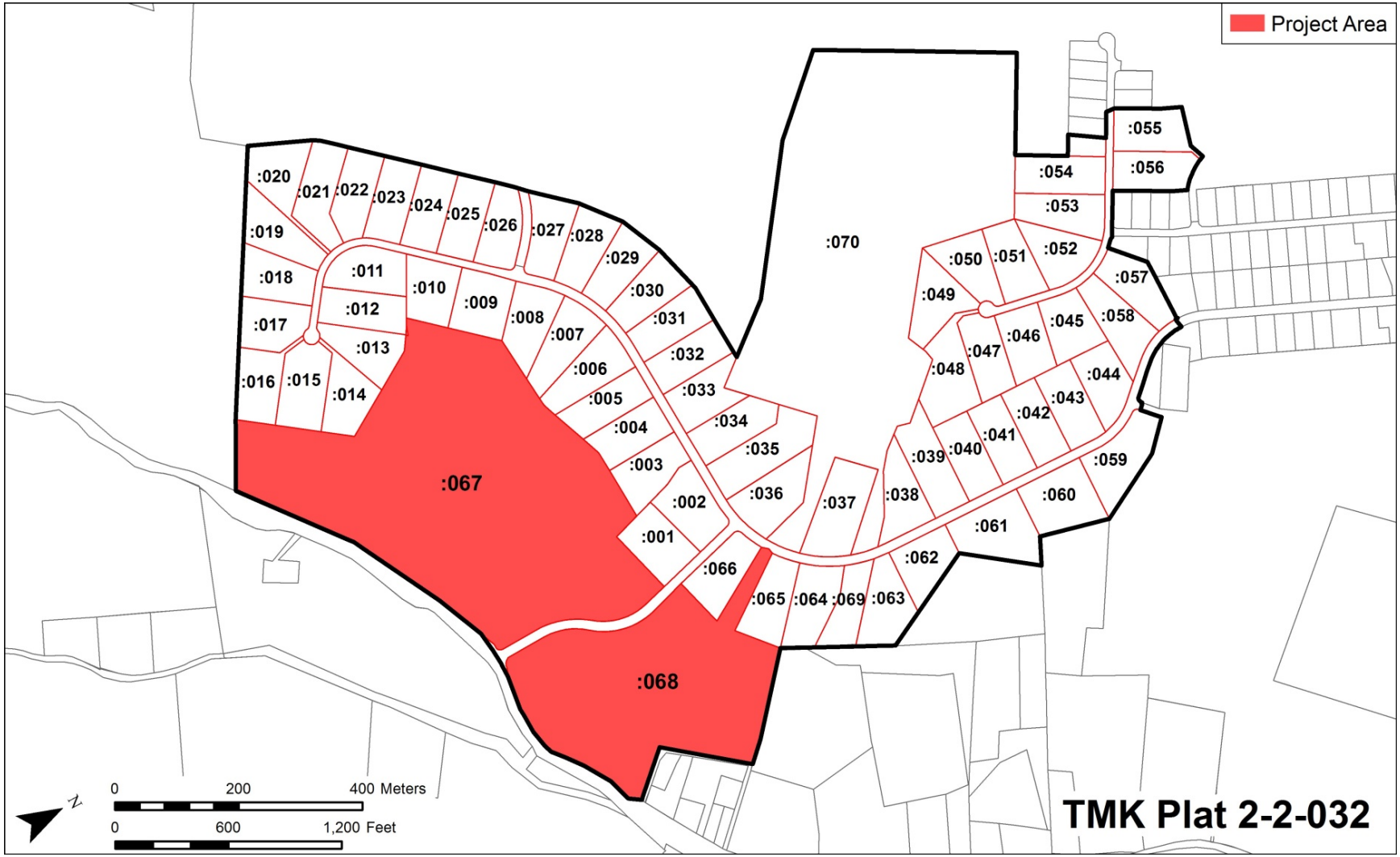


Figure 3. TMK map of the project area (graphic created by TCP Hawai‘i)

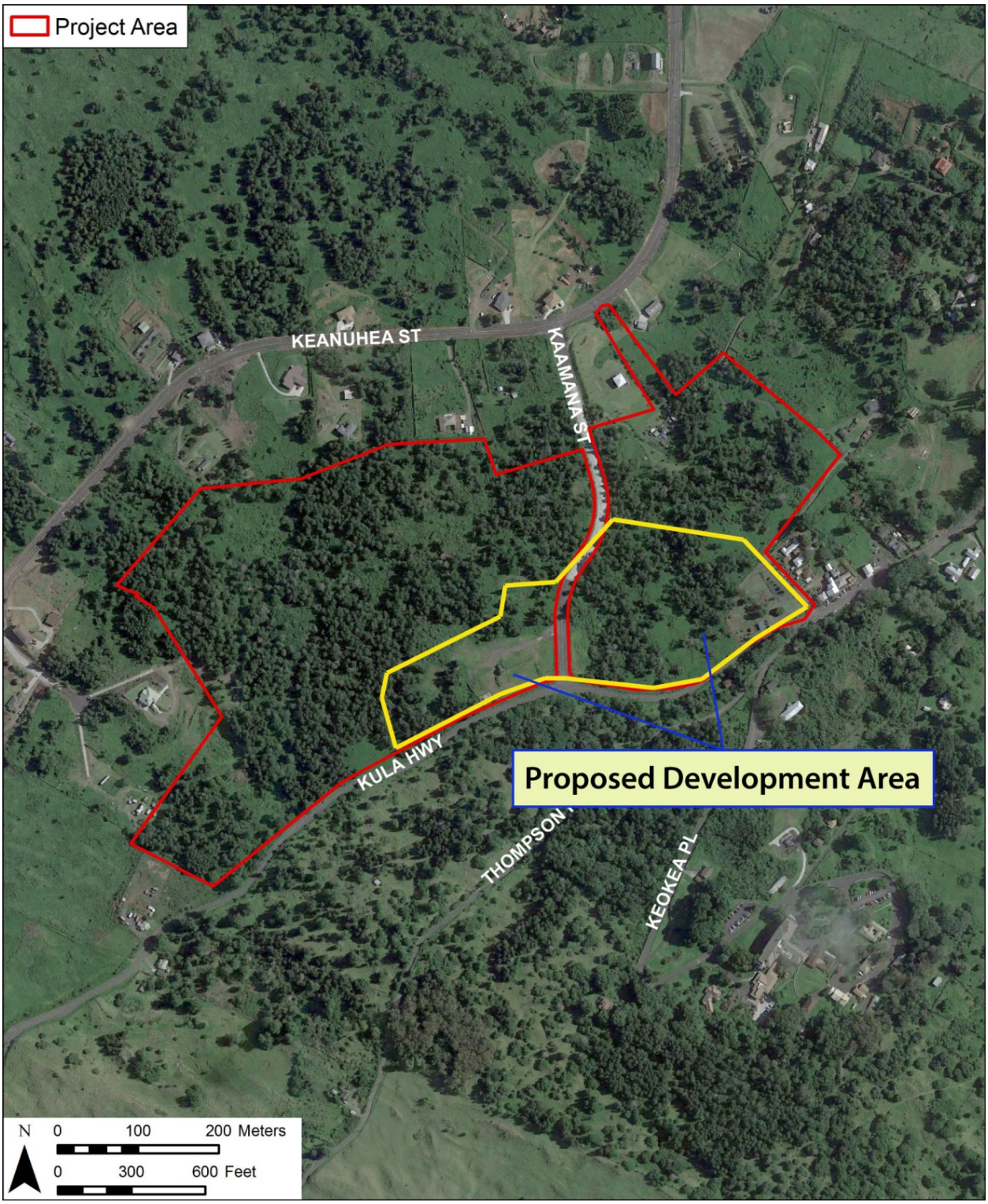


Figure 4. Approximately 15-acre proposed development area depicted (yellow polygon) within the larger project area (TMK [2] 2-2-032:067 & 068)

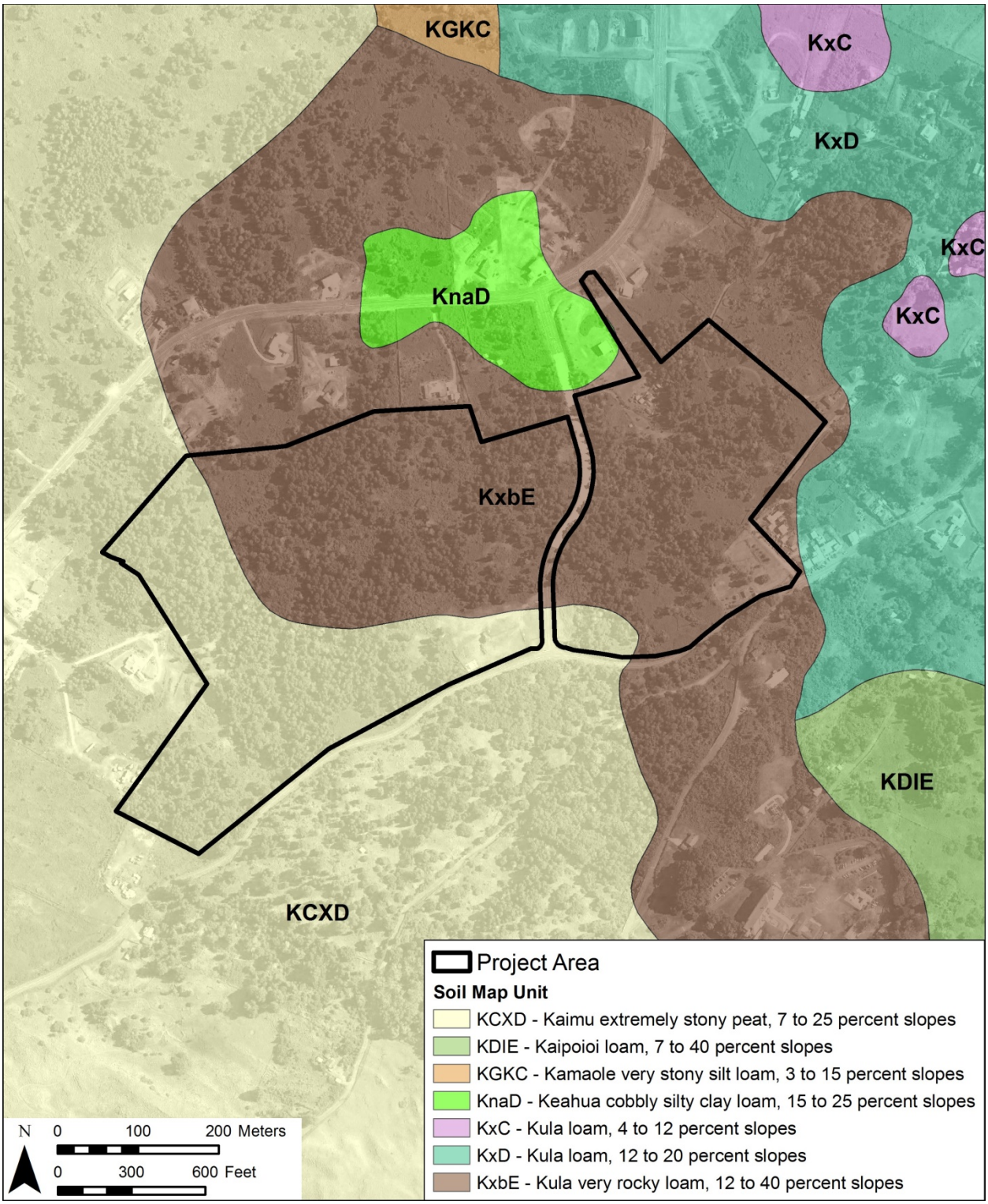


Figure 5. Soil data map of the project area (soil data from Foote et al. 1972)

METHODS

This section explains the archival, consultation and fieldwork methods used in this study.

Archival Research

Archival research was conducted to obtain relevant information for interpreting the project area's cultural, historical and archaeological context. Establishing this context provided an empirical basis for identifying and understanding potential cultural resources and practices valued by the community. In addition to conducting a records search at the State Historic Preservation Division (SHPD), we also utilized these on-line databases to obtain cultural, historical and archaeological data:

- OHA's Papakilo database (http://papakilodatabase.com/main/main.php)
- OHA's Kipuka database (http://kipukadatabase.com/kipuka/)
- Bernice P. Bishop Museum archaeological site database (http://has.bishopmuseum.org/index.asp)
- Bishop's Hawaii Ethnological Notes (http://data.bishopmuseum.org/HEN/browse.php?stype=3)
- University of Hawai'i-Mānoa's digital maps (http://magis.manoa.hawaii.edu/maps/index.html)
- DAGS' State Land Survey (http://ags.hawaii.gov/survey/map-search/)
- Waihona 'Aina website (www.waihona.com)
- Digital newspaper archive "Chronicling America, Historic American Newspapers" (http://chroniclingamerica.loc.gov/lccn/sn82014681/)
- Hawai'i State Archives digital collections (http://archives1.dags.hawaii.gov/)
- U.S. Library of Congress digital map collections (https://www.loc.gov/maps/)
- USGS Information Service, including digital map collections (https://nationalmap.gov/)
- AVA Konohiki's website (http://www.avakonohiki.org/)

Consultation

The following is a brief summary of consultation/outreach efforts in support of the CIA:

1. Notification was published in the Office of Hawaiian Affairs (OHA) monthly newspaper *Ka Wai Ola* (December, 2020 issue) – see Appendix B.
2. Ongoing meetings and coordination with DHHL staff (Ms. Julie-Ann Cachola), site managers Alex (Alika) Akana and Pi'ilani Akana, and PBR representatives.
3. Community outreach and notification from November, 2020, to May, 2021 (Table 1). A copy of the outreach letter is included as Appendix C.
4. Formal group interview by Kalama'ehu Takahashi, who was born and raised on Maui, with community members, Perry Artates, Richard Dancil, and Roderick Fong, on April 7, 2021. All three of these kama'āina were born and raised in Kēōkea.[3] The results of the interviews are presented in the Community Feedback and Interviews section below. Copies of documents used to support the interview process are included as Appendix D.

Field Inspection

On March 19, 2021, Chris Monahan met with Alex (Alika) Akana, site manager, and Richard Dancil, descendant and kama'āina to the project area, at the project site. Together we walked the portions of the property that are slated for development, according to the community's wishes. Richard is intimately familiar with the project area, having grown up and lived in the immediate area his entire life. Richard is well aware of the multiple preservation sites, including burials and heiau located beyond the limits of where we walked. Our GPS tracks for this pedestrian inspection were recorded using a hand-held Garmin GPSMAP 64st that consistently obtained 2–3 meter accuracy; these tracks are depicted in Figure 6.

[3] Kalama'ehu works for our partner consulting company, Nohopapa Hawai'i, which was responsible for conducting the community interview portion of this project.

Table 1. Summary of Community Outreach Efforts and Outcomes

Individual/ Organization	Position/ Affiliation	Summary of Outreach Efforts, Results & Comments
Richard Dancil	Homesteader	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Les Takatani (Moki)		11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/13/21 fourth email sent with letter 1/17/21 fifth email sent with letter
Robin (Pikake) Newhouse	Association President	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 12/18/20 received email that she would like to participate; responded to her email to arrange a day/time that works for her to be interviewed via Zoom 1/04/21 second email sent to arrange a day/time for interview 1/13/21 third email sent to arrange a day/time for interview 1/17/21 fourth email sent to arrange a day/time for interview
Perry Artates	President, Waiohuli Homestead Association	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Roderick Fong	Classmate of Perry; Fong Store	**4/7/21 - group interview with Perry Artates and Roderick Fong was conducted at Waiohuli Community Center; interviewer - Kalamaʻehu Takahashi**
Keʻeaumoku Kapu	ʻAha Moku o Maui Inc.	12/09/20, per Ikaika Nakahashi, included this community member to the list 12/09/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/13/21 fourth email sent with letter 1/17/21 fifth email sent with letter
OHA Compliance	OHA Compliance	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter
Vincent Hinano Rodrigues, JD	SHPD, History and Culture Branch Chief	11/24/20 emailed consultation letter 1/04/21 second email sent with consultation letter 1/13/21 third email sent with letter
Ikaika Nakahashi	SHPD, Cultural Historian – Maui	11/24/20 emailed consultation letter 12/09/20 received email from Ikaika recommending to add Keʻeaumoku Kapu to this list (see above)
Yvette Celiz (Chair)	Maui County Cultural Resources Commission	11/24/20 emailed consultation letter 12/17/20 second email sent with consultation letter 1/04/21 third email sent with consultation letter 1/04/21 received email from Annalise Kehler *[Cultural Resources Planner, Long Range Planning Division]* referring ʻAha Moku rep. Timmy Bailey & Keʻeaumoku Kapu & Tanya Lee-Greig (ʻĀina Archaeology) who may be able to provide contact names/info. 1/05/21 received an email from Paul Fasi [*Senior Staff Planner*] that Maui Planning Dept. had no comment

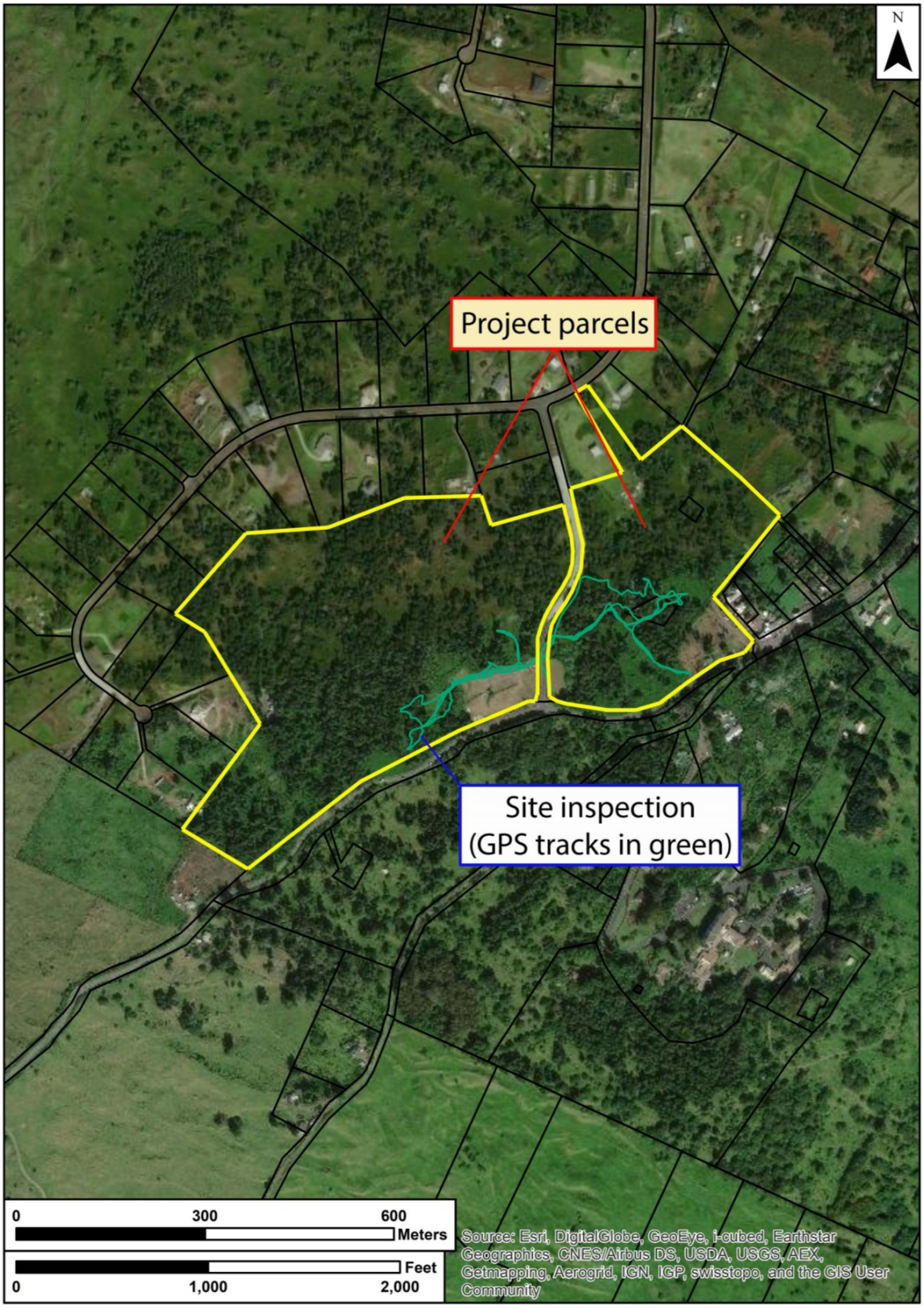


Figure 6. Pedestrian survey (GPS tracks) of field inspection by Chris Monahan on March, 19, 2021 (see text for discussion)

CULTURAL AND HISTORICAL CONTEXT

This section includes a brief synthesis of relevant cultural and historical information related to the types and character of land uses in and around the project area, specifically, as well as Kēōkea Ahupuaʻa, more generally, from pre-Contact times into the historic period and modern times. The main objective here, primarily through the analysis of historical documents, maps and aerial images, is to provide a project area-specific picture of land use and modification over time.

Hawaiian Cultural Landscape

The project area is in the traditional moku (district) of Kula, known today as Makawao District. Historian Helen Wong Smith's compilation of cultural and historical information about the project-area environs (Brown et al. 1989:4) describes Makawao, in general, as "kula-o-ka-maʻo-maʻo," or Land of Mirages, where lost souls once wandered until they found a place to rest. Pukui et al. (1974:142) interpret the place name Makawao as "forest beginning." [4] The project area is situated on the lower slopes of Haleakalā, known in Hawaiian traditions as the "House of the sun."

Kēōkea, which is also a place name in at least three locations on Hawaiʻi Island (i.e., in Hilo, Puna and Kohala), is translated (for the Maui location) as "the white sand (*ō* is short for *one*). This place name may refer to its shoreline location at Kīhei, located several miles west-northwest of the current project area.

Puʻu-o-kali (literally, "hill of waiting") is a prominent hill (elevation 1,481 ft.) a couple miles northwest of the project area along the boundary between the ahupuaʻa of Kēōkea and Waiohuli. From the coastline, this puʻu (hill) is a major visual aid and landmark between these lands. It is also associated with the following moʻolelo (oral-historical accounts):

> [It was] . . . believed once [to be] a *moʻo*, the wife of nearby Puʻu-hele; their child, Puʻu-o-inaina (hill of wrath) was placed on Ka-hoʻolawe and later was a lover of Pele's sweetheart, Lohiʻau. (Pukui et al. 1974:203)

As depicted in Figure 7, population estimates and main settlement areas for Maui dating to around 1853 by the demographer Coulter (1931) show the project area in upland Kēōkea was not a primary settlement area. Schmitt's (1977) population estimates for all of Maui Island from 1831 to 1878 suggest a declining overall population from 35,062 to 12,109 during this time.

Māhele Documents in and around the Project Area

In general, Māhele documents memorialize the onset of western land ownership laws and practices in the mid-1800s. They can be useful for the purposes of reconstructing cultural and historical contexts—particularly the traditional customs and practices of native Hawaiians, because they may include specific information on how the makaʻāinana (commoners) lived on the land and conducted their subsistence activities. Interestingly, Māhele data from the current project area show an atypical pattern compared with most of the Hawaiian Islands. As discussed and depicted on maps below, the project area is shown as part of *both* Crown land—that is, large tracts (such as entire ahupuaʻa) set aside for the monarchy's exclusive use—*as well as* kuleana (hoaʻāina, or commoner) parcels. Wong Smith (Brown et al. 1989:4) explains:

> Although there were many small parcels granted in Keokea and Waiohuli, the Indices states that Keokea was Crown Land from the beginning and that Waiohuli was approved as such in 1890 by Kalakaua. The numerous parcels may be a result of an experiment by the Kamehameha III's administration prior to the Great Mahele concerning trial fee ownership runs. In a report by Riford . . . 11 Land Commission Awards (LCA) either within or bordering the Keokea parcel

[4] All place name interpretations and translations hereafter are from Pukui et al. (1974) unless stated otherwise.

[i.e., including the current project area] and eight LCAs within the Waiohuli parcel are listed. The bulk of the parcels are designated as kula land and houselots.

Historic Period

Wong Smith (ibid.), discussing the time of the California gold rush (1840s), noted that the Kula Moku (District) was a place of commercial agricultural operations and cash crops. In particular, Kula was a place where "Irish" (white) potatoes were grown and shipped to California for profit. Other crops, including "corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton," were also grown in Kula (Mark 1975), which into modern times supplied the state with up to 35% of its vegetables (Wong Smith in Brown 1989:4).

Figure 8, a portion of 1903 Hawaiian Territorial map that is based on an 1885 survey, shows a few general observations of interest:

1. From a landscape perspective, this 1885-1903 map indicates that Waiohuli (literally, "water of change"), the adjacent ahupuaʻa to the north, was home to major stream drainages that Kēōkea did not appear to have.
2. The lands of the current project area are depicted as suited for pasturage and ranching, rather than agriculture. The general limits of "good agricultural land" is located just mauka (upslope) of the project area.
3. Kēōkea Ahupuaʻa is labelled as Crown lands—as discussed above, this is unusual since other data indicate there were numerous kuleana parcels (Land Commission Awards [LCA]) in and near the project area.
4. A nearby boundary marker (place name) along Kēōkea's boundary with Kamaʻole Ahupuaʻa to the south, mostly likely based on Hawaiian testimony from the historic-period Boundary Commission, appears to read Kamaoale (or perhaps Kamaoole [?]). According to the Waihona ʻAina database, "The Hawaiian Legislature created the Boundary Commission and the position of Commissioner of Boundaries on August 23, 1862. The task of each Island Boundary Commissioner was to settle the boundaries of the larger lands on that island, particularly ahupuaʻa, which had been awarded in the Mahele without survey. Their task was not to confer title."[5]
5. A map symbol (green dot) just mauka (upslope) of the current project area indicates a "school lot." This general location is labelled "Maui County Farm" on a 1911 map (see below) and "Chinese Church" and "Board of Hawaiian Evangelical Association" on a 1915 map (see below).

Figure 9, a portion of 1911 map of the "Kanakanui, Waiohuli and Keokea Pastoral Lots," and including a detailed inset of the project area created by TCP Hawaiʻi, shows a number of noteworthy observations:

1. Two LCAs (#s 10639 to Pa [1.9 acres] and 6720-B: ʻāpana 4 to Nahelu [3.6 acres]) are entirely, or nearly so, contained within the project area; however, they are both well outside of the proposed development area. Interestingly, Nahelu's LCA contains two of the preservation sites identified in previous studies of the project area: SIHP #s 50-50-10-2099—a heiau known as Papakea—and 2311, a burial site. Pa's kuleana parcel is described as "kalo [taro] land" that he received in 1843. Nahelu received his parcel in 1823.
2. Several other LCAs are located around the north and northeast sides of the project area; most are a short distance away, but one (LCA # 6724 to Makakulani) includes a small portion of the project area. This and others (LCA #s 6179-B: ʻāpana 2 [to Kalama], 6480: ʻāpana 2 [to Halekahi], 6415: ʻāpana 1 [to Kakua], and at least a dozen more) suggest a fairly densely-populated area, at least in the mid-1800s.

[5] https://waihona.com/boundarySearch.asp

3. An early version of the current Kula Highway is in place by this time (1911), running along the southeast side of the project area.
4. A mauka/makai-oriented road (presumably unimproved) labelled "Kapuhau and Kalepolepo Road" is shown extending from just north of the project area (along Kalama's parcel) down to and past Pu'u-o-kali.
5. The area just southeast of the project area is labeled "Maui County Farm." According to the National Register of Historic Places (NRHP) form for the Kula Sanitorium (see below), the "Maui County Farm and Sanitorium" was established in 1910.
6. East of the project area, upslope a short distance, the "Kula pipeline" is depicted. According to Mark (1975:4), the pipeline was built in 1905 during a terrible drought. The water source was in Olinda.

Figure 10 and Figure 11, two maps dating from 1915 (and both with detailed insets created by TCP Hawai'i) show the entire area of Kēōkea and Waiohuli along both sides of the Kula Highway subdivided into dozens of Land Grants, which are private purchases of land parcels from the government. Closer to the project area, several specific features are shown:

1. In the location of the current Kula Hospital, several buildings are labelled "Sanitorium" (see Figure 10). According to Wong Smith (Brown et al. 1989:4), the "Kula Sanitorium was founded for the care of tuberculosis suffers. Initially the sanitorium consisted of two tent-houses which accommodated 12 patients." This site (SIHP # 50-50-10-1540) was listed on the NRHP in 2003. The NRHP form states that the hospital was a complex of wood-framed structures from 1910-1937; then, starting in 1937, the historic buildings that are on the NRHP were built.[6]
2. The site of Keokea School is shown just east of the east end of the project area (see Figure 10); several church lots are also located to the east (Episcopal) and south (Chinese/Evangelical).

Incinerator Site – Associated with the Kula Sanitorium/Hospital

Although there is not much specific information available on this issue, there is an area of the current project area known as the "incinerator site," which was a place used by the Kula Hospital (Sanitorium) to burn waste, presumably biohazardous materials. The general area of this site is depicted in the Results section of the report (below). According to an environmental assessment that included the current project area (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Other information (e.g., when it was built, and its current disposition at the time [2004]) was unknown. The hospital was searching for other records related to the incinerator site.

Figure 12, a portion of 1924 topographic map with a detailed inset created by TCP Hawai'i, shows a long rock wall along a portion of the southwest boundary of the current project area.

Figure 13 and Figure 14, a 1951 aerial photograph and 1954 topographic map, respectively, depict a few relevant details in the current project area:

1. Both images depict a new road in the western third of the project area, connecting the main Kula Highway with the Pu'u-o-kali area downslope. This (presumably unimproved dirt) road continues to appear on a 1977 aerial—but looks partially overgrown by this time, and a 1983 topographic map (these are both included below).

[6] See website of the Historic Hawai'i Foundation (https://historichawaii.org/2014/03/03/kula-sanatorium/) for this form

2. The 1954 map includes a small square, which is most likely the incinerator structure we document in the Results below. The 1951 aerial shows activity around this area that appears to be related to the incinerator.
3. The 1951 aerial seems to depict an extremely denuded (of trees) landscape in the project area, compared with later and current aerials.

Figure 15, a 1977 aerial photograph, appears to show a reduction or cessation of activity in the area around the incinerator site. The landscape within the current project area, as well, appears to be less denuded than in the 1951 aerial.

Figure 16, a 1983 topographic map, does not include the square symbol at the incinerator site (that first appears on the 1954 map [see Figure 14]), which is consistent with information provided by the Kula Hospital that use of the incinerator ceased sometime before 1980.

According to Wong Smith (Brown et al. 1989:4), during the twentieth century, the current project area was used primarily for cattle grazing.

The Hawaii Chinese History Center (Mark 1975) published an oral history titled *The Chinese in Kula, Recollections of a Farming Community in Old Hawaii* that focuses on the time period between the 1890s and 1920s. A few observations are specifically relevant to this section of the CIA:

1. Farmers from Kēōkea generally delivered their produce, or had middlemen do it for them, down to Mākena Landing, which likely is one of the main purposes for the old road just northeast of the project area—which would have been a horse-drawn wagon road—discussed above (see 1911 map and discussion, above, and Figure 9).
2. Kēōkea had the largest public school in the Kula region, which was attended by many Chinese children, some of whom walked several miles to get there. This school had an enrollment of almost 100.

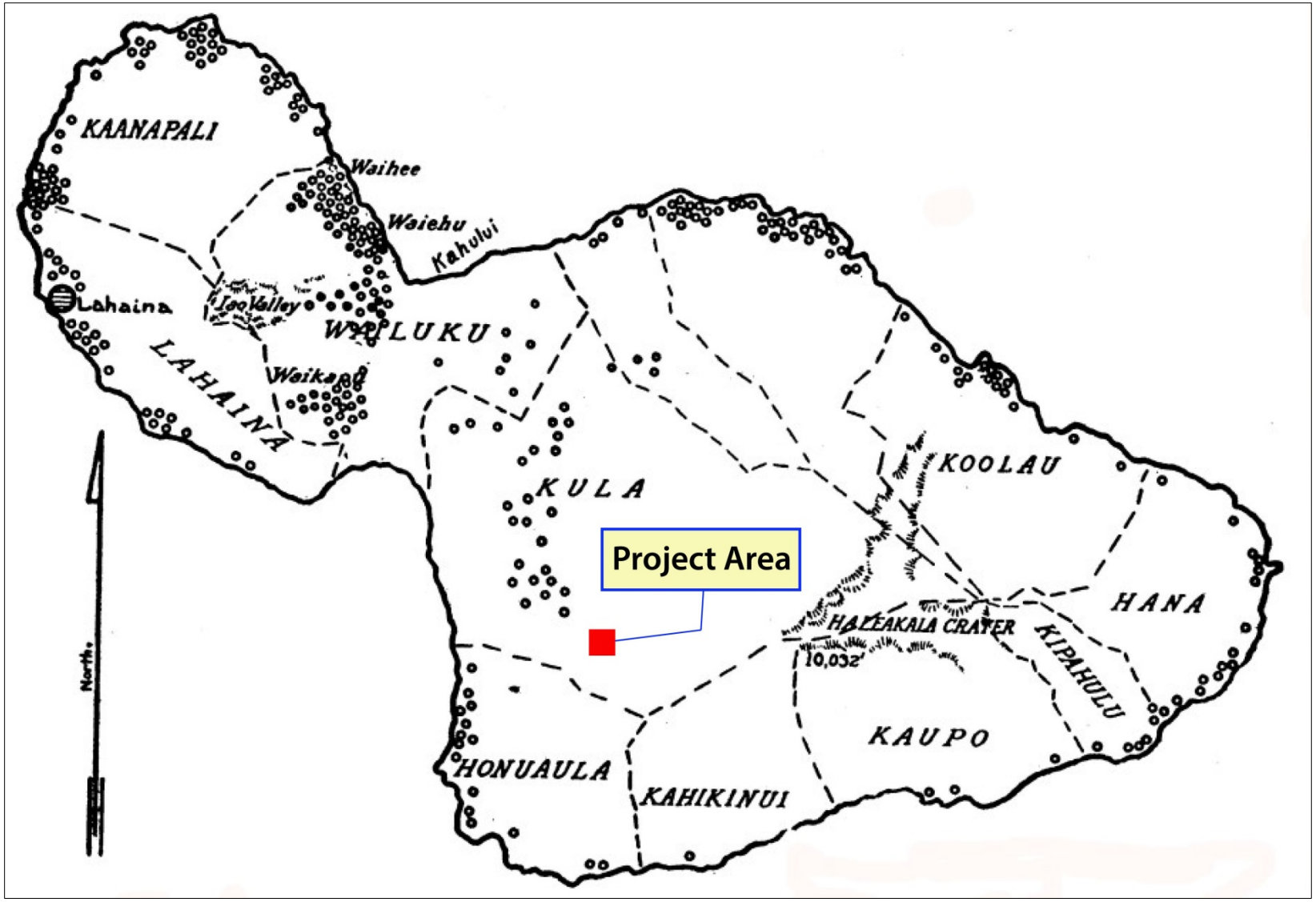


Figure 7. Population density estimates for Maui in 1853 by the demographer Coulter (1931), showing approximate project-area location; note, each symbol represents 100 people

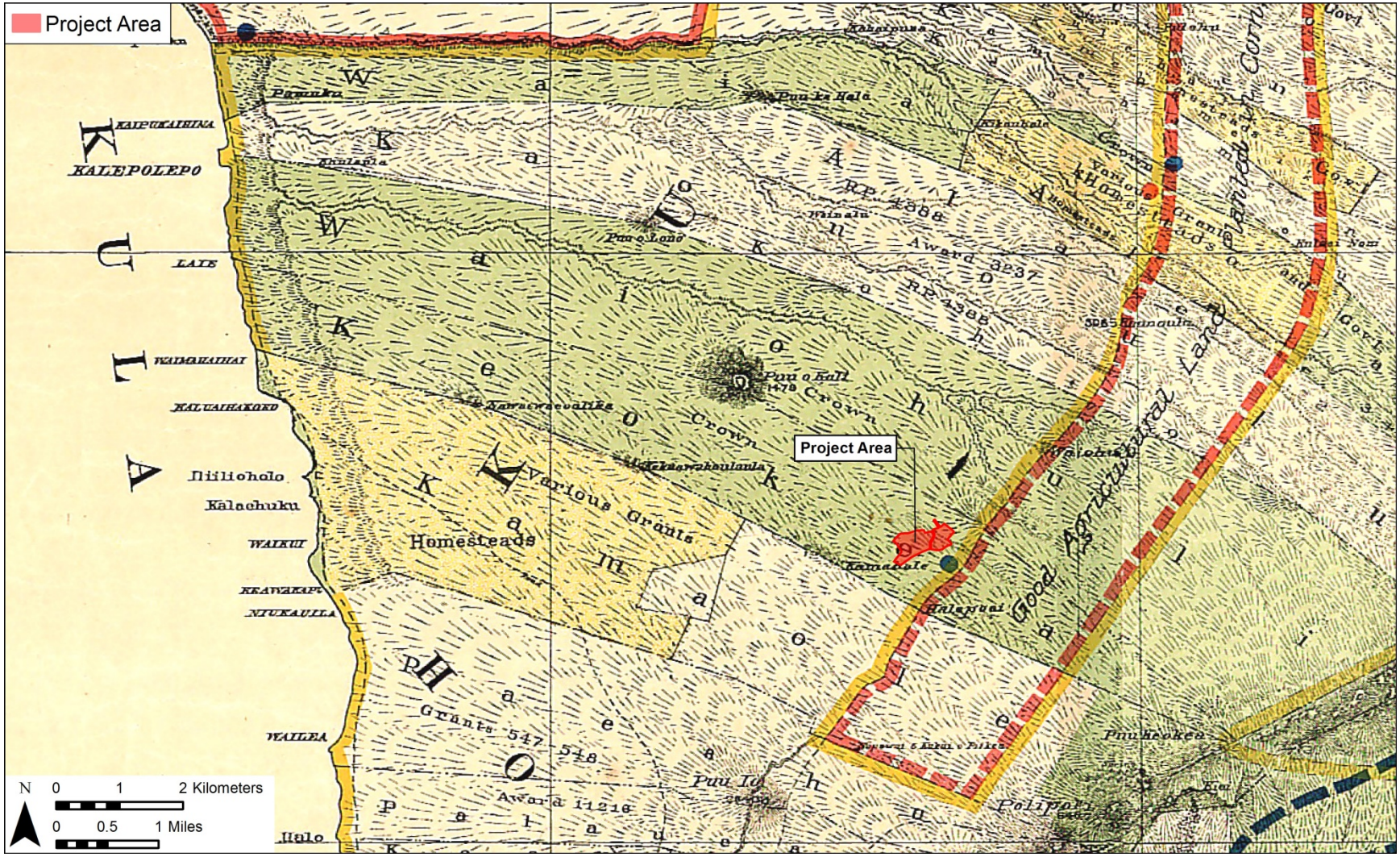


Figure 8. Portion of 1903 Hawaiian Territorial Government map by Donn (Registered Map 1268A) with project area location; this map is based on 1885 base map; <u>blue circle adjacent to project area denoted as a "school lot"</u>

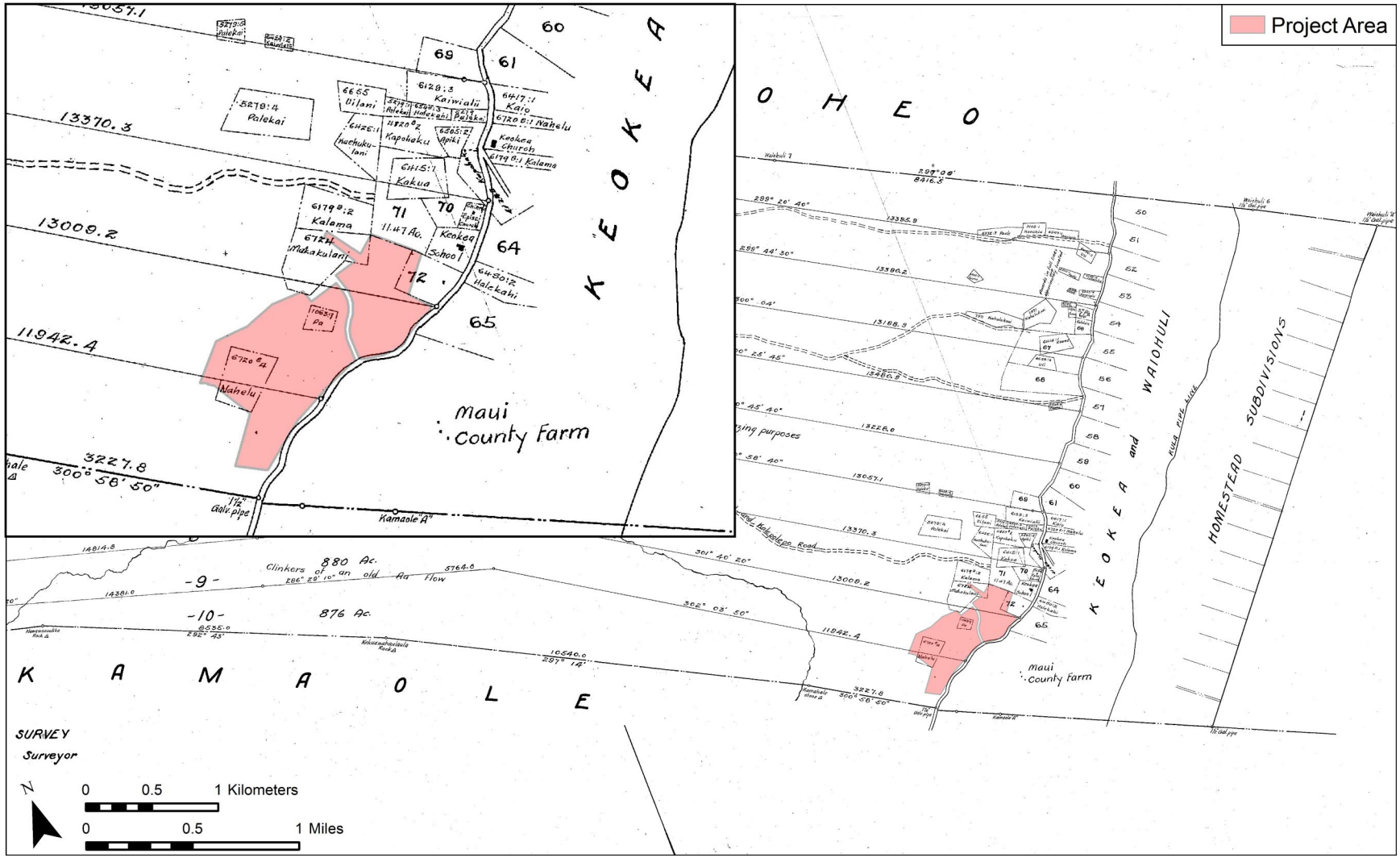


Figure 9. Portion of 1911 "Kanakanui, Waiohuli and Keokea Pastoral Lots" map with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAs) in and adjacent to the project area (see text)

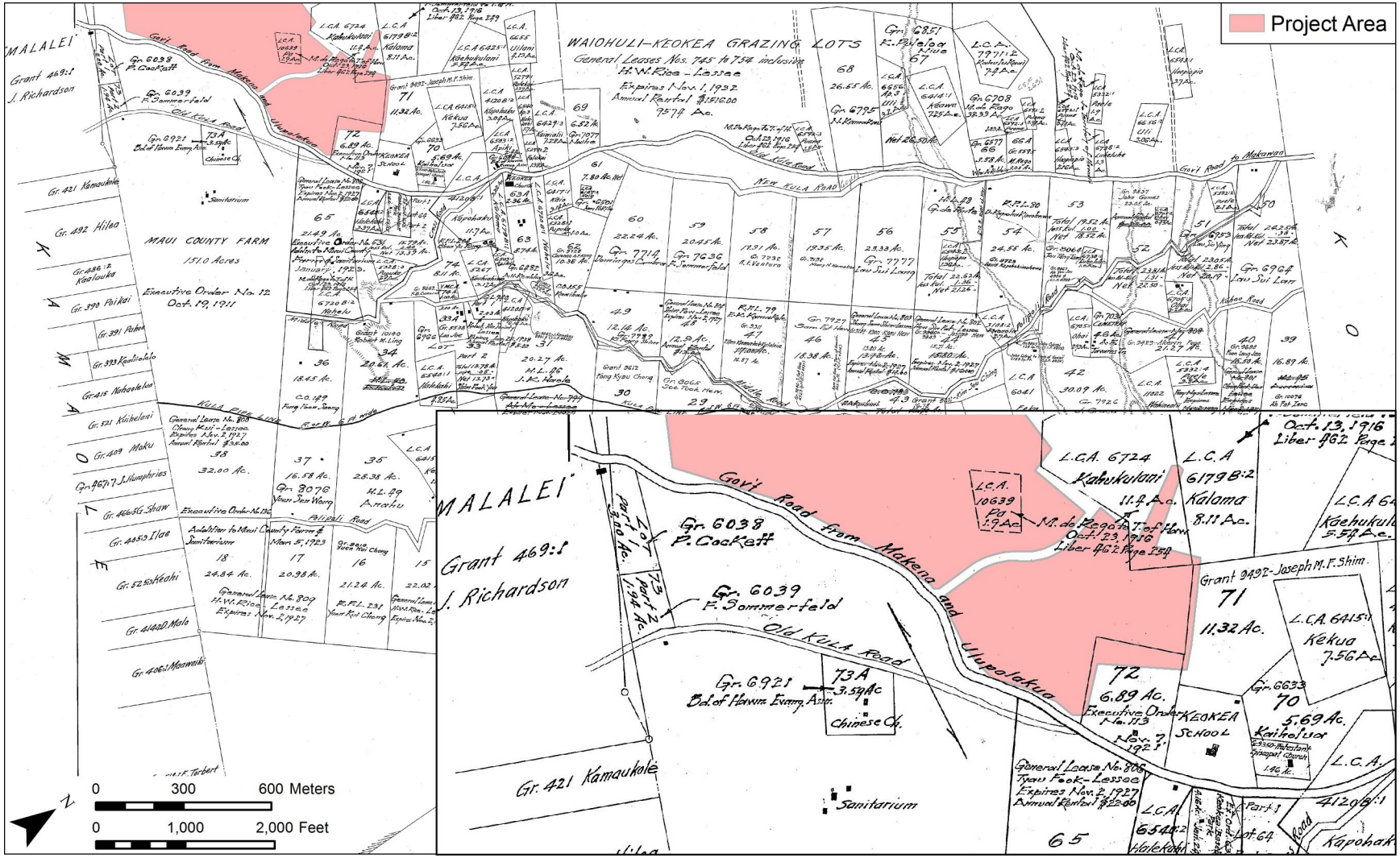


Figure 10. Portion of 1915 map (by Newton), "Waiohuli-Keokea Homesteads, Kula, Maui," HTS Plat 1029 map with project area, and inset/detail view in the lower right showing several kuleana parcels (LCAs) in and adjacent to the project area (see text)

Figure 11. Portion of 1915 map (by Newton), "Waiohuli-Keokea Homesteads" (Registered Map 2494) with project area, and inset/detail view in the upper left showing several kuleana parcels (LCAs) in and adjacent to the project area (see text)

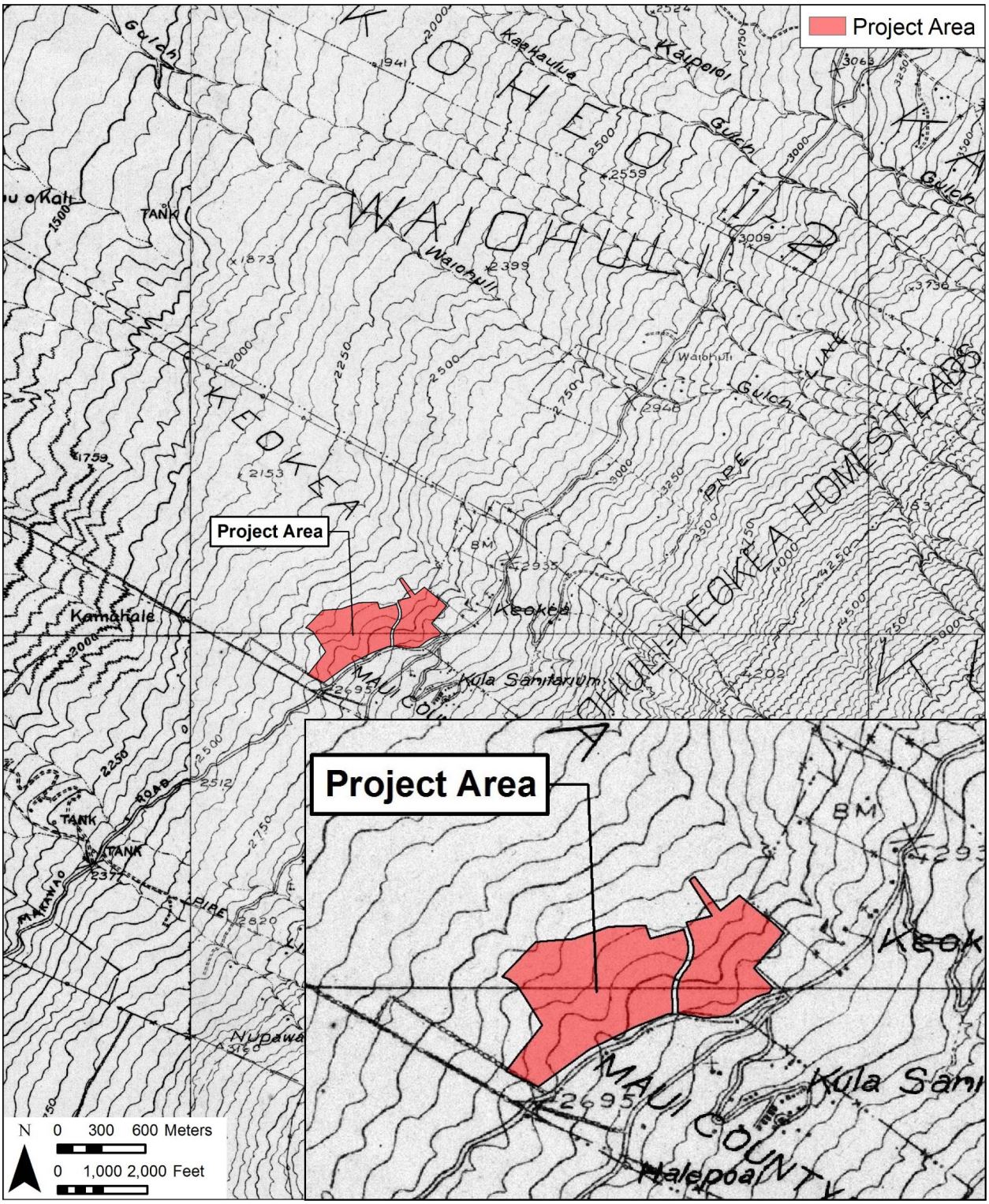


Figure 12. Portion of 1924 topographic map with project area location; inset in lower right (see text)

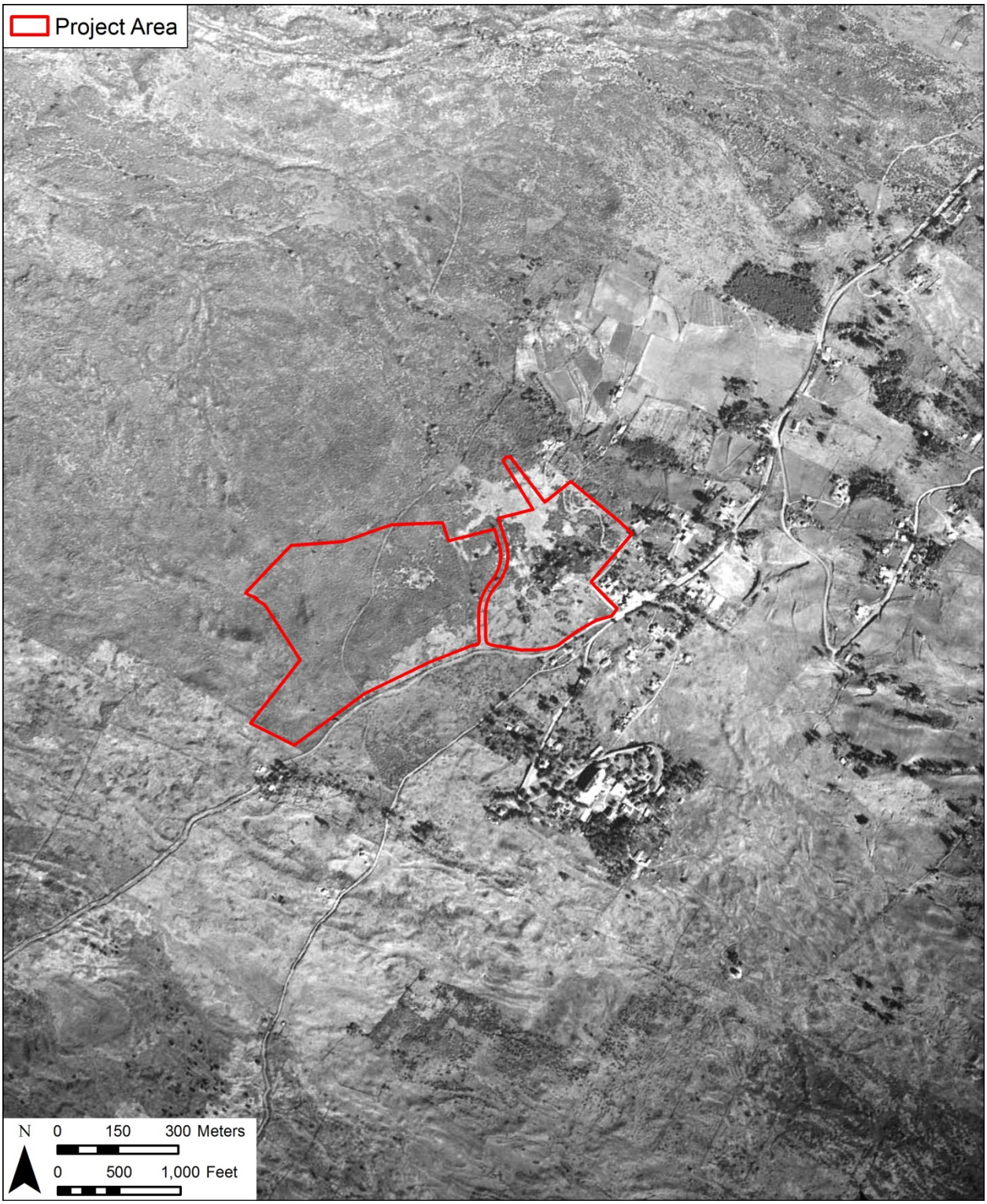


Figure 13. Portion of 1951 aerial photograph with project area location

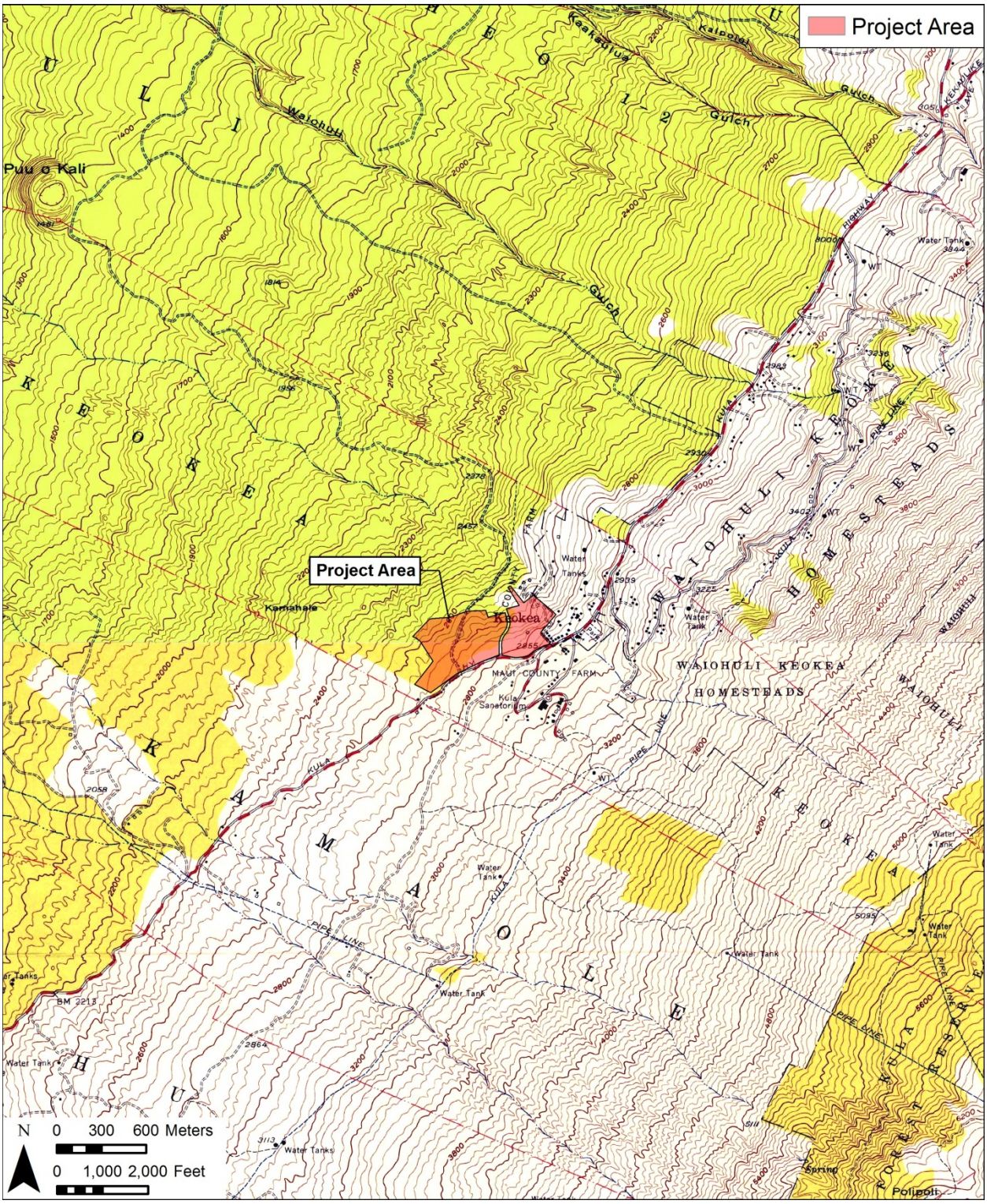


Figure 14. Portion of 1954 topographic map with project area location

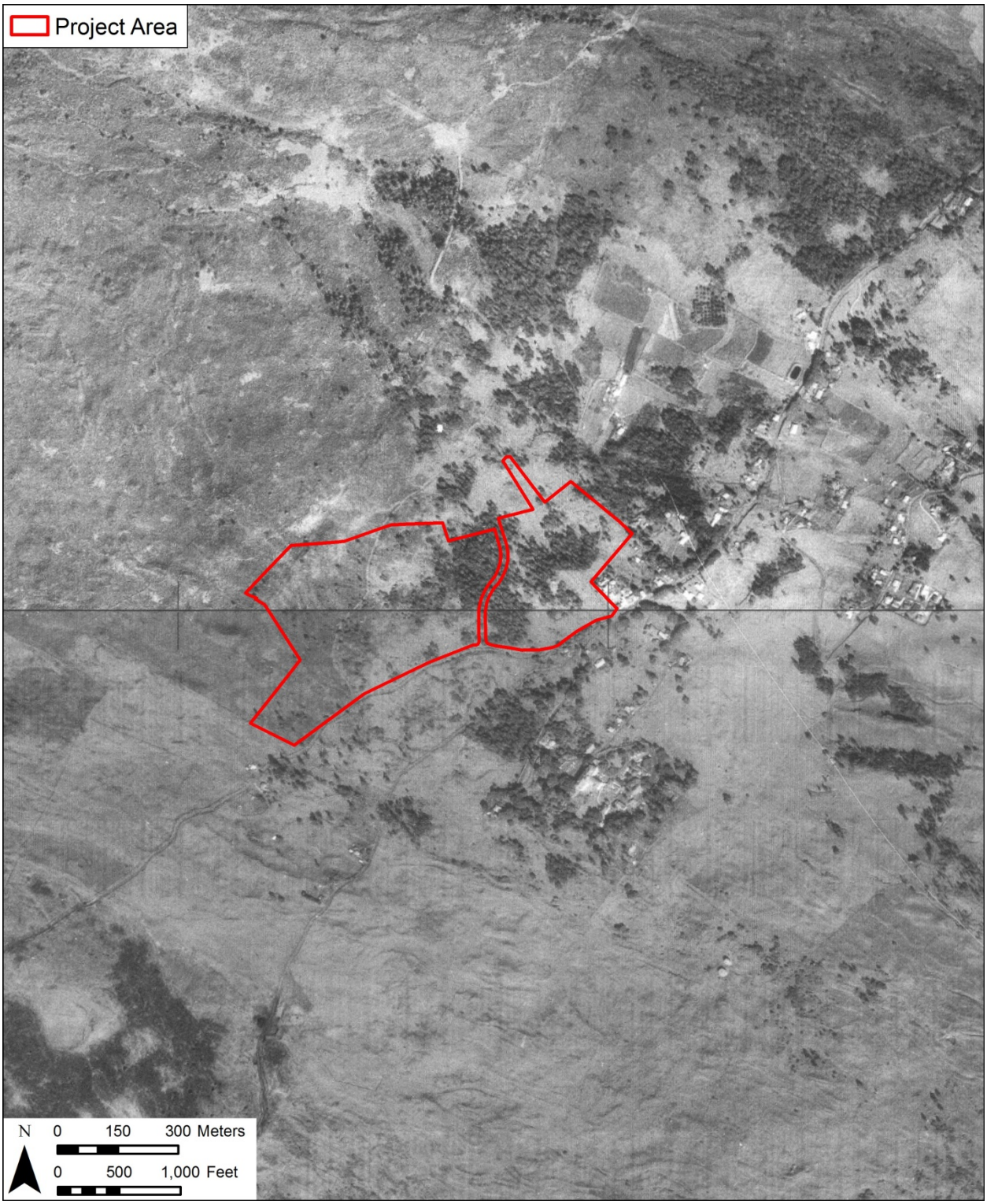


Figure 15. Portion of 1977 aerial photograph with project area location

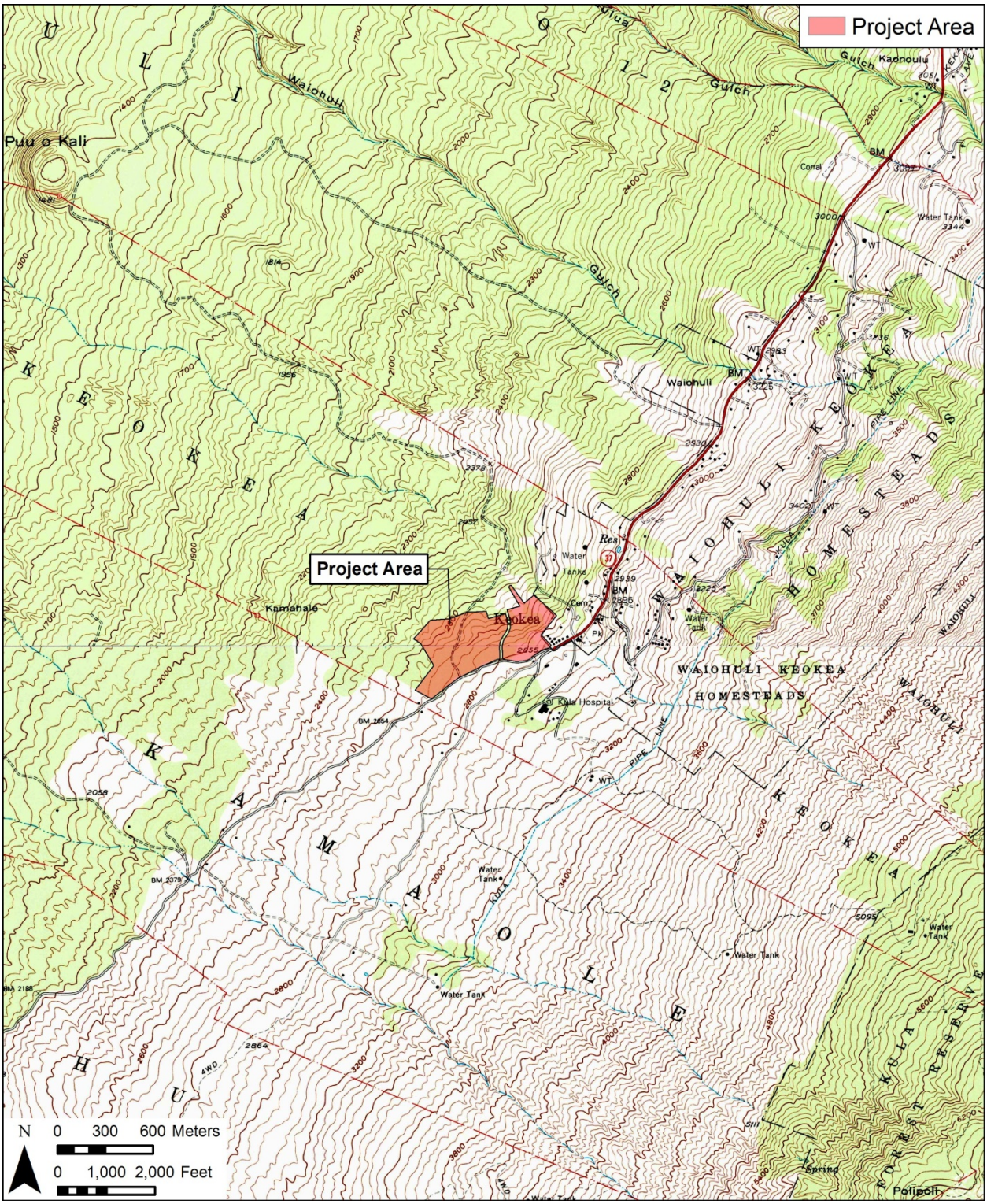


Figure 16. Portion of 1983 topographic map with project area location

ORAL-HISTORICAL ACCOUNTS

This section includes excerpts from four previous studies: (1) Mark's (1975) oral history of the early Chinese settlement in the Kula region; (2) Maxwell's cultural and historical study with interviews of upland Kēōkea; (3) Smith's (2001) cultural impact assessment of DHHL's Kēōkea Agricultural Lots Environmental Assessment (EA); and (4) Kihara's (2013) *Maui's Mom & Pop Stores: The Aesthetic & Intrinsic Study of Multi-Generation & Family-Owned Businesses,* completed as part of the author's doctoral work in the University of Hawai'i at Mānoa's School of Architecture.

Historic-Period Chinese Settlement in Kula & Kēōkea (Mark 1975)

Mark's (1975) oral history titled *The Chinese in Kula, Recollections of a Farming Community in Old Hawaii* focuses on the time period between the 1890s and 1920s. This story, and the Chinese impact and presence in the area, represents a kind of "bridging of the gap" between a more traditional, Hawaiian use of the landscape and the more recent, ultimately modern situation.

Because Mark's (1975) document is relatively short and out of print (i.e., difficult to find in libraries), we have reproduced it in its entirety as Appendix E. Some oral-historical observations from Mark (1975) with particular relevance to Kēōkea, but also referring more widely to the upland Kula area, are summarized below:

1. Chinese farming communities that arrived in Kula starting around the 1840s took to calling this area by a nickname "Nu Kaleponi" for "New California," based on similarities between the California gold rush and the Kula "potato boom." (ibid.:1)
2. Most Chinese people who initially came up to Kula to lease land to farm cash crops (as well as their subsistence crops) came from other parts of Maui and the Hawaiian Islands after their sugar cane contacts (typically five-year agreements) expired. During two main waves of migration to Kula, in the 1840s and then in the 1890s, ". . . the vast majority of Chinese, about ninety-five percent according to interview data, were Hakkas from Kwangtung Province who had heard of Kula farming through . . . mutual acquaintances." (ibid.:2)
3. Summarizing the time of greatest Chinese impact and presence in Kula in historic times, Mark (ibid.) writes:

   > Approximately eighty families moved to Kula between 1880 and 1910; by 1900 there were some seven hundred Chinese living there. For a period of thirty to forty years, Kula supported a thriving community which included English and Chinese schools, Christian churches, a Hung Men society, gambling joint and opium dens, general stores, and dozens of operating farms and cattle ranches.

4. Specific oral-history excerpts and quotations (see Appendix E) from people who grew up there during this time covered the following topics: the importance of working hard and starting work at an early age (young teens); the difficulty of drought when depending on the rain for farming—and traveling more than 10 miles away to get water during these times; the construction in 1905 of the Kula pipeline, which changed life for the better; taking produce and animals (e.g., cattle and chickens) down to Mākena Landing or to Wailuku to get them to market in Honolulu's Chinatown; exchange and barter of goods and services instead of, or in addition to, cash transactions; various shops and stores in the area; going to both English-language and Chinese-language schools with other Chinese as well as Hawaiians—a large school with 100 students was located in Kēōkea (taught by Principal David Kapohakimohewa and his wife); the Christian churches and traditional Chinese societies of the area; social and family activities; and other aspects of life back then.

5. The oral history also pays special attention to the Chinese community's relationship with their Hawaiian neighbors, which was described as strained on the sugar plantations, with its rigid hierarchies and structure, but less so in the relaxed country atmosphere of greater Kula. These two groups grew closer together over time. Mark (ibid.:34) writes: "Many Kula Chinese, impressed by the *aloha* shown them by the Hawaiian homesteaders in the Kula region, fancied themselves, as Willie Fong expresses it, 'Chinese by birth, but Hawaiian by heart.'"

Interviews from Cultural & Historical Assessment of Kēōkea (Maxwell n.d.)

Maxwell (n.d.) produced a draft report on the cultural and historical resources of Kēōkea in support of the (then proposed) 1st phase of DHHL residential development in Kēōkea.[7] Here, we include relevant excerpts from Maxwell's interviews conducted with six (6) knowledgeable people connected to this 'āina. With the exception of correcting minor typos and spelling, and adding clarifying language in brackets, Maxwell's (n.d.) information is reproduced verbatim below.

David "Haha" Kalahanohano Fernandez

He related that he was born in Kula Hospital on July 16, 1923. At that time his family resided right above this project [area] in a cottage at Keokea School. [And] that he remembers growing up in this area and on many occasions would play, ride horse through the area. He remembers being told by his elders that there were heiau and other "Hawaiian stuffs" in the area and don't be niele (inquisitive) and don't touch any of the platforms or other sites in the area. He was told that at one time there was a very large settlement of Hawaiians that lived in the area and they were mostly farmers, their crops being sweet potatoes. They would build their hale (house) with stone foundation and had a "big village" like Keone-oio on the Mākena coast below Kula. His family later moved to Waiakoa where he presently resides. He could not think of anyone that had information about the archaeological sites and believed that a lot of the sites have been destroyed by cattle raised on the project throughout these many years. [He] had nothing further to offer.

James K. Kapohakimohewa

At his residence [in Waiohuli, Maui]. He related that he was born in Kahakuloa Village on 3/18/36. In 1941 or thereabouts, his family moved to Kula and have lived in the general area of Waiohuli ever since. He remembers a youngster playing in the area of the project, but does not recall the specific archeological sites. [And] that the area was always in cattle ranching and can remember his parents telling him that there are a lot of things in the pasture from the "old Hawaiians" and he should not disturb anything. He had nothing further to add on the subject property.

Fredrick Ventura

At his home [in Waiakoa, Maui]. He mentioned that he was born in Waiakoa on April 3rd, 1938. [And] that he remembers hiking in the area in his youth, but does not remember seeing any archaeological sites and only remembers that there was cattle on the property. His brother Kenneth might have some information on the subject property [see below]. He had nothing further to add.

[7] Kahu Charles Kauluwehi Maxwell, Sr., or Uncle Charlie to those who knew him well, was a staunch defender of Hawaiian culture and burials, and of Maui's Hawaiian heritage, in general. He was a long-time member (and chair) of the Maui/Lāna'i Islands Burial Council before his passing in 2012. He was not a formally-trained academic or historian, but his passion for the work was impressive.

Kenneth Ventura

At his residence [in Waiakoa, Maui], he related that on numerous occasions he either played or hiked on the property but being young did not particularly pay attention to the archaeological sites in the area. His parents always told him not to touch anything Hawaiian in the pastures. [He] had nothing further to add.

Wayne Lu

At his residence [in Waiakoa, Maui], he related that he was born on Oʻahu on May 7, 1941 and moved to Maui in 1964. He [has] lived in the Kula area since then and can remember hunting on the property on numerous occasions. [And] that he remembers house sites and other structures but does not know what it was for and only knew that it was built by the ancient Hawaiians that once lived throughout the area. [He] had nothing further to add.

Hokulani Holt-Padilla

By telephone [from her home in Wailuku], stated that she was born on Oʻahu and moved to Maui at a young age and was raised in Waiehu by her grandparents. [And] that she is aware of the numerous archaeological sites on the subject property from research but does not have any information on it. She strongly feels that the sites should be preserved more so because it is on Hawaiian Homes Land [DHHL] property for the future Hawaiian generation yet to come. [She] had nothing further to add.

Interviews from a Cultural Impact Assessment by Smith (2001)

PHRI's Helen Wong Smith (2001) conducted cultural and historical research, including oral-history interviews, in support of assessments of DHHL land in both Kēōkea and Waiohuli Ahupuaʻa, including the entire current project area. Here, we include relevant excerpts from Smith's interviews conducted with several knowledgeable people connected to this ʻāina. Smith's (2001) information is paraphrased below with direct quotes indicated as such. The first two interviews (Smith 2001:2–3) with paniolo ("Hawaiian cowboys") William Poepoe and Henry Kekiwi were mainly in reference to Kaonoulu Ranch, which is located several miles from the current project area. These first two interviews were conducted in 1989. The next interviews (ibid.:3–5) with the Mr. and Mrs. Ching and with Mr. George Tanji were conducted in 2001 specifically in support of the DHHL's Kēōkea lands. Please also note, the style of formal address (e.g., using Mr. or Mrs., or not using these) is retained here as presented in Smith's (2001) report.

William Poepoe

According to Mr. Poepoe, his family once grew corn near Puʻu-o-kali, also known as Red Hill to locals; and the Army once used parts of this puʻu for target practice. More relevant to the current project area, "On the Kamaole-Keokea border there was once a Hawaiian settlement. Mr. Poepoe said there were paved sidewalks and gravesites there." It is unclear from Smith's report at what elevation this Hawaiian village was said to have once been located.

Henry Kekiwi

Mr. Kekiwi stated that ". . . cattle would graze in the lower lands near Puʻu Kali during the winter months, then around June, they would be taken mauka. [He] noted that Hawaiian Homes Land wraps around the land of a Mr. George Tanji, who has lived on the land many years growing cabbages and pigs." He also noted that ". . . Hawaiians and Chinese would move from Puʻu Kali area to further up Keokea during summer." Mr. Kekiwi noted the presence of ". . . many heiau in the general vicinity if Moloahi and Papakea in Keokea. . . He was not privy to the names of any of them nor was he aware of any stories about them."

Mr. Harley Ching and Mrs. Florence Ching

The Ching family has owned and operated the Ching Store in Kēōkea since 1939 (Mr. Harley Ching's father founded the store). The store is located a short distance to the east of the current project area. Both Mr. and Mrs. Ching were born and raised in Kēōkea, and both attended Keokea School. In addition to reminiscing about life in the 1930s and 40s in this area, Mr. Ching also discussed his work at Kula Hospital (formerly known as the Kula Sanitorium). He retired in 1994 as the maintenance supervisor at the hospital. He recalled that ". . . the vegetable garden and piggery [for the hospital] were located makai on the DHHL property"; and, also, ". . . that the DHHL property was leased to Harold Rice for cattle grazing."

Mr. George Tanji

Mr. George Tanji, a second generation farmer in Kēōkea, grew up near the project area. His father started farming on lands adjacent to DHHL's property more than 60 years prior [to 2001]. Mr. Tanji remembers an area within the DHHL lands, and at least partially within the current "proposed development area," known as the "100 acres":

> The "100 acres" abuts his property and consisted of lands leased by the Kula Hospital from the DHHL for various hospital support activities. The "100 acres" contained the hospital vegetation garden which was used to grow vegetables for hospital consumption. Remnants of fence posts and fencing which demarcated the "100 acres" are still [in 2001] visible.

Mr. Tanji noted that beyond the "100 acres," lands were leased to Harold Rice for cattle grazing. In addition to the vegetable gardens, the "100 acres" also contained a piggery, warehouse and slaughterhouse, and a lemon/lime orchard. All of these yielded products for the hospital's consumption. Significantly for the current project area, Mr. Tanji also mentioned the hospital incinerator being located on the "100 acres." He believes it ceased operation sometime in the late 1950s.

Interview Excerpts from Kihara's (2013) Study of "Mom and Pop Stores" on Maui

Kreig Kihara's (2013) *Maui's Mom & Pop Stores: The Aesthetic & Intrinsic Study of Multi-Generation & Family-Owned Businesses* was completed as part of the author's doctoral work in the University of Hawai'i at Mānoa's School of Architecture. Part of the study includes interview/questionnaire excerpts from the family-owners of the Ching Store and the Henry Fong Store, both in Kēōkea. Relevant information is included below. Please also note, the style of formal address (e.g., using Mr. or Mrs., or not using these) is retained here as presented in Kihara's (2013) study.

Florence Ching

Florence Ching, wife of Harley Ching (see above), reiterated information provided above about the original founding date (1939) of the store, as well as its founder (Harley Ching's father), Kim Seu Ching. Florence Ching recalled purchased items being packed in ". . . paper bags or wrapped in paper secured with string. Nothing was prepackaged and goods were bought in bulk. Rice and animal feed weighed 100 pounds" (Kihara 2013:62).

Kevin Kihara

Kevin Kihara's wife, Francene Fong Kihara, is a direct descendant of the store's founder, Henry Fong, who opened at the Kula Highway location in 1933. Kevin Kihara shared about the history of the store's founding and early years:

> When Henry Fong found out that the Territory of Hawaii was going to build a hospital in Keokea he decided that it would be better for business if he would move his store from its current location in "Chinatown" so called because of the many Chinese families that lived in town near the property of the Kwock Hing Society (the local social meeting place for community Chinese

> members) to its current location along Haleakala Road (later known as Kula Highway) where traffic would have to pass going and coming from the hospital. So he exchanged property that he had along the hospital property with land that the government had along the highway and opened this store in 1933.
>
> Having this prime location along the main highway of Kula for the store was good foresight because in years to come the population of the Chinese living in Keokea dwindled because many found it more beneficial for them to find better paying work on Oahu so many made that move from Maui so that business at the original location would have eventually become nonexistent, whereas the population was growing along the main highway and with just the day to day traffic from the hospital, business was good.
>
> During World War II it was especially profitable for Fong Store because the U.S. military had sent about 200,000 soldiers to Maui to various training camps set up throughout the island. One was located in Kanaio, about 7 miles from the store. The soldiers would frequent the store as well as the restaurant and movie theater that Henry built after the store. These times were very good for a proprietor.

Kevin Kihara continued (ibid.:66):

> Francene's [his wife] grandfather was born in Hawaii to parents who arrived in Hawaii from China to work on the sugar plantation in Kohala on the Big Island as contract laborers. Once their contract was over they moved to Maui to Keokea where many Chinese came to settle because they had heard the soil was fertile and good for farming. But farming was not always so easy and profitable and some knew good money could be made in becoming a storeowner. That is why Henry's father opened his first store in 1908 and made his teenage son Harry run it. As a young boy, Henry would help his older brother in his store. When Harry suddenly died in 1920, Henry, having just finished grammar school, took on the store under his ownership at the age of 17. Later Henry had the foresight to see that it would be best to move his store down the road along the main highway to a location before the State hospital was being built. So he traded some land that he had in "Chinatown" with the State for the land where the current store now sits. This store opened in 1933. He also created a little business community, building a restaurant on one side of the store where his sister and her husband cooked and managed, and he also built a movie theater on the other side beyond his house, and had his children run that, but it eventually shut down when business slowed due to the introduction of the television.

ARCHAEOLOGICAL CONTEXT

This section summarizes relevant previous archaeological studies in and near the project area, in order to reconstruct human use and modification of the land. The main purpose of presenting this information is to develop predictive data about the types and distribution of historic properties and their component features we expected to encounter; and to assist interpretation of any new findings.

Figure 17 depicts previous archaeological studies in and within ½-mile of the project area, which includes both Kēōkea and Waiohuli Ahupuaʻa. Figure 18 shows archaeological sites identified by Brown et al. (1989) in Kēōkea Ahupuaʻa. This figure is reproduced from the original (1989) report, and is difficult to read. In addition, it does not include formal (SIHP) site numbers.

Figure 19 shows archaeological sites with formal (SIHP) site numbers identified within ½-mile of the project area. Figure 20 is a detail (zoomed-in) depiction of previously-identified sites in the proposed development area (blue outline), in relation to the larger project area. Note that preservation sites in the project area—which are all outside of the proposed development area—are shown as red symbols.

Overview of Previous Archaeology in and near the Project Area

Brown et al. (1989) conducted archaeological surveys of large sections of DHHL land in both Kēōkea and Waiohuli Ahupuaʻa (see Figure 17), including the entire current project area. In the Kēōkea portion, which measured 351 acres, they identified a total of 108 sites comprised of 211 component features. A wide variety of pre-Contact, traditional-style Hawaiian sites were identified, as summarized in Table 2, including heiau and burials (including possible heiau and possible burials). Most of the identified sites were habitations and agricultural features.

Kolb et al. (1997) conducted an archaeological survey of neighboring Waiohuli Ahupuaʻa (see Figure 17), which did not include the current project area. Seventy-nine (79) sites were identified, including a wide variety of pre-Contact, traditional-style Hawaiian sites.

Dega et al. (2004) conducted data recovery of the Kēōkea portion studied by Brown et al. (1989), including the entire current project area. Dega et al. (2004) documented and tested 21 previously-identified sites, and prepared preservation (Dega 2005b) and burial treatment plans (Dega et al. 2005a).

Dagher et al. (2010) conducted archaeological monitoring in DHHL lands of Kēōkea and Waiohuli, but did not identify any historic properties in or near the current project area.

Dega and Havel (2005) conducted supplemental (addendum) inventory survey work in Waiohuli, and documented additional sites. Dega (2007) conducted data recovery in Waiohuli. Finally, Lyman and Dega (2017) conducted archaeological monitoring in Waiohuli Ahupuaʻa.

Preservation Sites in Project Area but Outside of Proposed Development Area

As depicted in Figure 20 and summarized in Table 3, four preservation sites are located in the central-western portion of the project area. These four sites are not located in the "proposed development area." SIHP # 50-50-10-2097 is about 100 m (328 ft.) from the proposed development area. The other preservation sites—SIHP # 2099, 2311 and 2339—are approximately 200 m (656 ft.) to 300 m (984 ft.) from the proposed development area.

SIHP # 2097, 2311 and 2339 are burial sites preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). Additional details on these sites are provided in Table 3.

SIHP # 2099, first identified by Brown et al. (1989), was included in a preservation plan by Dega (2005b). The site has been described as follows:

> . . . large, notched enclosure measuring 17.0 m long by 10.0 m wide (170.0 m^2). The site is known as Papakea Heiau . . . The structure has been heavily disturbed and has no northwestern

> wall. A notch is present in the southern corner. Adjacent to the northwestern side are two paved terraces. This site . . . has been assessed as prehistoric in origin. (Dega 2005b:8)

The preservation plan calls for a 3-meter preservation buffer (ibid.:5) around the site to be maintained in perpetuity for a total site-preservation area measuring 260 m^2. Dega (2005b:23) also states:

> Preservation . . . will take the form of avoidance and protection, also referred to as *conservation.* There are no plans for installing signs. . . There will be special provisions accorded cultural and lineal descendants, members of the Keokea Homesteaders Association and/or DHHL, school groups, other Native Hawaiian organizations, and any other groups so permitted by the Keokea Homesteaders Association for allowing access . . . for cultural practices.

Previously-Identified Sites in the Proposed Development Area

As depicted in Figure 20 and summarized in Table 3, three previously-identified sites are in the proposed development area; none of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. Modern alterations to this area—within which SIHP #s 2302 and 2307 are located—include an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure). SIHP # 2301 can no longer be located or recognized due to heavy vegetation in this area.

SIHP # 50-50-10-2301

SIHP # 2301 was described as a circular enclosure measuring some 5.4 m (length) by 4.5 m (width) interpreted as an "animal control" (e.g., a pen) and/or possible habitation site dating from pre-Contact times. Its original description (Brown et al. 1989:E36) reads:

> Circular enclosure with unfaced walls. The southeast wall is built into a small outcrop of rock. Maximum wall height is 40 cm. Walls are comprised of stacked basalt boulders and cobbles. A small drainage is present c. 4.0 m west of the enclosure.

The physical condition of the site was listed as fair.

SIHP # 50-50-10-2302

SIHP # 2302 was described as a rock wall measuring some 7.0 m long by 0.6 m wide interpreted as an agricultural feature dating from pre-Contact times. Its original description (ibid.) reads:

> Modified bedrock wall c. 0.5 m high (maximum). Feature is probably agricultural. Small agricultural terraces present in the area.

The physical condition of the site was listed as fair.

SIHP # 50-50-10-2307

SIHP # 2307 was described as a rectangular terrace and rock wall occupying an area measuring some 18.0 m long by 6.0 m wide interpreted as a habitation/agricultural features also dating from pre-Contact times. Its original description (Brown et al. 1989:E37) reads:

> Rectangular terrace built on top of a knoll. The wall is built across a small steep-sided drainage situated 6.0 m south of the terrace. The south and north walls of the terrace are situated on the edge of the knoll. An alignment extends 4.0 m north from the northwest corner of the terrace.

The physical condition of the site was listed as fair.

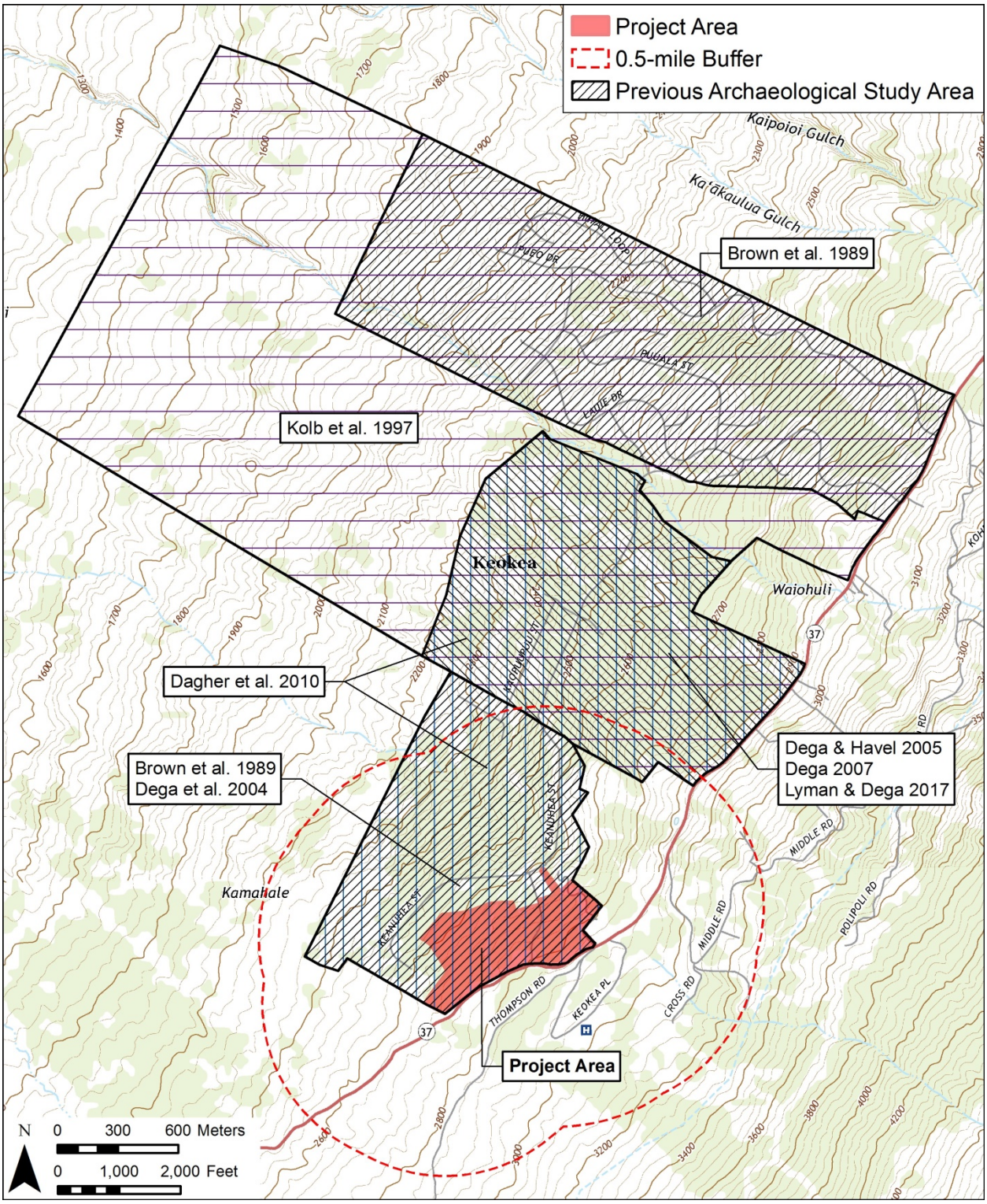


Figure 17. Previous archaeological studies in and within 1/2-mile of the project area

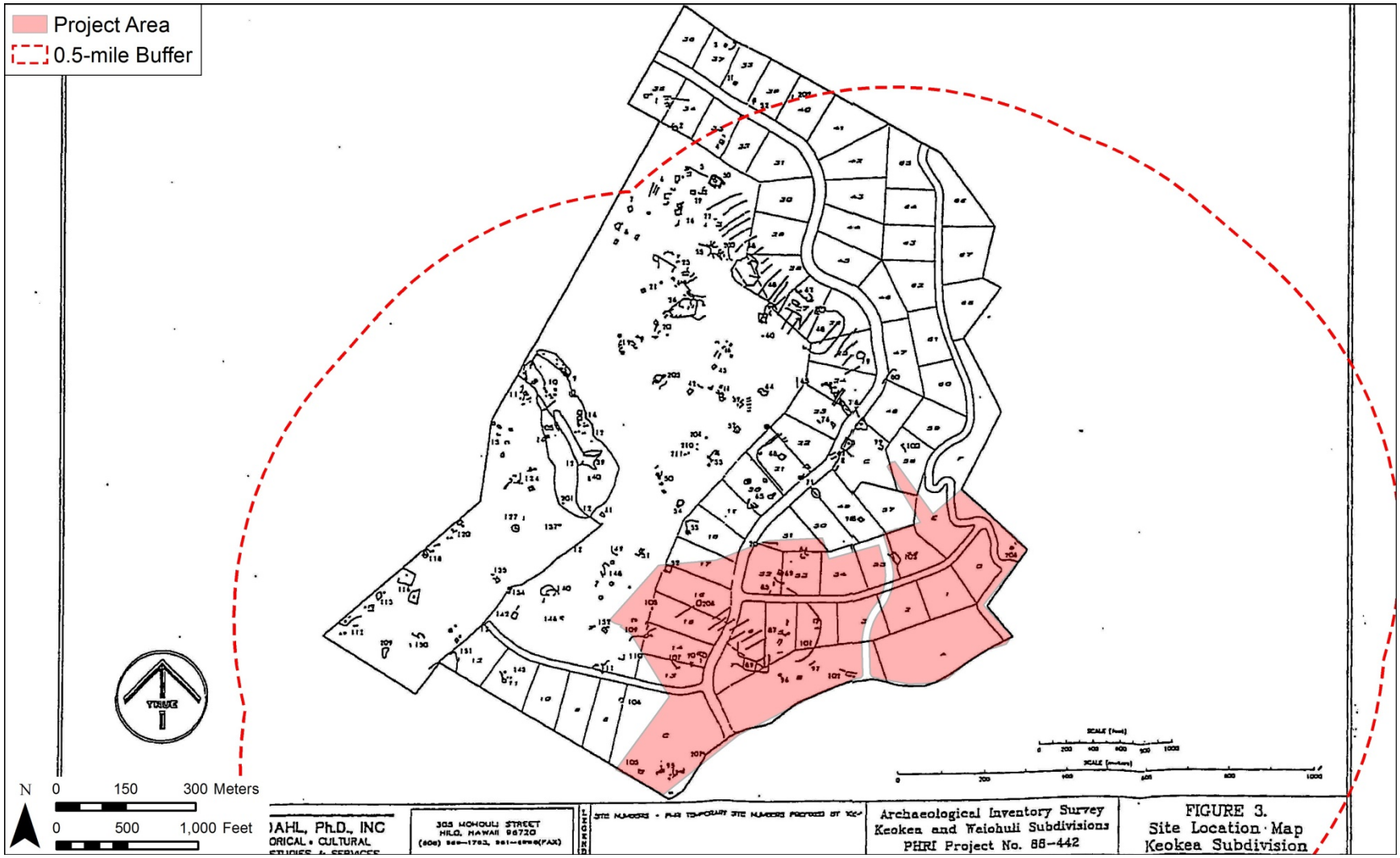


Figure 18. Previously-identified sites according to Brown et al. (1989) (see text for discussion)

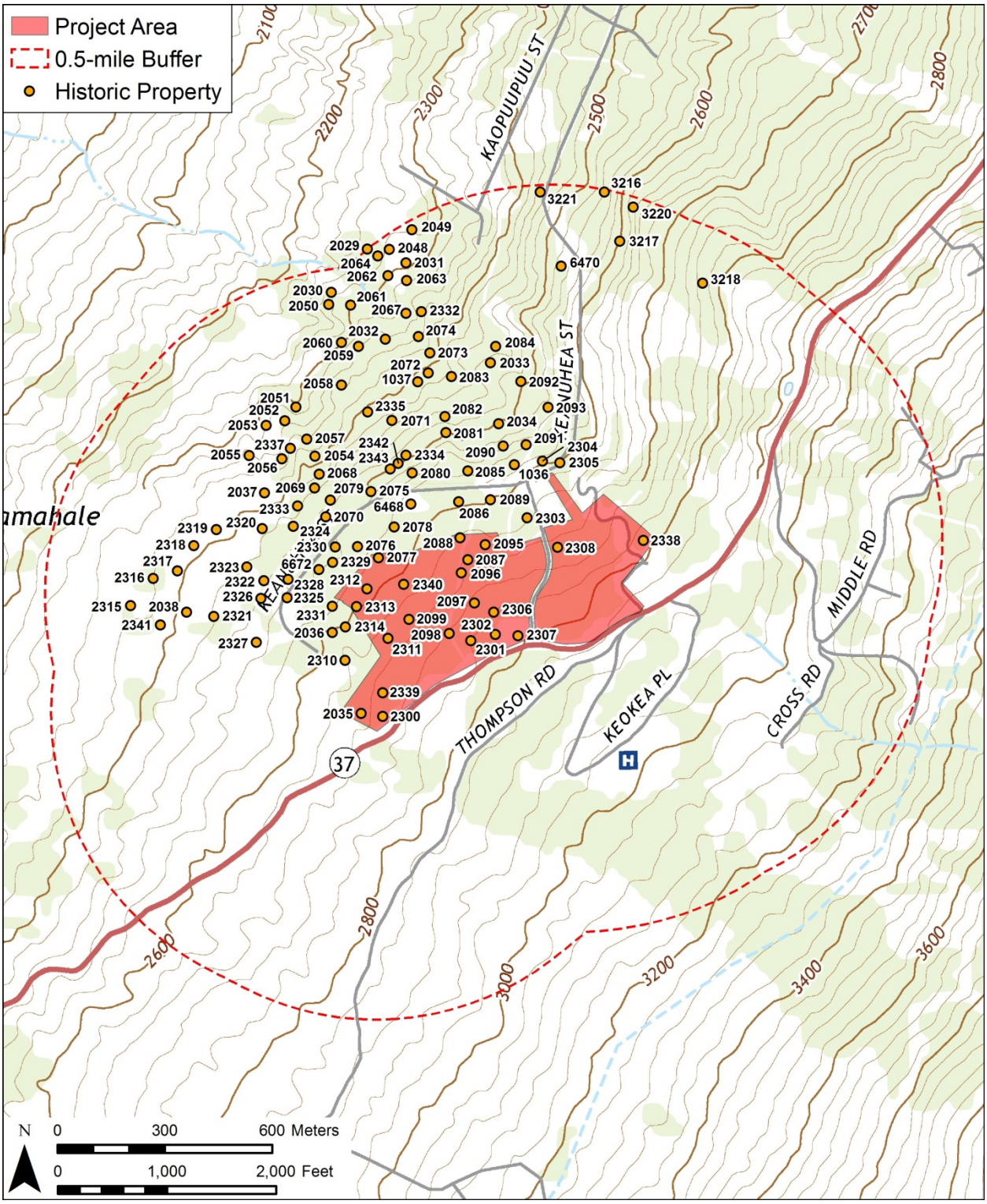


Figure 19. Previous archaeological studies in and within 1/2-mile of the project area

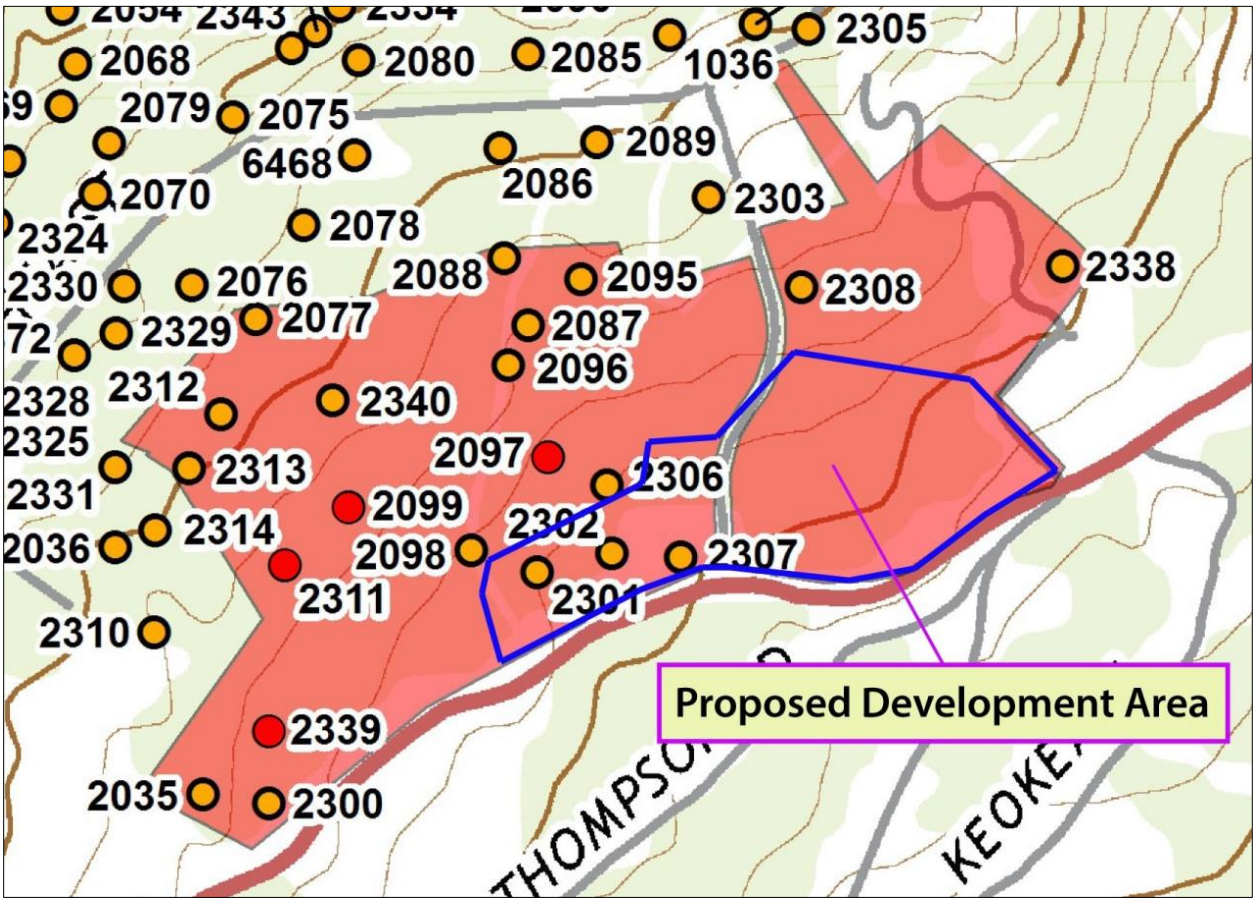


Figure 20. Previously-identified sites in the project area (light red-colored polygon) and proposed development area (blue outline); preservation sites (SIHP # 2099 is Papakea Heiau; SIHP #s 2097, 2311 and 2339 are burials) in the project area are red symbols (see text for discussion)

Table 2. Site Types by Functional Interpretation identified by Brown et al. (1989) in Kēōkea

Formal Type[1]	# of Sites	% of Total
Agricultural	5	4.63
Animal Control	6	5.55
Animal Control/Agriculture	3	2.78
Burial*/Habitation/Agriculture	3	2.78
Burial	1	0.93
Burial/Habitation	2	1.85
Burial/Agriculture	1	0.93
Tool Manufacturing	1	0.93
Habitation	22	20.37
Habitation*/Agriculture	1	0.93
Habitation/Agriculture	48	44.44
Habitation*/Animal Control	1	0.93
Habitation/Indeterminate	1	0.93
Habitation/Agriculture/Animal Control	4	3.84
Indeterminate	2	1.85
Religious*/Agriculture	1	0.93
Religious/Habitation/Agriculture	1	0.93
Religious*/Habitation/Agriculture	1	0.93
Religious	1	0.93
Temporary Habitation	1	0.93
Temporary Habitation/Agriculture	1	0.93
Water Tank	1	0.93
TOTAL	*108*	*100.00%*

[1] These categories are verbatim from Brown et al. (1989:15)
* These were described as tentative identifications.

Table 3. Previously-identified Archaeological Sites in the Project Area*

SIHP #[1]	Formal Type	Functional Interpretation	Temporal Interpretation	Status/Mitigation	Relationship w. Proposed Development Area (PDA)
2301	Circular enclosure	Animal control or possibly habitation	Pre-Contact	NFW	**Within the PDA**
2302	Rock wall	Agricultural	Pre-Contact	NFW	**Within the PDA**
2307	Rectangular terrace & rock wall	Habitation/agricultural	Pre-Contact	NFW	**Within the PDA**
2097	Mound & platform	Burial	Pre-Contact	**Preservation**	100 m (328 ft.) away from PDA
2099	Enclosure (remnant)	Papakea Heiau	Pre-Contact	**Preservation**	200 m (656 ft.) away from PDA
2311	Overhang/lava blister	Burial	Pre-Contact	**Preservation**	225 m (738 ft.) away from PDA
2339	Sink/lava tube	Burial	Pre-Contact	**Preservation**	300 m (984 ft.) away from PDA
2035	Enclosure	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2077	Enclosure w. paved area	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2087	Enclosure w. water tank	Water tank	Pre-Contact/Historic	NFW	Outside of the PDA
2088	Terrace	Agricultural	Pre-Contact	NFW	Outside of the PDA
2095	Rock wall	Indeterminate	Pre-Contact	NFW	Outside of the PDA
2096	Wall & terrace complex	Animal control/ Agricultural	Pre-Contact	NFW	Outside of the PDA
2098	Terrace	Agricultural/ Habitation/ Animal Control	Pre-Contact/Historic	NFW	Outside of the PDA
2300	Enclosure, wall terrace & wall segment	Habitation/agricultural	Pre-Contact	NFW	Outside of the PDA
2306	Mounds & wall	Animal control/ Agriculture	Pre-Contact/Historic	NFW	Outside of the PDA
2308	Overhang	Habitation	Pre-Contact	NFW	Outside of the PDA
2312	Enclosure	Habitation	Pre-Contact	NFW	Outside of the PDA
2313	C-shaped Terrace & agricultral features	Agricultural	Pre-Contact	NFW	Outside of the PDA
2338	Enclosure	Agriculture/ Possible Habitation	Pre-Contact	NFW	Outside of the PDA
2340	Enclosure	Habitation	Pre-Contact	NFW	Outside of the PDA
TOTAL	21 previously-identified sites in project area; 3 located in proposed developed area (PDA); 4 are preservation sites located outside of PDA				

[1] SIHP = State Inventory of Historic Places; complete, formal site #s in the column as preceded by "50-50-10-."
* Sites are arranged in the following order: (1) sites within the PDA are listed first; (2) preservation sites are ;isted next, and (3) all other sites in the project area but outside of the PDA are then listed in numerical order.

Results of Recent Field Inspection

The pedestrian survey (field inspection) by Chris Monahan conducted on 3/19/21 demonstrated the following main conclusions, which are described in more detail below (note, the location, areal extent and orientation of the areas and resources discussed below are depicted in Figure 21):

1. The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are not located in the proposed development area (see Figure 20);
2. One additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital (see Figure 21);
3. The three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are not preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301).
4. A modern rock wall along parts of Kula Highway and Ka'amana St. is not a historic property.

Relationship between Preservation Sites & Proposed Development Area

The four previously-identified preservation sites in the central and western portion of the project area and not in the proposed development area. The closest of these sites, SIHP # 50-50-10-2097, is located about 100 m (328 ft.) away from the proposed development area. The other sites—SIHP #s 2099, 2311 and 2339—are approximately 200-300 m (656-984 ft.) away. SIHP #s 2097, 2311 and 2339 are all burial sites that are being preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). SIHP # 2099, first identified by Brown et al. (1989), was included in a preservation plan by Dega (2005b). The site—known as Papakea Heiau—has been described in the previous section of the report (see pp. 25-6). The preservation plan calls for a 3-meter preservation buffer (ibid.:5) around the site to be maintained in perpetuity for a total site-preservation area measuring 260 m^2. Other details of preservation of this site have been described above (see p. 26).

Historic Property in Proposed Development Area – The Incinerator Site

An area of historic- and modern-aged debris from an old (abandoned since at least 1980) incinerator site associated with the Kula Hospital is in the eastern portion of the project area (previously designated TMK [2] 2-2-004:070, measuring 0.38 acres, but now subsumed by TMK [2] 2-2-004:068) [see yellow-outlined site boundary in Figure 21]).

As described above (see p. 13), there is not much specific information on the "incinerator site," which was used by the hospital to burn waste. According to an environmental assessment (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Other information (e.g., when it was built, and its current disposition at the time [2004]) was unknown.

Site features include an abandoned and overgrown (with vegetation) small metal-frame structure; this is presumably the location of the incinerator proper. The surrounding landscape is littered with debris. We did not spend much time at this site, which likely contains hazardous materials that are a health and safety hazard.

Figure 22 to Figure 27 illustrate the incinerator site, including the main structure as well as the surrounding landscape that is littered with hazardous debris.

Three Previously-Identified Historic Properties in the Proposed Development Area

Three previously-identified sites are in the proposed development area (see Figure 21). None of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. Modern alterations to this area—within which SIHP #s 2302 and 2307 are located—include an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure).

Figure 28 to Figure 30 show views of SIHP #s 2302 and 2307.

SIHP # 2301 was not relocated due to heavy vegetation in the area.

Modern Features (Not Historic Properties) in Proposed Development Area

A low, informally-constructed, dry-stacked rock wall built of boulders along the Kula Highway and Ka'amana St. is a modern construction and not a historic property (see Figure 21).

Figure 31 to Figure 32 show portions of this modern boulder wall.

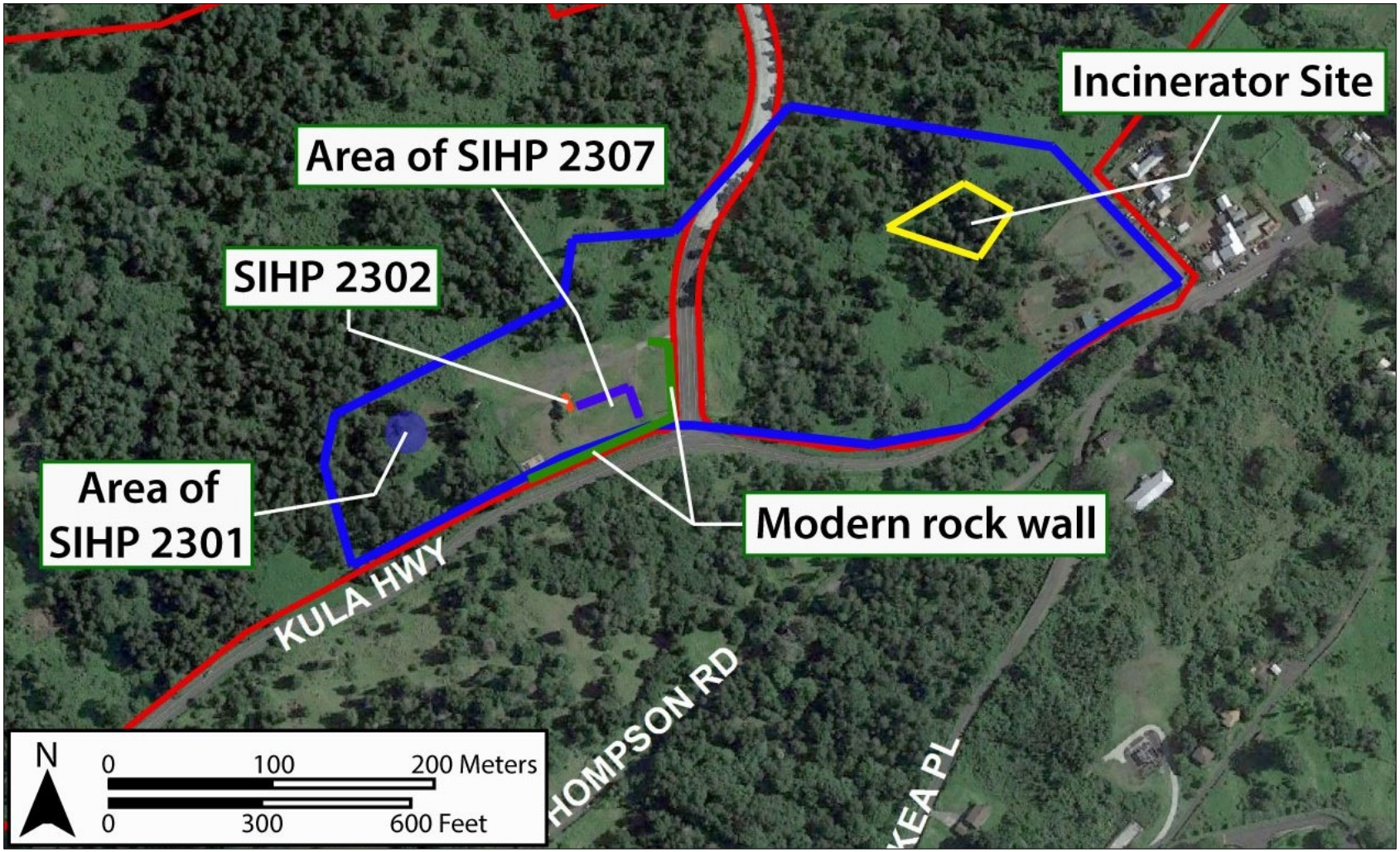


Figure 21. Aerial image showing results of archaeological field inspection (see text for discussion)

Figure 22. View of the overgrown incinerator site structure; view south

Figure 23. View of the overgrown incinerator site structure; view southwest

Figure 24. View of the overgrown incinerator site structure; view northwest

Figure 25. View of hillslope around the incinerator site; view north

Figure 26. View of incinerator material at the base of the main structure

Figure 27. View of surface material around the incinerator site

Figure 28. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing northeast

Figure 29. View of part of SIHP # 2307 (red arrows) and location of SIHP # 2302 (hidden by vegetation—yellow arrows); facing south-southeast

Figure 30. Detail of part of SIHP # 2307 (arrows); view east

Figure 31. Portion of modern rock wall (arrows) along Ka‘amana St.; view northeast

Figure 32. Portion of modern rock wall (arrows) near entrance to the farmers' market along Ka'amana St.; view southeast

COMMUNITY FEEDBACK AND INTERVIEWS

As described in the Methods section above, a formal group interview of three (3) community members was conducted on April 7, 2021, by Kalamaʻehu Takahashi, who was born and raised on Maui. Kalamaʻehu works for our partner consulting company, Nohopapa Hawaiʻi, which was responsible for conducting the community interview portion of this project. Nohopapa Hawaiʻi's manuscript delivery summarizing the interviews is included verbatim as Appendix F.

The three interviewees—Perry Artates, Richard Dancil, and Roderick Fong—were all born and raised in Kēōkea. The interview session was audio-recorded using Temi on-line software that transcribes audio into writing that must be then edited. After editing and transcribing the information, we sent it to the interviewees for their approval. *Other than approving the content that is provided below, one participant—Perry Artates—requested that all names he mentioned should be redacted. Therefore, we have redacted the names he mentioned in the transcription below*.

Interview with Perry Artates, Richard Dancil and Roderick Fong

Moʻokūʻauhau: Narrators (Interviewees') Names, Background, Significance, Mālama, "Old" Ways

Perry Artates was born and raised in Kēōkea. He still lives in the same district.

- "Born at the Kula Sanatorium, which was in the Kula Hospital."
- "Came back and now I'm a resident and lessee of Waiohuli Homestead."
- "We all grew up in this area. Because it's a rural district, we had to learn each other's culture from Chinese to Filipino, to Native Hawaiian, to Portuguese, because it's how we survived up here in learning each other's culture. And our families were exercising the livelihood in an area that was away from the urban and to be self-sustainable, that's the only choice we had to learn each other's culture. Because we could eat from anybody's house. To survive, whether they had chickens, whether they had pigs, whether they had cattle and live off the land. What everybody is trying to do now. The only place we have to go buy things that are part of living in this rural district was Fong's Store and Ching's Store. The chemistry, what we see or what we learned is trying to educate the future generations that this is how papa or mama or tūtū learned."
- Perry talks about how their ʻohana mālama or steward this place, [redacted]k's family has always been in the industry of construction. They build places or roads or infrastructure for the greater whole of this island. Because I worked fo[redacted]g construction during high school. We fall back, again, to our family ties and the family ties perpetuate the individuals. We took care of each other, no matter what direction we took, not only in higher education, but the basic principles and values growing up. To this day because we never forget where we came from and who was an instrument in having us have the greater things in life and to appreciate that."
- "They say hospital, I say sanitorium because the sanitorium was self-sufficient. The hospital became a hospital because it was a sanatorium for tuberculosis. So anybody who had tuberculosis in that time of age had to go to Kula Sanitorium."
    - "They grew their own food, had their own cattle and a dairy. They milked their own cows. Every day after school, I used to go walk up to the dairy and witness by sitting on the post watching these things happen. They used to milk cows by hand. They used to call the cattle with a transistor radio and had KCCN, the old Hawaiian station. They played the music and the cattle came in. They knew it's time for come. They put them

inside a stall and milk the cows. And they used to bring them inside the big containers. The community used to have fresh milk. Not homogenized. It was fresh."

Richard Dancil was born and raised in Kēōkea. He still lives in Kēōkea.

- "My father was born in 1910 and then he moved to Hawai'i in 1917. He was only like seven years old at the time, working on the plantation. And then in the 1930s, he started working on that Kula Sanitarium as a nurse. That's where he met my mom, Margie. She moved from Hana, that was in 1942 and started working on that the Kula Sanitarium and then that's how they met at the Kula hospital."

- "I wanted to add to the uniqueness of Kēōkea. I remember me and Rocky would go play at Kēōkea park and we'd get in trouble. By the time we reach home, mommy and daddy them know. But that's how tight the community. They would watch out for each other's families.

- Richard talks about Kula Sanitorium, "It was the nucleus. It was created in 1910. Originally it was tents. In the 1920s, they started building. Fong's construction was involved in. By 1936 it was the five-story building. And then the clinic, which they called the general hospital. That was in 1932."

Roderick Fong was born and raised in Kēōkea. His family still lives in Kēōkea and he lives in Kīhei.

- "Fourth generation. Probably in the 1890s. My family, my great-grand parents moved up here and they had eight children. One of which was my grandfather. And I still have quite a bit of family here from that eight or so siblings. Grew up here with all my family. My father was born and raised up here and so was my grandfather."

- Roderick talks about how their 'ohana mālama or steward this place, "Growing up, we didn't know of too many real, big cultural sites here. I don't know of, me personally, of any heiau and so forth. But you know, this is my opinion, this community back in the early 1800s was sparse and not much done. Eventually as the plantation were bringing immigrants in, they looked for areas that no one wanted and found out whether its good farming and so forth. They found Kēōkea. To this day, I feel it's one of the best places to farm the soil."
    - He continues, "Growing up, to me, we had the best cabbage, onions, the best whatever in the area. I think when they moved in the late 1800's to farm, they found that good soil and that's how the community grew. Like Richard said when the hospital came in, that was a big part of Richard's family, Perry's family, my family where they located to this day because of the hospital and bringing everybody closer together. So that was a start, which is the 1930s of having bigger Kēōkea community itself with businesses and whatever else you had in the area. But I think before that it was from the 1800s, it was land that nobody wanted. It was far away from water, far away from the harbor and everything else. So, no big-time business wanted anything to do with the land."
    - "It was a place that people could move to and start their own family. When you look out here, you can see how the land is from that time from way back then. Mākena landing was a shipyard. They would go down that way towards Ulupalakua through Mākena landing for everything. All the goods. It wasn't Kahului harbor."

Regarding practices/the "old" ways, Perry Artates commented, "Our kids, now, don't know how to kalua a pig. Our grandkids don't know how to do that either. Until you do it yourself as a papa. And the only reason why I say that because of the experience as a papa or tūtū. They think that's cruelty to an animal because it's what implanted in their brains today in their education. You got to teach them the old way."

- He continued, "The royalty of our kingdom, the richest food to feed the ali‘i wasn't the pig. It was the dog. Today, this generation rather eat McDonald's or Burger King so we're losing that because you know what's going to happen, you better know how to go back to the old way."
    - Roderick Fong commented, "My uncle he would say, 'I got somebody special coming.' So, he would prepare a dog."

Mo‘okū‘auhau ‘Āina, ‘Āina Mauli Ola: Cultural/Natural Landscape, Resources, Uses, & Practices

Regarding cultural sites, the narrators (interviewees) mentioned they don't know of any. Richard Dancil commented, "We didn't even think about going out and looking. We wouldn't even bother with that kind. No be mahai‘oe."

- Roderick Fong mentioned, "A little farming, a little ranching. But if you're looking at finding cultural centers, probably be that late 1800s of walls, farming walls, farming cisterns, and things like that. And not necessary going back even farther."
- Perry Artates shared, "The ones that would know, the paniolo, the cowboys because they go up and down the mountain. They can see them."
    - "You have to realize that in this area, you have to throw away the ‘ōpala. The ‘ōpala is going to be where there's vacant land that maybe a part of Hawaiian homelands. It's all a part of Hawaiian homelands. But until you do something, then you're going to find it."

Perry Artates, Richard Dancil, and Roderick Fong shared about the church names such as Haleakalā Church and the Chinese Episcopal Church.

- Roderick Fong talked about the history of Chinese, "The first wave was early 1840s. They just went to recruit, but they found that they rather get better families to recruit in the late 1800s. So, they decide to recruit from China Christian-Episcopal base towns. From the early to mid-1800s, Switzerland-German Christian missionaries went to China and establish all these towns. When they started recruiting the next wave of plantation owners' recruits, they wanted more family oriented, more Christian base. So that's why this group of Chinese, a lot of them were Christian. I don't even say my great-grandparents were Christian, but they were from that town that had established. I have old pictures of that town where they grew up, which is pretty famous, but that's where the churches were."
    - He continued, "Christian churches were started because the Chinese wanted Christian churches and the first pastor was a Chinese pastor, ordained minister from China, that established that in the early 1900s. The Catholic church, there were Portuguese around here that wanted Catholic church, so St. John's was built first."
    - "My grandparents were Christian/Episcopal, but all their kids wanted to be Catholic. My aunties and my father were Catholic. Growing up, whether you were Hawaiian or whatever, the churches you went to was Catholic."
    - "We grew up in the Catholic Church. They had their association building that is still stands and operates. My family still kind of goes through the ceremonies and twice a year they have something that they go to the graveyard where my grandparents or great-grandparents are buried. I can just tell you that they're still doing their customs. You have their Chinese graveyard up in the mountain."

Regarding trails, Roderick Fong mentioned, "Only cut-off trails from the road."

- Roderick continued, "Our family maps, there is sometimes written in there. Not necessarily they show the trail. Sometimes they do, but they might write down in the

deed that you got to give this trail to people to cross the trails. So, it's written down from the past."

- Perry Artates shared, "When you're young kid, you make your own trails."

Regarding roads, Roderick shared, "The roads were smaller about 13 feet and dirt."

  - He continued, "My family, it was my grandfather's brother, I think, who brought the first truck to Kula that hauled things around in 1924 or something like that. It was a Ford truck."

- Perry Artates commented, "We used to travel from here all the way down to Mākena. The Government Road was dirt and it was open."

Regarding native and introduced plants and animals, narrators responded with Chinatown substance food [the meaning of the previous few words is unclear] was sweet potato, most likely Hawaiian sweet potato, including peanuts were grown. Roderick Fong shared, "Mid-1800s, the first bulk farming was for the Irish potato to be sent to California. And they did sandalwood."

Regarding the use of resources, Richard Dancil shared, "We fished a lot."

- Roderick Fong commented, "We would go down to Mākena maybe eight times a year. And our close family friends, our parents, and grandparents, they were all teachers, principals, and educators. They're all buried at the Mākena church. They all grew up here in Kēōkea. Even though its Mākena and Kēōkea, you see the connection because that's the family."
  - Richard Dancil shared, "The families go way back. From the mountain to the ocean."
- Perry Artates added, "I think the question that is relating is what our ancestors give to us of self-sustainability. If you're talking about growing things up in this rural district, you have to understand that we don't have flowing water, at that time, because we're not in Hana. We're in Kēōkea. There's a possibility that there was flowing water. When the immigration came for plantation, they diverted the water. How did native Hawaiian people survive in this district without water? These ahupuaʻa go from mauka to makai. You get the names of the places in here that go all the way down to Kīhei. Because those streams that had water, that's where the Hawaiians lived where there was water. Not where there wasn't water. When get big rain, over here get plenty water inside this gulch over here and the next gulch over and the next gulch over had plenty water. And that's where the Hawaiians used to live. They could live in Kahikinui where it's dry. Manawainui, that's where everything washed out every time."
  - Regarding the names of the gulches, Perry Artates mentioned they have the maps. Referring to the 2007 flood, "Not until my later part of my life that I've witnessed the power of water. Not only because water is life, but what water can take away. The community was trapped in this area."
  - Roderick Fong commented, "Because of the cloud cover and temperature, even in the summer, clouds would come up at about two o'clock and its overcast. It's cool. And then it does rain, but we're not like Haʻikū where it rains a lot. This is dependent on the climate in this area. And it's not a continuous rainfall and not continuous drizzles. It's actually on the drier side. That's why a good rain, a good Kona rain would last and take advantage of that. But that's why this area is also one of the worst drought areas if you're farming. It's not the worst drought area in terms of dryness. But if you start to say, six months to eight months a year I'm farming here and everything is fine. Then all of a sudden, I got two years, I didn't have enough rain for my farming that's why it becomes a really critical drought area."

Perry Artates shared, "How do you put people on the land? You have to build. And that's where the findings in cultural impact assessment is a very important because you don't want to, even in this district in Waiohuli, even though there was a cultural impact assessment, they're only going to put places where they think it's important. They gave me a book and they're going to give you all the findings that they like record. But everything else can be just one number but the number is going to be in your property. But it's up to you if you like take care of that. Its culturally, whether its Chinese, Filipino, or Hawaiian, you build around it and mālama that."

Vision, Recommendations, and Additional Manaʻo

- Richard Dancil shared, "Go in the areas and if it's covered, go clear and clean by hand. That's what I did and then I realized had more rock walls in areas."
  - "My main thing is to see the community becoming tight and moving forward. Being Pono. But I can tell you one thing, I don't want to see is Kēōkeo turning into a city. I like this approach of like what you guys were talking about, instead of coming in with big equipment, you go in to clean, and walk the land. Get to know the land."
  - "I could see how the healing can come about when you're strengthening the Hawaiians identity. These kids, you can see that they take pride in this place. They're real protective. That's how I'd like to see this community get to that point. I don't like things to just be individuality, those types of things."
  - "Like today, if we can come to one similar type of tightness, that would be good."
  - "Education is a big thing. Right now, I feel comfortable with the baby steps. Sometimes when you move things too fast, the flavor changes."
- Perry Artates mentioned, "Homestead land, take the time to walk the land that you are awarded."
  - "Respect these sites and understand them to mālama. You don't know what kind of site it is. Like Richard said, when you go clean, it might just be a one wall that had cattle or might be one enclosure. When you see enclosures, that's a site. It's not just one wall because in the past days, everything was cattle, right? So, they built walls. Archaeological findings, in each enclosure, if it's an ahu, you will get something that designates that place as a prayer site. They designated, this is where we cook. This is where we sleep. This is where we do family gathering. When they mine, they found ash, fish bone, and things. That's an historical finding. It's not always cattle, its habitual or its about prayer. It's about respecting your culture."
  - "Education is the key and along those lines is specifically cultural assessment, like how Richard explained."
  - "We can control the sprawl in this rural district. We can control the sprawl only if there's a Community Development Corporation or CDC, with all the cultural. And that can be identifying only native Hawaiian people, but they cannot. Because not only native Hawaiian people live in this district. So, you have to include the [redacted] and all the native Hawaiian people, too. How many of the others who are living that we haven't contacted? And would they want to come? What about all those that used to grow food up here? Who can we contact? Unless it's only for our native Hawaiian community. Are we specifying is only for Hawaiian Homes? Then there may be opposition from those that we excluded because they born and raised up here too. Right?! They shouldn't be our worst enemy, those that live up here. But if we're identifying that this is only for native Hawaiian, I totally agree with that because we were here before. If we're going in that aspect, as kānaka, there was only Hawaiian people here. The names on that map, no

more those names anymore. Because those names, it's not carried on, those old, old names. The only way you're going to find if that's your line in that parcel and get all these Hawaiian names surrounding this whole district. You have to do your genealogy."

- "You know how you get common sense, when you learn and you were taught by your elders because they're the ones who knows before us. Historically, what are we trying to see if we know about things, it's always going to be historical. Until there's development. You not going to find anything until somebody's going to develop. It's for future, right? It's not for me. It's not for you. It's for your grandkids, right? They have to know the future is self-sustainable. They have to know how to go in a chicken pen to feed the chicken, get the egg so that you have eggs to eat. That's how it was before, you sit down, you're running around like small kid. Who you listen to? Gung-gung. You listen to all your ancestors talking story with their group of people that they know, but you're running around. And you come over there and pull on their leg, 'I hungry.' 'Go away, we still talking story.' And they come playing music, sing, talk story again, or even go inside Fong's theatre to go watch Chinese movie."
- "What are we creating in the parcel? That's my question. Before we move forward, are we recreating kupuna housing, commercial, industrial? What are we creating with this parcel? Because if we're creating things that's not going to help...it will help perpetuate self-sustainability, which should be homes first. You have to get the people off the waiting list to go into a house before you create all these other things. That's my concern. Hawaiians are waiting and they're passing on the list to get on their land. They're not going to live in a commercial building or an industrial building. They're not going to live inside anything else because they want to live on their land. After they live on their land, now you create all these other things. Kēōkea, there's people living over there whether it's undivided interests where its ag lots. They can create their own sustainability. If they utilize their two-acre parcel to grow their food. If they grow their food, now they have a place that now you're going to create to sell their property. I don't care if they're going to grow pigs or chickens, they get two acres, grow on top of their land, and then bring it to a place to sell their product. I have two-acres of land and if I don't know how to use that land to grow sustainability to grow vegetables or to grow what used to be out here, why are you going to create a commercial property? You can make your own business on your own two-acres. The thing that upsets me is, the people that live over there, they're not all from this district. They come from all over the place because they have the koko, they have the blood. All they like to do is come to one place and live on the land, but they don't know how to live on the land. You get one land, then make use of your land."

CONCLUSION – CULTURAL IMPACT ANALYSIS

On behalf of the Kēōkea Homestead Farm Lots Association, the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc. (PBR), TCP Hawaiʻi, has completed a Cultural Impact Assessment (CIA) in support of the Kēōkea Master Plan (Master Plan) for DHHL. The project area consists of 69 acres located in Kēōkea Ahupuaʻa, Makawao District, Island of Maui, Hawaiʻi, TMK (2) 2-2-032:067 & 068.

A multi-phase community plan that is being used to inform the in-progress Master Plan includes the following general components: community gardens, native reforestation areas, a native Hawaiian healing center, a police substation, Hawaiian immersion schools and day care facilities, a stage and amphitheater, parking areas, and a multi-purpose building with a kitchen for community events.

In addition to conducting community outreach and interviews, we also conducted a physical (field) inspection of the areas within the overall 69-acre project area where the community proposes to alter the ground surface, build structures and infrastructures, etc. This smaller area, designated the "proposed development area," measures about 15 acres. The CIA effort, however, included consideration of the overall 69-acre project area within the even larger context of the encompassing cultural and historical landscape of upcountry Kula.

The subject CIA was developed in collaboration with DHHL, PBR, and the community to learn more about the traditional and customary practices and beliefs relating to the project area, and the cultural and historical resources that once or currently support them, which may be impacted by the proposed project. This information has been gathered to support permitting approvals for the proposed project. It may also be used to support consultation with other stakeholders such as native Hawaiian organizations and individuals, and other community members. This CIA is designed to satisfy the Guidelines for Assessing Cultural Impacts, adopted by the Environmental Council, State of Hawaii, November 19, 1997, and any applicable requirements under Hawaii Revised Statutes Chapter 343 and the related Hawaii Administrative Rules ("Environmental Impact Statement Rules") under HAR Chapter 11-200.1.

Cultural Resources, Practices and Beliefs Associated with the Project Area

This information is a synthesis of the results of four major content sections of this report (CULTURAL AND HISTORICAL CONTEXT, ORAL-HISTORICAL ACCOUNTS, ARCHAEOLOGICAL CONTEXT and COMMUNITY FEEDBACK AND INTERVIEWS).

In this section, we do not reiterate all of the supporting evidence, citations and previous studies and reports upon which our assessment is based. Here, we simply present our analytical synthesis of the information; readers wanting more supporting evidence or details need to refer back to the previous four sections.

1. The project area is part of the uplands of Kēōkea Ahupuaʻa, in the moku (traditional district) of Kula, known today as the district of Makawao. The project area is situated on the lower slopes of Haleakalā, known in Hawaiian traditions as the "House of the sun."
2. Historian Helen Wong Smith's compilation of cultural and historical information about the project-area environs describes Makawao, in general, as "kula-o-ka-maʻo-maʻo," or Land of Mirages, where lost souls once wandered until they found a place to rest. Pukui et al. (1974:142) interpret the place name Makawao as "forest beginning."
3. Puʻu-o-kali (literally, "hill of waiting") is a prominent hill (elevation 1,481 ft.) a couple miles northwest of the project area along the boundary between the ahupuaʻa of Kēōkea and Waiohuli. From the coastline, this puʻu (hill) is a major visual aid and landmark between these lands. It is also associated with the following moʻolelo (oral-historical accounts): [It was] . . . believed once [to be] a *moʻo*, the wife of nearby Puʻu-hele; their child, Puʻu-o-inaina

(hill of wrath) was placed on Ka-hoʻolawe and later was a lover of Pele's sweetheart, Lohiʻau. (Pukui et al. 1974:203)

4. Māhele data from the project area show an atypical pattern compared with most of the Hawaiian Islands: the project area was part of *both* Crown land—that is, large tracts (such as entire ahupuaʻa) set aside for the monarchy's exclusive use—*as well as* kuleana (hoaʻāina, or commoner) parcels. Wong Smith explained: "Although there were many small parcels granted in Keokea . . . the Indices states that Keokea was Crown Land from the beginning. The numerous [small, kuleana] parcels may be a result of an experiment by the Kamehameha III's administration prior to the Great Mahele concerning trial fee ownership runs. In a report by Riford . . . 11 Land Commission Awards (LCA) either within or bordering the Keokea parcel [i.e., including the current project area] . . . are listed. The bulk of the parcels are designated as kula land and houselots."

5. Two LCAs (#s 10639 to Pa [1.9 acres] and 6720-B: ʻāpana 4 to Nahelu [3.6 acres]) are entirely, or nearly so, contained within the project area; however, they are both well outside of the proposed development area. Interestingly, Nahelu's LCA contains two of the preservation sites identified in previous studies of the project area: SIHP #s 50-50-10-2099—a heiau known as Papakea—and 2311, a burial site. Pa's kuleana parcel is described as "kalo [taro] land" that he received in 1843. Nahelu received his parcel in 1823.

6. Several other LCAs are located around the north and northeast sides of the project area; most are a short distance away, but one (LCA # 6724 to Makakulani) includes a small portion of the project area. This and others (LCA #s 6179-B: ʻāpana 2 [to Kalama], 6480: ʻāpana 2 [to Halekahi], 6415: ʻāpana 1 [to Kakua], and at least a dozen more) suggest a fairly densely-populated area, at least in the mid-1800s.

7. Wong Smith, discussing the time of the California gold rush (1840s), noted that the Kula Moku (District) was a place of commercial agricultural operations and cash crops. In particular, Kula was a place where "Irish" (white) potatoes were grown and shipped to California for profit. Other crops, including "corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton," were also grown in Kula (Mark 1975), which into modern times supplied the state with up to 35% of its vegetables (Wong Smith in Brown 1989:4).

8. In the late 1800s to early 1900s, the uplands of Kēōkea, in particular, were depicted as best suited for pasturage and ranching, rather than agriculture. The general limits of "good agricultural land" is located just mauka (upslope) of the project area (on a map dated 1885–1903). On a 1911 map, the area just southeast of the project area is labeled "Maui County Farm." According to the National Register of Historic Places (NRHP) form for the Kula Sanitorium (see below), the "Maui County Farm and Sanitorium" was established in 1910. This same (1911) map shows the "Kula pipeline" just east of the project area, upslope a short distance. According to Mark (1975:4), the pipeline was built in 1905 during a terrible drought. The water source was in Olinda.

9. Maps from 1915 depict several buildings labelled "Sanitorium" in the location of the current Kula Hospital. The "Kula Sanitorium" was founded for the care of tuberculosis suffers. Initially the sanitorium consisted of two tent-houses which accommodated 12 patients. This site (SIHP # 50-50-10-1540) was listed on the NRHP in 2003. The NRHP form states that the hospital was a complex of wood-framed structures from 1910-1937; then, starting in 1937, the historic buildings that are on the NRHP were built.

10. Although there is not much specific information available on this issue, there is an area of the current project area known as the "incinerator site," which was a place used by the Kula

Hospital (Sanitorium) to burn waste, presumably biohazardous materials. According to an environmental assessment that included the current project area (Environet 2004), the hospital used the incinerator site for a period of time before 1980. Helen Wong Smith's (2001) CIA interviewee, Mr. George Tanji, who worked at the Kula Hospital until his retirement, believes the incinerator ceased operation sometime in the late 1950s.

11. According to Wong Smith (Brown et al. 1989:4), during the twentieth century, the current project area was used primarily for cattle grazing.

12. Regarding the influx of Chinese to the project area environs starting in the middle 1800s, Mark's (1975) oral-history study contains a multitude of relevant information about this important part of Kēōkea's history: (a) Farmers from Kēōkea generally delivered their produce, or had middlemen do it for them, down to Mākena Landing via an old wagon road that went past Pu'u-o-kali; (b) Kēōkea once had the largest public school in the Kula region, which was attended by many Chinese children, some of whom walked several miles to get there. This school had an enrollment of almost 100; (c) Chinese farming communities that arrived in Kula starting around the 1840s took to calling this area by a nickname "Nu Kaleponi" for "New California," based on similarities between the California gold rush and the Kula "potato boom"; (d) Most Chinese people who initially came up to Kula to lease land to farm cash crops (as well as their subsistence crops) came from other parts of Maui and the Hawaiian Islands after their sugar cane contacts (typically five-year agreements) expired—Approximately eighty families moved to Kula between 1880 and 1910; by 1900 there were some seven hundred Chinese living there; and (e) the Chinese community's relationship with their Hawaiian neighbors, which was strained on the sugar plantations, improved in the relaxed country atmosphere of greater Kula. These two groups grew closer together over time.

13. Additional interviews gathered by others (i.e., Maxwell n.d.; Smith 2001; Kihara 2013) focus on Hawaiian perspectives, paniolo ("Hawaiian cowboys"), and small, family-owned stores in the area, such as Ching Store and Henry Fong Store. Relevant highlights from these interviews include the following: (a) several people who grew up in the vicinity of the project area were told by their elders that there were "old Hawaiian sites" around, and some people remember seeing these sites while hunting or pasturing cattle; many people stated that their elders told them to leave the old sites alone and not be niele (nosy); (b) some people were told that the general area once had a "very large settlement of Hawaiians that . . . were mostly farmers, their crops being sweet potatoes"; (c) some people talked about knowing that there were many heiau in the area; (d) as mentioned above, Mr. George Tanji believes the incinerator site in the proposed developed area was abandoned by the Kula Hospital in the 1950s; and (e) Mr. Tamji also recalls an area within the DHHL lands, and at least partially within the current "proposed development area," known as the "100 acres"—this area was used by the hospital (leased from DHHL) as a vegetation garden, piggery, warehouse and slaughterhouse, and a lemon/lime orchard, as well as for the incineration of hospital waste.

14. Previous archaeological studies from in and near the current project area and the proposed development area demonstrate the following relevant points: (a) several dozen traditional Hawaiian sites have been identified in previous studies of DHHL's Kēōkea lands (Brown et al. 1989; Dega et al. 2004); (b) four preservation sites are located in the central-western portion of the project area. These four sites are not located in the "proposed development area." SIHP # 50-50-10-2097 is about 100 m (328 ft.) from the proposed development area. The other preservation sites—SIHP # 2099, 2311 and 2339—are approximately 200 m (656 ft.) to 300 m (984 ft.) from the proposed development area. SIHP # 2097, 2311 and 2339 are burial sites preserved in place in perpetuity, according to a burial treatment plan by Dega (2005a). SIHP # 2099, first identified by Brown et al. (1989), was included in a preservation

plan by Dega (2005b). The site is an enclosure measuring 17.0 m long by 10.0 m wide (170.0 m^2) identified as Papakea Heiau; (c) three previously-identified sites are in the proposed development area; none of these are preservation sites, and all have been approved by the SHPD as "no further work" sites. Two of these (SIHP #s 2302 and 2307) have been incorporated into the mechanically-leveled (machine-graded) farmers' market area along the Kula Highway and just south of Ka'amana St. Modern alterations to this area—within which SIHP #s 2302 and 2307 are located—include an unimproved gravel parking area and signage, a chain-link perimeter fence, a storage shed, and an event [tent-frame] structure). SIHP # 2301 can no longer be located or recognized due to heavy vegetation in this area.

15. A field inspection of the proposed development area conducted in support of this CIA demonstrated the following: (a) The four previously-identified preservation sites (SIHP #s 2097 [burial], 2099 [heiau], 2311 [burial] and 2339 [heiau]) in the overall project area are not located in the proposed development area; (b) One additional (newly-identified) significant historic property was identified in the proposed development area during the field inspection—this is known as the "incinerator site" associated with the historic Kula Hospital; (c) The three previously-identified sites in the proposed development area (SIHP #s 2301, 2302 and 2307), which are not preservation sites and have been previously determined to be "no further work" sites by the SHPD, have either been totally incorporated into the modern landscape of the farmers' market (i.e., SIHP #s 2302 and 2307) or are more or less unrecognizable given the passage of time (SIHP # 2301); and (d) A modern rock wall along parts of Kula Highway and Ka'amana St. is not a historic property.

16. Finally, the most relevant results of the group interview conducted with three kama'āina (native—born) to this land (i.e., Perry Artates, Richard Dancil, and Roderick Fong) include the following: (a) all the different groups of people—Hawaiian, Chinese, Portuguese, Filipino, etc., had to learn each other's culture and respect each other, living as they did far away from the major settlement areas along the coast—they had to practice self-reliance and sustainable ways of living—Kēōkea was a place where everyone took care of, and knew the business of, every one else; (b) even the Kula Hospital (Sanitorium), which most people in the area have some kind of relationship with through family members or personally, was fully self-sufficient, including using some of DHHL's land (on lease) to grow food and raise animals; (c) these men know generally about the fact that old Hawaiian sites are in the area, but they were not familiar with specific sites because they were raised to not be nosy; (d) the importance of the availability of water for farming and subsistence and life was discussed in both historic and modern-day terms; (e) these men talked passionately about moving forward in Kēōkea carefully and slowly and with a good plan that does not turn the place into a city or a tourist destination, but one that works for those who live and work and garden there now; and (f) all of these men advocate for taking care of the archaeological sites that are in the project area/proposed development area.

Findings

Based on all available evidence, we have determined that the proposed development project will have no negative impacts on traditional and customary practices associated with the project area; cultural resources that support these practices; and/or other beliefs about the project area that relate to these resources and practices (see decision of the Hawaii Supreme Court in Ka Pa'akai O Ka 'Āina v. Land Use Commission, 94 Hawai'i 31, 74, 7 P.3d 1068, 1084 [2000]). If planning for the proposed development project adheres to, and takes into consideration, the recommendations listed below, the existing valued cultural, historical and natural resources in the proposed development area will be enhanced, not negatively affected, by the project.

Recommendations

In order to ensure that the proposed development project enhances, rather than takes away from (i.e., adversely affects), the existing valued cultural, historical and natural resources in the proposed development area, we offer the following recommendations:

1. The incinerator site needs to be cleaned up/remediated so that this portion of the proposed development area can be safely accessed and used now and in the future. In addition to possible soil contamination, this area is littered with broken glass, metal and other surface hazards.
2. Interested parties, including those interviewed in this CIA, should be consulted during drafting of the Master Plan so that their input can be meaningfully integrated into the specific details of the proposed development plan.

REFERENCES CITED

Brown, R.S., A. Haun, and H. Wong Smith (1989). *Archaeological Inventory Survey, Keokea and Waiohuli Subdivisions, Lands of Keokea and Waiohuli, Makawao District, Island of Maui (TMK:2-2-02:55,56).* Paul H. Rosendahl, Inc., Hilo, Hawai‘i.

Coulter, J.W. (1931). *Population and utilization of land and sea in Hawaii, 1853*. B.P. Bishop Museum, Honolulu.

Dagher, C.A., et al. (2010). *An Archaeological Monitoring Report for the Construction of Roadway Corridors . . .* Scientific Consultant Services, Inc., Honolulu.

Dega, M.F., L. Morawski, and C. Monahan (2004). *The Archaeology of Upland Keokea: Archaeological Data Recovery of the DHHL Kula Residential Lots, Unit 1 of the Keokea Subdivision, Keokea Ahupua`a, Makawao District, Maui Island, Hawai`i* (TMK:2-2-02:55). Scientific Consultant Services, Inc., Honolulu.

Dega, M.F. (2005a). *Burial Treatment Plan for The Department of Hawaiian Homelands (DHHL), Kula Residential Lots, Unit 1 of Keokea Subdivision, Keokea Ahupua`a, Makawao District, Maui Island, Hawai`i [TMK: 2-2-02: PORTION OF 55*] Scientific Consultant Services, Inc., Honolulu.

Dega, M.J. (2005b). *Preservation Plan for the Department of Hawaiian Homelands (DHHL), Kula Residential Lots, Unit 1 of Keokea Subdivision, Keokea Ahupua‘a, Kula District, Maui Island, Hawai‘i [TMK:2-2-02:por. of 055].* Scientific Consultant Services, Inc., Honolulu

Dega, M.J. (2007). *Archaeology of Upland Waiohuli: An Archaeological Data Recovery Report for the Department of Hawaiian Homelands* (DHHL) Phase I Waiohuli Residential Lots, Waiohuli Ahupua`a, Makawao District, Maui Island, Hawai`i. *[TMK: (2) 2-2-02:056 14].* Scientific *Consultant* Services, Inc., Honolulu.

Dega, M.F., and B. Havel (2005). *Waiohuli Road Corridor Survey: Revised Archaeological Inventory Survey Report for the Department of Hawaiian Home Lands (DHHL) in Waiohuli Ahupua`a, Kula District, Island of Maui, Hawai`i [TMK: 2-2-2: portion of 014].* Scientific Consultant Services, Inc., Honolulu.

Environet, Inc. (2004). *Phase I Environmental Site Assessment, Waiohuli – Keokea, Kula, Maui, Hawai‘i. Honolulu*. Environet, Inc., Honolulu.

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens **(**1972**).** *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai and Lanai*. State of Hawaii, U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.

Kihara, K. (2013). *Maui’s Mom & Pop Stores: The Aesthetic & Intrinsic Study of Multi-Generation & Family-Owned Businesses.* Doctorate of Architecture, University of Hawai‘i-Mānoa, Honolulu.

Kolb, M., J. Conte, and R. Cordy (1997). *Kula: The Archaeology of Upcountry Maui in Waiohuli and Keokea: An Archaeological and Historical Settlement Survey in the Kingdom on Maui. On file at SHPD, Kapolei, Hawai‘i.*

Lyman, K., and M.F. Dega (2017). *Archaeological Monitoring Report for the DHHL Keokea Project (Phase 1). Waiohuli Ahupua‘a, Makawao District, Maui Island, TMK (2) 2-2-033 (por) and (2) 2-2-034 (por).* Scientific Consultant Services, Inc., Honolulu.

Mark, D.M.L. (1975). *The Chinese in Kula, Recollections of a Farming Community in Old Hawaii.* Hawaii Chinese History Center, Honolulu.

Maxwell, C.K. (n.d.). Draft *Ua Ala Ka Lā a Honi i Kēōkea (The Sun Has Risen and Touched Kēōkea).* CKM Cultural Resources, LLC, Pukalani, Maui. Ms. provided by client.

Pukui, M.K., S.H. Elbert, and E.T. Mookini **(**1974**).** *Place Names of Hawaii.* University of Hawaii Press, Honolulu.

Schmitt, R.C. (1977). *Historic Statistics of Hawaii.* University of Hawaii Press, Honolulu.
Smith, H.W. (2001). *Cultural Impact Assessment for DHHL Keokea Agricultural Lots,* Appendix F in *Final Environmental Assessment for the Department of Hawaiian Home Lands, Keokea Agricultural Lots, Unit 1, Keokea, Maui, Hawaii.* SSFM, Honolulu.

APPENDIX A – State OEQC Guidelines for Assessing Cultural Impacts

Excerpt (pp. 11–13) from *Guide to the Implementation and Practice of the Hawaii Environmental Policy Act,* 2012 Edition, State of Hawai‘i, Office of Environmental Quality Control (available online at http://oeqc.doh.hawaii.gov/Shared%20Documents/Misc_Documents/Guide%20to%20the%20Implementation%20and%20Practice%20of%20the%20HEPA.pdf)

GUIDELINES FOR ASSESSING CULTURAL IMPACTS

(Adopted by the Environmental Council, State of Hawaii, November 19, 1997)

I. INTRODUCTION

It is the policy of the State of Hawaii under Chapter 343, HRS, to alert decision makers through the environmental assessment process about significant environmental effects which may result from the implementation of certain actions. An environmental assessment of cultural impacts gathers information about cultural practices and cultural features that may be affected by actions subject to Chapter 343, and promotes responsible decision-making.

Articles IX and XII of the State Constitution, other state laws and the courts of the state require government agencies to promote and preserve cultural beliefs, practices, and resources of native Hawaiians and other ethnic groups. Chapter 343 also requires environmental assessment of cultural resources, in determining the significance of a proposed project.

The Environmental Council encourages preparers of environmental assessments and environmental impact statements to analyze the impact of a proposed action on cultural practices and features associated with the project area. The Council provides the following methodology and content protocol as guidance for any assessment of a project that may significantly affect cultural resources.

II. CULTURAL IMPACT ASSESSMENT METHODOLOGY

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

Such information may be obtained through scoping community meetings, ethnographic interviews and oral histories. Information provided by knowledgeable informants, including traditional cultural practitioners, can be applied to the analysis of cultural impacts in conjunction with information concerning cultural practices and features obtained through consultation and from documentary research.

In scoping the cultural portion of an environmental assessment, the geographical extent of the inquiry should, in most instances, be greater than the area over which the proposed action will take place. This is to ensure that cultural practices which may not occur within the boundaries of the project area, but which may nonetheless be affected, are included in the assessment. Thus, for example, a proposed action that may not physically alter gathering practices, but may affect access to gathering areas would be included in the assessment. An ahupua'a is usually the appropriate geographical unit to begin an assessment of cultural impacts of a proposed action, particularly if it includes all of the types of cultural practices associated with the project area. In some cases, cultural practices are likely to extend beyond the ahupua'a and the geographical extent of the study area should take into account those cultural practices.

The historical period studied in a cultural impact assessment should commence with the initial presence in the area of the particular group whose cultural practices and features are being assessed. The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religious and spiritual customs.

The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, including submerged cultural resources, which support such cultural practices and beliefs.

If the subject area is in a developed urban setting, cultural impacts must still be assessed. Many incorrectly assume that the presence of urban infrastructure effectively precludes consideration of current cultural factors. For example, persons are known to gather kauna`oa, `ilima, `uhaloa, noni or ki on the grassy slopes and ramps of the H-1 freeway and some state highways on the neighbor islands. Certain landmarks and physical features are used by Hawaiian navigators for sailing, and the lines of sight from landmarks to the coast by fisherman to locate certain fishing spots. Blocking these features by the construction of buildings or tanks may constitute an adverse cultural impact.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

A. Identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g. district or ahupua'a;
B. Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
C. Receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
D. Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
E. Identify and describe the cultural resources, practices, and beliefs located within the potentially affected area; and
F. Assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Interviews and oral histories with knowledgeable individuals may be recorded, if consent is given, and field visits by preparers accompanied by informants are encouraged. Persons interviewed should be afforded an opportunity to review the record of the interview, and consent to publish the record should be obtained whenever possible. For example, the precise location of human burials is likely to be withheld from a cultural impact assessment, but it is important that the document identify the impact a project would have on the burials. At times an informant may provide information only on the condition that it remains in confidence. The wishes of the informant should be respected.

Primary source materials reviewed and analyzed may include, as appropriate: Mahele, land court, census and tax records including testimonies; vital statistics records; family histories and genealogies; previously published or recorded ethnographic interviews and oral histories; community studies, old maps and photographs; and other archival documents, including correspondence, newspaper or almanac articles, and visitor journals. Secondary source materials such as historical, sociological and anthropological texts manuscripts, and similar materials published and unpublished, should also be consulted. Other materials, which should be examined, include prior land use proposals, decisions, and rulings, which pertain to the study area.

III. CULTURAL IMPACT ASSESSMENT CONTENTS

In addition to the content requirements for environmental assessments and environmental impact statements, which are set out in HAR §11-200-10 and 16 through 18, the portion of the assessment concerning cultural impacts should address, but not necessarily be limited to, the following matters:

A. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.
B. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
C. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
D. Biographical information concerning the individuals and organizations consulted, their particular expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
E. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
F. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
G. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.
H. An explanation of confidential information that has been withheld from public disclosure in the assessment.
I. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
J. An analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
K. A bibliography of references, and attached records of interviews which were allowed to be disclosed.

The inclusion of this information will help make environmental assessments and environmental impact statements complete and meet the requirements of Chapter 343, HRS. If you have any questions, please call 586-4185. You may ask OEQC if a directory of cultural impacts assessment providers is available.

APPENDIX B – *KA WAI OLA* NOTIFICATION

The notification below appeared in the December, 2020, issue of the Office of Hawaiian Affairs (OHA) newspaper.

CULTURAL IMPACT ASSESSMENT: KĒŌKEA AHUPUA'A, KULA DISTRICT, MAUI

On behalf of the Kēōkea Homestead Farm Lots Association (KHFLA), the Department of Hawaiian Homelands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai'i, LLC, in partnership with Nohopapa Hawai'i, LLC, is preparing a Cultural Impact Assessment (CIA) as part of the Kēōkea Master Plan for DHHL. The project area in Kēōkea Ahupua'a at TMK (2) 2-2-032:067 & 068 is 69 acres. These lands are located in Kula District, Maui, adjacent to the Kula Highway and just makai of Kula Hospital. Please contact Chris Monahan at (808) 754-0304 or mookahan@gmail.com if you would like to participate or contribute to this study by sharing your mana'o about any cultural or historical resources or other information you believe may be relevant. This could include mo'olelo (oral history) or any recollections about the project area in the past, or use of these lands that may include (in the past or currently) traditional and customary practices. Mahalo nui! ■

APPENDIX C – OUTREACH LETTER SENT TO COMMUNITY MEMBERS & ORGANZATIONS

TCP Hawai'i, LLC
Documenting Traditional Cultural Properties of Hawai'i
Preserving and Restoring Cultural and Natural Resources of Hawai'i

---

'Ianuali 13, 2021

Welina mai me ke aloha,

On behalf of the Kēōkea Homestead Farm Lots Association (KHFLA), the Department of Hawaiian Home Lands (DHHL), and working with the local planning firm, PBR HAWAII & Associates, Inc., TCP Hawai'i, LLC has partnered with Nohopapa Hawai'i, LLC to conduct a Cultural Impact Assessment (CIA) as part of the Kēōkea Master Plan for DHHL. The primary purpose of this project is to summarize and utilize the community's valued mana'o as a source of knowledge in this CIA. The project area includes 69 acres located in the Kēōkea Ahupua'a, Kula Moku, Maui, TMK (2) 2-2-032:067 & 068 (see Figure 1 and Figure 2).

We would like to engage with individuals, 'ohana, and organizations that have relationships with this wahi pana, and have knowledge and mana'o on how best to protect and steward Kēōkea, now and into the future. In particular, we would like to gather information relating to:

- **Mo'okū'auhau 'Āina, Wahi Kūpuna (Cultural Landscapes, Resources, and Practices)**
- **'Āina Mauli Ola (Natural Landscapes, Resources, and Uses)**
- **Mo'olelo (Place Names/Inoa 'Āina, Mele, Oli, 'Ōlelo No'eau, Hula)**
- **Suggestions and concerns regarding future management and stewardship**
- **Referrals to other 'ohana and individuals who are connected with the project area**

We will be reaching out to you soon in hopes of arranging an interview. We look forward to collaborating with you to document your mana'o for the long-term preservation and stewardship of Kēōkea.

Me ka ha'aha'a,

Christopher M. Monahan, Ph.D.
TCP Hawai'i, LLC, 150 Hāmākua Dr., #810
Kailua, Hawai'i
(808) 754-0304, mookahan@gmail.com

Momi Wheeler
(808) 430-2557
momi@nohopapa.com
Nohopapa Hawai'i, LLC

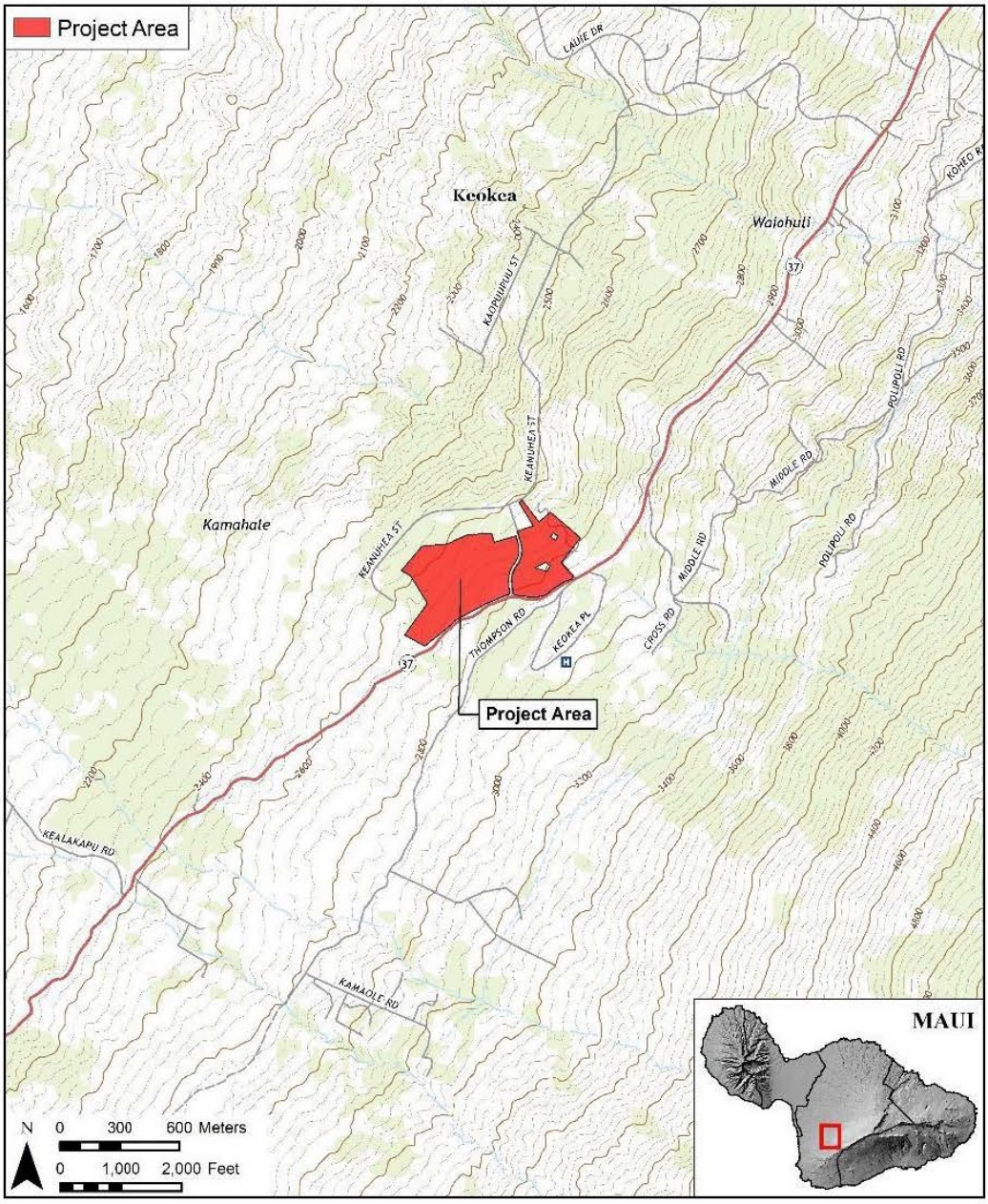


Figure 1. Project area location on topographic map

Figure 2. Project area location on an aerial image

APPENDIX D – DOCUMENTS USED TO SUPPORT INTERVIEW PROCESS

The documents on the next three (3) pages are a two-page Questionnaire Guide that helped frame the community interview process, and a one-page Informed Consent form that interviewees sign prior to being interviewed.

NOHOPAPA HAWAI'I

CIA – Kēōkea Master Plan for DHHL
Questionnaire Guide

Interviewer: _____ **Date:** _____ **Location:** _____

Mo'okū'auhau

Community Member's Name:	
Where did you grow up? Where do you live today?	
How are you pili to this place? Why is Kēōkea significant to you/your 'ohana?	
How do you/your 'ohana mālama this place?	
Is your 'ohana from the Kēōkea area and/or surrounding ahupua'a? o Do you/your 'ohana have any stories about the area? *(Share any connections to this wahi)* o What activities or cultural practices did you/your 'ohana practice/do? o What are a few things of the "old" ways that are no longer practiced or available?	

Mo'okū'auhau 'Āina, 'Āina Mauli Ola *(Cultural/Natural Landscape, Resources, Uses, and Practices)*

Are there any cultural sites/areas that you are aware of, around, or connected to Kēōkea? o Any prominent geographical features, boundary markers, habitation, trails, burial sites or religious sites? o What's the cultural significance of these sites/areas? o Aware of any historical maps, photos that depict changing land use and/or settlement patterns?	
What native and/or introduced plants and animals are associated with Kēōkea? o In the surrounding area(s)? o Traditionally and historically? *Such as growing, cultivation, mo'olelo* o Significance and/or uses of these resources?	

1

Any water resources, springs, streams?	
Any seasonal changes to the natural landscape?	

Mo'olelo, Inoa 'Āina, Mele, Oli, 'Ōlelo No'eau

What cultural practices are associated with Kēōkea and the surrounding area? o Any mele, 'ōlelo no'eau, oli or other traditions that reflect a sense of place and cultural identity for this place and its people? o How can these cultural practices be integrated into resource management and/or restoration today?	
Are there inappropriate practices/protocols/uses for Kēōkea?	

Recommendations

What is your vision for this project?	
How should DHHL work with Native Hawaiian beneficiaries and other community members to manage/maintain Kēōkea? o What individuals/hui should be involved in the management?	
Is there any other mana'o that you want to share? *(i.e. recommendations, concerns, questions)*	

Contact Information & Referrals

The opportunity will be given to review your written transcript/interview summary and make any additions, deletions, or corrections as you wish. What is the best way to send you the transcribed interview? *(Email or Mail)* **What is your mailing address to receive a makana to say Mahalo for sharing your valued mana'o?*	
Can you refer us to any other individuals or organizations we should talk to?	
Are there any parts of this interview you do not want publicly disclosed?	

TCP Hawai'i, LLC
Documenting Traditional Cultural Properties of Hawai'i
Preserving and Restoring Cultural and Natural Resources of Hawai'i

INFORMED CONSENT FORM

Aloha mai, TCP Hawai'i and Nohopapa Hawai'i appreciate your generosity and willingness to share your knowledge of the wahi pana of Kēōkea and its surrounding areas. This mana'o will be used to guide and inform DHHL on the cultural history and future stewardship recommendations for the area.

TCP Hawai'i and Nohopapa Hawai'i understand our responsibility in respecting the wishes and concerns of the interviewees participating in this study. Here are the procedures we promise to follow:

1. The interview will not be recorded without your knowledge and explicit permission.
2. You will have the opportunity to review the written transcript and summary of your interview. At that time, you may make any additions, deletions or corrections you wish.
3. You will be given a copy of the interview transcript and/or summary for your records.
4. You will be given a copy of this release form for your records.
5. You will be given a copy of any photographs taken of you during the interview.

For your protection, we need your written confirmation that (circle yes or no):

1. You consent to the use of the complete transcript and/or interview quotes for the purposes of this study. Yes No
2. If a photograph is taken during the interview, you consent to the photograph being included in this study. Yes No

I, _____, agree to the procedures outlined above and,
(Please print your name here)
by my signature, give my consent and release of this interview and/or photograph to be used as specified.

_____
(Signature)

_____
(Date)

APPENDIX E – COMPLTE COPY OF MARK'S (1975) ORAL HISTORY OF THE CHINESE IN KULA

The Chinese in Kula

RECOLLECTIONS OF A FARMING COMMUNITY IN OLD HAWAII

By Diane Mei Lin Mark

Published by:
Hawaii Chinese History Center

THE CHINESE IN KULA:

Recollections of a Farming Community in Old Hawaii

by

Diane Mei Lin Mark

Hawaii Chinese History Center
111 North King Street Room 410
Honolulu, Hawaii 96817

©

Copyright, 1975

by

Hawaii Chinese History Center

All rights reserved including
the right of reproduction in
whole or in part in any form.

First Printing February 1976
Second Printing January 1977

ON THE COVER
Unidentified Kula farmer taking corn to market (about 1911)

CONTENTS

	Page
Preface	iii
Acknowledgements	v
Birth of a Community	1
Farming the Land	3
Marketing Kula Products	5
Grocery Stores and What Money Could Buy	6
Saving Money	7
Education	9
Christian Churches	11
Photographs	13-24
Ket Hing Society	24
Social Life	27
Diet and Health	27
Family Life	29
Law Enforcement	30
Architecture and Construction of Homes	30
Sun Yat-sen, a Frequent Kula Visitor	31
Hawaiian Neighbors	33
Land and Community Spirit	34
Conclusion	38
Appendices	
Footnotes	41
Persons Interviewed by HCHC's Kula Oral History Project	43
Honolulu Kula Club	44
Bibliography	45
Glossary	47

PREFACE

The following pages are, in essence, a "collective diary" -- the history of the Chinese in Kula, Maui, through the eyes of those who lived it. This history has come alive for us in interviews with Kula residents and ex-residents during which we discussed childhood adventures, education, farm life, dynamics of the economy, social activities, health care, religion, and family genealogies.

Half a century ago, farmers and ranchers, Christians and Taoists, young and old experienced a life in Kula which tested both physical stamina and internal strength. However, their long days of farming Kula uplands on the western slopes of Haleakala were colored by their social and religious affairs, interaction among themselves and with their Hawaiian neighbors, and the very way their society was structured.

It should be explained at the outset that this study is not an academic treatise. Nor is it a statistical abstract of the Kula Chinese community. Nor does it pretend to be an "objective" historical document. One doubts that history can ever be objectively interpreted.

We have attempted here to capture the unique flavor of Kula life at the turn of the century, from the 1890's to the 1920's, when this local Chinese community established itself and developed to a thriving level of activity.

To study the dynamics of this period in Kula is to uncover a fascinating chapter in Hawaiian history, and one which has remained largely unwritten. It is indeed fortunate for those interested in this history that many of the people who resided in Kula during those years are alive today. Their memories provide a direct pipeline to the past. What they recall of working on the farm, learning their ABC's at Keokea School, riding horseback to Wailuku, celebrating the success of Sun Yat-sen's 1911 Chinese revolution -- cannot be found in school textbooks. "Oral history" is people's history, and can supply insight into understanding events as they really happened.

The study of communities like Kula is important not only for historical lessons, but because those communities, along with the sugar plantation, rice farming, and urban experiences, help us understand the contemporary situation of the Chinese in Hawaii.

Base resources for this study were: 1) four Kula field trips made by Hawaii Chinese History Center [HCHC] task forces, 1971-1974; 2) oral history interviews with residents and former residents of Kula; 3) a number of articles and references to Kula in such publications as the *Hawaii Church Chronicle*, *Thrum's Hawaiian Annual*, and the *Pacific Commercial Advertiser*; 4) old photographs of Kula from family albums and various publications.

Although this publication is the culmination of the efforts of many people, we see it as a mere beginning in understanding the history of the Chinese in Kula, and in the Hawaiian Islands. It is our hope that this publication will stimulate further research and interest in the history of the Chinese and all local people in Hawaii, and will underscore the value of "oral history" as a means of defining and describing historical periods for future generations.

D. M.
June 1975

HONOLULU, HAWAII

Acknowledgements

MAHALO NUI LOA to Mrs. Irma Tam Soong, HCHC Executive Director, and Dr. Seymour Lutzky, Chairman, University of Hawaii American Studies Department, for their valuable advice and guidance throughout the duration of this project.

Mr. Tin-yuke Char, HCHC Advisor, with the capable assistance of Mrs. Char, did preliminary research and laid the groundwork for HCHC field trips to the Neighbor Islands. The first of these "historical safaris" was to Kula in August 1971.

Members of HCHC conducted numerous interviews, braved hot sun and overgrown brush on anthropological endeavors, and initiated fund-raising projects for publication. The Kula Club of Honolulu (see Appendices for more information) co-sponsored the first Kula field trip with HCHC, and has, with Kula's Chinese residents, been supportive through every phase of our endeavor.

Mrs. Adrienne Lee Mark transcribed many hours of tape-recorded interviews for the study, and Mr. Douglas Chong, HCHC Historic Sites Chairman, provided insight and information about Kula's Ket Hing Society and Fook On Tong. Dr. Nancy Young and Mrs. Jean Ohai carefully examined the manuscript and offered many helpful editorial suggestions. Mrs. Una May Zane Young typed the final manuscript for printing. My aunts, Mrs. Gladys Kum and Miss Vera Chong, must be thanked for tending to details in bringing this book to printing, and for general moral support throughout these many months.

Mahalo to the Kula Club, Island Federal Savings and Loan, and the Rockefeller Foundation for underwriting printing costs for the book.

Without the *kokua* of all these people, this historical study would not have been possible.

Birth of a Community

Kula is situated on the western slopes of Haleakala Crater, 3,000 feet above sea level on the island of Maui, in the Hawaiian Islands. Its soil, derived from lava rock and volcanic ash, can be highly productive and fertile when put to farming purposes. The landscape is composed of rolling hills, a timberline partially hidden by thin layers of drifting clouds, and an undulating terrain especially adaptable to farming in small-scale family operations. Thus, the Kula economy has almost always depended upon the use of agricultural land for truck crop production.

Among the first people to take advantage of the agricultural potential of Kula land were a group of Chinese farmers, who in the 1840's leased land in Kula, planted Irish potatoes, and shipped their crops to the mining communities of California. By 1847 these pioneer farmers had met with success,,and that year alone produced 20,000 barrels of Irish potatoes. Soon Kula was nicknamed "Nu Kaleponi," meaning "New California," because of similarities between the California gold rush and the Kula "potato boom."[1] No fertilizer was needed for this rich virgin soil, and the potatoes readily flourished up to the timberline.

By the mid-1850's, however, the demand for Kula potatoes had diminished. In other parts of Hawaii, the sugar industry was testing its wings but found itself encountering labor difficulties. The Hawaiian population had seen a drastic decrease, primarily due to foreign disease and the introduction of "Western civilization." The native population was reduced from 300,000 in 1778 to 107,000 in 1836,[2] to 84,165 in 1850.[3] The *haole* planters found many of the remaining Hawaiians unwilling to supply the field labor necessary for the operation of the plantations.

The Royal Hawaiian Agricultural Society was formed in 1850 to solve problems facing the young sugar industry and decided to "experiment" with Chinese coolie labor, which had been successfully employed in colonies such as Peru, Cuba, British and Dutch Guiana, British North Borneo, and South Africa.

In 1852, 175 field laborers arrived on the barque *Thetis* after a long sea journey from Hong Kong with a short stop at Amoy. They were contracted to work for five years at three dollars a month, plus free passage, room, and board.[4]

Pleased with the work of this initial group of field workers, the

planters requested that more laborers be brought to the Islands. Between 1852 and 1909 more than 45,000 of the 219,825 laborers brought to Hawaii were Chinese.[5]

At the expiration of their contracts, many of these workers returned to China with their savings, but thousands of the total 45,000 chose to remain here. While some remained on the sugar plantations, the majority settled in different geographic locations throughout the islands. Many moved to Honolulu Chinatown, where they opened small stores and restaurants or settled into other urban occupations. Others moved to the rural areas, and farmed taro, rice, *pulu* fiber (used in pillows), dried fungus (*pepeiao akua*), and other crops.[6]

Most Chinese workers left the plantations because of restrictive contract terms which left little opportunity for promotion or wage increase, a tightly-regimented lifestyle, and in some cases, blatant mistreatment by the *lunas*, or overseers. When word reached the camps that other opportunities were possible in farming and in Chinatown businesses, many workers opted for departure from the plantations and ventured to other parts of Hawaii.

The initial success that their fellow Chinese had encountered in planting potatoes in Kula in the 1840's and 50's motivated many to move to that region and lease land for farming. They moved to Kula from places such as Makawao, Paia, and Wailuku on Maui, Kohala on the Big Island, and Honolulu. Some went to Kula directly from China, bypassing plantation work.

During both waves of migration to Kula, in the 1840's and then in the 1890's, the vast majority of Chinese, about ninety-five percent according to interview data, were Hakkas from Kwangtung Province who had heard of Kula farming through a grapevine of mutual acquaintances.

In China, ancestors of the Hakka people were said to have emigrated from the North to various southern regions following barbarian invasions and other disorders at the end of the Chin (267-317 A.D.) and T'ang (618-907 A.D.) dynasties. They typically were forced to settle in the rocky, mountainous areas unoccupied by the native population of each province that they encountered.[7] The term "Hakka," in translation "stranger" or "guest folk," reflects the relationship the Hakka often had with other Chinese.

The hardships involved in farming mountainous terrain such as Kula's, then, was not a new experience for many Hakkas who settled in Kula. Historically, the Hakka people had learned to contend with a variety of adverse conditions. Yet they maintained a pride in their group so enduring that the Hakka dialect and customs remained intact, even in the midst of new and strange lands. Today in Hawaii, Hakka people still jokingly point to the "Hakka blood" when recalling victory in difficult circumstances.

One of the early Kula residents who was instrumental in attracting

his fellow Hakkas to Kula was Jung Muk Heen, also known as Chung Mook Heen, father of Judge William H. Heen. Heen operated two Maui stores: one in Olowalu, near Lahaina, and the other in Kula, called Hop Wo. After establishing himself on Maui, Heen brought young Hakka men from China, took them to Kula, taught them how to speak English and Hawaiian, and how to conduct business. They became proficient at operating his stores, and eventually ventured out on their own.[8]

Approximately eighty families moved to Kula between 1880 and 1910; by 1900 there were some seven hundred Chinese living there. For a period of thirty to forty years, Kula supported a thriving community which included English and Chinese schools, Christian churches, a Hung Men society, gambling joints and opium dens, general stores, and dozens of operating farms and cattle ranches.

******

Farming the Land

During the early farming years, most Kula Chinese acquired their farmland by lease or deed from the *haole* ranchers or Hawaiian homesteaders. Much of this land was owned by the Hawaiian government, which leased it to the ranchers, who in turn subleased it to the Chinese. In some cases, the farmers made their lease payments in farm produce, in lieu of monetary transaction. One family which leased land from Ulupalakua Ranch paid five bags of corn for every acre of land they farmed.[9]

In addition to Irish potatoes, the Kula farmers planted corn, beans, onions, Chinese cabbage, round cabbage, sweet potatoes, wheat and other grains, and even cotton. When the Hawaiian market showed no demand for corn, the farmers used the corn to raise pigs, ducks, and chickens, and marketed the animals instead.

Vegetables, fruits, and flowers were planted in backyard gardens. Magnolia, hibiscus, *sa-li* (Chinese pear), peach, and mulberry trees were common sights on Chinese property. Some of the Kula residents managed ranches where they raised cattle, horses, pigs, and even bees.[10]

Early farming in Kula was adapted to the topography. In planting crops, the farmers followed the natural contour of the land, rather than terracing, and depended on the moist air and rainfall rather than irrigation.[11]

Farming the land was often a family endeavor. Footbinding was not a part of their culture, and Hakka women had always worked in the fields of China alongside their men. Kula provided no exception to this way of life. After completing their morning housework, many Kula women joined their husbands in the field. When a baby was too young to be left alone in the house, the mother worked with the infant strapped to her back, or placed the baby nearby on a ground cloth.

Young boys were expected to take on major responsibilities in the field in their early teens:

> At the age of 10 or 12, we had to start working already . . . going out on the land on horseback and plowing the land and all that. They said that when one is 14 he should be able to plow the land, and plowing is not an easy job . . . there were two horses to a plow. We used to go up and down, up and down, from sunrise to sundown. Summertime is harvesting season. You start growing corn in January and by June it is ready for harvesting.
>
> -- Nee Fat Ho

The curse of Kula farming is drought, and unfortunately it occurs every several years. Until 1905, there was little water piped into the area, and during droughts the farmers had to pack barrels of water on mules from Polipoli Springs, or from the beach or Olinda, both about eight miles away.

> In case of a drought, why, we would have to go to the stream, maybe walk a mile or two before we get to Polipoli to get enough water for our own use at home. We have what you call a 'cistern,' but that's only used for home use, not for irrigation. So everything we planted there depends on rain. It was the 'feast or the famine.'
>
> -- Richard C. Ching

During severe droughts, the whole community suffered. Some people went as far as Makawao, over ten miles, for a few gallons of water. Cattle and horses died of thirst in the fields, and entire crops were ruined.

Before 1905, one small pipeline, a half-inch in diameter, brought some water from Polipoli Springs. The water was stored in a tank on the main Kula road and supplied water to those who needed it. The pipe opening was so small, however, that the water flowed in a trickle and it took many hours to fill one barrel.

> I was living a couple of miles from there (the water tank). My two sisters and I would come in the early evening with one donkey, carrying four five-gallon cans for water. We would come to this place and take turn. If you come first and get your share, then you would leave and I would follow you . . . and it would take hours to fill up twenty gallons of water.
>
> . . . We would come in the evening and go back next morning . . . Night time we would come over here and bring firewood and build a fire to

> keep us warm . . . We would bring sweet potato and corn, and roast them on the charcoal while waiting for our turn. So that's the kind of life we had before we had the Kula Pipeline.
>
> -- Willie Fong

The Kula Pipeline was built in 1905, during perhaps the worst drought in Kula history. A large water source was discovered in Olinda, northeast of Kula, and the government approved a request to construct a pipeline from that location to Kula. The contractor for this ambitious project was a prominent Kula resident named Shim Mook, and labor was supplied by the men and women of the area.

Transporting the pipes up the Kula mountainside was no easy matter. The pipes were transported to Kula on trucks and unloaded at regular intervals on Kula's main road. Then Shim Mook took over, hauling the pipes up the hill as far as his mule team could go. From that point to the site where the pipes were laid, the pipe segments were hand-carried.

Several Kula women were among those hired to carry the heavy galvanized pipes a quarter to a half mile up the hill to the site. Pipe segments were sixteen, eighteen, and twenty feet long, six inches in diameter and over a quarter-inch thick. They could weigh up to two hundred pounds. It took four women to carry each pipe, two in front and two behind.[12]

Once the pipeline was installed, the community enjoyed a full water supply. In fact, there was so much water that every few thousand feet a hole was tapped in the pipe to release the excess air and water pressure. The Kula children found great enjoyment in this, for these "little geysers" introduced a world of mudpies and water battles.

******

Marketing Kula Products

When the corn, potatoes, and other crops were harvested, they were packed and transported on mule teams or wagons to Kahului and Makena harbors, and then shipped to Honolulu. Some farmers paid middlemen to take their produce to the seaports, but others made the delivery themselves. Those who lived in the southern districts of Keokea and Kamaole usually brought their produce to the Makena landing, while farmers from Waiohuli, Koheo, and Waiakoa, living in the northern districts of Kula were closer to Kahului seaport.

> Besides working on the farm . . . (my grandfather) also drove a wagon team to the ports in Lahaina and Makena and hauled groceries from the ports to the farmers in the Kula district. The entire trip to the ports and back to Kula took about sixteen hours. He drove the wagon team for

about four to five years, until he was about seventeen years old."

-- Theresa Fong
Fourth generation Kula Chinese

Most of Kula's produce, poultry, and beef was sent to two or three markets in Honolulu Chinatown, including Wing Hong Yuen and Sing Loy. The two stores, in turn, supplied Kula's general stores with Chinese dry goods and staples such as rice, flour, sugar, and canned milk.[13]

Some families exchanged produce and other goods with relatives or friends living in other parts of Hawaii:

Chickens to Honolulu

Grandma and Grandpa lived in Honolulu, and they periodically sent us all kinds of goodies, including such items as a large wooden box of soda crackers, apples, oranges, cookies, Chinese food-stuffs and candies, of course. Papa and mama would occasionally ship them homegrown, corn-fed chickens, and these had to be crated by a friend who ran a general store two miles away.

The chickens, perhaps 10, had to be caught after dark from the trees where they roosted. Each had its legs tied and was placed in a rice sack sitting with its head protruding from a small opening. Ellen and I would each carry two while Papa carried the remainder over a yo-yo pole so he could be free to carry our guiding light, a lantern!

Papa always stopped halfway for a rest and to check the chickens. Once he found one of my chickens dead. Guess it was choked by my careless carrying. I was frozen when I saw it, yet Ellen and I had to take it home and have Mama fetch another from the tree for replacement. There was great fear in us as we walked home with only a lantern for moral support We walked as fast as we could and finally returned to where Papa was anxiously waiting for us. What a relief when the chore was over!

-- Mabel Chong Jung

******

Grocery Stores and What Money Could Buy

There were several general merchandise stores in Keokea and Kamaole which sold Chinese groceries as well as American goods such as Eagle Brand condensed milk, sugar, butter, and dry goods. Among the largest

imports to Kula were rice, cooking oil, and ingredients used in Chinese cooking. Fresh produce was also stocked in the stores, and shopkeepers received ten percent commission on all local products they handled.[14]

Because of the scarcity of hard cash, the Kula grocery stores worked out an exchange system with some of the Chinese farmers and Hawaiian homesteaders:

We used to trade. My father ran a little grocery store too, next to Mau Gim Biang, in Kamaole there. We used to trade with the Hawaiians especially, and with some of the farmers around there. We would supply them with whatever they need, like rice, flour, coffee, canned goods. And then when they harvest their crops they would pay us. And sometimes they bring one, two dozen eggs, to exchange for something . . . "

And the Hawaiians would do the same thing. We would give them credit for sometimes three months, sometimes two months. When they have a flock of chickens ready to go out, then they call me to go down there. Sometimes they give you a few pigs. You know that chicken, the rooster, they never sell them until they get up to four pounds. If they think it's three pounds, they go tell me, 'Willie, don't come now, come next month when they get more big.' And you know how much for one four-pound rooster? Fifty cents!

-- Willie Fong

In addition to buying a four-pound rooster for half a dollar, Kula residents in the early 1900's could purchase a large bag of potatoes for fifty cents, two dozen eggs for a quarter, a hundred pounds of rice for two dollars, and a seventy-pound pig for five dollars. Those who needed a horse for transportation could buy one for fifteen dollars, and a trained one for a few dollars more.

At bakeries in Kahului, a loaf of French bread was five cents, jelly on a couple of slices was often complimentary, and a bottle of soda water sold for a nickel.[15]

******

Saving Money

A few of the Chinese, having accumulated some extra money, opened bank accounts in Kahului. Nee Fat Ho recalls convincing his father to bank his money, and then journeying to Kahului town to do it for him:

In the old days, there was no such thing as putting your money in the bank; whatever money you

had, there was no currency, it was always in gold. The folks, when they wanted to sell something for the year, they'd sell two or three pigs. When they got their money they wouldn't put the money in the bank. They would bury the money.

That was kind of funny. When I went to school, I learned about putting money in the bank. So I told my dad, 'I know where you put your money -- under the house, you bury there.' One time he buried some money under a tree and he forgot what tree he buried it under. So he was digging under this tree, under that tree, and when he finally found it he was so excited!

When I went to school I found out about banking and I told my dad to put his money in the bank since they pay interest. On top of that, if you bury money, you might lose it. He said, 'I don't trust the bank.' I said, 'How about trying to put some money in the bank?' He said okay. From Kula to Kahului is about 25 miles on horseback. So my father said, 'Try put $2,000 in the bank and see what happen.' So I had this money; I was only about 12 years old . . . being a small, young kid I had to take this pack horse because I had to buy a lot of merchandise, like a bag of rice. I put that $2,000 in the bag where I put corn, rice, and wheat for the horses to eat. So, if anybody held me up all they could get from me was the few dollars I had in my pocket. They won't get the $2,000.

And when I got to Kahului, I walked in the bank and this man that worked in the bank, his name was K.K. Tim, was the first Chinese to work in the bank. And when I went there, I gave him the money and he went like this, and this, and this. He said, 'Okay, it's $2,000.' 'Gee,' I said, 'You can count it down so fast!' It was funny-looking to walk into the bank. I never thought I'd work in a bank for 42 years!

Most of the Chinese who came to Hawaii did not expect to make the Islands their home. They maintained strong feelings of loyalty to their homeland, and planned to return there as soon as they had made enough money to retire comfortably in their native province.

In Kula, many of the farmers sent money home to China regularly and enlisted the aid of the literate members of the community, including Mau Gim Biang, a store owner; Ho Seong, a Chinese school teacher; Dai Tin Loon, a store owner and president of the Ket Hing Society in 1900; Rev. Shim Yin Jin and Rev. Chong How Fo, Christian ministers. A popular time to send letters and monetary gifts was at Chinese New Year when the

farmers would tell these gentlemen what parties the money should be sent to, and what to include in the letters.

******

Education

Because their economic struggles both in China and Hawaii had made it impossible to obtain an education, the Kula farmers were determined that their children would not be similarly deprived.

The majority of Chinese children in Kula attended both Chinese language and English public schools. One public school was in Waiakoa, and another, the larger of the two with an enrollment of almost one hundred children, was in Keokea. The latter was conducted by a Hawaiian couple, Principal David Kapohakimohewa, and his wife Julia, a teacher. As the student enrollment increased, additional teachers were hired.

> Learning was mostly by rote -- I remember singing the ABC's and the chore of writing each alphabet time and again until it was perfectly formed (according to my teacher's instructions). I remember the ink wells that sat at one corner of our desks with a compartment for books and pencils. I always looked forward to romp around the nasturtium patch with its red, orange, and yellow blooms.
>
> -- Hazel Chong Huang

While some children lived near the school, others had to walk two, three, and even four miles from their homes to the Keokea district. Because of the long distance between the home and school, often including a hike over hills, across ditches, and through rocky terrain, many children did not begin school until the age of eight or nine.

Most children attended Chinese language school from eight to nine o'clock in the morning, went to "English school" from nine to two in the afternoon, and then returned to Chinese school from two to four o'clock.

A number of former Keokea School students have bitter memories of their school days. The boys were frequently disciplined for "misbehaving" or speaking Chinese instead of English in class.

> To us old-timers, we felt that we were cheated because the instructors here were not too qualified. The only qualification they had . . . was a big stick, and we were whipped every day. That's one of the reasons that our parents sent their children away from Kula, so they can have better opportunities elsewhere.
>
> -- Titus Fong

The Keokea School student body was approximately three-fourths Chinese and one-fourth Hawaiian, and cross-cultural interaction, particularly on the playground, was inevitable.

> Recess time in the school grounds, all the Chinese speak Chinese. The principal always says, 'You *pakes*, why can't you learn to speak English instead of Pake?' And, you know, he has six children -- they all learned to speak Chinese! And they are pure Hawaiian . . . they just picked it up from the Chinese boys.
>
> -- Nee Fat Ho

A few Hawaiian youngsters even joined their classmates at Chinese school and learned to speak Hakka as well as their Chinese friends.

When the original two-room Keokea School had become too crowded for the growing student body, a larger four-room structure was built down the road. In the meantime, one or two classes were shifted to the Kula Congregational Church, and taught by the wife of the church's pastor, Mrs. Chong How Fo. Mrs. Chong, the former Mary Yin Kyau Lee, had spent her early childhood years in Kula and then moved with her family to Honolulu where she was the first Chinese girl to be admitted to Punahou School (a private school founded for missionary children). After her marriage to the Rev. Chong How Fo in Honolulu, she moved back to Kula with him, and for years was the only Chinese woman in Kula who was fluent in the English language. When the Chinese children first started school in Kula, they spoke only Chinese. Mrs. Chong had the task of teaching them English that first year, and from the second year of their schooling all classes were conducted in English.

There were three Chinese schools in Kula, one at each of the two Chinese Christian churches, and the third conducted by Ho Seong, a priest at the Ket Hing Society. At St. John's Episcopal Church, classes were taught by Rev. Shim Yin Chin, and at Kula Congregational Church, Rev. Chong How Fo was the instructor.

Almost all of the Kula Chinese sent their children to Chinese school to learn the rudiments of the spoken and written language and to expose them to various aspects of the culture. Tuition was two dollars a month.[16]

> If you understand the people from China, when they come here they intend . . . to make a fortune and return. So those that send for their wives and raise their families feel that someday when they have enough money they're going to return to the area where they come from. That's why they send us to Chinese school. Not only that, but we would be learning the Chinese culture while our parents are busy working out in the field.
>
> -- Peter Chong

In the course of time, many of the Chinese children at the church language schools were converted to Christianity, but their parents retained their Chinese religion, a blend of Buddhism, Taoism, and folk customs.

While some parents strongly opposed their children's talk of another "Father," others allowed their children to adopt the new religion, hoping that by becoming Christians more opportunities would open for their children in America.[17]

For some Kula children, education occurred at home as well. In the evenings, their parents would recount stories of old China. Tales of Taoism, Buddhism, Confucianism, and of the farmer boy who became prime minister of China filled the imaginations of these young people growing up outside of the homeland.

During World War I, many prosperous Kula farmers sent their children to some of the best public and private schools in Maui and Oahu. In Honolulu they attended the private Episcopal boys' school Iolani, the public McKinley High School, and Catholic St. Louis College. On Maui they attended Wailuku Public School, the historic Protestant Lahainaluna School, and St. Anthony's School, a Catholic institution.

While there were a number of girls who went away for further schooling with their brothers, they were a minority. In the traditional Chinese value system, the boys frequently received preferential treatment especially in education.

******

Christian Churches

Out of the five churches in Kula, two had predominantly Chinese congregations, while the others ministered to the Hawaiian and Portuguese communities.

The pastor of one Chinese church, Rev. Shim Yin Chin of St. John's, went to Kula not only to start a ministry, but to organize a Chinese school at the request of the Kula community.

> In 1899, a gentleman, Mr. Shim Mook . . . one of the leaders in the community . . . wrote back to the village (in China) to ask the people there to send a Chinese to teach the Chinese children over here. And we were among the students.
>
> So they sent Rev. Shim Yin Chin. I understand he was a Lutheran minister of the Basel Seminary, German mission. And he came here and taught Chinese in one of the small homes . . . he developed to be . . . very much a success.

> Rev. Shim was very successful in his ministry. He converted a number of our families into the Episcopal Church, mostly I think the second generation, not the first generation.
>
> -- Kim Loon Ching

Rev. Shim began his Kula ministry in 1900. Ten years later, enough money had been raised to build St. John's Church. Besides conducting church activities and teaching Chinese language classes, Rev. Shim initiated the Chinese World Studies Center, which promoted weekly discussions of current events in China and the world. Their new-found interest in this activity prompted a number of men to turn away from the opium habit. Rev. Shim preached at St. John's until his death in 1918.

The other Chinese minister in Kula during those years was Rev. Chong How Fo, who had also been educated at the Basel Seminary in China. Upon his arrival in Hawaii in 1894, he served as chaplain at Mills School (now Mid-Pacific Institute), and in 1899 was sent to Kula by the Hawaiian Board of Missions.

For sixteen years, Rev. Chong served the spiritual needs of the people of Kula Congregational Church, or "Fook Yim Tong," conducted daily language classes for the youth, and as a medical missionary used his knowledge of Chinese herb medicine among Kula's sick. When church members were ill, he rode on horseback to their homes, determined the nature of the illness by listening to their pulse, and prescribed herbs for the cure.

Both Rev. Shim and Rev. Chong were supported in their work by their wives. One of Rev. Chong's daughter's remembers:

> Ministers' wives . . . probably have a much easier time today than my mother did. Each Sunday she fed the congregation with lunch, and of course there were no supermarkets at which to buy the bread. So on Saturday morning, whenever she was finished with her housework, she would bake loaves of bread. She milked the cow, churned the butter, made poha jam . . . and served lunch to the people.
>
> When my father was busy, my mother would get on a horse to visit the congregation. She helped split wood, trimmed and polished kerosene lamps. We had a well beside our house, and she drew water from there, because there was no water piped in . . .
>
> My mother did say that the Chinese people were very closely knit over here. To come to church, they walked from a radius of five miles. A very fortunate few came on horseback, which was then the only mode of transportation. They also visited our family during the weekdays and when they did they always came with a basket of food,

Congregation of St. John's Episcopal Church, August 25, 1912.

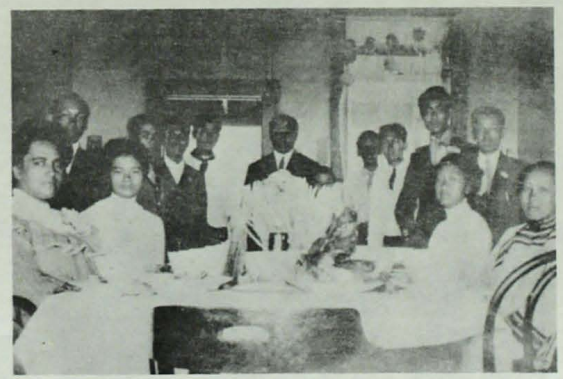
(Photo by L. Tai Sing)

KULA, MAUI

Bishop Henry B. Restarick addresses St. John's congregation, August 25, 1912.

Sunday School children at Kula Congregational Church. Mr. and Mrs. David Kapohakimohewa, principal and teacher, Keokea School, are second and third from left, top row. (1912)

Rev. and Mrs. How Fo Chong and family in parsonage garden, Kula Congregational Church. (1912)



Hawaiians and Chinese throw a party. (1912)

Top left: Mules hauling water barrels and farm produce. (about 1911) Top right: Kula youth displays his marksmanship. Note corn-grinding machine in background. (1911) Bottom: Roaming the mountains on a hunting trip. (1912)

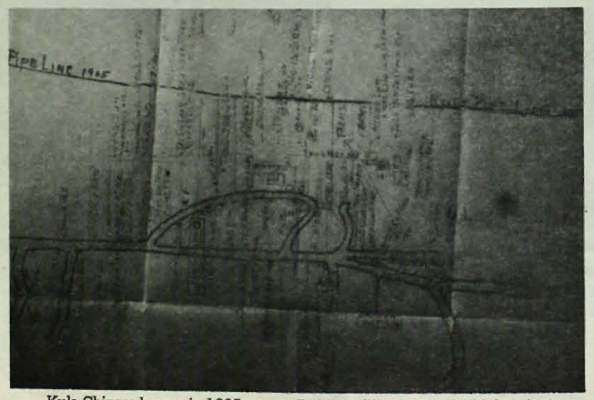
Sun Mi's ranch house, rear view. Photograph from Julia Zane, granddaughter of Tong Kan, who bought the ranch from Sun Mi in 1908.

Honolulu Kula Club members on a "homecoming visit," September 5, 1946.

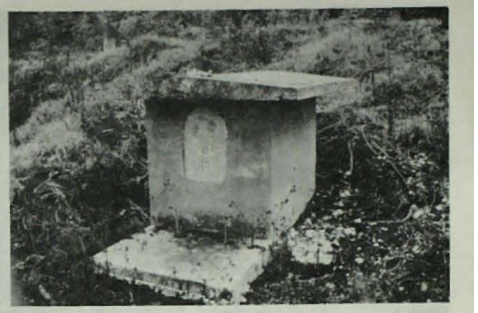
Kula Club members, including first president, Richard C. Ching (far right), horseback riding on the slopes of Haleakala, September 5, 1946.

Photograph found on Ket Hing altar by HCHC and Kula Club researchers August 1971. Ket Hing Society members and families on occasion of Consul-General King-Chau Mui's visit to Kula, September 1931.

Members of Hawaii Chinese History Center and Honolulu Kula Club on first research trip to Kula, August 1971. On steps of Ket Hing Society building.

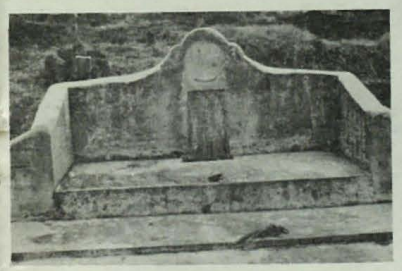


Kula Chinese homes in 1905, as recalled by Willie Fong. (1974 drawing)



Left: Fook On Tong gravestones: "Altar of Departed Friends and Relatives" – community ancestral memorial. (1972 photo)

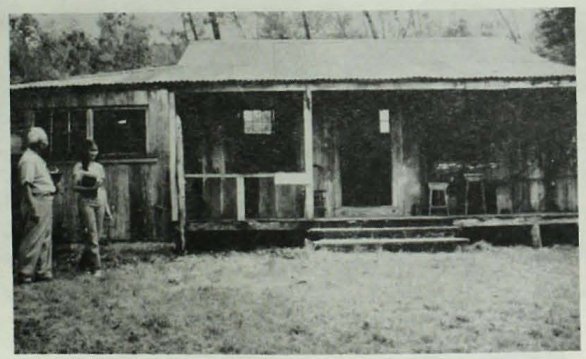
Right: A simple inscription: Grave of Tsang Yau (Zane You) of Tung Kun District. (1972 photo)



Left: Full view of top left photo this page. Right: "Bathtub"–shaped grave marker. (1972 photo)

Kwan Ti, god of justice – Ket Hing Society altar. (1974 photo)

Four of the present directors of Ket Hing Society working to save the building. Clockwise form left top: Willie Fong, Clarence Wong, Harley Ching, Harry Hew. (1972)



Building which housed kitchen, gambling room, opium den of Ket Hing Society. (1972)

Artifacts uncovered from kitchen area of Sun Mi ranch house. (1972)

HCHC volunteers on an archeological dig – Sun Mi ranch site. (1972)

whatever they had planted. And they always went home with jams and loaves of bread which my mother had baked.

-- Vera Chong

Much of the social life enjoyed by the Kula community evolved around the churches. At the Fook Yim Tong and St. John's, lunch was often served after Sunday services, providing an opportunity for socializing and exchanging news.

The Christian churches were the center of attention every Christmas season, when a dinner, Nativity play, and party were always on the agenda. The young boys wore their best khaki pants and the girls donned their party dresses for this special occasion.

> Christmas is a big thing. We always celebrate Christmas at night. So, imagine we have to go to the church to celebrate Christmas -- we insist on going but our parents don't want us to go because they have to take us home at night. Then we always have dinner there. Christmas is a big thing -- we start in the day, have different programs in school, then we end up with a dinner. We have goat meat . . . and then we have coffee, cakes, biscuits, and things like that.
>
> Then we have our Christmas program. All the children take part in the program and all the parents come and enjoy the program. And then we have toys, candies, apples, and oranges. When you're poor, having a toy is a really big thing. It all ends at about ten o'clock in the evening.
>
> -- Nee Fat Ho

At the close of the night's festivities, the families would light their kerosene lamps and trek down the dark country roads to their homes.

******

Ket Hing Society

While part of the Kula Chinese population attended worship services at the Christian churches, many others held on to the Chinese religion, and preferred to spend their Sundays at the Ket Hing Society Hall.

The Ket Hing Society was organized in 1900 with seventy-one charter members. The construction of the society building was one of Kula's first community efforts, and the renovation and moving of the building recalled that same community spirit. The Ket Hing building came to rest at its present site in 1912.

On Sundays, the society building was a bustling gathering place.

People throughout the Kula region would lay down their labors for the day and go to the society to eat, drink, gamble, trade stories, and listen to news of China.

> On Sundays my father and I, (I'm the oldest), used to go over there [Ket Hing Society] and then there was a gambling joint there. All the men folks would be gambling. And they would all be listening to the storytellers. They would have a couple of people who had communication with China. This man would sit down and everybody would gather around him and he would be telling stories, especially of the history of China, of Confucius, and the Taoist way of life.
>
> So that's how my father got a lot of information, and when he came home, he would tell us what he remembered about it.
>
> -- Richard C. Ching

The scholars of the community, the two Christian ministers and Dai Tin Loon, who had once taken the Imperial Civil Service examinations in China, spent Sunday afternoons at the society reading aloud news of the world to the farmers. Although Ket Hing members were very strong believers in the Chinese folk religion, they respected the Christian ministers because of their educational background, and always welcomed them on Sunday afternoons, after the ministers had conducted their own worship services. Immediately following the reading of news articles, the society members would launch into discussions and debates which sometimes lasted hours.

This avid interest in Chinese current events demonstrated a continued identification with the homeland among the first generation Chinese. Most looked forward to making their fortunes and returning to their villages. Many refused to buy land on Maui because of their intention of returning to China with their children someday.

Ket Hing was a Hung Men society, a fraternal order also known as Hoong Moon, Triads, Chinese Masonic Lodges, which originated in 300 A.D. in the Han Dynasty. This particular order originated in the Ching Dynasty, in the early seventeenth century. In later years the Hung Men became a secret society because of its involvement in revolutionary activities against the alien Manchu Dynasty. In many large Chinese immigrant settlements overseas, in Hong Kong, Singapore, and Hawaii, Hung Men societies were organized in support of the movement to overthrow the Manchus and restore the Ming.

In addition to its political purposes, the Ket Hing housed an altar for worship of the society's deity, Kwan Ti, god of justice and compassion. To the right of the altar was a small room containing the ancestral plaque of the Hung Men society, as well as the society's earth gods. To the left was a room containing ceremonial clothes and fortune sheets.

In the far corner of the room there were placed on the ground, "Ng Fong" the god of five directions, and the Hawaiian earth spirit. Many Ket Hing members worshipped here to appease the spiritual powers they felt had influence on their fortunes.

The Ket Hing building was completed in 1907, and held the distinction of being the first two-story structure in Kula. The second floor of the building was restricted to men and was used for Triad initiation ceremonies. It also contained the Kwan Ti altar, banners declaring faith and loyalty, and a plaque which read "Ch'ee Tin Gung" or "Palace of the Lord which Aids Heaven." Inside the building was a plaque which read "Chung Yi Tong," or "Hall of Fidelity and Righteousness."

Downstairs and on the grounds, the society was often the setting for social gatherings, festivals, weddings, and birthday celebrations. Ket Hing members also cared for the burial of community members, and celebrated *Ching Ming* every spring in reverence to the dead.

Disputes and financial debts were often settled at the society. When two members found themselves in a financial disagreement, for example, they could report the problem to the society and a fair solution through arbitration would be arrived at.

Situated beside the main building was a smaller building containing a large community kitchen equipped with two *woks*, a hearth, a sink, and a "foodsafe," or makeshift "icebox." This small building also housed a gambling room, an opium room, and caretaker's quarters. The posts supporting the building were made of mamane wood, which is said to grow stronger with age.

In 1912, the Ket Hing Society was moved about two hundred feet south. The land had been parcelled out as homestead property and the society was forced to vacate the lot.[18] Shim Mook took charge of moving the building, and with the help of others, jacked it up, placed rollers beneath it, and used a mule team to transport it the necessary distance.

Adjacent to the society was the Fook On Tong cemetery, maintained by the Fook On Tong, "Hall of Blessing and Tranquility Association." Early community members were interred there, with Christians and non-Christians buried side by side. A survey of the cemetery's headstones by the Hawaii Chinese History Center task forces confirmed that the vast majority of early Kula Chinese were Hakkas from Kwangtung Province, and that common surnames included Lee, Zane, Chong, Ching, and Soon.

Before the Fook On Tong cemetery was established, a few Chinese were buried in the Hawaiian Congregational Church cemetery. The oldest Chinese gravestone in Kula is located on the grounds of Haleakala Church, which had a primarily Hawaiian congregation. The Chinese inscription reads that this early Kula migrant was surnamed Chou, came from Sin On district, Kwangtung province, was born in 1829 and died in 1888.

******

Social Life

Although the Chinese in Kula were a hard-working farming people, they regularly took time to socialize and enjoy each others' company. They attended church, or went to the Ket Hing Society, or gathered at the stores, making Keokea the social center on weekends.

> The old people, they mix well. They eat together, they gamble together . . . At Keokea, Sundays, it was a great place to market there, and people go there to listen to news, and some of them have snacks, and there's drinks, whatever they want, and some of them smoke opium in the old days, and when sunset time they all go home.
>
> -- William K. Luke

Early each Sunday morning a pig was slaughtered by one of the Kula farmers and throughout the day was divided among many families in the community. Each family took whatever it needed for the week. Those who did not have a piggery paid cash for their share, but those who did took their share free because eventually it would be their turn to provide the pig. This weekly event gave neighbors a chance to share a meal together and keep up with community news.

Celebration of birthdays, Chinese festivals, and Christian holidays such as Christmas and Easter were lively events which colored Kula social life for both young and old.

******

Diet and Health

Because many of the farmers raised pigs, pork was a weekly item on the Kula table. Chicken was also a staple, as were rice, sweet potatoes corn, cabbage, and other vegetables. Several Hawaiians from the area fished and brought their daily catch to the Keokea stores. Salted fish was a common item in Chinese homes; because refrigeration was not available, many foods were preserved with salt.

While babies were given fresh cow's milk, older children drank Eagle Brand condensed milk. School children brought lunches ranging from hard tack and biscuits to hot cakes and corn on the cob.

In addition to plain farmer's food, there were delicacies such as dog and cat meat to be enjoyed. Dog meat was stewed with fennel, licorice and bean curd sauce in a *wok* and eaten with rice and Chinese rose wine, or *mui kwai lu*. Feral, or wild cats from the mountains, generally weighing twenty to thirty pounds, were cooked with five or six chickens and an assortment of herbs. Because wild cat was a rare dish, it was very expensive, costing three to four dollars per person.[19] Both dog and cat meat were delicacies eaten only by those with the palate and

pocketbook for them!

The clean air, rugged farm work, and simple diet kept most Kula farmers and their families in good health. When sickness did occur, the Chinese patronized the town's herb shops, Tyau Store in Keokea and Dai Tin Loon in Waiahole. If the illness were minor, families relied on their own knowledge of herbs, and used bitter melon, mulberry root, salted limes, and other home remedies. If the illness were more serious, one of the town's herbalists was summoned. By taking the pulse count of the sick person, the herbalist could pinpoint the nature of the sickness, and prescribe the proper herbs.

Those who practiced the Chinese folk religion also believed in the medicinal qualities of herb water bottled on the seventh day of the seventh month in the Chinese lunar calendar. Drinking some of that bottled water was said to cure simple stomach ailments and the like.[20] In the event of a very major illness, a "Western doctor" was summoned from Kahului or Wailuku. Because there were no dentists in Kula, residents who needed dental care had to make the horseback or wagon journey to Kahului or Wailuku for treatment.

Opium was readily available in Kula during the early part of the century and a small percentage of the population, composed of the poorer farmers and the bachelors, turned to the habit. One estimate is that perhaps ten percent of the male population engaged in opium smoking. There were at least two opium dens in town where opium sold for twenty-five to fifty cents a smoke.

Periodically, opium was smuggled from Honolulu on inter-island ships. The cans, weighing five gallons each, were attached to floaters and thrown overboard near the Makena landing, where they were brought to shore with the tide. The supply eventually found its way to "Kula San," or Kula Chinatown, where an eight-ounce can sold for seventy to eighty dollars.[21]

> In Keokea there were opium dens. And the source, I don't know, it's from Honolulu, and people used to go up there to Keokea and smoke. Like this fellow Jong Ngee. He had a pipe of his own and we used to go and watch him when we were kids.
>
> Interviewer: "Did he know you were watching?"
>
> Yeah, he told us to come in and sit down. We figured if he was smoking we could steal a lot of peaches. He has a peach tree there and when the time is right, we used to run and get some peaches from the tree. The best time is when he is smoking his opium and feels good, see?
>
> -- Peter Chong

******

Family Life

Although there were single men farming in Kula, the major part of the population was composed of families. Some of the Chinese moved to Kula from plantations such as Kohala and established themselves before sending to China for their wives. Others bypassed plantation work and came straight from China with their women.

There were two basic reasons for the close-knit families of Kula. One was the traditional Chinese emphasis on filial piety and on the individual seen in the larger context of family. The other was the distance between farm houses which limited most other social contact to weekend activities and special events. Parents and children worked daily in the fields together, ate meals together, and spent many evenings together as a family.

Traditionally, women had played an important role in Hakka society. They were not forced to bind their feet, and they worked in the fields with their men. Girls were rarely sold as bond slaves. In Kula, besides tending to household needs and sometimes raising flowers, vegetables, chickens, and pigs in the backyard, the women joined their husbands in planting and harvesting the potatoes, corn, and other cash crops which provided family income.

Most Kula people recall the economic struggles of the early 1900's when discussing their childhood. Being a child was not all fun and games, they say, and many parents placed their children on a strict schedule of chores and farmwork to be done before and after their classes at Chinese and English school. The children often found themselves feeding the chickens, collecting eggs, feeding the pigs and horses, pulling weeds, and getting water from the community pipeline or Polipoli Springs.

By the time the children were in their early teens, they were entrusted with family and farm responsibilities. Occasionally they found it necessary to miss school or church because they were needed at home or in the fields.

However, the days were not totally filled with work, and free time for children invited play and adventure. Many speak with fond memories of childhood pasttimes such as tag, "crack-crack top," button and marble-shooting, baseball (with a home-made ball), and jacks. While the girls were expected to spend their free time near home, the boys had more freedom to roam the countryside with friends. Hunting in the mountains was a popular sport among the older boys. Wildlife in the Kula and Ulupalakua region included upland game, pheasants, partridge, doves, turkeys, quails, wild cattle, and goats.

On Sundays Hawaiian cowboys would race horses on the road below Ket Hing Society, much to the delight of the young boys, who liked to run their own races down the Kula roads.[22]

******

Law Enforcement

One Kula resident recalls that at the turn of the century the homes were so far apart and community members so much like "calabash cousins" that people never thought of thieves or feared "evil" except when as children they were told ghost stories.

Hawaiian policemen rode on horseback through the town regularly to make sure all the children were in school. The police spoke Hawaiian, and very little English, but they seemed to have no problem communicating their message.

On the whole, Kula people preferred to settle disputes among themselves rather than take their troubles to a court system which might be totally insensitive to their problems. The favored mediator in many cases was the Ket Hing Society, which acted as an impartial third party and was more familiar with the Kula community than were the courts.

******

Architecture and Construction of Homes

Most homes in Kula were simple wooden frame houses, but the size of the house and quality of building materials reflected the economic status of the family. Poorer families built their walls by fastening corn stalks between wood panels while wealthier families used good lumber.[23]

Many homes had open fireplaces for the cold mountain nights, small bedrooms, a living room, a kitchen, and often a large room for harvest storage. Some houses had dirt floors in at least one room, such as the kitchen. Beds consisted of wooden boards lined with mats and pillows were stuffed with corn husks or duck feathers. Some homes had just one bedroom in which all family members slept.

The kitchen was one of the most spacious rooms and often had an opening in the ceiling through which smoke from the oven could pass, symbolizing the departure of evil from the household. In many homes, character inscriptions on red paper were pasted to the walls to show that the house was blessed and the family would have good luck. Two commonly-worshipped gods in Kula homes were the Chinese kitchen or hearth god and the god of the soil.

Constructing the house was often a collective activity in which friends with different skills pitched in to help build the structure the family had designed.

> . . . if you wanted to build a house, you would buy the material and you would have a dozen men or so to help you. So that's how you would build homes. One would help the other and the others would help the others. So it was one for

> all and all for one. It was very interesting and there was even a bit of socializing.
>
> -- Richard C. Ching

******

Sun Yat-sen, A Frequent Kula Visitor

A prominent rancher and farmer in the Kula area during those years was Sun Mi, older brother of Dr. Sun Yat-sen, "Father of the Chinese Revolution." Sun Mi leased and bought some eight hundred acres of land and had five hundred head of cattle,[24] and was the only coffee planter in the region.[25] Sun Yat-sen first visited the islands in 1879. He attended Iolani School in Honolulu, graduated in 1882 at the age of sixteen, and returned to Canton and Hong Kong to study medicine.

Several years later, when he became involved in revolutionary activities in China, Sun Yat-sen revisited the Hawaiian Islands to solicit support for the revolution. To allow him to travel freely as a United States citizen without being harassed by the Manchus, Sun Mi and some influential friends secured for Sun Yat-sen a false birth certificate which said that Sun "was born in Waimanu, Ewa, Oahu on the 24th day of November 1870," that he was a physician, "practicing at present at Kula, island of Maui," and that he made his home at Kula.[26]

For their safety, Sun Yat-sen moved his wife and family to Maui, where they lived with Sun Mi and his family. Consequently, Sun Yat-sen always made a special trip to Kula when he was in the islands. Each time Sun Yat-sen visited, Sun Mi was said to have given his brother several thousand dollars for his political work.[27]

In 1903, during his fourth trip to Hawaii, Sun joined the Ket On Society in Honolulu, a Hung Men organization with a large Hakka membership, hoping to gain the following of the society's many members. Some say the Chinese revolution received minimal and inconsistent support from the Hawaiian Hung Men because the immediate needs of the local immigrant community were more pressing. Then, too, revolutionary activity in China may have been too remote to generate much enthusiasm, or it may have been that the society lacked the leadership to provide political direction.[28] Other historians argue that Hawaii was the mainstay of overseas support for the Chinese revolution and that thousands of dollars were donated to the cause by the Chinese here.

During his visits to Kula, Dr. Sun was sometimes consulted for medical advice; on one trip he administered smallpox vaccinations, using bamboo needles and boiled water poured over pomelo leaves to cleanse the spot to be vaccinated. His charge was one dollar for girls and two dollars for boys. Today, Mrs. Pak Hoy Wong of Wailuku, Maui is proud to show the scar on her left arm, the result of a bamboo vaccination by Dr. Sun, but also says she resented the differential treatment given

males and females.[23]

Mrs. Sun Yat-sen and Mrs. Sun Mi became regular guests at the home of Rev. and Mrs. Chong How Fo every Christmas:

> They came to Kula on horseback, a Hawaiian lad with them. They had bound feet, you see. Everywhere they go, the Hawaiian cowboy goes with them. Christmas eve they came. We had Christmas eve supper, and Christmas day we had lunch. They spent one night with us every Christmas, for eight or nine years, I think. After that they moved to Kahului for a little while. It was too far for them to come, so they didn't come.
>
> Interviewer: "Did Mrs. Sun Yat-sen ever talk about what her husband was doing?"
>
> Never mentioned. Her husband's club was called Hing Chung Hui. Hing Chung is to . . . arouse China. China was always in the back, the old kind, so he wanted a new China, everything new. That's why he was at Nanking.
>
> -- Mrs. Chong How Fo

When word reached Kula that the 1912 revolution was a success, the town broke out in celebration. China had taken a giant and historic ste step forward, and Dr. Sun Yat-sen, a familiar and respected personality in Kula, had become the Republic's first leader.

> They paraded down this main road, and go back there to the society building again. A good two miles. They passed right by our place, you know. Some with the flute, some with the cymbal, making all kinds of noise, music, and then we would burn firecrackers when they come. Everybody was happy. So we all joined that. Barefooted! Those days we didn't even have a pair of shoes!
>
> -- Millie Fong

In 1908, Sun Mi sold his ranch to Tong Gan, who was known as "Akana Lilii" (Akana, the Small One) to the Hawaiians. Before moving to Kula, Tong Gan had started a sugar mill in Makawao and raised sugar cane in Haiku. Tong Gan was the maternal grandfather of Mrs. Lillian Tavares Santos, who accompanied the HCHC field trip group in 1972 to the site of the Sun Mi ranch and pointed out, room by room, how the original ranch house once stood. Her sister, Mrs. Julie Zane, provided the group with a photograph of the structure. When told where the kitchen once stood, task force members began digging in the ground, and uncovered pieces of old Chinese dishes, pottery, and bottles.

******

Hawaiian Neighbors

Over the years, the Chinese and Hawaiian people in Kula developed a close rapport, both economically and socially. Previously, on the sugar plantations, the Hawaiians were often the *lunas*, and the relationship between them and the Chinese laborers was far from cordial. But once removed from that framework and living in adjacent farms and homesteads, the two peoples began to develop a friendly and warm relationship.

At Chinese New Year the Hawaiians would serenade the Chinese, who in turn would feed the Hawaiians, offer them drinks, and slip *li-see* (gifts of money wrapped in red paper) into their hands.

> The Hawaiians are very friendly. You know the old saying, 'That's the Hawaiian in me.' you know -- the hospitality of them. You could be traveling on this road and the Hawaiian house there, regardless they know you or not, they would invite you to come and eat with them. They say 'Hele mai ai,' come and eat.
>
> During Christmas, four or five of us would get on horseback and we would go as far as Ulupalakua Ranch, the other side there. That's where they have their doings Christmas, you see. We would be eating at this house, and then we watch the next house the smoke coming up. They say, 'Oh, so-and-so's imu is lighted. They going kalua pig.' So next day we head over there, we eat. And then from there we would come down to Ulupalakua again, same thing, we eat from house to house. And then you know how they like their drinks also. And I like my drinks, too. So those days we didn't have imported liquor like whiskey. They used to make their home brew . . . 'schweppes.'
>
> They ferment the potato and the cactus, and mash it. They would ferment 'em in a fifty-gallon barrel, cover 'em up with the burlap bags, and let the thing ferment, maybe for two weeks. When that thing start fermenting, that's when it's ready.
>
> So one time we was drinking at one house and eating. First thing we run out of is drinks. We would address all the people, 'Brudda! Eh, brudda, how's your house? How's the schweppes? Ready?' He stop, scratch his head, he says, 'Well, I get some. I don't know if ready or not. We go look.' Okay, get on the horse with the jug, going to his house. He take up the burlap bag and we look that thing still bubbling, fermenting. So they have a

> cup ready, one of these cups with the long handle. They would push the mash, all the ingredients away (and taste it). 'Eh brudda, g-o-o-d stuff -- ready!' Fill up the jug. But meantime you could see the maggots all swimming in there, you know. I don't know how they get in there. I tell this to my friends, they kind of feel a little funny: 'Gee, you drink those kind?' I say, 'Yeah, that's why I look so healthy!' I used to take one week time, go visit the Hawaiian houses, come back, and it's Chinese New Year. Their turn to come and serenade us. We feed 'em Chinese food . . .
>
> -- Willie Fong

Many Kula Chinese, impressed by the *aloha* shown them by the Hawaiian homesteaders in the Kula region, fancied themselves, as Willie Fong expresses it, "Chinese by birth, but Hawaiian by heart." A number learned the Hawaiian language, and almost everyone recognized oft-used Hawaiian phrases of welcome such as "Hele mai ai."

******

Land and Community Spirit

In 1911 the Hawaiian government opened a large amount of public lands to the people of Hawaii, and it became possible for citizens to purchase property in Kula. The land was surveyed in August of that year and opened for bidding. The sale was advertised in English and Hawaiian newspapers, but word was somehow not communicated to the Chinese whose lives these land sales would most affect.

According to the *Hawaiian Church Chronicle*, the Kula Chinese "were not aware of what was taking place until the land was sold and the Hawaiians came and told them that the property belonged to them. They (Chinese) had relied on the information which they had received that the disposal of the land would not take place for a considerable time."[30]

Thus the land which the Chinese had been leasing and living on for years (many for fifteen years or more) was being sold without prior consultation, an injustice which threatened to leave them homeless.

Faced with the common problem of eviction, the Kula people, determined to remain on the land, organized themselves. Ninety-eight young residents signed a petition expressing the desire of the Chinese to be allowed to reside on certain lots their families had farmed for many years:

> . . . our homes and farms, our parents' graves and our schools, our relatives and friends we must leave behind and the question is where shall we go. The fowls have nests and the foxes have their caves

> but we unfortunates will have no home to go to and no place in which to make a living.[31]

During this crucial period, Rev. Shim Yin Chin, pastor of St. John's Episcopal, became spokesmen for the Kula Chinese, and was successful in obtaining an important change in homestead policy. He enlisted the aid of Honolulu Bishop Henry Bond Restarick and Rev. Kong Yin Tet, who took up the cause and approached Governor Walter Frear with the problem.

In a letter to the Commissioner of Public Lands dated September 27, 1911, Governor Frear enclosed the petition from the Kula residents and suggested that leases be made to occupants of unsold lots for approximately ten years, subject to withdrawal for homestead purposes. Then as the older children of those families reached eighteen years of age, they would be able to apply for the lots as homesteads.[32]

The October 1911 *Hawaiian Church Chronicle* reported that the government had promised " . . . that the land still unsold should be leased to the Chinese until such time as members of the family who were born on the soil are old enough to acquire a title to the same." This, then, was the agreement reached with the homestead authorities, and many residents were granted leases on these terms.

Within months, however, some residents were intimated by those who sought to elude the agreement made with the Governor and to force the Chinese to sell out. An August 1912 letter to Bishop Restarick signed by the "Hawaiian Chinese residents of Kula, Maui" related these incidents. According to the residents, a Mr. Pia and a Mr. Brown on July 29, 1912 told Chong En Young, a Kula farmer, to sign a document which would permit his lot to go to public auction. Chong refused. Pia and Brown replied, according to the letter, "No matter, you will sign or not, the lot is going to be at auction; if we get the land, you will lose your lot, your house, and your corn." Pia and Brown reportedly had similar words with another farmer, Chin Sam Fat, the following day.

Bishop Restarick again wrote Governor Frear, reminding him of his policy to lease land to the Chinese under the special agreement. He then informed Frear that the incidents continued in Kula despite the agreement. "Of course you are aware that the older Chinese there are unable to speak English and are naturally timid and suspicious of the white people. I was quite unaware of this attempt to get them to sign their names to documents," wrote Restarick. He urged Frear to investigate the situation in order to "prevent any injustice being done to these worthy people."[33]

On August 8, 1912, Governor Frear assured Bishop Restarick that the lease agreement would be upheld and that the residents need not fear competition from parties such as the Cornwall Ranch, which had decided to apply for land in another area. To celebrate their community victory, the Kula Chinese hosted a reception in honor of Bishop Restarick and Rev. Shim on August 11, 1912 at St. John's Church.

In their own words, these were the feelings expressed to Bishop Restarick in a letter three months later:

November 22, 1912

To the Rt. Rev. H. B. Restarick,
Bishop of Honolulu.

Dear Sir: --We, the undersigned people of Kula, Maui, wish to show our heirty [*sic*] thanks for the kind interest you have given us. During the past year you have carefully presented the fact before Governor Frear and an arrangement was made that we may be able to lease the land. Before November 2nd, which was the date set for the auctioning of the lease, we sent a wireless message and asked you to be present at auction at Makawao Court House, to our regret not knowing you were not well in health. Then you have wisely sent Rev. Korey Yim Ten and Rev. W.S. Short to represent. On the appointed day Rev. Shim Yin Chin and we arrived at Makawao Court House at 10 o'clock same day. We sincerely desire the Lord of Heaven bless you and your clergy who have help us in the matter with all the blessings and a long-long life.

Respectfully yours,

Fong Ny, Lin Kon Shin, Chong En Young, Kiu Ki Tyan, Chin Sam Fat, Shang Sam Sin, Shin Moo Chin, Ton Chan Lin, Zane Pak Den, Lin En Shin, Chong Kui, Hen Ein Fat, Chin Chin Choy.[34]

In following years, those Chinese who applied for homesteads and were granted them were given three years to improve their lot, fence it, build a home, and work on the land. After that period of time, they could apply for a "right of purchase" lease, and then buy the land outright from the government.[35]

Before this special arrangement was arrived at, however, a number of Kula farmers saw their land divided into homesteads and leased to others. These farmers, with the loss of their farmland, were forced to move out of Kula and find other livelihoods elsewhere in the islands.

Another mass exodus occurred in 1918, when some forty families left Kula because the land they were leasing was sold to a man named Harold Rice, who had intentions of changing its use to ranch land. The leases to the land had not expired, but the farmers were unaware of their right to challenge the eviction.[36]

The families who managed to remain in Kula continued to farm the land and engage in community activities, but for various reasons, family

after family departed Kula, and the Chinese community never re-attained the level of bustling activity it had enjoyed in the early 1900's. Among the reasons which had prompted the exodus of many Kula families during the 1910's and 20's were: severe drought which ruined crops and killed livestock, soil which was reaching depletion level after years of harvesting and tilling, lack of educational opportunities for their children, and loss of land due to parceling of homesteads.

Most of these people moved to Honolulu, where the day was not as endless, and the opportunities were more varied. Others moved to Haiku or other parts of Maui or to other islands.

Conclusion

Today Kula has a multi-ethnic population which has retained farming and ranching as its chief industries. The population of some 450 (1971 figure) includes just a few Chinese families, who with the passage of time have intermarried to the extent that most are now related, and form a large, extended family.

The cash crops in Kula are no longer corn and potatoes, but a variety of vegetables and flowers produced by some thirty-five family-operated farms ranging from five to fifty acres. Under irrigation, the agricultural yield of the soil is still very high.

In the early 1970's, Kula grew some 35 percent of Hawaii's vegetables, including large percentages of the State's head lettuce, dry onions, and tomatoes. Kula also supplies many of the carnations and other flowers used by lei-makers and florists throughout the islands. Much of the remaining land is devoted to livestock breeding by about twenty full and part-time ranchers.[37]

It is difficult to imagine that Keokea, now a quiet country town with two general stores and a gas station, was once the bustling center of activities for the Kula Chinese. The rolling hills covered with soft deep grass and the farmlands full of carnation flowers and head lettuce almost belie the fact that sixty or seventy years earlier, Chinese farmers struggled with the elements to make a living off this very land. While the Ket Hing Society building has been maintained by a few society members and St. John's Episcopal Church still conducts Sunday morning services, the Kula Congregational Church is now hidden behind overgrown brush, and the old farmhouses have been replaced by newer homes. There are distinct evidences of change in Kula, but something of the old life-style still remains.

The cool climate (average temperature is 62°-67°F) and ozone-rich air (a tuberculosis center, the Kula Sanitorium, takes advantage of this), the fragrant eucalyptus forest, the colorful flame vines, morning glories, and jacaranda trees, and the thin layers of white clouds which move silently across the mountaintops make Kula a region of exceptional beauty now, as in the past.

The early Chinese of Kula survived the long days of laboring in the fields, the frequent dry spells, and the fluctuations of the Hawaiian market. Theirs is a story of pioneer struggle and accomplishment which should be added, along with other ethnic histories, to the colorful tapestry of the history of Hawaii's people.

APPENDICES

Footnotes

[1]Joseph Feher (compiled and designed by), Hawaii, A Pictorial History, (Honolulu: Bishop Museum Press, 1969), p. 217-218.

[2]Robert Schmitt, Demographic Statistics of Hawaii, 1778-1965, (Honolulu, 1966), p. 41.

[3]Atlas of Hawaii, compiled by Department of Geography, University of Hawaii, (Honolulu: Univ. of Hawaii Press, 1973), p. 99.

[4]Report of the President of the Bureau of Immigration, (Honolulu: 1886), p. 5.

[5]Sanford Pratt, "Immigration and Emigration in the Hawaiian Sugar Industry," paper presented to Industrial Relations Section, Hawaiian Sugar Technologists, (Honolulu, Territory of Hawaii, 1950).

[6]Clarence Glick, "The Chinese Migrant in Hawaii: A Study of Accommodation," Ph.D. dissertation, Univ. of Chicago, 1938.

[7]Tin-yuke Char, The Hakka Chinese -- Their Origin and Folk Songs, translated by C.H. Kwock (San Francisco: Jade Mountain Press, 1969).

[8]Interview, William K. Luke.

[9]Interview, Willie Fong.

[10]Interview, William K. Luke.

[11]Interview, T. S. Shinn.

[12]Interview, Willie Fong.

[13]Interview, Willie Fong

[14]Interview, Titus Fong

[15]Interview, Nee Fat Ho

[16]Interview, Titus Fong

[17]Interview, Nee Fat Ho

[18]Interview, Willie Fong

[19] Interview, Lee Tai Hu.

[20] Interview, Peter Chong.

[21] Interview, Willie Fong

[22] Interview, Richard Ching

[23] Interview, Mrs. Meu Kai Chang Wong.

[24] Interview, Lee Tai Hu.

[25] Pacific Commercial Advertiser, October 5, 1896.

[26] Shao Chang Lee, "The Chinese 'Suns' in Hawaii," Paradise of the Pacific, November, 1937, p. 19.

[27] Interview, Lee Tai Hu.

[28] Loretta Pang, "The Chinese Revolution: Its Activities and Meaning in Hawaii," Univ. of Hawaii honors thesis for B.A. degree in Asian Studies, 1963.

[29] Interview, Mrs. Pak Hoy Wong.

[30] Hawaiian Church Chronicle, October 1911, p. 12.

[31] Ibid.

[32] Ibid.

[33] Letter from Bishop Restarick to Governor Frear, August 7, 1912, (Archives, State of Hawaii).

[34] Translation of letter from people of Kula to Bishop Restarick, November 22, 1912, (Archives, State of Hawaii).

[35] Report on Hawaiian Homestead Laws (State of Hawaii: Legislative Reference Bureau).

[36] Interview, Mrs. Stella Ho Lau.

[37] "Project Measure Work Plan -- Lower Kula Irrigation Project," Board of Water Supply, Maui County, September, 1971.

Persons Interviewed by HCHC's
Kula Oral History Project

Ching, Clarence
Ching, Kim Loon
Ching, Richard C.
Chong, Ellen
Chong, Mrs. How Fo
Chong, Peter
Chong, Vera
Fong, Titus
Fong, Willie
Hew, Harry
Ho, Nee Fat
Huang, Hazel Chong
Ing, George
Jung, Mabel Chong
Kum, Gladys Chong
Lau, Stella Ho
Lee, Tai Hu
Luke, William K.
Santos, Lillian Tavares
Shinn, Ten Sung
Wong, Meu Kai Chang
Wong, Pak Hoy
Zane, Julia

Tape recordings, transcripts, and notes of the oral history interviews upon which this manuscript is based are retained by HCHC and are available to serious researchers of local Chinese history. Documents from Kula's Ket Hing Society and Fook On Tong are also housed at HCHC.

Photographs included in this book were taken by HCHC task force photographers and photo-copied from the family albums of Mrs. Chong How Fo and Mr. Richard Ching, and from the Hawaiian Church Chronicle.

Honolulu Kula Club

The Honolulu Kula Club was organized on June 8, 1938 by a group of former Kula residents then residing in Honolulu. Objectives of the club were to preserve and perpetuate Chinese heritage and traditions, foster closer fellowship among its members, and offer assistance to members in need.

Richard C. Ching was the club's first president, and other officers on the original council were Rev. W.O. Shim, vice president; Philip S. Tyau, second vice president; Daniel Y.S. Pang, secretary, Nee Fat Ho, treasurer; Harold Wong, auditor; Albert Yap and Harold S. Char, sergeants-at-arms.

Since its inception, numerous projects have been initiated, including physical examinations for members; building of the Community Hall at St. John's Episcopal Church in Keokea; collaborating with the Hawaii Chinese History Center in identifying headstones at the Kula Chinese cemetery to determine birthplaces of immigrant forefathers; sponsoring the annual necrology service at St. Elizabeth Church in Honolulu for deceased members; organizing social activities for members and get-togethers with friends in Kula. Annual Christmas dinners are held for members and friends.

Bibliography

"A Day at Ulupalakua in the 1870's," Maui Historical Society, Aug. 14, 1965.

Ashdown, Inez. "Maui No Ka Oi..." Paradise of the Pacific. Oct. 1946.

Char, Tin Yuke. "Report on Chinese Clubhouses and Cemeteries on the Island of Maui," Hawaii Chinese History Center, Aug. 25, 1972.

Char, Tin Yuke and Kwock, C. H. The Hakka Chinese -- Their Origin and Folk Songs. Taipei, 1969.

Chen Ta. Emigrant Communities in South China. A Study of Overseas Migration and its Influence on Standards of Living and Social Change. New York, 1939

Coman, Katherine. The History of Contract Labor in the Hawaiian Islands. Published for Amer. Econ. Assoc. New York: MacMillan Co., 1903.

Feher, Joseph. Hawaii: A Pictorial History. Bishop Museum Press, 1969.

Fuchs, Lawrence. Hawaii Pono: A Social History. New York, 1961.

Glick, Clarence. "The Chinese Migrant in Hawaii: A Study of Accommodation." Ph.D. dissertation, Univ. of Chicago, 1938.

_____. "Transition from Familism to Nationalism Among Chinese in Hawaii." American Journal of Sociology 43, 5. 1938.

Hawaiian Church Chronicle, October 1911, September 1912.

"History from Our Files: 60 Years Ago -- 1889." Honolulu Advertiser, July 8, 1949. ed. page.

Jones, Dr. Kenneth. "Thirty Years of Progress: The Story of Kula 1910-1940" (pamphlet).

"Kula Sanitarium," Honolulu Advertiser. March 7, 1922.

Lee, Bung Chong. "The Chinese Store as a Social Institution," 1936. from Hormann's Community Forces in Hawaii, Univ. of Hawaii, 1956.

Lee, Shao Chang. "The Chinese 'Suns' in Hawaii." Paradise of the Pacific. Nov. 1937.

Letter from Gov. Frear to Commissioner of Public Lands, transmitting petition from Chinese in Kula, Maui, regarding release of certain lots. Sept. 27, 1911. State Archives.

Letter from Bishop H. B. Restarick to Gov. Frear, Aug. 7, 1912. State Archives.

Little, John. "The Fine Art of Growing Old in Kula." Honolulu Advertiser. March 28, 1974.

Mark, Diane. "Maui 'Safari' Probes Old Chinese Community." Honolulu Advertiser. Aug. 21, 1971.

"Old Hawaii: Our Hawaiian Cowboy," (Willie Fong), Lahaina Sun, August 30, 1972.

Paitson, Hupi. Maui Now! Aquarius Enterprises. Makawao: 1965.

Pang, Loretta. "The Chinese Revolution: Its Activities and Meaning in Hawaii." U.H. honors thesis for B.A. degree in Asian Studies, 1963.

"Project Measure Work Plan -- Lower Kula Irrigation Project," Board of Water Supply, Maui, 1971.

Quon, Mary. "Chinese Immigration: Hawaii." U.H. honors thesis for B.A. degree in Sociology, 1968.

Restarick, Henry Bond. Sun Yat-sen: Liberator of China. New Haven: Yale Univ. Press, 1931.

Sager and Korte. "Management Plan for Kula Forest Reserve, Maui," Honolulu, 1971.

Shapiro, H. L. Chinese Population in Hawaii. New York, 1931.

"The Hawaiian Islands," U.S. Adjutant-General's Office, Military Information Division. Washington, 1893.

Thrum's Hawaiian Annual: 1893, 1900, 1901, 1910, 1917, 1920.

Turner, Charlotte. Twenty-Seven Years on Maui. Wailuku, Maui, 1920.

von Tempski, Armine. Born in Paradise. New York: Duell, Sloan, and Pearce, 1940.

Wong, Rev. Richard. "Chinese Recall Old Farm Days in Kula." Honolulu Advertiser. Sept. 11, 1972.

Glossary

mahalo nui loa - many thanks

kokua - help, aid

haole - Caucasian

pake - Chinese

Ching Ming - annual Chinese Memorial Day

wok - Chinese cooking vessel

aloha - love, caring

APPENDIX F – INTERVIEW WRITE-UP BY NOHOPAPA HAWAI‘I

Note, as discussed in the text, per his request, Perry Artates’ mentions of specific peoples’ names have been redacted, blacked out, in the interview summary below. CM

Cultural Impact Assessment as part of the Kēōkea Master Plan for DHHL, Kula Moku, Maui
Community Engagement

Narrators: Perry Artates, Richard Dancil, Roderick Fong
Interviewer: Kalama'ehu Takahashi
Date: 4/07/21, Malama: Welo, Mahina: Kāloakūlua

Mo'okū'auhau:

Narrator's Name, Background, Significance, Mālama, "Old" Ways

Perry Artates was born and raised in Kēōkea. He still lives in the same district.

- "Born at the Kula Sanatorium which was in the Kula Hospital."
- "Came back and now I'm a resident and lessee of Waiohuli Homestead."
- "We all grew up in this area. Because it's a rural district, we had to learn each other's culture from Chinese to Filipino, to Native Hawaiian, to Portuguese, because it's how we survived up here in learning each other's culture. And our families were exercising the livelihood in an area that was away from the urban and to be self-sustainable, that's the only choice we had to learn each other's culture. Because we could eat from anybody's house. To survive, whether they had chickens, whether they had pigs, whether they had cattle and live off the land. What everybody is trying to do now. The only place we have to go buy things that are part of living in this rural district was Fong's Store and Ching's Store. The chemistry, what we see or what we learned is trying to educate the future generations that this is how papa or mama or tūtū learned."
- Perry talks about how their 'ohana mālama or steward this place, "[redacted] family has always been in the industry of construction. They build places or roads or infrastructure for the greater whole of this island. Because I worked for [redacted] construction during high school. We fall back, again, to our family ties and the family ties perpetuate the individuals. We took care of each other, no matter what direction we took, not only in higher education, but the basic principles and values growing up. To this day because we never forget where we came from and who was an instrument in having us have the greater things in life and to appreciate that."
- "They say hospital, I say sanitorium because the sanitorium was self-sufficient. The hospital became a hospital because it was a sanatorium for tuberculosis. So anybody who had tuberculosis in that time of age had to go to Kula Sanitorium."
    - "They grew their own food, had their own cattle and a dairy. They milked their own cows. Every day after school, I used to go walk up to the dairy and witness by sitting on the post watching these things happen. They used to milk cows by hand. They used to call the cattle with a transistor radio and had KCCN, the old Hawaiian station. They played the music and

the cattle came in. They knew it's time for come. They put them inside a stall and milk the cows. And they used to bring them inside the big containers. The community used to have fresh milk. Not homogenized. It was fresh."

Richard Dancil was born and raised in Kēōkea. He still lives in Kēōkea.

- "My father was born in 1910 and then he moved to Hawai'i in 1917. He was only like seven years old at the time, working on the plantation. And then in the 1930's, he started working on that Kula Sanitarium as a nurse. That's where he met my mom, Margie. She moved from Hana, that was in 1942 and started working on that the Kula Sanitarium and then that's how they met at the Kula hospital."
- "I wanted to add to the uniqueness of Kēōkea. I remember me and Rocky would go play at Kēōkea park and we'd get in trouble. By the time we reach home, mommy and daddy them know. But that's how tight the community. They would watch out for each other's families."
- Richard talks about Kula Sanitorium, "It was the nucleus. It was created in 1910. Originally it was tents. In the 1920s, they started building. Fong's construction was involved in. By 1936 it was the five-story building. And then the clinic, which they called the general hospital. That was in 1932."

Roderick Fong was born and raised in Kēōkea. His family still lives in Kēōkea and he lives in Kīhei.

- "Fourth generation. Probably in the 1890s. My family, my great-grand parents moved up here and they had eight children. One of which was my grandfather. And I still have quite a bit of family here from that eight or so siblings. Grew up here with all my family. My father was born and raised up here and so was my grandfather."
- Roderick talks about how their 'ohana mālama or steward this place, "Growing up, we didn't know of too many real, big cultural sites here. I don't know of, me personally, of any heiau and so forth. But you know, this is my opinion, this community back in the early 1800's was sparse and not much done. Eventually as the plantation were bringing immigrants in, they looked for areas that no one wanted and found out whether its good farming and so forth. They found Kēōkea. To this day, I feel it's one of the best places to farm the soil."
    - He continues, "Growing up, to me, we had the best cabbage, onions, the best whatever in the area. I think when they moved in the late 1800's to farm, they found that good soil and that's how the community grew. Like Richard said when the hospital came in, that was a big part of Richard's family, Perry's family, my family where they located to this day because of the hospital and bringing everybody closer together. So that was a start, which is the 1930's of having bigger Kēōkea community itself with businesses and whatever else you had in the area. But I think before that it was from the 1800's, it was land that

nobody wanted. It was far away from water, far away from the harbor and everything else. So, no big-time business wanted anything to do with the land."

- "It was a place that people could move to and start their own family. When you look out here, you can see how the land is from that time from way back then. Mākena landing was a shipyard. They would go down that way towards Ulupalakua through Mākena landing for everything. All the goods. It wasn't Kahului harbor."

Regarding practices/the "old" ways, Perry Artates commented, "Our kids, now, don't know how to kalua a pig. Our grandkids don't know how to do that either. Until you do it yourself as a papa. And the only reason why I say that because of the experience as a papa or tūtū. They think that's cruelty to an animal because it's what implanted in their brains today in their education. You got to teach them the old way."

- He continued, "The royalty of our kingdom, the richest food to feed the ali'i wasn't the pig. It was the dog. Today, this generation rather eat McDonald's or Burger King so we're losing that because you know what's going to happen, you better know how to go back to the old way."
  - Roderick Fong commented, "My uncle he would say, 'I got somebody special coming.' So, he would prepare a dog."

Mo'okū'auhau 'Āina, 'Āina Mauli Ola (Cultural/Natural Landscape, Resources, Uses, and Practices)

Regarding cultural sites, the narrators mentioned they don't know of any. Richard Dancil commented, "We didn't even think about going out and looking. We wouldn't even bother with that kind. No be mahai'oe."

- Roderick Fong mentioned, "A little farming, a little ranching. But if you're looking at finding cultural centers, probably be that late 1800's of walls, farming walls, farming cisterns, and things like that. And not necessary going back even farther."
- Perry Artates shared, "The ones that would know, the paniolo, the cowboy's because they go up and down the mountain. They can see them."
  - "You have to realize that in this area, you have to throw away the 'ōpala. The 'ōpala is going to be where there's vacant land that maybe a part of Hawaiian homelands. It's all a part of Hawaiian homelands. But until you do something, then you're going to find it."

Perry Artates, Richard Dancil, and Roderick Fong shared about the church names such as Haleakalā Church and the Chinese Episcopal church.

- Roderick Fong talked about the history of Chinese, "The first wave was early 1840's. They just went to recruit, but they found that they rather get better

families to recruit in the late 1800's. So, they decide to recruit from China Christian-Episcopal base towns. From the early to mid-1800's, Switzerland-German Christian missionaries went to China and establish all these towns. When they started recruiting the next wave of plantation owners' recruits, they wanted more family oriented, more Christian base. So that's why this group of Chinese, a lot of them were Christian. I don't even say my great-grandparents were Christian, but they were from that town that had established. I have old pictures of that town where they grew up, which is pretty famous, but that's where the churches were."

- He continued, "Christian churches were started because the Chinese wanted Christian churches and the first pastor was a Chinese pastor, ordained minister from China, that established that in the early 1900's. The Catholic church, there were Portuguese around here that wanted Catholic church, so St. John's was built first."
- "My grandparents were Christian/Episcopal, but all their kids wanted to be Catholic. My auntie's and my father were Catholic. Growing up, whether you were Hawaiian or whatever, the churches you went to was Catholic."
- "We grew up in the Catholic Church. They had their association building that is still stands and operates. My family still kind of goes through the ceremonies and twice a year they have something that they go to the graveyard where my grandparents or great-grandparents are buried. I can just tell you that they're still doing their customs. You have their Chinese graveyard up in the mountain."

Regarding trails, Roderick Fong mentioned, "Only cut-off trails from the road."

- Roderick continued, "Our family maps, there is sometimes written in there. Not necessarily they show the trail. Sometimes they do, but they might write down in the deed that you got to give this trail to people to cross the trails. So, it's written down from the past."

❖ Perry Artates shared, "When you're young kid, you make your own trails."

Regarding roads, Roderick shared, ""The roads were smaller about 13 feet and dirt."

- He continued, "My family, it was my grandfather's brother, I think, who brought the first truck to Kula that hauled things around in 1924 or something like that. It was a Ford truck."

❖ Perry Artates commented, "We used to travel from here all the way down to Mākena. The Government Road was dirt and it was open."

Regarding native and introduced plants and animals, narrators responded with Chinatown substance food was sweet potato, most likely Hawaiian sweet potato,

including peanuts were grown. Roderick Fong shared, "Mid-1800's, the first bulk farming was for the Irish potato to be sent to California. And they did sandalwood."

Regarding the use of resources, Richard Dancil shared, "We fished a lot."

- Roderick Fong commented, "We would go down to Mākena maybe eight times a year. And our close family friends, our parents, and grandparents, they were all teachers, principals, and educators. They're all buried at the Mākena church. They all grew up here in Kēōkea. Even though its Mākena and Kēōkea, you see the connection because that's the family."
    - Richard Dancil shared, "The families go way back. From the mountain to the ocean."
- Perry Artates added, "I think the question that is relating is what our ancestors give to us of self-sustainability. If you're talking about growing things up in this rural district, you have to understand that we don't have flowing water, at that time, because we're not in Hana. We're in Kēōkea. There's a possibility that there was flowing water. When the immigration came for plantation, they diverted the water. How did native Hawaiian people survive in this district without water? These ahupua'a go from mauka to makai. You get the names of the places in here that go all the way down to Kīhei. Because those streams that had water, that's where the Hawaiians lived where there was water. Not were there wasn't water. When get big rain, over here get plenty water inside this gulch over here and the next gulch over and the next gulch over had plenty water. And that's where the Hawaiians used to live. They could live in Kahikinui where its dry. Manawainui, that's where everything washed out every time."
    - Regarding the names of the gulches, Perry Artates mentioned they have the maps. Referring to the 2007 flood, "Not until my later part of my life that I've witnessed the power of water. Not only because water is life, but what water can take away. The community was trapped in this area."
    - Roderick Fong commented, "Because of the cloud cover and temperature, even in the summer, clouds would come up at about two o'clock and its overcast. It's cool. And then it does rain, but we're not like Ha'ikū where it rains a lot. This is dependent on the climate in this area. And it's not a continuous rainfall and not continuous drizzles. It's actually on the drier side. That's why a good rain, a good Kona rain would last and take advantage of that. But that's why this area is also one of the worst drought areas if you're farming. It's not the worst drought area in terms of dryness. But if you start to say, six months to eight months a year I'm farming here and everything is fine. Then all of a sudden, I got two years, I didn't have enough rain for my farming that's why it becomes a really critical drought area."

Perry Artates shared, "How do you put people on the land? You have to build. And that's where the findings in cultural impact assessment is a very important because you don't

want to, even in this district in Waiohuli, even though there was a cultural impact assessment, they're only going to put places where they think it's important. They gave me a book and they're going to give you all the findings that they like record. But everything else can be just one number but the number is going to be in your property. But it's up to you if you like take care of that. Its culturally, whether its Chinese, Filipino, or Hawaiian, you build around it and mālama that."

Vision, Recommendations, and Additional Mana'o

- Richard Dancil shared, "Go in the areas and if it's covered, go clear and clean by hand. That's what I did and then I realized had more rock walls in areas."
  - "My main thing is to see the community becoming tight and moving forward. Being Pono. But I can tell you one thing, I don't want to see is Kēōkeo turning into a city. I like this approach of like what you guys were talking about, instead of coming in with big equipment, you go in to clean, and walk the land. Get to know the land."
  - "I could see how the healing can come about when you're strengthening the Hawaiians identity. These kids, you can see that they take pride in this place. They're real protective. That's how I'd like to see this community get to that point. I don't like things to just be individuality, those types of things."
  - "Like today, if we can come to one similar type of tightness, that would be good."
  - "Education is a big thing. Right now, I feel comfortable with the baby steps. Sometimes when you move things too fast, the flavor changes."
- Perry Artates mentioned, "Homestead land, take the time to walk the land that you are awarded."
  - "Respect these sites and understand them to mālama. You don't know what kind of site it is. Like Richard said, when you go clean, it might just be a one wall that had cattle or might be one enclosure. When you see enclosures, that's a site. It's not just one wall because in the past days, everything was cattle, right? So, they built walls. Archaeological findings, in each enclosure, if it's an ahu, you will get something that designates that place as a prayer site. They designated, this is where we cook. This is where we sleep. This is where we do family gathering. When they mine, they found ash, fish bone, and things. That's an historical finding. It's not always cattle, its habitual or its about prayer. It's about respecting your culture."
  - "Education is the key and along those lines is specifically cultural assessment, like how Richard explained."
  - "We can control the sprawl in this rural district. We can control the sprawl only if there's a Community Development Corporation or CDC, with all the

cultural. And that can be identifying only native Hawaiian people, but they cannot. Because not only native Hawaiian people live in this district. So, you have to include the [redacted] and all the native Hawaiian people, too. How many of the other's who are living that we haven't contacted? And would they want to come? What about all those that used to grow food up here? Who can we contact? Unless it's only for our native Hawaiian community. Are we specifying is only for Hawaiian Homes? Then there may be opposition from those that we excluded because they born and raised up here too. Right?! They shouldn't be our worst enemy, those that live up here. But if we're identifying that this is only for native Hawaiian, I totally agree with that because we were here before. If we're going in that aspect, as kānaka, there was only Hawaiian people here. The names on that map, no more those names anymore. Because those names, it's not carried on, those old, old names. The only way you're going to find if that's your line in that parcel and get all these Hawaiian names surrounding this whole district. You have to do your genealogy."

- "You know how you get common sense, when you learn and you were taught by your elders because they're the ones who knows before us. Historically, what are we trying to see if we know about things, it's always going to be historical. Until there's development. You not going to find anything until somebody's going to develop. It's for future, right? It's not for me. It's not for you. It's for your grandkids, right? They have to know the future is self-sustainable. They have to know how to go in a chicken pen to feed the chicken, get the egg so that you have eggs to eat. That's how it was before, you sit down, you're running around like small kid. Who you listen to? Gung-gung. You listen to all your ancestors talking story with their group of people that they know, but you're running around. And you come over there and pull on their leg, 'I hungry.' 'Go away, we still talking story.' And they come playing music, sing, talk story again, or even go inside Fong's theatre to go watch Chinese movie."
- "What are we creating in the parcel? That's my question. Before we move forward, are we recreating kupuna housing, commercial, industrial? What are we creating with this parcel? Because if we're creating things that's not going to help...it will help perpetuate self-sustainability, which should be homes first. You have to get the people off the waiting list to go into a house before you create all these other things. That's my concern. Hawaiians are waiting and they're passing on the list to get on their land. They're not going to live in a commercial building or an industrial building. They're not going to live inside anything else because they want to live on their land. After they live on their land, now you create all these other things. Kēōkea, there's people living over there whether it's undivided interests where its ag lots. They can create their own sustainability. If they utilize their two-acre parcel to grow their food. If

they grow their food, now they have a place that now you're going to create to sell their property. I don't care if they're going to grow pigs or chickens, they get two acres, grow on top of their land, and then bring it to a place to sell their product. I have two-acres of land and if I don't know how to use that land to grow sustainability to grow vegetables or to grow what used to be out here, why are you going to create a commercial property? You can make your own business on your own two-acres. The thing that upsets me is, the people that live over there, they're not all from this district. They come from all over the place because they have the koko, they have the blood. All they like to do is come to one place and live on the land, but they don't know how to live on the land. You get one land, then make use of your land."

Appendix G

TRAFFIC IMPACT ANALYSIS REPORT

TRAFFIC IMPACT ANALYSIS REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN

KULA, MAUI, HAWAII

FINAL DRAFT

March 25, 2022

Prepared for:

PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817-5031
Telephone: (808) 533-3646
Facsimile: (808) 526-1267
E-mail: atahnl@atahawaii.com
Honolulu • Wailuku, Hawaii

TRAFFIC IMPACT ANALYSIS REPORT
DHHL KEOKEA FARM LOTS MASTER PLAN

Kula, Maui, Hawaii

FINAL DRAFT

Prepared for

PBR Hawaii
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Prepared by
Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors
Honolulu • Wailuku, Hawaii

March 25, 2022

TABLE OF CONTENTS

		Page
1.	INTRODUCTION	1-4
	1.1 Project Location	1
	1.2 Project Description	1
2.	METHODOLOGY	5
	2.1 Study Methodology	5
	2.2 Intersection Analysis	5
	2.3 Study Area Intersection Analysis	5
3.	EXISTING TRAFFIC CONDITIONS	6-9
	3.1 Multimodal Facilities	6
	3.1.1 Bicycle and Pedestrian Facilities	6
	3.1.2 Transit Facilities	6
	3.2 Roadway System	6
	3.3 Existing Traffic Volumes	6
	3.4 Existing Observations and Intersection Analysis	7
4.	BASE YEAR 2042 TRAFFIC CONDITIONS	10-18
	4.1 Defacto Growth Rate	10
	4.2 Traffic Forecasts for Known Developments	10
	4.3 Base Year 2042 Analysis	16
5.	FUTURE YEAR 2042 TRAFFIC CONDITIONS	19-24
	5.1 Background	19
	5.2 Travel Demand Estimations	19
	5.2.1 Trip Generation	19
	5.2.2 Trip Distribution & Assignment	20

TABLE OF CONTENTS
Cont'd

5.3 Future Year 2042 Analysis 21

6. CONCLUSION 25-26

6.1 Existing Conditions 25

6.2 Base Year 2042 26

6.3 Future Year 2042 26

7. RECOMMENDATIONS 27

8. REFERENCES 28

TABLE OF CONTENTS
Cont'd

TABLES

3.1 EXISTING CONDITIONS LOS SUMMARY 9

4.1 TRIPS GENERATED BY KNOWN DEVELOPMENTS 12

4.2 EXISTING AND BASE YEAR LOS SUMMARY 18

5.1 PROJECT TRIP GENERATION RATES..... 20

5.2 PROJECT-GENERATED TRIPS 20

5.3 EXISTING, BASE YEAR, AND FUTURE YEAR CONDITIONS..... 24

FIGURES

1.1 LOCATION MAP 3

1.2 SITE PLAN 4

3.1 EXISTING CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS 8

4.1 HALIIMAILE DEVELOPMENT 13

4.2 KEOKEA DEVELOPMENT 14

4.3 PUKALANI-MAKAWAO DEVELOPMENTS 15

4.4 BASE YEAR 2042 CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS 17

5.1 PROJECT TRIPS 22

5.2 FUTURE YEAR 2042 CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS 23

TABLE OF CONTENTS
Cont'd

APPENDICES

A. LOS CRITERIA

B. TRAFFIC COUNT DATA

C. LOS WORKSHEETS

D. AMPHITHEATER SPECIAL EVENTS ASSESSMENT

AUSTIN, TSUTSUMI & ASSOCIATES, INC. CIVIL ENGINEERS • SURVEYORS
CONTINUING THE ENGINEERING PRACTICE FOUNDED BY H. A. R. AUSTIN IN 1934

TERRANCE S. ARASHIRO, P.E.
ADRIENNE W.L.H. WONG, P.E., LEED AP
DEANNA M.R. HAYASHI, P.E.
PAUL K. ARITA, P.E.
ERIK S. KANESHIRO, L.P.L.S, LEED AP
MATT K. NAKAMOTO, P.E.
GARRETT K. TOKUOKA, P.E.

ADRIENNE W.L.H. WONG, P.E., LEED AP
Maui Branch Manager

TRAFFIC IMPACT ANALYSIS REPORT

DHHL KEOKEA FARM LOTS MASTER PLAN

Kula, Maui, Hawaii

1. INTRODUCTION

This report documents the findings of a traffic study conducted by Austin, Tsutsumi, and Associates, Inc. (ATA) to evaluate the traffic impacts resulting from the proposed Department of Hawaiian Home Lands (DHHL) Keokea Farm Lots Master Plan (hereinafter referred to as the "Project") located in Kula, Maui, Hawaii. The developer of the Project will be the Keokea Homestead Farm Lots Association (KHFLA).

1.1 Project Location

The Project is located on approximately 69 acres on the south end of the DHHL Keokea subdivision. The Project is located north of Kula Highway and bifurcated by Kaamana Street. Access to the Project site will be provided via Kaamana Street. Figure 1.1 shows the location of the proposed Project site.

1.2 Project Description

Implementation of the various elements of the Master Plan is subject to the availability of funding (public and private). For the purposes of preparing this TIAR, the following phasing proposed:

- Phase 1 – Clear lands and provide utility connection to the Project site.
- Phase 2 – East of Kaamana Street, convert existing nursery and remaining lands to provide an approximately 10,000 SF healing center, 2.9 acres of garden planting areas and walking paths, and commercial area/food truck space for 20 food trucks.
- Phase 3 & 4 – Construct an approximately 5,000 SF multi-purpose hale with certified kitchen and courtyard, approximately 200-seat amphitheater, a preschool and K-6 immersion school for nearby beneficiaries, and a senior day care facility. Anticipated

enrollment for the preschool and K-6 school is 30 students and 140 students, respectively. The senior day care facility is anticipated to enroll 50 seniors.

- Phase 5 – Maintain remaining adjacent native forest surrounding the Project site.

The KHFLA anticipates that the 200-seat amphitheater will be used primarily on the weekends to avoid peak hours of traffic and allow for greater attendance at events when attendees will not have school or work conflicts.

The project will be accessed via the following three (3) intersections:

1. New unsignalized 4-leg intersection with Kaamana Street.
2. One-way entry only from Kula Highway to access the schools and senior day care facility.
3. Kula Highway/Thompson Road for the garden area.

Since the Project is still in the master planning stages, the exact phasing timeline is not yet known, but for planning purposes, a 20-year horizon to Year 2042 is conservatively used for this TIAR.

The site plan can be found in Figure 1.2.

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

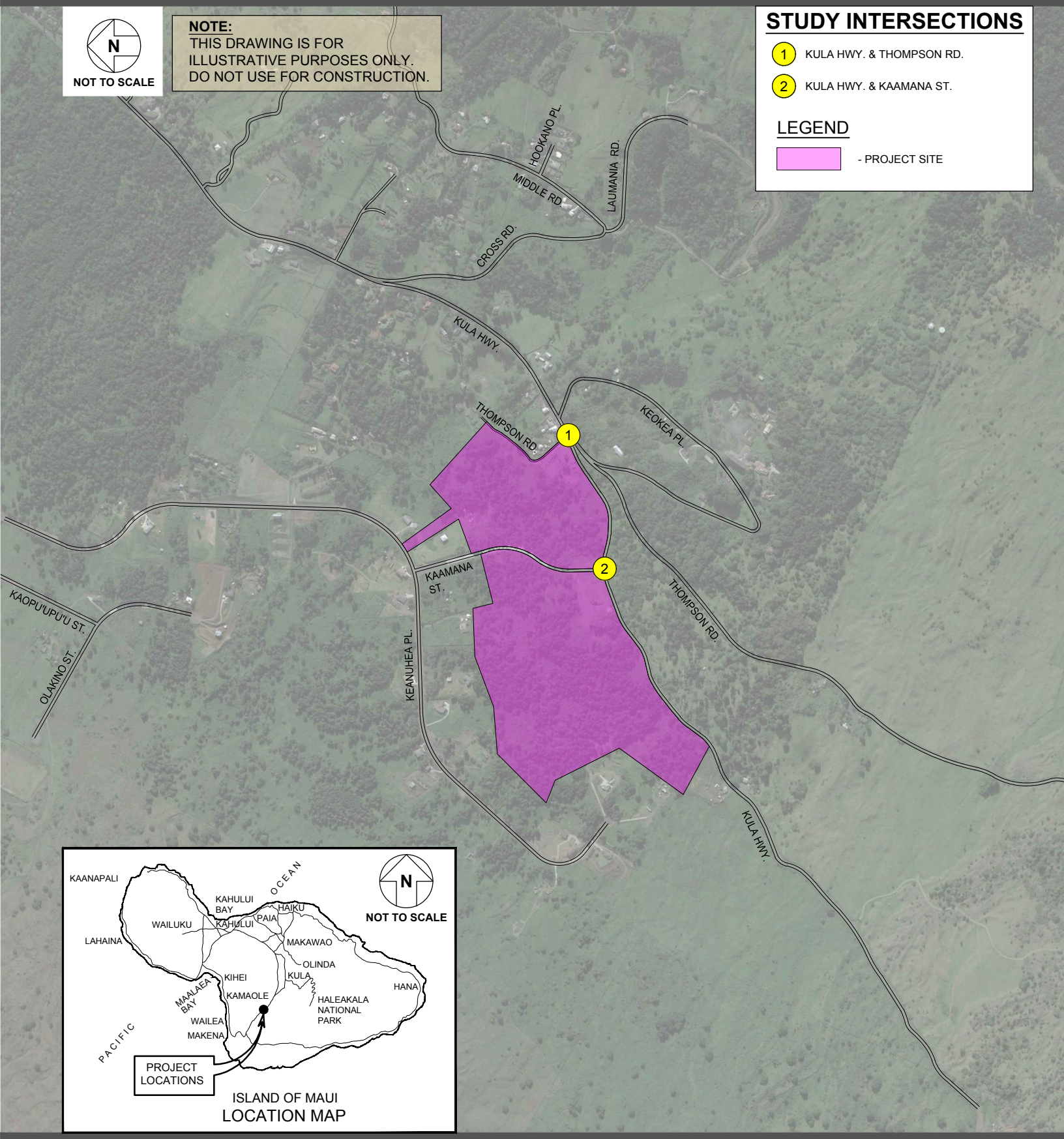
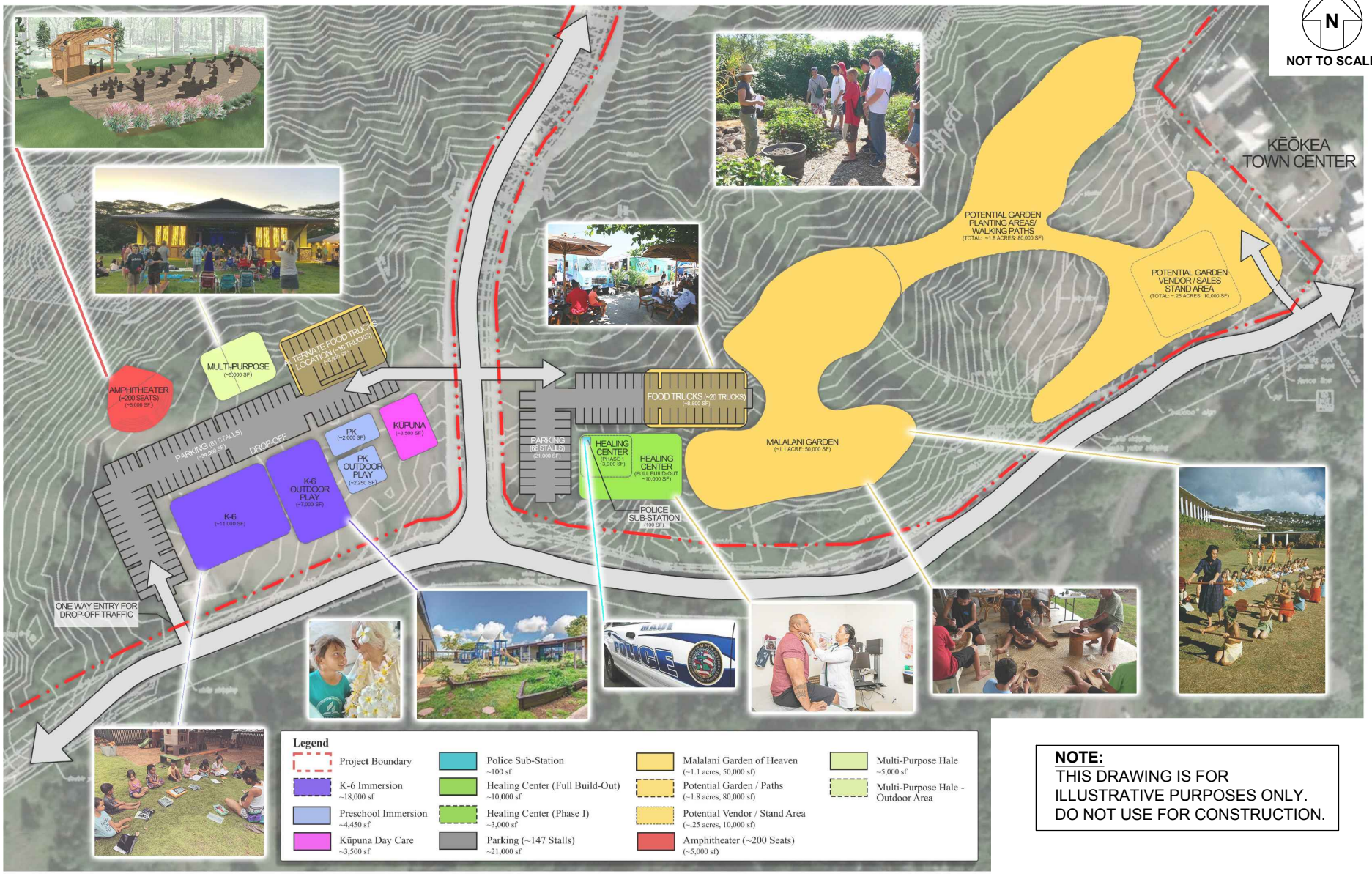


FIGURE 1.1

LOCATION MAP

DHHL KEOKEA FARM LOTS MASTER PLAN

Austin Tsutsumi & Associates, Inc.
Engineers & Surveyors



NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. DO NOT USE FOR CONSTRUCTION.

FIGURE 1.2

SITE PLAN

2. METHODOLOGY

2.1 Study Methodology

This study will address the following:

- Assess existing traffic operating conditions at key intersections during the weekday morning (AM) and afternoon (PM) peak hours of traffic within the study area.
- Traffic projections for Base Year 2042 (without the Project) including traffic generated by other known developments in the vicinity of the Project in addition to an ambient growth rate. These other known developments are projects that are currently under construction or known new/future developments that are anticipated to affect traffic demand and operations within the study area.
- Trip generation and traffic assignment characteristics for the proposed Project.
- Traffic projections for Future Year 2042 (with the Project), which includes Base Year traffic volumes in addition to traffic volumes generated by the Project.
- Recommendations for Base Year and Future Year roadway improvements or other mitigative measures, as appropriate, to reduce or eliminate the adverse impacts resulting from traffic generated by known developments in the region or the Project.

2.2 Intersection Analysis

Level of Service (LOS) is a qualitative measure used to describe the conditions of traffic flow at intersections, with values ranging from free-flow conditions at LOS A to congested conditions at LOS F. The Highway Capacity Manual (HCM), 6th Edition, includes methods for calculating volume to capacity ratios, delays, and corresponding Levels of Service that were utilized in this study. LOS definitions for signalized and unsignalized intersections are provided in Appendix B.

Analyses for the study intersections were performed using the traffic analysis software Synchro, which is able to prepare reports based on the methodologies described in the HCM. These reports contain control delay results as based on intersection lane geometry, signal timing, and hourly traffic volumes. Based on the vehicular delay at each intersection, a LOS is assigned to each approach and intersection movement as a qualitative measure of performance. These results, as confirmed or refined by field observations, constitute the technical analysis that will form the basis of the recommendations outlined in this report.

2.3 Study Area Intersection Analysis

Analysis within the Project's study area was performed at the following intersections:

- Kula Highway/Kaamana Street (March 2021 - Unsignalized)
- Kula Highway/Thompson Road (March 2021 - Unsignalized)

3. EXISTING TRAFFIC CONDITIONS

3.1 Multimodal Facilities

3.1.1 Bicycle and Pedestrian Facilities

In the vicinity of the Project, there are no sidewalks or bicycle facilities currently available along Kula Highway or Kaamana Street.

According to Bike Plan Hawaii, published by the State of Hawaii Department of Transportation in 2013, there is a signed shared roadway proposed along Kula Highway between Kekaulike Avenue/Haleakala Highway and Piilani Highway.

3.1.2 Transit Facilities

The Maui Bus system offers several routes that connect the major areas in Maui. As of July 2021, a one-way fare costs $2.00, and a monthly pass costs $45.00. In the vicinity of the Project, there are two bus stops which are served by the Kula Islander (Route 39), which provides service between Kula Hospital and the transit hub at Queen Kaahumanu Shopping Center in Kahului. One stop is located near the intersection of Kula Highway and Keokea Place, across the street from the Project. Another stop is located along Kaamana Street, less than 500 feet from the Project.

3.2 Roadway System

The following are brief descriptions of the existing roadways studied within the vicinity of the Project:

Kula Highway is generally a north-south, two-way, two-lane roadway. This roadway begins to the south near Ulupalakua School & Ranch (where it transitions from Piilani Highway) and extends northward until it transitions to Haleakala Highway north of its intersection with Makaena Place. In the vicinity of the Project, Kula Highway has a posted speed limit of 25 miles per hour (mph).

Kaamana Street is a two-way, two-lane roadway that provides connection to residences in the study area. This roadway begins to the west with its intersection with Keanuhea Street and continues eastward until its intersection with Kula Highway. The posted speed limit is 20 mph in the vicinity of the Project.

Thompson Road is generally a two-way, two-lane roadway that begins to the north at its intersection with Kula Highway and extends southward until it transitions to Keokea Place, which ultimately provides access to Kula Hospital & Clinic and loops around to connect back to Kula Highway. The posted speed limit is 15 in the vicinity of the Project.

3.3 Existing Traffic Volumes

The hourly traffic volume data utilized in this report was collected on Wednesday, March 3, 2021. Based on a comparison to HDOT volumes taken in 2015, traffic volumes collected in 2021 were similar and comparable, but adjusted slightly to match growth from 2015. See the traffic count data provided in Appendix A for the existing intersections studied and their corresponding traffic count data. Based on the traffic count data, the weekday AM and PM peak hours of traffic were determined to occur between 6:45 AM and 7:45 AM and 3:30 PM and 4:30 PM, respectively.

3.4 Existing Observations and Intersection Analysis

Traffic volumes along Kula Highway were observed to be very low throughout the AM and PM peak hours, with approximately 60-200 vehicles in each direction along Kula Highway during the peak hours, or about 1-3 vehicles per minute in each direction, on average. As a result, turning movements from Thompson Road and Kaamana Street experienced little difficulty finding adequate gaps in Kula Highway traffic.

During both peak hours, all movements at both study intersections are anticipated to operate acceptably at LOS B or better.

Existing laneage, volumes, and LOS can be found in Figure 3.1 and a LOS summary can be found in Table 3.1.

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

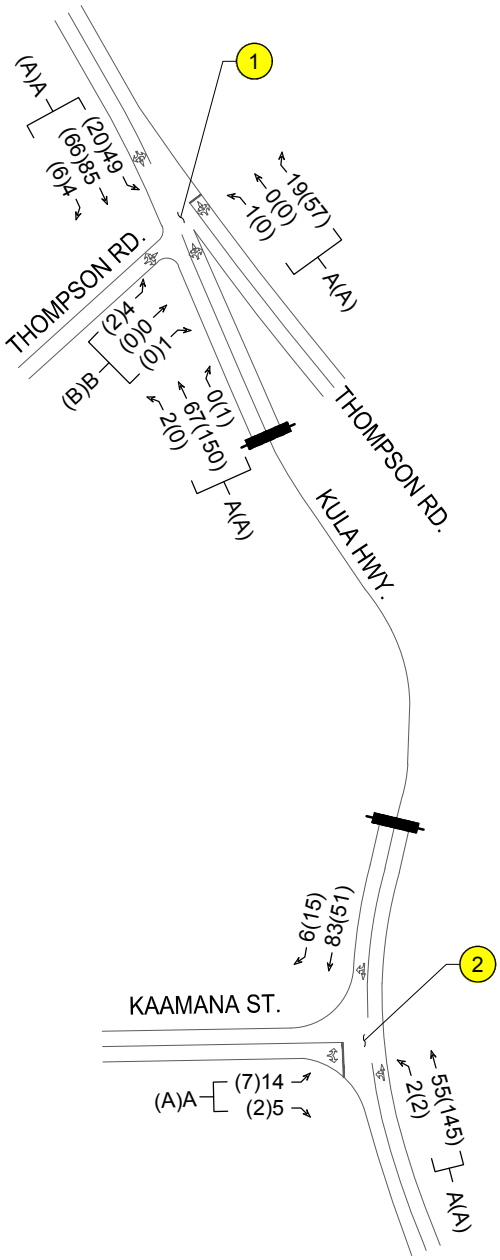
NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.
DO NOT USE FOR CONSTRUCTION.

N
NOT TO SCALE

DATE OF COUNTS:
WEDNESDAY, MARCH 3, 2021

AM PEAK HOUR:
6:45 AM - 7:45 AM

PM PEAK HOUR:
3:30 PM - 4:30 PM



LEGEND

X	- UNSIGNALIZED INTERSECTION X
##(##)	- AM(PM) VEHICLE VOLUMES
X(X)	- AM(PM) LOS

FIGURE 3.1

EXISTING CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS

Table 3.1: Existing Conditions LOS Summary

Intersection	Existing Conditions					
	AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kula Highway & Driveway/Thompson Road						
NB LT	7.4	0.00	A	0.0	-	A
EB LT/TH/RT	10.4	0.01	B	11.2	0.00	B
WB LT/TH/RT	8.8	0.02	A	9.4	0.07	A
SB LT	7.4	0.04	A	7.6	0.02	A
Overall	2.6	-	-	2.3	-	-
2: Kula Highway & Kaamana Street						
NB LT	7.4	0.00	A	7.4	0.00	A
EB LT/RT	9.3	0.02	A	9.5	0.01	A
Overall	1.2	-	-	0.5	-	-

4. BASE YEAR 2042 TRAFFIC CONDITIONS

For planning purposes, a 20-year horizon, to Year 2042, was selected to reflect the Project completion year. The Base Year 2042 scenario represents the traffic conditions within the study area without the Project. Traffic projections were formulated by applying a defacto growth rate to the traffic count volumes as well as trips generated by known future developments in the vicinity of the Project.

4.1 Defacto Growth Rate

Projections for Base Year 2042 traffic were based upon the Maui Regional Travel Demand Model (MRTDM) growth for forecast years between 2007 and 2035, and nearby developments in the immediate vicinity of the Project. The annual growth rate used along Kula Highway was 1.44% per year.

4.2 Traffic Forecasts for Known Developments

By the Year 2042, numerous developments are forecast to be completed within the Project study area. Many of the following known developments were determined to be accounted for in the MRTDM. The known developments that are projected to be complete by Year 2042 and generate traffic within the Project study area are illustrated in Figures 4.1-4.3 and listed below based on the available information:

- Kauhale Lani Residential – Proposed to construct approximately 170 single-family units plus 170 ohana units with access via Old Haleakala Highway. This development still requires entitlements before construction, but was conservatively assumed to be completed by Year 2042.
- Kualono Subdivision – Partially completed 49 single-family residential subdivision with access via Old Haleakala Highway. It is estimated that at the time that traffic counts were conducted in 2021, 22 undeveloped lots were remaining and included in this TIAR.
- Kulamalu Town Center (TC) – The majority of parcels within this development is currently occupied by a mix of retail/office space and residential subdivisions. Approximately 99,250 SF of vacant lot space remains undeveloped. The existing occupied lot area for retail/office space is approximately 175,900 SF with a building SF GFA of 74,400 SF, or 42% Floor Area Ratio (FAR). By applying the 42% FAR to the remaining 99,250 SF of vacant lot space, it was determined that approximately 42,000 SF of future retail/office space is assumed to be constructed by Year 2042. A church is also planned within this development. Access will occur via Aapueo Parkway.
- Pulelehuakea Subdivision – Proposed to construct approximately 13 single-family homes with access via Aina Lani Drive. A total of 26 single-family units were assumed for the purpose of this analysis to account for the construction of any ohana units.
- Tam Yau Estates – Proposed to construct approximately 16 single-family homes with access via Makani Road. A total of 32 single-family units were assumed for the purpose of this analysis to account for the construction of any ohana units. At the time traffic counts were conducted in 2021, all homes were still being constructed.
- Waiohuli Homestead Community – Proposed to construct a total of 334 residential lots at full build-out, including Phase 1 which includes 55 units, Phase 1A which consists of 46 units, Phase 2 which consists of 76 units, Phase 3 which consists of 77 units, Phase 4A

which consists of 27 units, and Phase 4B which consists of 53 units. For the purpose of this report, it was assumed that Phases 1 and 1A was partially complete and occupied at the time of the traffic count, and the remainder of Phase 1A, 2, 3, 4A, and 4B would be complete by Year 2042.

- Haliimaile Residential Project – Proposes to develop 196 single-family dwelling units and a maximum of 53 ohana units in addition to a 10-acre park upon 62.994 acres of land off of Haliimaile Road. The project will be accessed via two driveways from Haliimaile Road.
- Boschetti-Makawao 201H Development – Proposes to develop approximately 57.616 acres of land to provide 160 multi-family residential units and 77 single-family units with the potential for one ohana dwelling unit on each single-family lot. Vehicular access to the Project will be provided via four (4) new Project accesses along Apana Road.

The forecast trip generation for each of these developments was based on information obtained from submitted TIARs and the Trip Generation Manual published by the Institute of Transportation Engineers (ITE). These trips are summarized in Table 4.1. It is anticipated that the majority of trips to/from the planned future developments will be to/from Kahului or Wailuku and will not pass through the study area.

Table 4.1: Trips Generated by Known Developments

Project	Land Use Type (ITE Code)	Indepen-dent Variable	AM Peak Hour			PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Exit
Haliimaile Residential	210	DU	45	126	171	149	86	235
Total Background Trips in Haliimaile			45	126	171	149	86	235
Kauhale Lani Community	210	DU	62	185	247	208	121	329
Tam Yau Estates	210	DU	7	21	28	23	12	35
Kualono Subdivision	210	DU	6	5	11	16	8	24
Pulelehuakea Subdivision	210	DU	6	18	24	18	10	28
Kulamalu Town Center (TC)	820	GLA	13	8	21	82	89	171
	560	GFA	2	1	3	1	2	3
Boschetti-Makawao 201H Development	210	DU	29	82	111	94	56	150
	220	DU	18	55	73	57	33	90
	411	Acre	1	0	1	1	0	1
Total Background Trips in Haliimaile/Makawao			144	375	519	500	331	831
Waiohuli Homestead Community	210	DU	72	195	267	224	126	350
Total Background Trips in Keokea			72	195	267	224	126	350

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

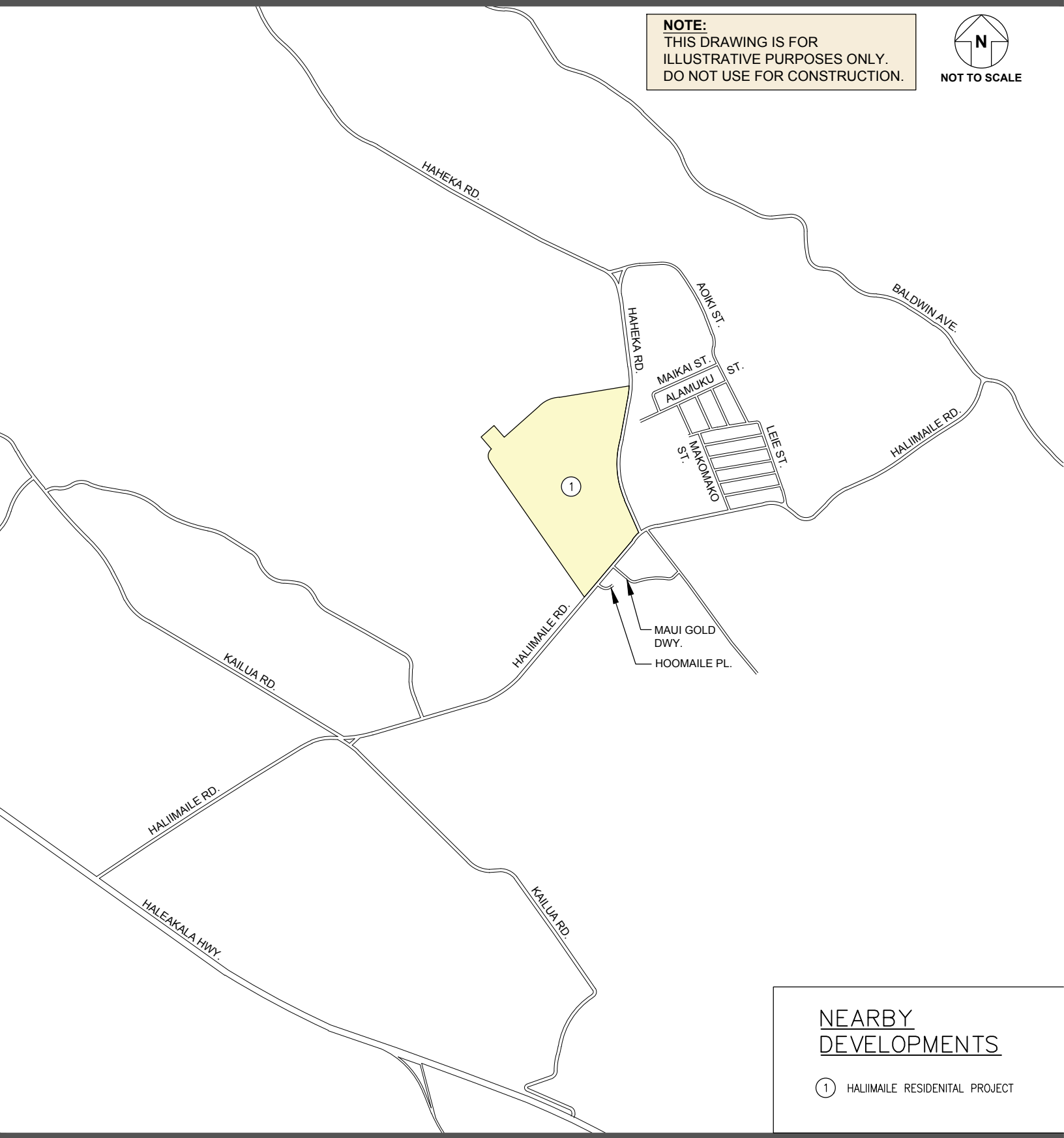


FIGURE 4.1

HALIIMAILE DEVELOPMENT

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

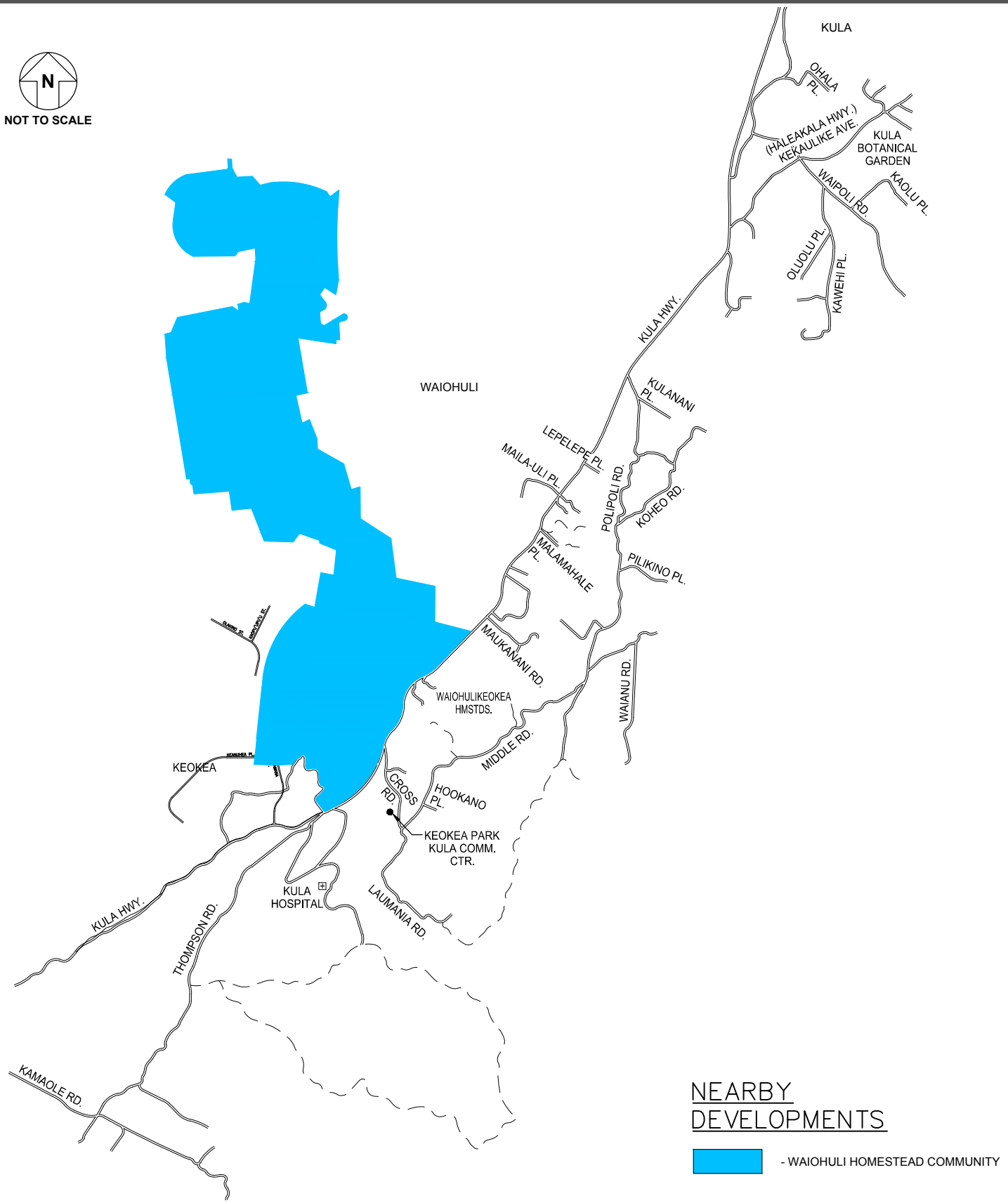
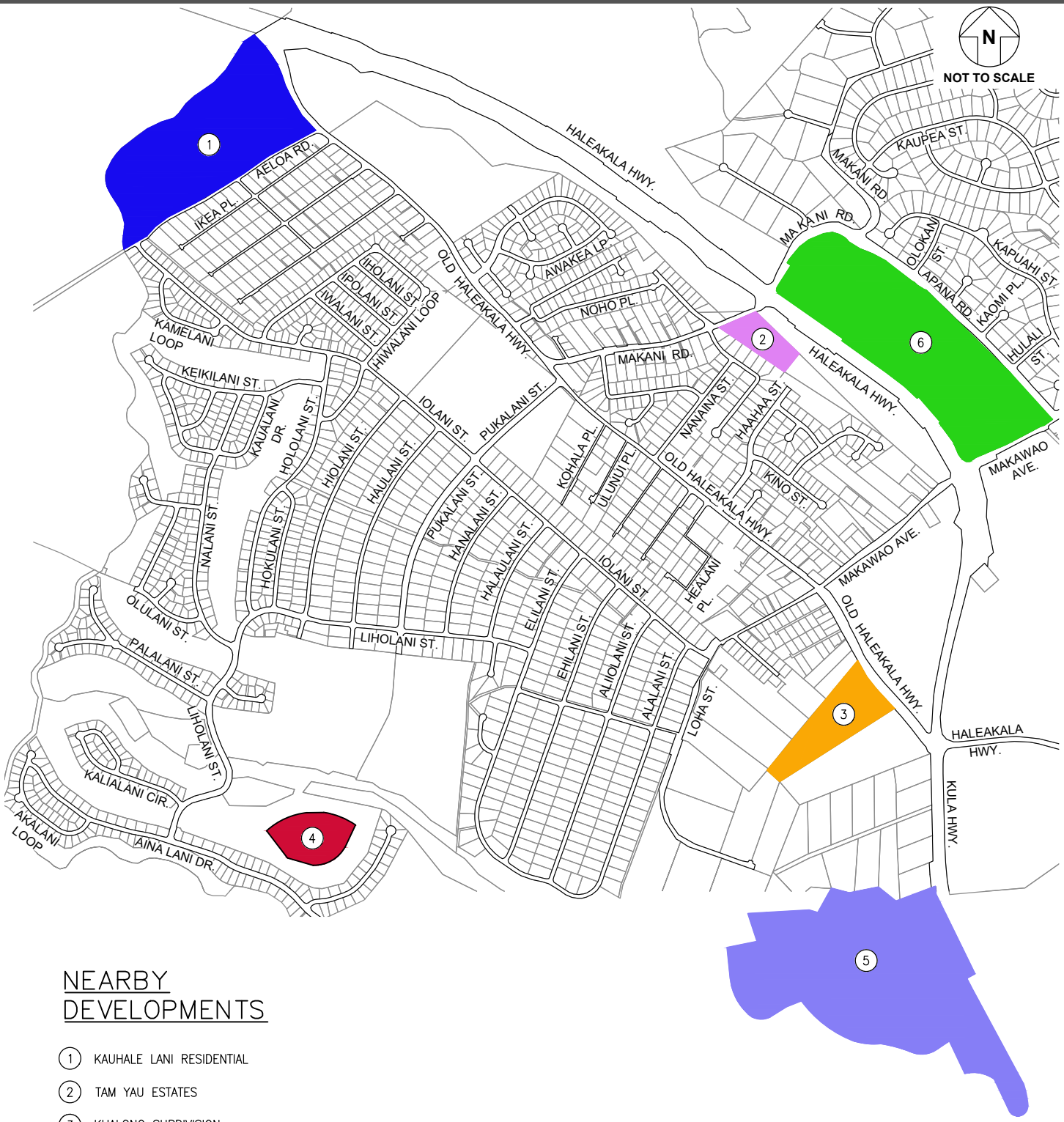


FIGURE 4.2

KEOKEA DEVELOPMENT

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors



NEARBY DEVELOPMENTS

1. KAUHALE LANI RESIDENTIAL
2. TAM YAU ESTATES
3. KUALONO SUBDIVISION
4. PULELEHUAKEA SUBDIVISION
5. KULAMALU
6. BOSCHETTI–MAKAWAO 201H DEVELOPMENT

FIGURE 4.3

PUKALANI-MAKAWAO DEVELOPMENTS

4.3 Base Year 2042 Analysis

As a result of defacto growth and trips generated by background projects, traffic volumes along Kula Highway are anticipated to increase by 15-45 vehicles in each direction during each of the AM and PM peak hours. With Base Year conditions, volumes are anticipated to continue to be very low, with approximately 95-200 vehicles in each direction in each of the AM and PM peak hours.

Operations at both study intersections are anticipated to continue to be acceptable and similar to Existing conditions, with all movements operating at LOS B or better across both peak hours.

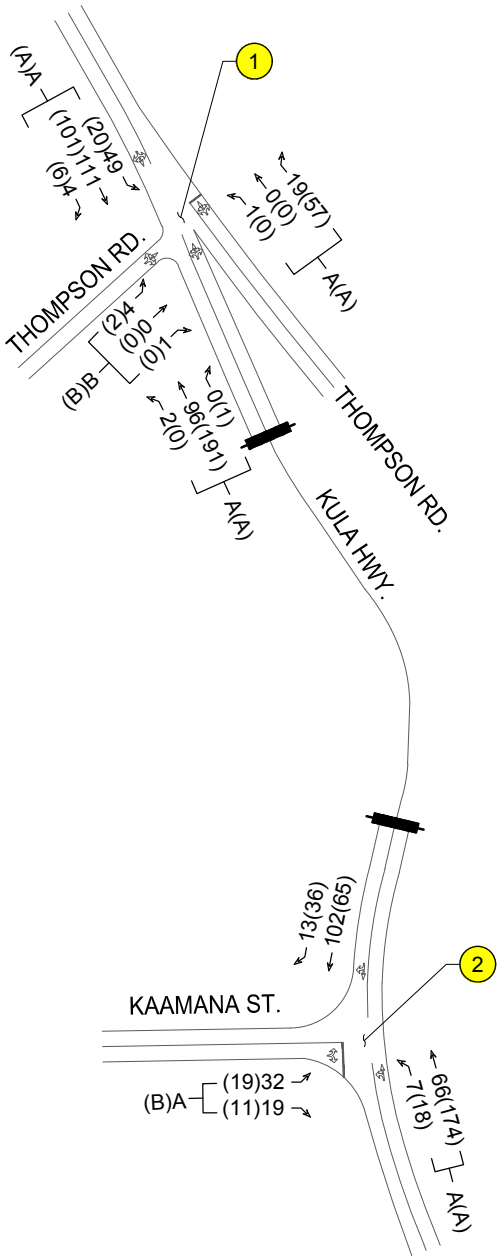
Base Year laneage, volumes, and LOS can be found in Figure 4.3. A LOS Summary can be found in Table 4.2.

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.
DO NOT USE FOR CONSTRUCTION.

N
NOT TO SCALE



LEGEND

X	- UNSIGNALIZED INTERSECTION X
##(##)	- AM(PM) VEHICLE VOLUMES
X(X)	- AM(PM) LOS

FIGURE 4.4

BASE YEAR 2042 CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS

Table 4.2: Existing and Base Year LOS Summary

Intersection	Existing Conditions						Base Year Conditions					
	AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kula Highway & Driveway/Thompson Road												
NB LT	7.4	0.00	A	0.0	-	A	7.5	0.00	A	0.0	-	A
EB LT/TH/RT	10.4	0.01	B	11.2	0.00	B	10.8	0.01	B	12.0	0.00	B
WB LT/TH/RT	8.8	0.02	A	9.4	0.07	A	9.0	0.02	A	9.7	0.08	A
SB LT	7.4	0.04	A	7.6	0.02	A	7.5	0.04	A	7.7	0.02	A
Overall	2.6	-	-	2.3	-	-	2.1	-	-	1.9	-	-
2: Kula Highway & Kaamana Street												
NB LT	7.4	0.00	A	7.4	0.00	A	7.5	0.01	A	7.5	0.01	A
EB LT/RT	9.3	0.02	A	9.5	0.01	A	9.7	0.07	A	10.0	0.04	B
Overall	1.2	-	-	0.5	-	-	2.3	-	-	1.3	-	-

5. FUTURE YEAR 2042 TRAFFIC CONDITIONS

The Future Year 2042 scenario represents the traffic conditions within the Project study area with the full build-out and occupancy of the Project.

5.1 Background

Implementation of the various elements of the Master Plan is subject to the availability of funding (public and private). For the purposes of preparing this TIAR, the following phasing is proposed:

- Phase 1 – Clear lands and provide utility connection to the Project site.
- Phase 2 – East of Kaamana Street, convert existing nursery and remaining lands to provide an approximately 10,000 SF healing center, 2.9 acres of garden planting areas and walking paths, and commercial area/food truck space for 20 food trucks.
- Phase 3 & 4 – Construct an approximately 5,000 SF multi-purpose hale with certified kitchen and courtyard, approximately 200-seat amphitheater, a preschool and K-6 immersion school for nearby beneficiaries, and a senior day care facility. Anticipated enrollment for the preschool and K-6 school is 30 students and 140 students, respectively. The senior day care facility is anticipated to enroll 50 seniors.
- Phase 5 – Maintain remaining adjacent native forest surrounding the Project site.

The KHFLA anticipates that the 200-seat amphitheater will be used primarily on the weekends to avoid peak hours of traffic and allow for greater attendance at events when attendees will not have school or work conflicts.

The project will be accessed via the following three (3) intersections:

1. New unsignalized 4-leg intersection with Kaamana Street.
2. One-way entry only from Kula Highway to access the schools and senior day care facility.
3. Kula Highway/Thompson Road for the garden area.

Since the Project is still in the master planning stages, the exact phasing timeline is not yet known, but for planning purposes, a 20-year horizon to Year 2042 is conservatively used for this TIAR.

5.2 Travel Demand Estimations

5.2.1 Trip Generation

The Institute of Transportation Engineers (ITE) publishes a book based on empirical data compiled from a body of more than 4,250 trip generation studies submitted by public agencies, developers, consulting firms, and associations. This publication, titled Trip Generation Manual, 10th Edition, provides trip rates and/or formulae based on graphs that correlate vehicular trips with independent variables.

See Tables 5.1 and 5.2 for Trip Generation formulae and projections for the Project.

As noted previously, the amphitheater is anticipated to be used for events primarily on the weekends to avoid the weekday peak hours of traffic. The AM and PM trip generation in Table 5.2 still accounts for the 5,000 SF amphitheater as a Recreational Community Center (ITE 495).

Table 5.1: Project Trip Generation Rates

Land Use (ITE Code)	Independent Variable	AM Peak Hour		PM Peak Hour	
		Trip Rate	% Enter	Trip Rate	% Enter
Senior Adult Housing - Multifamily (252)	DU	0.2	34%	0.25	56%
Public Park (411)	Acres	0.02	59%	[a]	55%
Health & Fitness Club (492)	kSF	1.31	51%	3.45	57%
Recreational Community Center (495)	kSF	1.91	66%	2.5	47%
Private School K-8 (530)	Students	1.01	56%	0.26	56%
Day Care Center (565)	Students	0.78	53%	0.79	47%
Nursery - Wholesale (818)	kSF	2.41	50%	5.24	50%
Food Cart Pod (926)	Food Carts	0	0%	7.56[1]	50%

Notes
[1] Trip rate determined using manual traffic count data from existing Kahului food cart pods
DU= Dwelling Units & kSF = 1,000 Square Feet
[a] T = 0.06X + 22.6

Table 5.2: Project-Generated Trips

Land Use (ITE Code)	Quantity	Independent Variable	Weekday AM Peak Hour			Weekday PM Peak Hour		
			Enter	Exit	Total	Enter	Exit	Total
Senior Adult Housing - Multifamily (252)	50	DU	4	6	10	8	5	13
Public Park (411)	2.9	Acres	1	0	1	13	10	23
Health & Fitness Club (492)	13	kSF	10	8	18	26	19	45
Recreational Community Center (495)	10	kSF	14	6	20	12	13	25
Private School K-8 (530)	140	Students	80	62	142	18	19	37
Day Care Center (565)	30	Students	13	11	24	12	12	24
Nursery - Wholesale (818)	10	kSF	13	12	25	27	26	53
Food Cart Pod (926)	20	Food Carts	0	0	0	76	76	152
Total Project Trips			**135**	**105**	**240**	**192**	**180**	**372**

5.2.2 Trip Distribution & Assignment

Trips generated by the Project were assigned throughout the study area generally based upon existing and projected Base Year 2042 travel patterns. The traffic generated by the Project was added to the forecast Base Year 2042 traffic volumes within the vicinity of the Project to constitute the traffic volumes for the Future Year 2042 traffic conditions. Figure 5.1 illustrates the Project-generated trip distribution.

5.3 Future Year 2042 Analysis

The Project is forecast to generate approximately 240(372) trips in the AM(PM) peak hours at full build-out. When distributed across study intersections, the Project is anticipated to add approximately 215(342) trips in both directions combined along Kula Highway during the AM(PM) peak hours.

With the addition of Project traffic, it is anticipated that all movements at the Kula Highway/Kaamana Street and Kula Highway/Thompson Road at LOS C or better across both peak hours, with all movements operating significantly under capacity.

At the new 4-way Kaamana Street/Project Access intersection, which was assumed to provide single-lane, stop-controlled Project driveways, all movements are anticipated to operate at LOS B or better across both peak hours.

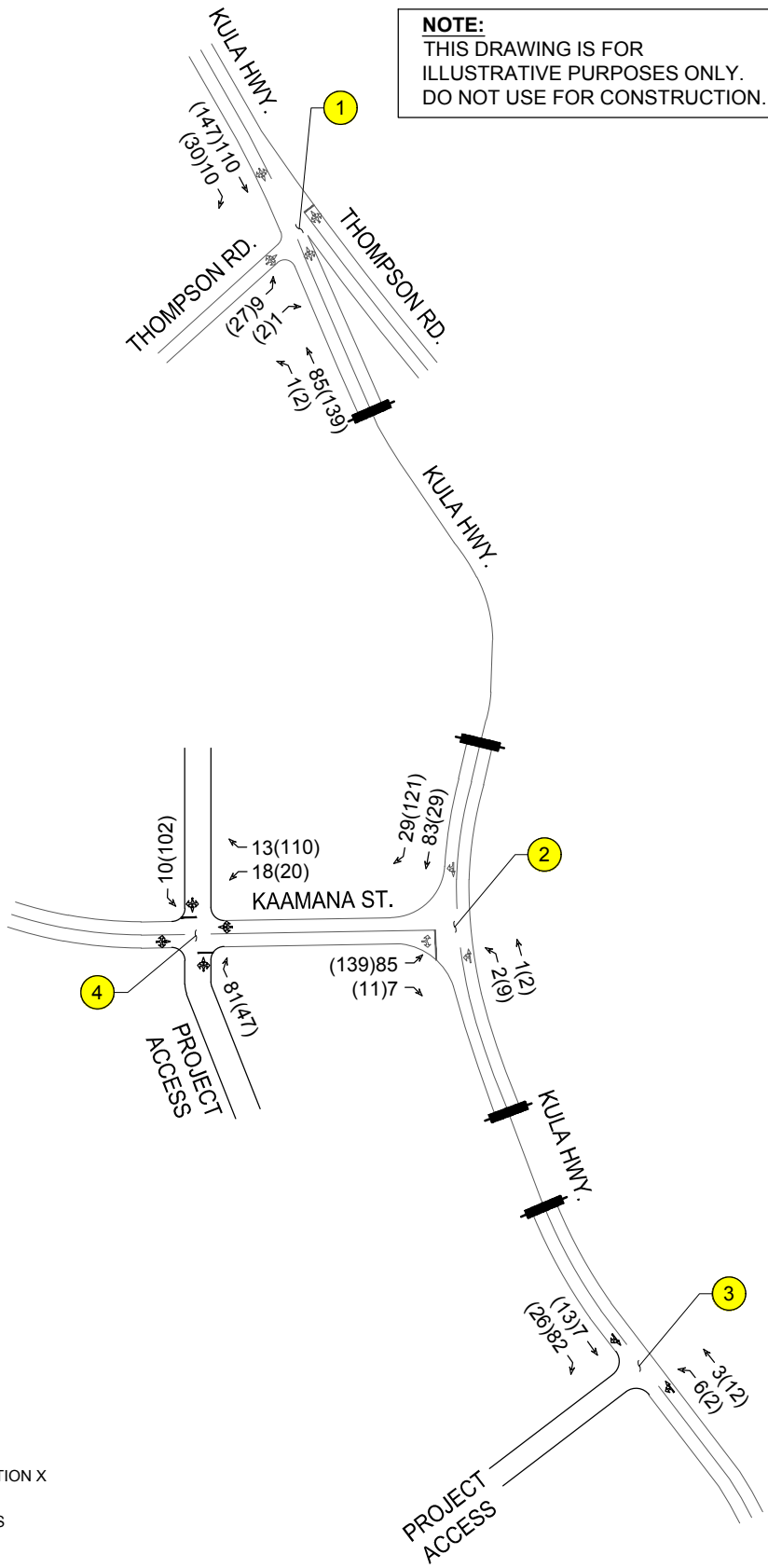
At the ingress-only Project driveway along Kula Highway, which serves the adult daycare and schools, it is anticipated that the majority of traffic will arrive in a 15–20-minute window near the start and end of the school day, typical for school traffic. To expedite, it is recommended that the school implement formal drop-off and pick-up procedures. These procedures may include staggered pick-up times and providing parents with vehicle placards to assist teachers in gathering students as their parents arrive. Parents can also be encouraged to park in the parking lot during drop-off or pick-up instead of waiting in the queue. In addition, it is recommended that a right-turn lane along Kula Highway into the ingress-only driveway be provided to accommodate any spillback that may occur. Although northbound left-turn volumes are anticipated to be low, it should be encouraged that parents approach the site from the north, if possible, to minimize queue spillback in the northbound Kula Highway lane during school peak hours.

Although amphitheater events are anticipated to occur primarily on the weekends outside of the AM and PM peak hours of traffic, it is recommended that a private-duty police officer(s) be hired for popular and well-attended events to help control traffic, primarily at the Kaamana Street/Project Access intersection, and enforce parking prohibitions along Kula Highway. On-street parking along Kaamana Street may be considered if on-site parking is inadequate during special events. A more detailed analysis of special events at the amphitheater is provided in Appendix D.

Future Year laneage, volumes, and LOS can be found in Figure 5.2. A LOS Summary can be found in Table 5.3.

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors



LEGEND

X - UNSIGNALIZED INTERSECTION X

##(##) - AM(PM) VEHICLE VOLUMES

FIGURE 5.1

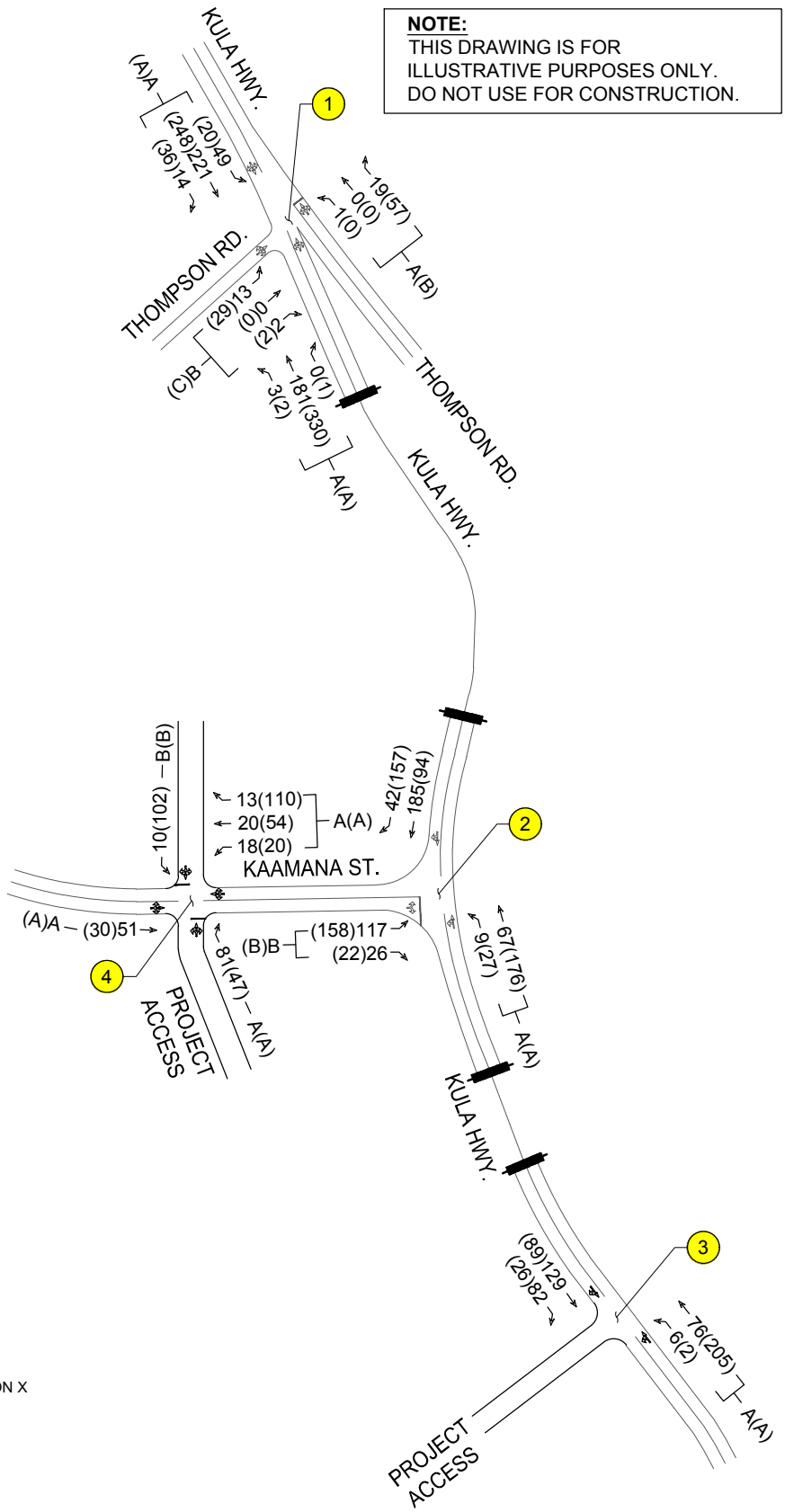
PROJECT TRIPS

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.
DO NOT USE FOR CONSTRUCTION.

N
NOT TO SCALE



LEGEND

X	- UNSIGNALIZED INTERSECTION X
##(##)	- AM(PM) VEHICLE VOLUMES
X(X)	- AM(PM) LOS

FIGURE 5.2

FUTURE YEAR 2042 CONDITIONS, LANE CONFIGURATIONS, TRAFFIC VOLUMES AND LOS

Table 5.3: Existing, Base Year, and Future Year Conditions

Intersection	Existing Conditions						Base Year Conditions						Future Year Conditions					
	AM			PM			AM			PM			AM			PM		
	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS	HCM Delay	v/c Ratio	LOS
1: Kula Highway & Driveway/Thompson Road																		
NB LT	7.4	0.00	A	0.0	-	A	7.5	0.00	A	0.0	-	A	7.8	0.00	A	7.9	0.00	A
EB LT/TH/RT	10.4	0.01	B	11.2	0.00	B	10.8	0.01	B	12.0	0.00	B	13.6	0.04	B	17.8	0.11	C
WB LT/TH/RT	8.8	0.02	A	9.4	0.07	A	9.0	0.02	A	9.7	0.08	A	9.6	0.03	A	10.8	0.09	B
SB LT	7.4	0.04	A	7.6	0.02	A	7.5	0.04	A	7.7	0.02	A	7.7	0.04	A	8.1	0.02	A
Overall	2.6	-	-	2.3	-	-	2.1	-	-	1.9	-	-	1.6	-	-	1.8	-	-
2: Kula Highway & Kaamana Street																		
NB LT	7.4	0.00	A	7.4	0.00	A	7.5	0.01	A	7.5	0.01	A	7.8	0.01	A	7.9	0.02	A
EB LT/RT	9.3	0.02	A	9.5	0.01	A	9.7	0.07	A	10.0	0.04	B	11.7	0.22	B	14.2	0.33	B
Overall	1.2	-	-	0.5	-	-	2.3	-	-	1.3	-	-	3.9	-	-	4.4	-	-
3: Kula Highway & Project Driveway																		
NB LT	-	-	-	-	-	-	-	-	-	-	-	-	7.7	0.01	A	7.5	0.00	A
Overall	-	-	-	-	-	-	-	-	-	-	-	-	0.2	-	-	0.1	-	-
4: Kaamana Street & Project Driveway																		
NB LT/TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	8.9	0.09	A	8.6	0.05	A
EB LT	-	-	-	-	-	-	-	-	-	-	-	-	0.0	-	A	0.0	-	A
WB LT	-	-	-	-	-	-	-	-	-	-	-	-	7.4	0.01	A	7.3	0.01	A
SB LT/TH/RT	-	-	-	-	-	-	-	-	-	-	-	-	10.1	0.02	B	11.2	0.16	B
Overall	-	-	-	-	-	-	-	-	-	-	-	-	4.9	-	-	4.7	-	-

6. CONCLUSION

Implementation of the various elements of the Master Plan is subject to the availability of funding (public and private). For the purposes of preparing this TIAR, the following phasing is proposed:

- Phase 1 – Clear lands and provide utility connection to the Project site.
- Phase 2 – East of Kaamana Street, convert existing nursery and remaining lands to provide an approximately 10,000 SF healing center, 2.9 acres of garden planting areas and walking paths, and commercial area/food truck space for 20 food trucks.
- Phase 3 & 4 – Construct an approximately 5,000 SF multi-purpose hale with certified kitchen and courtyard, approximately 200-seat amphitheater, a preschool and K-6 immersion school for nearby beneficiaries, and a senior day care facility. Anticipated enrollment for the preschool and K-6 school is 30 students and 140 students, respectively. The senior day care facility is anticipated to enroll 50 seniors.
- Phase 5 – Maintain remaining adjacent native forest surrounding the Project site.

The KHFLA anticipates that the 200-seat amphitheater will be used primarily on the weekends to avoid peak hours of traffic and allow for greater attendance at events when attendees will not have school or work conflicts.

The project will be accessed via the following three (3) intersections:

1. New unsignalized 4-leg intersection with Kaamana Street.
2. One-way entry only from Kula Highway to access the schools and senior day care facility.
3. Kula Highway/Thompson Road for the garden area.

Since the Project is still in the master planning stages, the exact phasing timeline is not yet known, but for planning purposes, a 20-year horizon to Year 2042 is conservatively used for this TIAR.

6.1 Existing Conditions

There are no sidewalks or bicycle facilities currently available in the vicinity of the Project. There are two bus stops located near the Project – one at the intersection of Kula Highway/Keokea Place across the street from the Project, and another along Kaamana Street, less than 500 feet from the Project. Both are served by the Maui Bus Kula Islander route.

The hourly traffic volume data utilized in this report was collected on Wednesday, March 3, 2021 and was adjusted to accommodate COVID-19 related impacts. Based on the traffic count data, the weekday AM and PM peak hours of traffic were determined to occur between 6:45 AM and 7:45 AM and 3:30 PM and 4:30 PM, respectively.

Traffic volumes along Kula Highway were observed to be very low throughout the AM and PM peak hours, with approximately 60-200 vehicles in each direction along Kula Highway during the peak hours, or about 1-3 vehicles per minute in each direction, on average. As a result, turning movements from Thompson Road and Kaamana Street experienced little difficulty finding adequate gaps in Kula Highway traffic.

During both peak hours, all movements at both study intersections are anticipated to operate acceptably at LOS B or better.

6.2 Base Year 2042

The Year 2042 was selected to reflect the Project completion year. Projections for Base Year 2042 traffic were based upon the Maui Regional Travel Demand Model (MRTDM) growth for forecast years between 2007 and 2035, and nearby developments in the immediate vicinity of the Project. The annual growth rate used along Kula Highway was 1.44% per year.

A number of background developments were conservatively anticipated to be completed by Year 2042 and their corresponding trips added to the network, including Kauhale Lani Residential, Kualono Subdivision, Kulamalu Town Center, Pulelehuakea Subdivision, Tam Yau Estates, Waiohuli Homestead Community, and the Boschetti-Makawao 201H Development. It is anticipated that the majority of trips generated by these future developments will be to/from Kahului or Wailuku and will not pass through the study area.

As a result of defacto growth and trips generated by background projects, traffic volumes along Kula Highway are anticipated to increase by 15-45 vehicles in each direction during each of the AM and PM peak hours. With Base Year conditions, volumes are anticipated to continue to be very low, with approximately 95-200 vehicles in each direction in each of the AM and PM peak hours.

Operations at both study intersections are anticipated to continue to be acceptable and similar to Existing conditions, with all movements operating at LOS B or better across both peak hours.

6.3 Future Year 2042

The Project is forecast to generate approximately 240(372) trips in the AM(PM) peak hours at full build-out. When distributed across study intersections, the Project is anticipated to add approximately 215(342) trips in both directions combined along Kula Highway during the AM(PM) peak hours.

With the addition of Project traffic, it is anticipated that all movements at the Kula Highway/Kaamana Street and Kula Highway/Thompson Road at LOS C or better across both peak hours, with all movements operating significantly under capacity.

At the new 4-way Kaamana Street/Project Access intersection, which was assumed to provide single-lane stop-controlled Project driveways, all movements are anticipated to operate at LOS B or better across both peak hours.

At the ingress-only Project driveway along Kula Highway, which serves the adult daycare and schools, it is anticipated that the majority of traffic will arrive in an approximately 15–20-minute window near the start and end of the school day. To expedite, it is recommended that the school implement formal drop-off and pick-up procedures. In addition, it is recommended that a right-turn lane along Kula Highway into the ingress-only driveway be provided to accommodate any spillback that may occur.

Although amphitheater events are anticipated to occur outside of the AM and PM peak hours of traffic, it is recommended that a private-duty police officer(s) be hired to help control traffic and enforce parking prohibitions along Kula Highway.

7. RECOMMENDATIONS

The following recommendations should be implemented with build-out of the Project:

- Construct the Project driveways at the Kaamana Street/Project Access intersection as single-lane, stop-controlled driveways.
- Implement formal procedures at the school and senior daycare center to expedite drop-off and pick-ups.
  - These can include measures like staggered pick-up times, recommended routes, and providing parents with vehicle placards to assist teachers in gathering students as their parents arrive.
- Provide a right-turn lane along Kula Highway to accommodate any spillback that may occur.
- Minimize the traffic impacts of the proposed amphitheater by:
  - Scheduling amphitheater events to avoid the weekday AM and PM peak hours of traffic.
  - Hiring private-duty police to control traffic, especially at the Kaamana Street/Project Access intersection, and enforce parking prohibitions along Kula Highway during special events.
  - Allowing parking along Kamaana Street during special events if on-site parking is inadequate to prevent parking along Kula Highway.
- Consider coordinating with the County and DHHL to install speed control measures, such as speed humps or pedestrian-activated rectangular rapid flashing beacons (RRFB), at the Kaamana Street/Project Access intersection as warranted.

8. REFERENCES

1. Federal Highway Administration, Manual on Uniform Traffic Control Devices, 2009.
2. Institute of Transportation Engineers, Trip Generation, 10th Edition, 2017.
3. Julian Ng Incorporated, Traffic Assessment of Hale Mahaolu Ewalu Senior Housing Project, July 2013.
4. Kittelson & Associates, Inc., Transportation Impact Analysis for the Kula Lodge and Restaurant, September 1994.
5. Phillip Rowell and Associates, Traffic Impact Analysis Report for the Kauhale Lani Community, February 2008.
6. Phillip Rowell and Associates, Traffic Impact Assessment Report for the Pulelehuakea Residential Subdivision, April 2010.
7. Phillip Rowell and Associates, Traffic Impact Assessment Report for the Waiohuli Homestead Community, May 2005.
8. Transportation Research Board, Highway Capacity Manual, 6th Edition, 2016.
9. Wilson Okamoto Corporation, Traffic Impact Report for Kula Ridge, July 2006.
10. Wilson Okamoto Corporation, Traffic Impact Report for the Kula Senior Community Housing, December 2005.

A P P E N D I C E S

APPENDIX A

TRAFFIC COUNT DATA

Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Kaamana St
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians

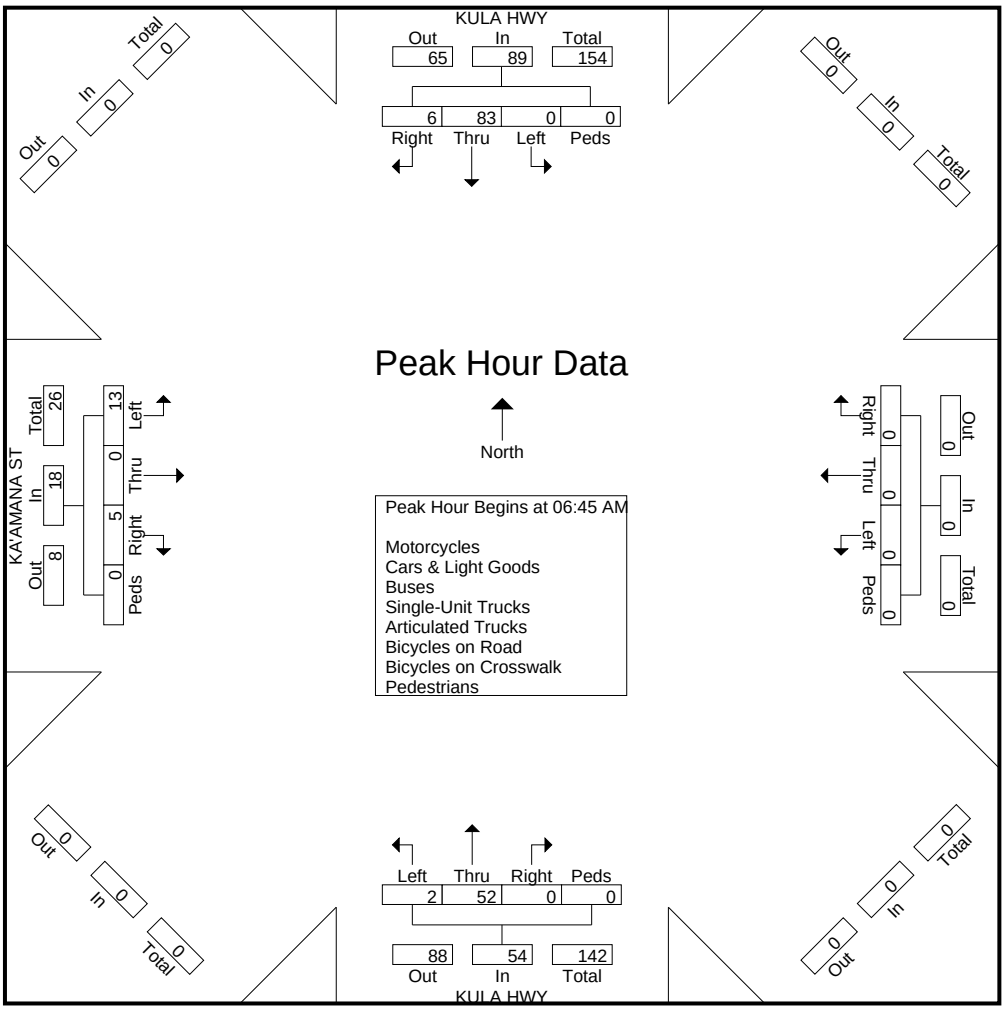
	KULA HWY Southbound				Westbound				KULA HWY Northbound				KA'AMANA ST Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	0	33	0	0	0	0	0	0	0	4	0	0	1	0	0	0	38
06:45 AM	0	29	1	0	0	0	0	0	2	12	0	0	5	0	3	0	52
Total	0	62	1	0	0	0	0	0	2	16	0	0	6	0	3	0	90
07:00 AM	0	15	1	0	0	0	0	0	0	8	0	0	3	0	1	0	28
07:15 AM	0	22	1	0	0	0	0	0	0	15	0	0	3	0	1	0	42
07:30 AM	0	17	3	0	0	0	0	0	0	17	0	0	2	0	0	0	39
07:45 AM	0	10	1	0	0	0	0	0	0	14	0	0	2	0	0	0	27
Total	0	64	6	0	0	0	0	0	0	54	0	0	10	0	2	0	136
08:00 AM	0	19	4	0	0	0	0	0	1	6	0	0	4	0	0	0	34
08:15 AM	0	12	4	0	0	0	0	0	0	10	0	0	3	0	0	0	29
Grand Total	0	157	15	0	0	0	0	0	3	86	0	0	23	0	5	0	289
Apprch %	0	91.3	8.7	0	0	0	0	0	3.4	96.6	0	0	82.1	0	17.9	0	
Total %	0	54.3	5.2	0	0	0	0	0	1	29.8	0	0	8	0	1.7	0	
Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Motorcycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars & Light Goods	0	154	15	0	0	0	0	0	3	81	0	0	23	0	5	0	281
% Cars & Light Goods	0	98.1	100	0	0	0	0	0	100	94.2	0	0	100	0	100	0	97.2
Buses	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
% Buses	0	0.6	0	0	0	0	0	0	0	2.3	0	0	0	0	0	0	1
Single-Unit Trucks	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
% Single-Unit Trucks	0	1.3	0	0	0	0	0	0	0	2.3	0	0	0	0	0	0	1.4
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Road	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Bicycles on Road	0	0	0	0	0	0	0	0	0	1.2	0	0	0	0	0	0	0.3
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Kaamana St
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 2

	KULA HWY Southbound					Westbound					KULA HWY Northbound					KA'AMANA ST Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	0	**29**	1	0	**30**	0	0	0	0	0	**2**					**5**		**3**		**8**	**52**
07:00 AM	0	15	1	0	16	0	0	0	0	0	0	8	0	0	8	3	0	1	0	4	28
07:15 AM	0	22	1	0	23	0	0	0	0	0	0	15	0	0	15	3	0	1	0	4	42
07:30 AM	0	17	**3**									**17**			**17**	2	0	0	0	2	39
Total Volume	0	83	6	0	89	0	0	0	0	0	2	52	0	0	54	13	0	5	0	18	161
% App. Total	0	93.3	6.7	0		0	0	0	0		3.7	96.3	0	0		72.2	0	27.8	0		
PHF	.000	.716	.500	.000	.742	.000	.000	.000	.000	.000	.250	.765	.000	.000	.794	.650	.000	.417	.000	.563	.774



Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Thompson Rd
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians

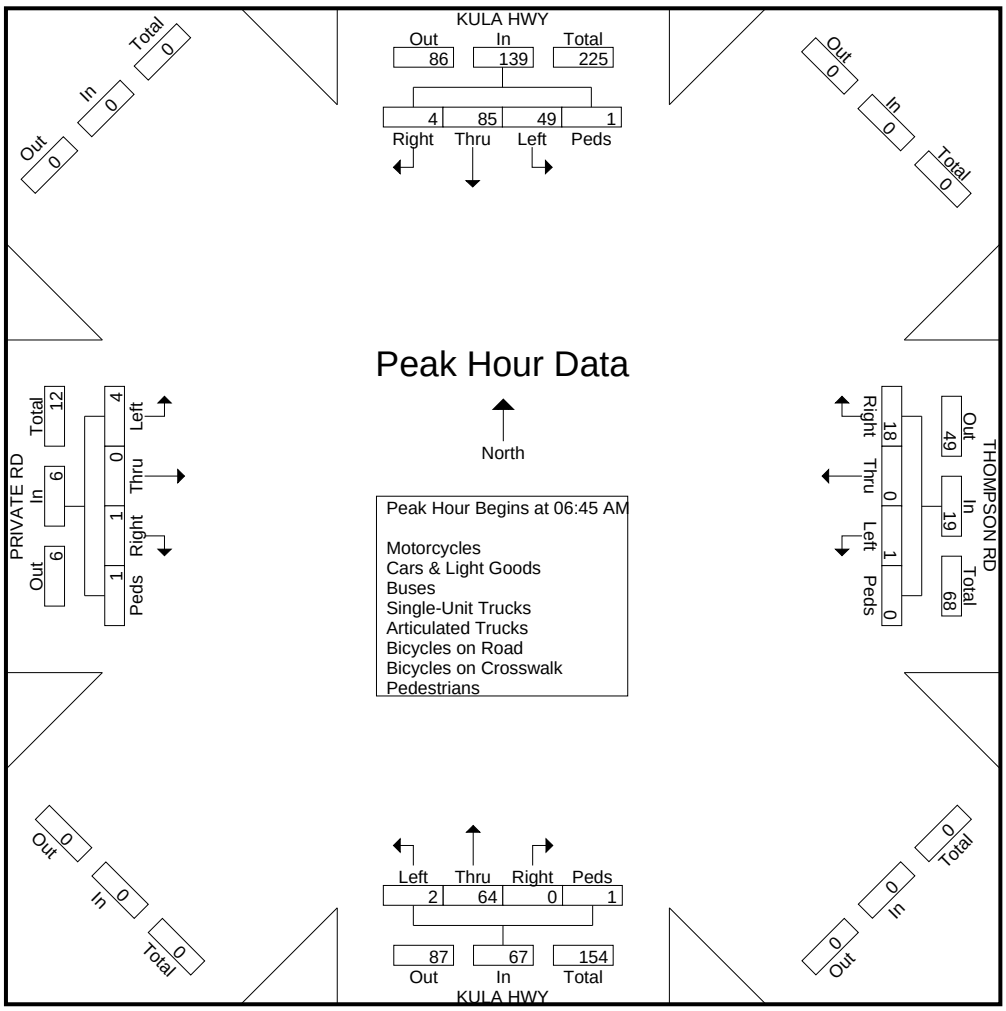
	KULA HWY Southbound				THOMPSON RD Westbound				KULA HWY Northbound				PRIVATE RD Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
06:30 AM	15	34	2	1	0	0	2	0	0	5	0	0	3	0	0	0	62
06:45 AM	27	29	2	1	0	0	0	0	2	16	0	0	1	0	0	0	78
Total	42	63	4	2	0	0	2	0	2	21	0	0	4	0	0	0	140
07:00 AM	5	14	1	0	1	0	0	0	0	9	0	1	3	0	0	1	35
07:15 AM	8	22	0	0	0	0	3	0	0	20	0	0	0	0	1	0	54
07:30 AM	9	20	1	0	0	0	15	0	0	19	0	0	0	0	0	0	64
07:45 AM	15	12	1	2	0	0	9	1	0	16	0	0	0	0	0	0	56
Total	37	68	3	2	1	0	27	1	0	64	0	1	3	0	1	1	209
08:00 AM	5	23	1	2	0	0	2	0	0	8	1	0	1	0	0	3	46
08:15 AM	13	15	1	5	1	0	7	0	0	14	0	0	1	0	0	0	57
Grand Total	97	169	9	11	2	0	38	1	2	107	1	1	9	0	1	4	452
Apprch %	33.9	59.1	3.1	3.8	4.9	0	92.7	2.4	1.8	96.4	0.9	0.9	64.3	0	7.1	28.6	
Total %	21.5	37.4	2	2.4	0.4	0	8.4	0.2	0.4	23.7	0.2	0.2	2	0	0.2	0.9	
Motorcycles	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Motorcycles	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0.2
Cars & Light Goods	95	166	9	0	2	0	37	0	2	101	1	0	9	0	1	0	423
% Cars & Light Goods	97.9	98.2	100	0	100	0	97.4	0	100	94.4	100	0	100	0	100	0	93.6
Buses	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	3
% Buses	0	0.6	0	0	0	0	0	0	0	1.9	0	0	0	0	0	0	0.7
Single-Unit Trucks	2	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0	7
% Single-Unit Trucks	2.1	1.2	0	0	0	0	2.6	0	0	1.9	0	0	0	0	0	0	1.5
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.9	0	0	0	0	0	0	0.2
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	11	0	0	0	1	0	0	0	1	0	0	0	4	17
% Pedestrians	0	0	0	100	0	0	0	100	0	0	0	100	0	0	0	100	3.8

Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Thompson Rd
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 2

	KULA HWY Southbound					THOMPSON RD Westbound					KULA HWY Northbound					PRIVATE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 06:30 AM to 08:15 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 06:45 AM																					
06:45 AM	**27**	**29**	**2**	**1**	**59**	0	0	0	0	0	**2**										**78**
07:00 AM	5	14	1	0	20	**1**	0	0	0	1	0	9	0	**1**		**3**			**1**	**4**	35
07:15 AM	8	22	0	0	30	0	0	3	0	3	0	**20**			**20**	0	0	**1**			
07:30 AM	**9**	**20**	**1**	**0**	**30**	**0**	**0**	**15**	**0**	**15**	0	19	0	0	19	0	0	0	0	0	64
Total Volume	49	85	4	1	139	1	0	18	0	19	2	64	0	1	67	4	0	1	1	6	231
% App. Total	35.3	61.2	2.9	0.7		5.3	0	94.7	0		3	95.5	0	1.5		66.7	0	16.7	16.7		
PHF	.454	.733	.500	.250	.589	.250	.000	.300	.000	.317	.250	.800	.000	.250	.838	.333	.000	.250	.250	.375	.740



Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Kaamana St
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians

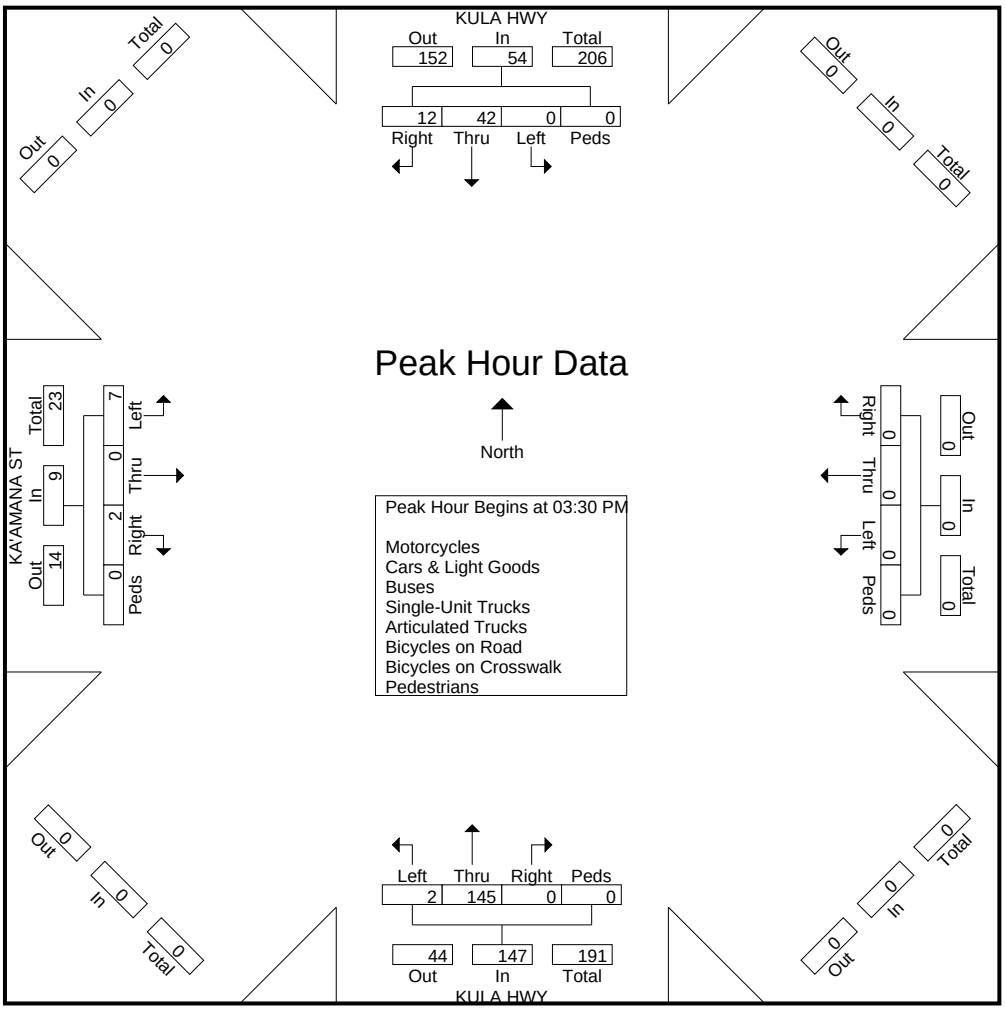
	KULA HWY Southbound				Westbound				KULA HWY Northbound				KA'AMANA ST Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
03:30 PM	0	13	3	0	0	0	0	0	0	48	0	0	1	0	1	0	66
03:45 PM	0	9	4	0	0	0	0	0	2	36	0	0	5	0	0	0	56
Total	0	22	7	0	0	0	0	0	2	84	0	0	6	0	1	0	122
04:00 PM	0	12	4	0	0	0	0	0	0	35	0	0	1	0	0	0	52
04:15 PM	0	8	1	0	0	0	0	0	0	26	0	0	0	0	1	0	36
04:30 PM	0	15	2	0	0	0	0	0	0	22	0	0	0	0	0	0	39
04:45 PM	0	10	4	0	0	0	0	0	0	28	0	0	2	0	0	0	44
Total	0	45	11	0	0	0	0	0	0	111	0	0	3	0	1	0	171
05:00 PM	0	9	5	0	0	0	0	0	2	18	0	0	2	0	0	0	36
05:15 PM	0	12	1	0	0	0	0	0	0	25	0	0	3	0	1	0	42
Grand Total	0	88	24	0	0	0	0	0	4	238	0	0	14	0	3	0	371
Apprch %	0	78.6	21.4	0	0	0	0	0	1.7	98.3	0	0	82.4	0	17.6	0	
Total %	0	23.7	6.5	0	0	0	0	0	1.1	64.2	0	0	3.8	0	0.8	0	
Motorcycles	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Motorcycles	0	2.3	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.8
Cars & Light Goods	0	84	24	0	0	0	0	0	3	229	0	0	13	0	3	0	356
% Cars & Light Goods	0	95.5	100	0	0	0	0	0	75	96.2	0	0	92.9	0	100	0	96
Buses	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Buses	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.3
Single-Unit Trucks	0	0	0	0	0	0	0	0	1	4	0	0	1	0	0	0	6
% Single-Unit Trucks	0	0	0	0	0	0	0	0	25	1.7	0	0	7.1	0	0	0	1.6
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.3
Bicycles on Road	0	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0	4
% Bicycles on Road	0	2.3	0	0	0	0	0	0	0	0.8	0	0	0	0	0	0	1.1
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Pedestrians	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Kaamana St
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 2

	KULA HWY Southbound					Westbound					KULA HWY Northbound					KA'AMANA ST Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	0	**13**	3	0	**16**	0	0	0	0	0	0	**48**			**48**	1	0	**1**			**66**
03:45 PM	0	9	**4**								**2**					**5**				**5**	56
04:00 PM	0	12	4	0	16	0	0	0	0	0	0	35	0	0	35	1	0	0	0	1	52
04:15 PM	0	8	1	0	9	0	0	0	0	0	0	26	0	0	26	0	0	1	0	1	36
Total Volume	0	42	12	0	54	0	0	0	0	0	2	145	0	0	147	7	0	2	0	9	210
% App. Total	0	77.8	22.2	0		0	0	0	0		1.4	98.6	0	0		77.8	0	22.2	0		
PHF	.000	.808	.750	.000	.844	.000	.000	.000	.000	.000	.250	.755	.000	.000	.766	.350	.000	.500	.000	.450	.795



Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Thompson Rd
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 1

Groups Printed- Motorcycles - Cars & Light Goods - Buses - Unit Trucks - Articulated Trucks - Bicycles on Road - Bicycles on Crosswalk - Pedestrians

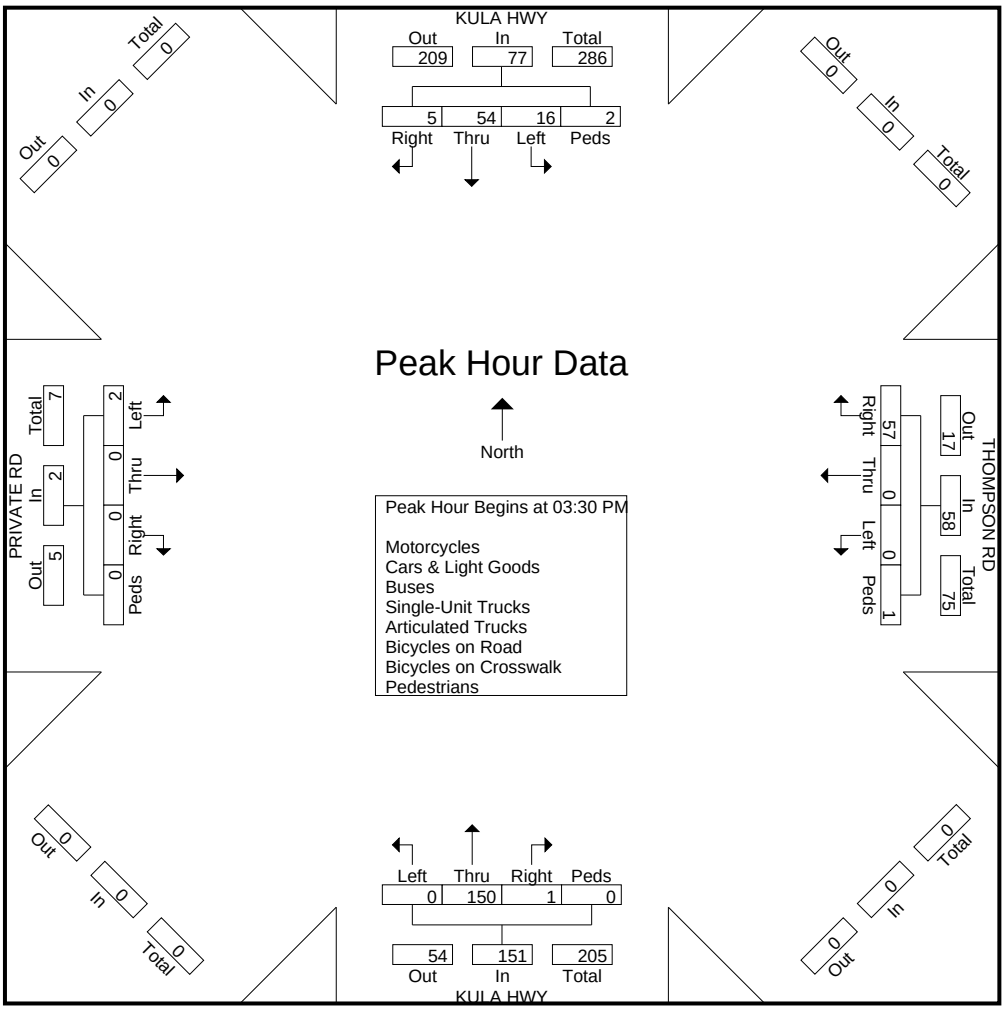
	KULA HWY Southbound				THOMPSON RD Westbound				KULA HWY Northbound				PRIVATE RD Eastbound				
Start Time	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Int. Total
03:30 PM	4	17	3	0	0	0	25	0	0	44	0	0	0	0	0	0	93
03:45 PM	4	12	0	0	0	0	7	0	0	44	0	0	0	0	0	0	67
Total	8	29	3	0	0	0	32	0	0	88	0	0	0	0	0	0	160
04:00 PM	3	16	1	2	0	0	22	0	0	37	0	0	1	0	0	0	82
04:15 PM	5	9	1	0	0	0	3	1	0	25	1	0	1	0	0	0	46
04:30 PM	3	16	1	0	1	0	16	0	0	22	0	0	0	0	0	0	59
04:45 PM	4	14	0	0	0	0	5	0	0	30	0	0	1	0	0	0	54
Total	15	55	3	2	1	0	46	1	0	114	1	0	3	0	0	0	241
05:00 PM	5	14	1	0	0	0	6	0	0	19	1	0	1	0	0	0	47
05:15 PM	7	15	0	1	0	0	5	0	0	27	0	0	0	0	0	0	55
Grand Total	35	113	7	3	1	0	89	1	0	248	2	0	4	0	0	0	503
Apprch %	22.2	71.5	4.4	1.9	1.1	0	97.8	1.1	0	99.2	0.8	0	100	0	0	0	
Total %	7	22.5	1.4	0.6	0.2	0	17.7	0.2	0	49.3	0.4	0	0.8	0	0	0	
Motorcycles	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3
% Motorcycles	0	1.8	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.6
Cars & Light Goods	34	108	7	0	1	0	87	0	0	238	2	0	4	0	0	0	481
% Cars & Light Goods	97.1	95.6	100	0	100	0	97.8	0	0	96	100	0	100	0	0	0	95.6
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Single-Unit Trucks	0	1	0	0	0	0	1	0	0	6	0	0	0	0	0	0	8
% Single-Unit Trucks	0	0.9	0	0	0	0	1.1	0	0	2.4	0	0	0	0	0	0	1.6
Articulated Trucks	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
% Articulated Trucks	0	0	0	0	0	0	0	0	0	0.4	0	0	0	0	0	0	0.2
Bicycles on Road	1	2	0	0	0	0	1	0	0	2	0	0	0	0	0	0	6
% Bicycles on Road	2.9	1.8	0	0	0	0	1.1	0	0	0.8	0	0	0	0	0	0	1.2
Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles on Crosswalk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pedestrians	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	0	4
% Pedestrians	0	0	0	100	0	0	0	100	0	0	0	0	0	0	0	0	0.8

Austin Tsutsumi & Associates

1871 Wili Pa Loop STE.A
Wailuku, HI 96793
Phone: (808) 244-8044 Fax: (808) 242-9163

File Name : Kula Hwy - Thompson Rd
Site Code : 20-550 Kokea Master Plan TIAR
Start Date : 3/3/2021
Page No : 2

	KULA HWY Southbound					THOMPSON RD Westbound					KULA HWY Northbound					PRIVATE RD Eastbound					
Start Time	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Left	Thru	Right	Peds	App. Total	Int. Total
Peak Hour Analysis From 03:30 PM to 05:15 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	4	**17**	**3**		**24**	0	0	**25**		**25**	0	**44**			**44**	0	0	0	0	0	**93**
03:45 PM	4	12	0	0	16	0	0	7	0	7	0	44	0	0	44	0	0	0	0	0	67
04:00 PM	3	16	1	**2**												**1**				**1**	82
04:15 PM	**5**								**1**	4	0	25	**1**	0	26	1	0	0	0	1	46
Total Volume	16	54	5	2	77	0	0	57	1	58	0	150	1	0	151	2	0	0	0	2	288
% App. Total	20.8	70.1	6.5	2.6		0	0	98.3	1.7		0	99.3	0.7	0		100	0	0	0		
PHF	.800	.794	.417	.250	.802	.000	.000	.570	.250	.580	.000	.852	.250	.000	.858	.500	.000	.000	.000	.500	.774



APPENDIX B

LEVEL OF SERVICE CRITERIA

LEVEL OF SERVICE (LOS) CRITERIA

VEHICULAR LEVEL OF SERVICE FOR SIGNALIZED INTERSECTIONS (HCM 6th Edition)

Level of service for vehicles at signalized intersections is directly related to delay values and is assigned on that basis. Level of Service is a measure of the acceptability of delay values to motorists at a given intersection. The criteria are given in the table below.

Level-of Service Criteria for Signalized Intersections

Level of Service	Control Delay per Vehicle (sec./veh.)
A	< 10.0
B	>10.0 and ≤ 20.0
C	>20.0 and ≤ 35.0
D	>35.0 and ≤ 55.0
E	>55.0 and ≤ 80.0
F	> 80.0

Delay is a complex measure, and is dependent on a number of variables, including the quality of progression, the cycle length, the green ratio, and the v/c ratio for the lane group or approach in question.

VEHICULAR LEVEL OF SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS (HCM 6th Edition)

The level of service criteria for vehicles at unsignalized intersections is defined as the average control delay, in seconds per vehicle.

LOS delay threshold values are lower for two-way stop-controlled (TWSC) and all-way stop-controlled (AWSC) intersections than those of signalized intersections. This is because more vehicles pass through signalized intersections, and therefore, drivers expect and tolerate greater delays. While the criteria for level of service for TWSC and AWSC intersections are the same, procedures to calculate the average total delay may differ.

Level of Service Criteria for Two-Way Stop-Controlled Intersections

Level of Service	Average Control Delay (sec/veh)
A	≤ 10
B	>10 and ≤15
C	>15 and ≤25
D	>25 and ≤35
E	>35 and ≤50
F	> 50

APPENDIX C

LOS WORKSHEETS

APPENDIX C

LOS WORKSHEETS

Existing 2021 Conditions

Intersection	
Int Delay, s/veh	2.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	1	0	19	2	67	0	49	85	4
Future Vol, veh/h	4	0	1	1	0	19	2	67	0	49	85	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	1	1	0	21	2	73	0	53	92	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	288	277	94	278	279	73	96	0	0	73	0	0
Stage 1	200	200	-	77	77	-	-	-	-	-	-	-
Stage 2	88	77	-	201	202	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	664	631	963	674	629	989	1498	-	-	1527	-	-
Stage 1	802	736	-	932	831	-	-	-	-	-	-	-
Stage 2	920	831	-	801	734	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	631	607	963	654	605	989	1498	-	-	1527	-	-
Mov Cap-2 Maneuver	631	607	-	654	605	-	-	-	-	-	-	-
Stage 1	801	709	-	931	830	-	-	-	-	-	-	-
Stage 2	900	830	-	770	707	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.4	8.8	0.2	2.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1498	-	-	678	964	1527	-	-
HCM Lane V/C Ratio	0.001	-	-	0.008	0.023	0.035	-	-
HCM Control Delay (s)	7.4	0	-	10.4	8.8	7.4	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	1.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	5	2	55	83	6
Future Vol, veh/h	14	5	2	55	83	6
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	15	5	2	60	90	7

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	158	94	97	0	-	0
Stage 1	94	-	-	-	-	-
Stage 2	64	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	833	963	1496	-	-	-
Stage 1	930	-	-	-	-	-
Stage 2	959	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	832	963	1496	-	-	-
Mov Cap-2 Maneuver	832	-	-	-	-	-
Stage 1	929	-	-	-	-	-
Stage 2	959	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.3	0.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1496	-	863	-	-
HCM Lane V/C Ratio	0.001	-	0.024	-	-
HCM Control Delay (s)	7.4	0	9.3	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	57	0	150	1	20	66	6
Future Vol, veh/h	2	0	0	0	0	57	0	150	1	20	66	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	62	0	163	1	22	72	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	315	284	76	284	287	164	79	0	0	164	0	0
Stage 1	120	120	-	164	164	-	-	-	-	-	-	-
Stage 2	195	164	-	120	123	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	638	625	985	668	623	881	1519	-	-	1414	-	-
Stage 1	884	796	-	838	762	-	-	-	-	-	-	-
Stage 2	807	762	-	884	794	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	586	615	985	660	613	881	1519	-	-	1414	-	-
Mov Cap-2 Maneuver	586	615	-	660	613	-	-	-	-	-	-	-
Stage 1	884	783	-	838	762	-	-	-	-	-	-	-
Stage 2	750	762	-	870	781	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.2	9.4	0	1.6
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1519	-	-	586	881	1414	-	-
HCM Lane V/C Ratio	-	-	-	0.004	0.07	0.015	-	-
HCM Control Delay (s)	0	-	-	11.2	9.4	7.6	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	7	2	2	145	51	15
Future Vol, veh/h	7	2	2	145	51	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	8	2	2	158	55	16

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	225	63	71	0	-	0
Stage 1	63	-	-	-	-	-
Stage 2	162	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	763	1002	1529	-	-	-
Stage 1	960	-	-	-	-	-
Stage 2	867	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	762	1002	1529	-	-	-
Mov Cap-2 Maneuver	762	-	-	-	-	-
Stage 1	959	-	-	-	-	-
Stage 2	867	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.5	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1529	-	805	-	-
HCM Lane V/C Ratio	0.001	-	0.012	-	-
HCM Control Delay (s)	7.4	0	9.5	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0	-	-

APPENDIX C

LOS WORKSHEETS

Base Year 2042 Conditions

Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	4	0	1	1	0	19	2	96	0	49	111	4
Future Vol, veh/h	4	0	1	1	0	19	2	96	0	49	111	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	1	1	0	21	2	104	0	53	121	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	348	337	123	338	339	104	125	0	0	104	0	0
Stage 1	229	229	-	108	108	-	-	-	-	-	-	-
Stage 2	119	108	-	230	231	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	607	584	928	616	582	951	1462	-	-	1488	-	-
Stage 1	774	715	-	897	806	-	-	-	-	-	-	-
Stage 2	885	806	-	773	713	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	576	561	928	597	559	951	1462	-	-	1488	-	-
Mov Cap-2 Maneuver	576	561	-	597	559	-	-	-	-	-	-	-
Stage 1	773	688	-	896	805	-	-	-	-	-	-	-
Stage 2	865	805	-	743	686	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	10.8	9	0.2	2.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1462	-	-	623	924	1488	-	-
HCM Lane V/C Ratio	0.001	-	-	0.009	0.024	0.036	-	-
HCM Control Delay (s)	7.5	0	-	10.8	9	7.5	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	2.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	32	19	7	66	102	13
Future Vol, veh/h	32	19	7	66	102	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	35	21	8	72	111	14

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	206	118	125	0	-	0
Stage 1	118	-	-	-	-	-
Stage 2	88	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	782	934	1462	-	-	-
Stage 1	907	-	-	-	-	-
Stage 2	935	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	777	934	1462	-	-	-
Mov Cap-2 Maneuver	777	-	-	-	-	-
Stage 1	902	-	-	-	-	-
Stage 2	935	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	9.7	0.7	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1462	-	829	-	-
HCM Lane V/C Ratio	0.005	-	0.067	-	-
HCM Control Delay (s)	7.5	0	9.7	-	-
HCM Lane LOS	A	A	A	-	-
HCM 95th %tile Q(veh)	0	-	0.2	-	-

Intersection	
Int Delay, s/veh	1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	0	0	0	0	57	0	191	1	20	101	6
Future Vol, veh/h	2	0	0	0	0	57	0	191	1	20	101	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	2	0	0	0	0	62	0	208	1	22	110	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	398	367	114	367	370	209	117	0	0	209	0	0
Stage 1	158	158	-	209	209	-	-	-	-	-	-	-
Stage 2	240	209	-	158	161	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	562	562	939	589	560	831	1471	-	-	1362	-	-
Stage 1	844	767	-	793	729	-	-	-	-	-	-	-
Stage 2	763	729	-	844	765	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	513	552	939	581	550	831	1471	-	-	1362	-	-
Mov Cap-2 Maneuver	513	552	-	581	550	-	-	-	-	-	-	-
Stage 1	844	754	-	793	729	-	-	-	-	-	-	-
Stage 2	706	729	-	830	752	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12	9.7	0	1.2
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1471	-	-	513	831	1362	-	-
HCM Lane V/C Ratio	-	-	-	0.004	0.075	0.016	-	-
HCM Control Delay (s)	0	-	-	12	9.7	7.7	0	-
HCM Lane LOS	A	-	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0	0.2	0	-	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	19	11	18	174	65	36
Future Vol, veh/h	19	11	18	174	65	36
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	21	12	20	189	71	39

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	320	91	110	0	-	0
Stage 1	91	-	-	-	-	-
Stage 2	229	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	673	967	1480	-	-	-
Stage 1	933	-	-	-	-	-
Stage 2	809	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	663	967	1480	-	-	-
Mov Cap-2 Maneuver	663	-	-	-	-	-
Stage 1	919	-	-	-	-	-
Stage 2	809	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10	0.7	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1480	-	749	-	-
HCM Lane V/C Ratio	0.013	-	0.044	-	-
HCM Control Delay (s)	7.5	0	10	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

APPENDIX C

LOS WORKSHEETS

Future Year 2042 Conditions

Intersection	
Int Delay, s/veh	1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	0	2	1	0	19	3	181	0	49	221	14
Future Vol, veh/h	13	0	2	1	0	19	3	181	0	49	221	14
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	14	0	2	1	0	21	3	197	0	53	240	15

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	568	557	248	558	564	197	255	0	0	197	0	0
Stage 1	354	354	-	203	203	-	-	-	-	-	-	-
Stage 2	214	203	-	355	361	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	434	439	791	440	435	844	1310	-	-	1376	-	-
Stage 1	663	630	-	799	733	-	-	-	-	-	-	-
Stage 2	788	733	-	662	626	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	408	418	791	423	414	844	1310	-	-	1376	-	-
Mov Cap-2 Maneuver	408	418	-	423	414	-	-	-	-	-	-	-
Stage 1	661	602	-	797	731	-	-	-	-	-	-	-
Stage 2	766	731	-	630	598	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.6	9.6	0.1	1.3
HCM LOS	B	A		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1310	-	-	436	804	1376	-	-
HCM Lane V/C Ratio	0.002	-	-	0.037	0.027	0.039	-	-
HCM Control Delay (s)	7.8	0	-	13.6	9.6	7.7	0	-
HCM Lane LOS	A	A	-	B	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0.1	-	-

Intersection	
Int Delay, s/veh	3.9

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	117	26	9	67	185	42
Future Vol, veh/h	117	26	9	67	185	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	127	28	10	73	201	46

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	317	224	247	0	-	0
Stage 1	224	-	-	-	-	-
Stage 2	93	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	676	815	1319	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	931	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	671	815	1319	-	-	-
Mov Cap-2 Maneuver	671	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	931	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	11.7	0.9	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1319	-	693	-	-
HCM Lane V/C Ratio	0.007	-	0.224	-	-
HCM Control Delay (s)	7.8	0	11.7	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.9	-	-

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	6	76	129	82
Future Vol, veh/h	0	0	6	76	129	82
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	7	83	140	89

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	282	185	229	0	-	0
Stage 1	185	-	-	-	-	-
Stage 2	97	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	708	857	1339	-	-	-
Stage 1	847	-	-	-	-	-
Stage 2	927	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	704	857	1339	-	-	-
Mov Cap-2 Maneuver	704	-	-	-	-	-
Stage 1	843	-	-	-	-	-
Stage 2	927	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.6	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1339	-	-	-	-
HCM Lane V/C Ratio	0.005	-	-	-	-
HCM Control Delay (s)	7.7	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	4.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	51	0	18	20	13	0	0	81	10	0	0
Future Vol, veh/h	0	51	0	18	20	13	0	0	81	10	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	55	0	20	22	14	0	0	88	11	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	36	0	0	55	0	0	124	131	55	168	124	29
Stage 1	-	-	-	-	-	-	55	55	-	69	69	-
Stage 2	-	-	-	-	-	-	69	76	-	99	55	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1575	-	-	1550	-	-	850	760	1012	796	766	1046
Stage 1	-	-	-	-	-	-	957	849	-	941	837	-
Stage 2	-	-	-	-	-	-	941	832	-	907	849	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1575	-	-	1550	-	-	842	750	1012	720	756	1046
Mov Cap-2 Maneuver	-	-	-	-	-	-	842	750	-	720	756	-
Stage 1	-	-	-	-	-	-	957	849	-	941	826	-
Stage 2	-	-	-	-	-	-	929	821	-	828	849	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	2.6	8.9	10.1
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1012	1575	-	-	1550	-	-	720
HCM Lane V/C Ratio	0.087	-	-	-	0.013	-	-	0.015
HCM Control Delay (s)	8.9	0	-	-	7.4	0	-	10.1
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0	-	-	0	-	-	0

Intersection	
Int Delay, s/veh	1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	29	0	2	0	0	57	2	330	1	20	248	36
Future Vol, veh/h	29	0	2	0	0	57	2	330	1	20	248	36
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	0	2	0	0	62	2	359	1	22	270	39

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	729	698	290	699	717	360	309	0	0	360	0	0
Stage 1	334	334	-	364	364	-	-	-	-	-	-	-
Stage 2	395	364	-	335	353	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	338	364	749	354	355	684	1252	-	-	1199	-	-
Stage 1	680	643	-	655	624	-	-	-	-	-	-	-
Stage 2	630	624	-	679	631	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	302	355	749	347	346	684	1252	-	-	1199	-	-
Mov Cap-2 Maneuver	302	355	-	347	346	-	-	-	-	-	-	-
Stage 1	679	629	-	654	623	-	-	-	-	-	-	-
Stage 2	572	623	-	662	617	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.8	10.8	0	0.5
HCM LOS	C	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	314	684	1199	-	-
HCM Lane V/C Ratio	0.002	-	-	0.107	0.091	0.018	-	-
HCM Control Delay (s)	7.9	0	-	17.8	10.8	8.1	0	-
HCM Lane LOS	A	A	-	C	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.3	0.1	-	-

Intersection	
Int Delay, s/veh	4.4

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	158	22	27	176	94	157
Future Vol, veh/h	158	22	27	176	94	157
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	172	24	29	191	102	171

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	437	188	273	0	-	0
Stage 1	188	-	-	-	-	-
Stage 2	249	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	577	854	1290	-	-	-
Stage 1	844	-	-	-	-	-
Stage 2	792	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	563	854	1290	-	-	-
Mov Cap-2 Maneuver	563	-	-	-	-	-
Stage 1	823	-	-	-	-	-
Stage 2	792	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1290	-	587	-	-
HCM Lane V/C Ratio	0.023	-	0.333	-	-
HCM Control Delay (s)	7.9	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	1.5	-	-

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	0	0	2	205	89	26
Future Vol, veh/h	0	0	2	205	89	26
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
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	0	0	2	223	97	28

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	338	111	125	0	-	0
Stage 1	111	-	-	-	-	-
Stage 2	227	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	658	942	1462	-	-	-
Stage 1	914	-	-	-	-	-
Stage 2	811	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	657	942	1462	-	-	-
Mov Cap-2 Maneuver	657	-	-	-	-	-
Stage 1	912	-	-	-	-	-
Stage 2	811	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	0	0.1	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1462	-	-	-	-
HCM Lane V/C Ratio	0.001	-	-	-	-
HCM Control Delay (s)	7.5	-	0	-	-
HCM Lane LOS	A	-	A	-	-
HCM 95th %tile Q(veh)	0	-	-	-	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	30	0	20	54	110	0	0	47	102	0	0
Future Vol, veh/h	0	30	0	20	54	110	0	0	47	102	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	33	0	22	59	120	0	0	51	111	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	179	0	0	33	0	0	196	256	33	222	196	119
Stage 1	-	-	-	-	-	-	33	33	-	163	163	-
Stage 2	-	-	-	-	-	-	163	223	-	59	33	-
Critical Hdwy	4.12	-	-	4.12	-	-	7.12	6.52	6.22	7.12	6.52	6.22
Critical Hdwy Stg 1	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.12	5.52	-	6.12	5.52	-
Follow-up Hdwy	2.218	-	-	2.218	-	-	3.518	4.018	3.318	3.518	4.018	3.318
Pot Cap-1 Maneuver	1397	-	-	1579	-	-	763	648	1041	734	699	933
Stage 1	-	-	-	-	-	-	983	868	-	839	763	-
Stage 2	-	-	-	-	-	-	839	719	-	953	868	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1397	-	-	1579	-	-	754	638	1041	689	688	933
Mov Cap-2 Maneuver	-	-	-	-	-	-	754	638	-	689	688	-
Stage 1	-	-	-	-	-	-	983	868	-	839	751	-
Stage 2	-	-	-	-	-	-	826	707	-	906	868	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	0.8	8.6	11.2
HCM LOS			A	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	1041	1397	-	-	1579	-	-	689
HCM Lane V/C Ratio	0.049	-	-	-	0.014	-	-	0.161
HCM Control Delay (s)	8.6	0	-	-	7.3	0	-	11.2
HCM Lane LOS	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.2	0	-	-	0	-	-	0.6

APPENDIX D

SPECIAL EVENTS AMPHITHEATER ASSESSMENT

Appendix D: Amphitheater Special Events Assessment

Based on the pre-assessment consultation comment letter from HDOT dated February 1, 2022 (Ref DIR 1215, HWY-PS 2.7152), HDOT requested that the TIAR evaluate impacts due to day-to-day operations and special events. The TIAR analyzed the Project based on the anticipated day-to-day operations, generating trips for the 5,000 SF amphitheater as a general Recreational Community Center (ITE 495). KHFLA anticipates that special events at the 200-seat amphitheater will be held primarily on the weekends to avoid peak hours of traffic and allow for greater attendance at events when attendees will not have school or work conflicts.

Appendix D evaluates traffic operations of the Project site during special events at the amphitheater, which will likely occur during off-peak hours.

Special Event Trip Generation

Based on anticipated peak operating times of the healing center, garden area, preschool, K-6 immersion school, and senior day care facility, these land uses are not expected to generate many trips concurrently with special events held at the amphitheater. However, it is anticipated that the food truck area will remain open to customers. Special events are assumed to last at least one (1) hour with all attendees entering the Project site within the hour before the event starting and exiting the site within the hour after the event ending.

To determine anticipated trip generation of the Project site during special events, it was conservatively assumed that the amphitheater would operate at full capacity with 200 attendees. All attendees are assumed to arrive/depart by vehicle with an average vehicle occupancy of 2.5 (based on the Federal Highway Administration (FHWA) publication Managing Travel for Planned Special Events, September 2003). Trips generated by the food truck area were based on rates provided in the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition. Off-site trips to/from the food trucks were conservatively generated based on peak operations of the food truck area. Food truck patrons will likely increase during a special event, however these added food truck patrons will be in the form of pedestrians walking to/from the food trucks and amphitheater site and are already accounted for in the trip generation for the amphitheater special event, so no additional off-site vehicular food truck trips are included.

See Table 1 for the projected trip generation of the Project during special events. Compared to the day-to-day operations of the more critical weekday PM peak hour of traffic evaluated in the TIAR, Project trip generation is expected to be lower overall during special events.

Table 1: Project-Generated Trips during Special Events

Land Use	Quantity	Independent Variable	One Hour Before Event Start			One Hour After Event End		
			Enter	Exit	Total	Enter	Exit	Total
Food Cart Pod (ITE 926) [1]	20	Food Carts	76	76	152	76	76	152
Amphitheater (Special Event) [2]	200	Seats	80	0	80	0	80	80
TOTAL			**156**	**76**	**232**	**76**	**156**	**232**

Notes:
1. Trip generation conservatively based on the peak hour of generator for both time periods.
2. Amphitheater trip generation based on maximum attendance of 200 guests arriving by vehicle with an average vehicle occupancy of 2.5

Special Event Parking

Based on the anticipated trip generation of the amphitheater during special events as shown in Table 1, the proposed 81-stall parking lot located to the west of Kaamana Street should be the primary event parking lot and is expected to have enough capacity to serve the maximum number of vehicles for event attendees only. It is recommended that the drop-off area intended for use by the preschool, K-6 immersion school, and senior day care facility during day-to-day operating conditions remain open during special events to allow for pick-ups/drop-offs of event attendees. Special event parking can also be provided in the parking lot east of Kaamana Street however, event attendees should be directed to park in the west lot if parking is available in order to maintain parking for food truck customers. The Project should also consider overflow lawn/gravel parking at vacant on-site area(s) to supplement the existing paved parking lots. Consideration should be given to providing pedestrian crossing enhancements and/or personnel to direct traffic at the Kaamana Street/Project Access intersection to help facilitate pedestrian crossings between the amphitheater and overflow parking/food truck area.

“No Parking” restrictions along Kula Highway should be enforced during special events, and attendees should be directed via signage or personnel to the appropriate parking lots.

Special Event Circulation

In order to facilitate parking and pick-up/drop-off operations during special events, it is recommended that event attendees be directed, by signage or personnel, to primarily enter the site via the ingress-only Project driveway along Kula Highway. As noted in the TIAR, a right-turn lane along Kula Highway into the ingress-only driveway is recommended to remove right-turn vehicles from through traffic and accommodate any queue spillback onto the highway. Directing event attendees to enter via the ingress-only Project driveway will help to separate event traffic from food truck traffic entering at the Kula Highway/Kaamana Street intersection and provide attendees with a direct route to parking, the pick-up/drop-off area, and overflow parking east of Kaamana Street. If this parking lot west of Kaamana Street gets fully occupied, signage or personnel should redirect traffic to the parking lot east of Kaamana Street and/or future overflow parking as-needed. See Figure 1 for the proposed special event circulation and Figure 2 for the special event trip distribution.

Special Event Operations

As noted in the previous section, it is recommended that event attendees be directed to enter the ingress-only access in order to separate event traffic from food truck traffic. As shown in Figure 2, 74 vehicles are anticipated to enter from the north and six (6) vehicles are anticipated to enter from the south. Conservatively assuming that 50% of the attendees arrive within the 15-minute window prior to the event starting, queues of up to five (5) vehicles entering from the north may form (based on a two-minute arrival period). Given the approximately 70-foot driveway distance between Kula Highway and the first available parking stalls, two (2) to three (3) vehicles can be stored on site if parking maneuvers at the stalls nearest to Kula Highway cause delays, resulting in a maximum of two (2) to three (3) vehicles or a 50 to 75-foot queue in the right-turn lane on Kula Highway. However, queues are generally expected to be contained within the Project parking lot, which provides space for at least 12 vehicles to queue between the drop-off area and Kula Highway.

Kula Highway/Kaamana Street and the new Kaamana Street/Project Access intersection are expected to operate similar to PM peak hour conditions evaluated in the TIAR.

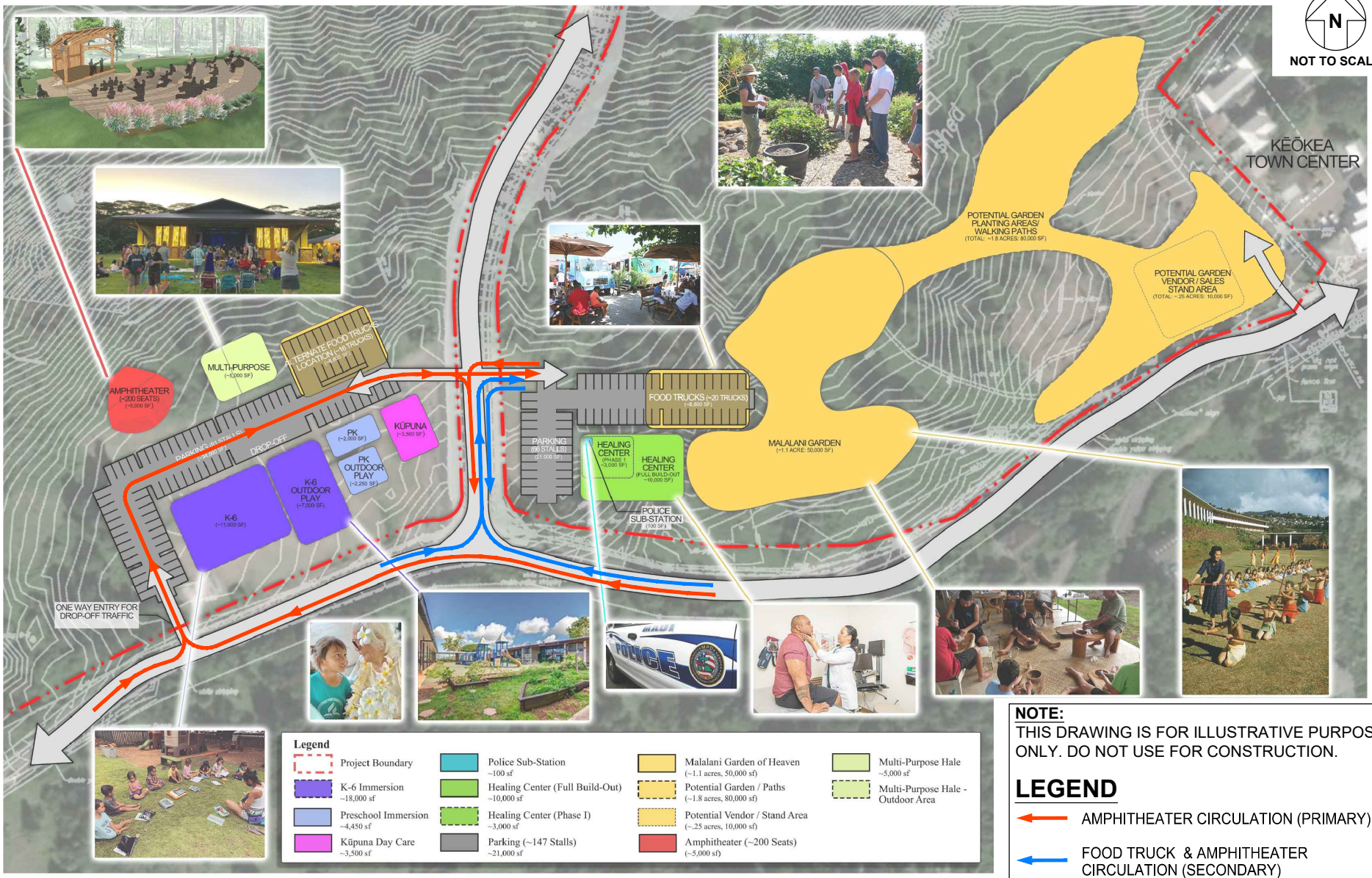
Recommendations and Conclusions

The following are the recommendations and conclusions of the Special Events Assessment:

- Special events are expected to occur during off-peak hours on weekends or weeknights.
- The Project site is anticipated to generate a total of 232 trips in the hour before the event starts and 232 trips in the hour following the end of the event.
- The Project parking lot west of Kaamana Street should be the primary event parking lot and is expected to have enough capacity to serve the maximum number of vehicles for event attendees only.
- The Project parking lot east of Kaamana Street may be used as secondary parking if the parking lot west of Kaamana Street gets filled, but should continue to service food truck customers.
- The Project should consider overflow lawn/gravel parking at vacant on-site area(s) to supplement the existing paved parking lots if these paved lots become fully occupied.
- Consider pedestrian crossing enhancements and/or providing personnel to direct traffic at the Kaamana Street/Project Access intersection to facilitate crossings between the amphitheater and overflow parking/food truck area.
- To facilitate site circulation and operations and minimize impacts to Kula Highway, the following are recommended:
    - Enforce “No Parking” restrictions along Kula Highway.
    - Maintain the pick-up/drop-off area in the parking lot west of Kaamana Street to facilitate special event pick-up and drop-offs.
    - Direct event attendees to enter via the ingress-only Project access on Kula Highway to provide direct access to parking, the pick-up/drop-off area, and overflow parking.
- Maximum queues of two (2) to three (3) vehicles or 50 to 75 feet may form in the right-turn lane along Kula Highway into the ingress-only Project access. However, queues are generally expected to be contained within the Project site.

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors



NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY. DO NOT USE FOR CONSTRUCTION.

LEGEND

- AMPHITHEATER CIRCULATION (PRIMARY)
- FOOD TRUCK & AMPHITHEATER CIRCULATION (SECONDARY)

FIGURE 1

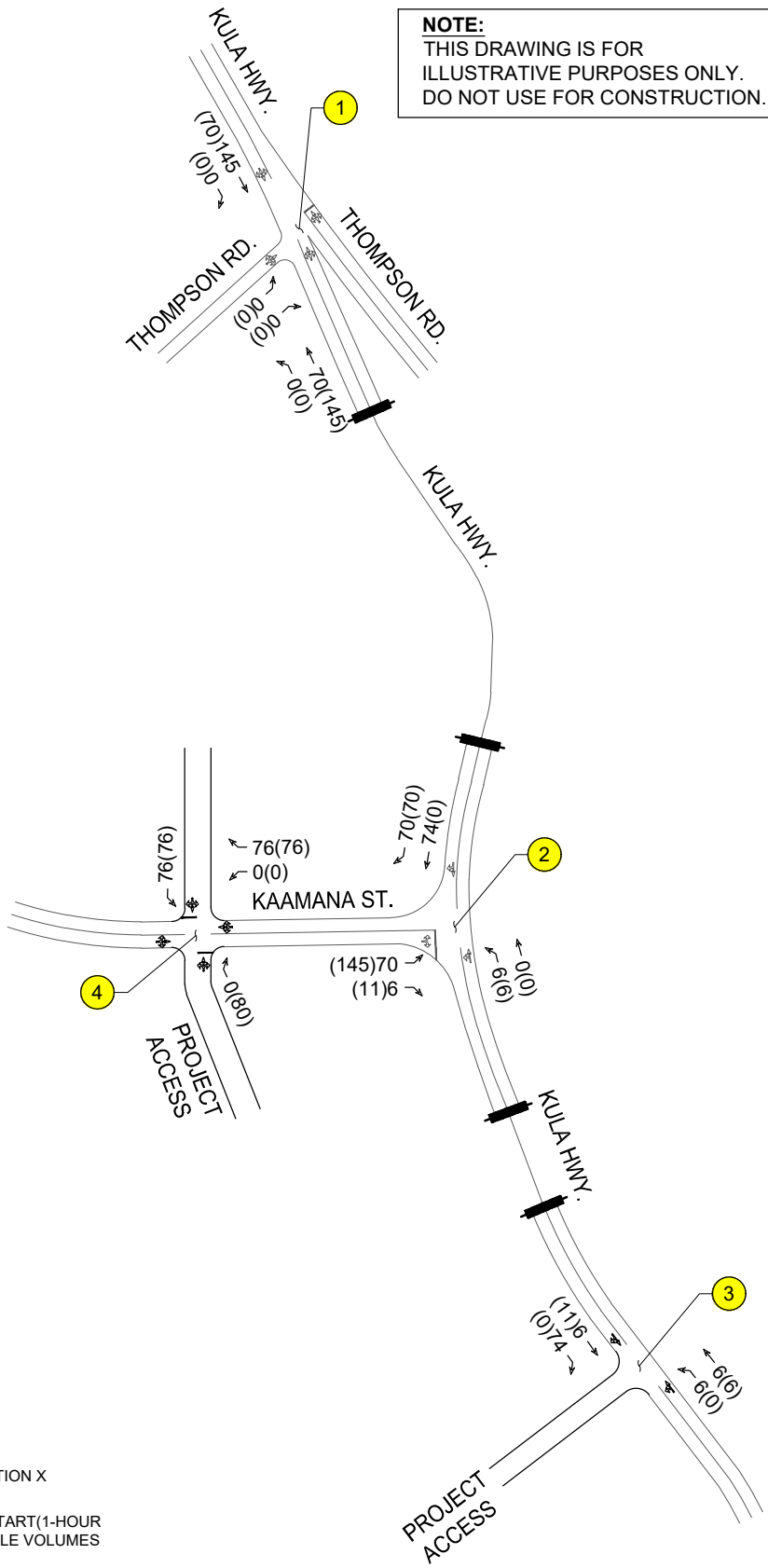
SPECIAL EVENTS SITE CIRCULATION

DHHL KEOKEA FARM LOTS MASTER PLAN

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

NOTE:
THIS DRAWING IS FOR ILLUSTRATIVE PURPOSES ONLY.
DO NOT USE FOR CONSTRUCTION.

N
NOT TO SCALE



LEGEND

X - UNSIGNALIZED INTERSECTION X

##(##) - 1-HOUR BEFORE EVENT START(1-HOUR AFTER EVENT END) VEHICLE VOLUMES

FIGURE 2

SPECIAL EVENTS TRIPS

Appendix H

PRELIMINARY ENGINEERING & DRAINAGE REPORT

PRELIMINARY ENGINEERING AND DRAINAGE REPORT DHHL KEOKEA FARM LOTS MASTER PLAN PROJECT

KULA, MAUI, HAWAII
TMK: (2) 2-2-032:067 and TMK: (2) 2-2-032:068

April 2022

Prepared for:

PBR Hawaii & Associates, Inc.
1001 Bishop Street, Suite 650
Honolulu, Hawaii 96813

Prepared by:

Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Sumner Street, Suite 521
Honolulu, Hawaii 96817-5031
Telephone: (808) 533-3646
Facsimile: (808) 526-1267
E-mail: atahnl@atahawaii.com
Honolulu • Wailuku, Hawaii

PRELIMINARY ENGINEERING AND DRAINAGE REPORT
FOR
DHHL KEOKEA FARM LOTS MASTER PLAN PROJECT

KULA, MAUI, HAWAII

TMK: (2) 2-2-032:067 and TMK: (2) 2-2-032:068

Prepared for:

PBR Hawaii & Associates, Inc.

1001 Bishop Street, Suite 650

Honolulu, Hawaii 96813

Prepared by:

Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors

Honolulu • Wailuku, Hawaii

April 2022

TABLE OF CONTENTS

I. INTRODUCTION…….…….. 1

II. PROPOSED PROJECT…….……. 1-2

A. LOCATION…….…… 1

B. PROJECT DESCRIPTION.…… 1-2

III. EXISTING CONDITIONS……. 2-4

A. TOPOGRAPHY AND SOIL CONDITIONS……. 2-3

B. FLOOD ZONE……. 3

C. INFRASTRUCTURE ……. 3

1. WATER AND SEWER …… 3

2. DRAINAGE …….. 3-4

IV. PROPOSED IMPROVEMENTS…… 4-5

A. GRADING PLAN…....…… 4

B. DRAINAGE PLAN…..…… 4

C. WATER SYSTEM .....……... 4-5

D. SEWER SYSTEM .....…… 5

E. EROSION CONTROL PLAN……. 5

V. CONCLUSION……..…… 6

VI. REFERENCES……..…… 7

EXHIBITS

1. LOCATION AND VICINITY MAP
2. PRELIMINARY SITE PLAN AND UTILITY PLAN
3. SOILS MAP
4. FLOOD ZONE MAP: TMK (2) 2-2-032:067
5. FLOOD ZONE MAP: TMK (2) 2-2-032:068
6. DRAINAGE AREA MAP: PRE-DEVELOPMENT CONDITIONS
7. DRAINAGE AREA MAP: POST-DEVELOPMENT CONDITIONS

APPENDICES

A. PRELIMINARY HYDROLOGY CALCULATIONS
B. PRELIMINARY WATER DEMAND CALCULATIONS
C. PRELIMINARY WASTEWATER CALCULATIONS

PRELIMINARY ENGINEERING AND DRAINAGE REPORT FOR DHHL KEOKEA FARM LOTS MASTER PLAN PROJECT

I. INTRODUCTION

The purpose of this report is to provide an overview of the preliminary civil engineering design in support of the Department of Hawaiian Homelands (DHHL) Keokea Farm Lots Master Plan hereinafter referred to as the "Project". This report evaluates existing site conditions and presents proposed site grading, drainage, water, and wastewater improvements.

II. PROPOSED PROJECT

A. LOCATION

The Project is located in Keokea, Maui, Hawaii and includes portions of Tax Map Keys (TMK) (2) 2-2-032:067 and (2) 2-2-032:068, both of which are owned by DHHL. The project site is bordered by Kula Highway to the south, DHHL residential lots to the north, and is split by Ka‘amana Street, with TMK (2) 2-2-032:067 to the west and (2) 2-2-032:068 to the east. The total area of the two parcels is approximately 70 acres. Refer to Exhibit 1 for the Location and Vicinity Map.

B. PROJECT DESCRIPTION

The Project is anticipated to be done in phases; however, this report will evaluate the full build-out final condition.

Improvements on TMK (2) 2-2-032:067 include a K-6 immersion school with outdoor play area, a pre-school immersion school with outdoor play area, a senior day care facility, a multi-purpose building with a certified commerical kitchen, an amphitheater with approximately 200 seats and vehicle parking. The parking and access improvements include a one-way entry from Kula Highway, 81 parking stalls, curbside drop-off/pick-up, and a two-way entry from Ka‘amana Street. The K-6 school enrollment is estmated at 140 students and the pre-school

enrollment is estimated at 30 students. The senior day care facility is projected to accommodate a maximum of 50 people.

Improvements on TMK (2) 2-2-032:068 include a police sub-station, a cultural learning/healing center, native plant garden with walking paths, and vehicle parking with an area for food truck vendors. The parking and access improvements include 66 parking stalls, and a two-way entry point from Ka‘amana Street.

Site work will include excavation and embankment of site, construction of roadways, parking, walkways, and installation of service utilities including water, drainage, wastewater and other electrical utilities. Refer to Exhibit 2 for Preliminary Site and Utility Plan. Preliminary layout is based on information provided in the Keokea Master Plan 10 year, dated January 2016 and updated based on the DHHL Kēōkea Site Analysis Draft Conceptual Master Plan by PBR Hawaii and Associates, Inc.

III. EXISTING CONDITIONS

A. TOPOGRAPHY AND SOIL CONDITIONS

A majority of the ground surface of the site is currently covered by undeveloped forested area, and generally slopes from southeast to northwest. Onsite elevations range from 2900 to 2800 feet above mean sea level (MSL).

The soil classification found on the project site is predominately classified as Kula Rock outcrop complex, 12 to 40 percent slopes (KxbE) and accounts for 65 percent of the project area. Soil KxbE is a part of the Kula series and is characterized by well-drained soils with medium runoff and moderate erosion hazard. The Kula soil series is classified under hydrologic soil group “A”.

Kaimu extremely stony peat, 7 to 25 percent slopes (KCXD), accounts for 34.5 percent of the project area. Soil KCXD is part of the Kaimu series and is characterized by well-drained soils having very slow runoff and slight erosion hazard. The Kaimu soil series is classified under hydrologic soil group “A”.

The remaining project area is classified as Keahua cobbly silt clay loam, 15 to 25 percent slopes (KnaD). Soil KnaD is a part of the Keahua series and is characterized by well-drained soils having medium runoff and moderate erosion hazard. The Keahua soil series is classified under hydrologic soil group “C”.

Soils classifications and descriptions are taken from the United States Department of Agriculture Soil Conservation Services Publication entitled, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawai‘i, dated 1972 and the United States Department of Agriculture (USDA) Web Soil Survey. Refer to Exhibit from 3 for Soils Map.

B. FLOOD ZONE

The proposed project site has a flood zone classification of Zone X. Zone X is characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2% annual chance floodplain. Flood zone classification is based on the Flood Insurance Rate Map (FIRM) number 1500030685E, effective September 25, 2009, as prepared by the Federal Emergency Management Agency. Refer to Exhibit 4 and 5 for Flood Zone Map.

C. INFRASTRUCTURE

1. WATER AND SEWER

There is no existing sewer or water infrastructure servicing the site. There is an existing 8-inch high pressure waterline within Ka‘amana Street to the north of the site, the source of which is a 0.25 million gallon concrete reservoir that was constructed as part of the Keokea-Waiohuli Development – Phase I, based on available record drawings. The reservoir is owned and was developed by DHHL in 2009.

2. DRAINAGE

Stormwater runoff generated from the project site sheet-flows towards adjacent properties to the north. There is no existing underground drainage system nor any retention system onsite. Drainage area E-1 accounts for runoff generated by TMK (2) 2-2-032:067 and E-2 accounts for runoff from TMK (2) 2-2-032:068.

Existing onsite runoff is estimated using the Rational Method since the project area is less than 100 acres. The existing runoff flow rates for a 50-year, 1 hour design storm, are approximately 32.4 cubic feet per second (cfs) and 16.6 cfs for drainage areas E-1 and E-2, respectively. Total existing runoff flow is 49.0

cfs. Refer to Appendix A for Preliminary Hydrology Calculations and Exhibit 6 for Drainage Area Map: Pre-Development Conditions.

IV. PROPOSED IMPROVEMENTS

A. GRADING PLAN

The Project will require excavation and/or embankment for the construction of parking areas and proposed building pads, and attempts will be made to balance "cuts" and "fills" to the best extent feasible in order to accommodate drainage and service utilities, while minimizing the import and/or export of earthwork materials.

B. DRAINAGE PLAN

Under the proposed design, the existing flow pattern and size of the drainage areas will remain the same. Drainage area P-1 accounts for runoff generated by TMK (2) 2-2-032:067 and P-2 accounts for runoff from TMK (2) 2-2-032:068.

Proposed runoff flow rates for a 50-year, 1 hour design storm, are approximately 38.5 cfs and 18.8 cfs for drainage areas P-1 and P-2, respectively. The proposed total runoff is 57.3 cfs. Refer to Appendix A for Preliminary Hydrology Calculations and Exhibit 7 for Drainage Area Map: Post-Development Conditions.

The Maui County Department of Public Works and Environmental Management Drainage Standards requires retention of the increase in stormwater runoff between the post-development flows and pre-development flows. The Project post-development stormwater runoff flow is 8.3 cfs greater than pre-development conditions, therefore, a stormwater retention system is required. To retain the difference, TMK (2) 2-2-032:067 and TMK (2) 2-2-032:068 will each require a retention basin. The retention basins may be sized according to a larger design storm than required, based on land availability. See Exhibit 2 for proposed location and schematic size of each retention basin.

C. WATER SYSTEM

Providing water service to the project site requires extending the existing Ka‘amana Street 8-inch water main by approximately 1000 feet from the north

and will require installation of a new water meter and backflow preventer for each parcel. TMK (2) 2-2-032:067 will require a 2-inch water meter and TMK (2) 2-2-032:068 will require a 1-inch water meter. The sizes of the water meters are determined by using the anticipated plumbing fixture units, estimated by using building descriptions in the master plan. Refer to Appendix B for Preliminary Water Demand Calculations.

An inquiry to the Department of Water Supply for water availability and reservation requirements was made and is pending a response.

D. SEWER SYSTEM

The Project will require the installation of a septic tank and treatment bed systems for each parcel to provide individual onsite wastewater treatment. The proposed septic tank system for TMK (2) 2-2-032:067 should be designed to handle 8,700 gallons per day (gpd) and the septic tank system for TMK (2) 2-2-032:068, should be to handle 3,060 gpd. These flows represent the approximate wastewater demand at the end of the fifth phase and are estimated using information provided in the master plan as well as, Appendix D, Table 1 of Individual Wastewater Standards. Refer to Appendix C for Preliminary Wastewater Demand Calculations and Exhibit 2 for proposed location and schematic size of the new septic tank and treatment bed systems.

E. EROSION CONTROL PLAN

Temporary erosion control measures are required during construction to minimize soil loss and erosion hazards. Best Management Practices (BMPs) include silt fences, dust fences, stabilized construction entrances, truck wash-down areas, and filter socks. Periodic water spraying of loose soils will be implemented to minimize air-borne dirt particles from reaching adjacent properties.

Regular inspection and maintenance of the erosion control BMPs must be conducted during construction. Monitoring of the BMPs during construction is the responsibility of the selected contractor with general oversight by the owner or the owner's designated representative.

V. CONCLUSION

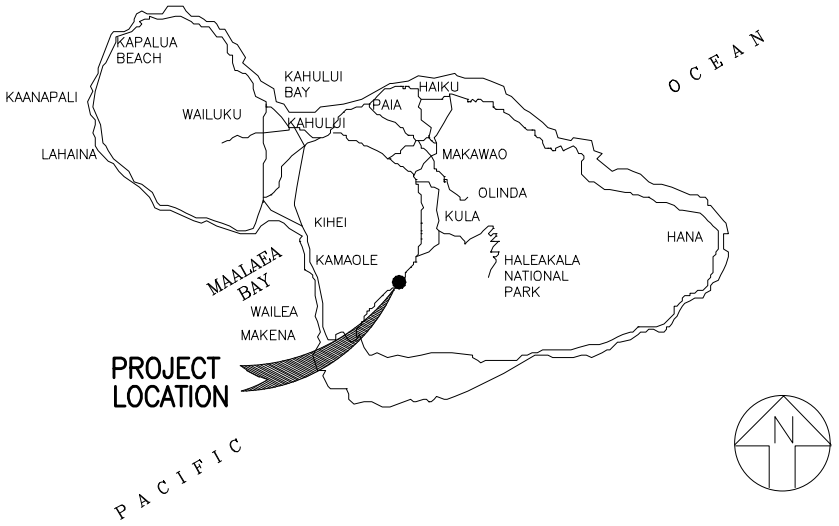
The project will comply with the Maui County's "Rules for the Design of Storm Water Treatment Best Management Practices". In accordance with the rules, runoff mitigation and treatment are required to maintain water quality. Temporary erosion controls are required to minimize pollution during and after construction.

The proposed improvements for this project will be designed in accordance with the applicable rules and regulations of the County of Maui. Based on the preceding information, the project is expected to have no adverse effects on existing facilities or the surrounding environment.

VI. REFERENCES

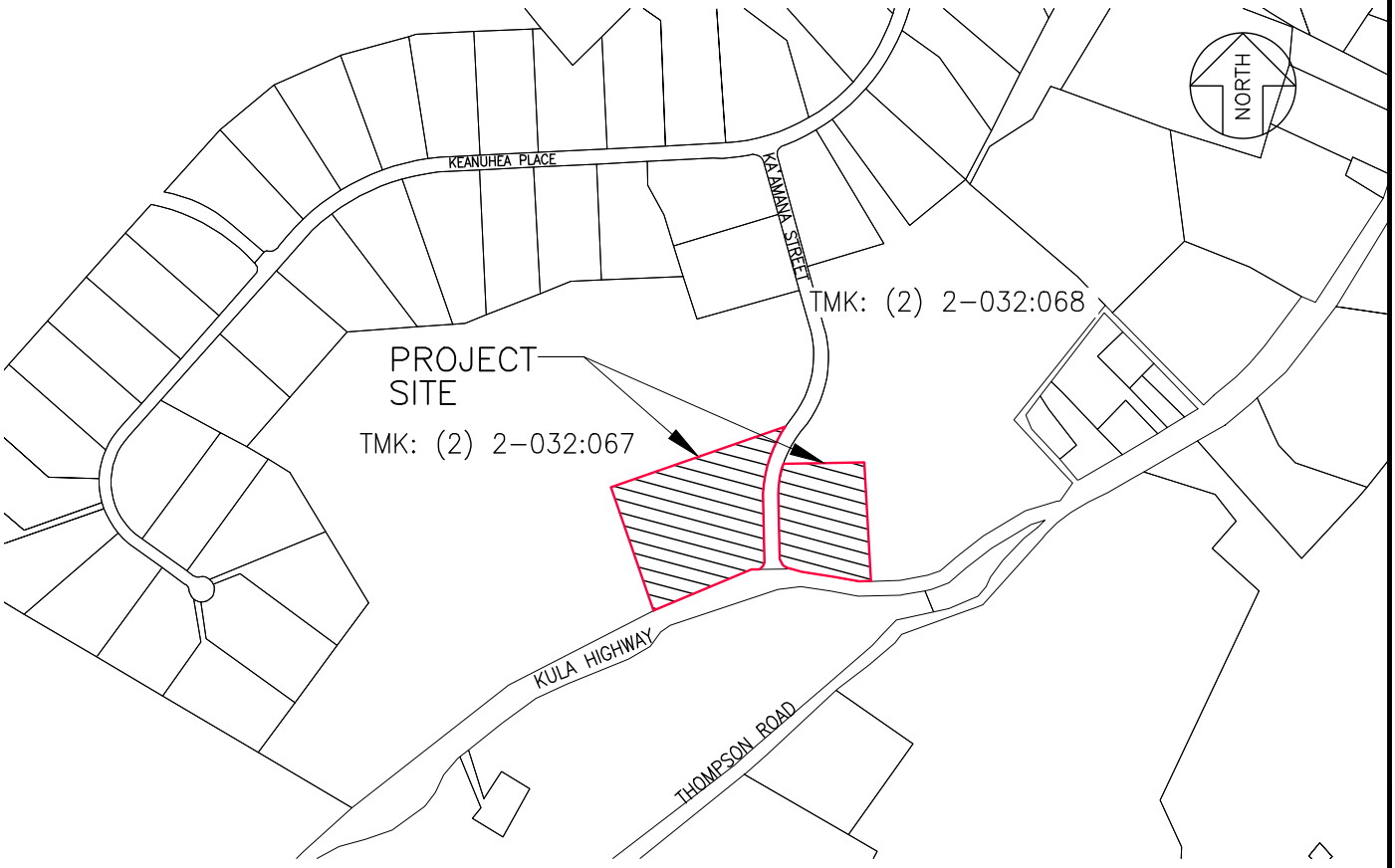
1. Department of Hawaiian Home Lands, *Keokea Master Plan 10 year,* January 2016.
2. DHHL Kēōkea Site Analysis Draft Conceptual Master Plan by PBR Hawaii and Associates, Inc. Received via email on 11/08/2021.
3. Department of Public Works & Waste Management, County of Maui, Chap.4, *Rules for the Design of Storm Drainage Facilities in the County of Maui*, November 1995.
4. Department of Public Works & Waste Management, County of Maui. (November 9, 2012). *Rules for the Design of Storm Water Treatment Best Management Practices*, Title MC-15, Subtitle 01, Chapter 111.
5. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/. Accessed 01/19/2022.
6. USDA, Soil Conservation Service in Cooperation with the University of Hawaiʻi Agricultural Experiment Station. (August 1972). *Soil Survey of Island of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaiʻi*.
7. Federal Emergency Management Agency. (September 25, 2009). *Flood and Insurance Rate Map, Maui County, Hawaiʻi.* Map Number 1500030685E.
8. County of Maui, Wastewater Reclamation Division, Wastewater Flow Standards, February 2, 2006.
9. National Weather Service Staff, National Weather Service, National Oceanic and Atmospheric Administration. *Precipitation Frequency Data Server*. Available online at http://hdsc.nws.noaa.gov/hdsc/pfds/hi/hi_pfds.html, accessed January 19, 2022.

EXHIBITS



ISLAND OF MAUI

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

PRELIMINARY ENGINEERING AND DRAINAGE REPORT

DHHL KEOKEA FARM LOTS

MASTER PLAN PROJECT

TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068

KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

LOCATION AND VICINITY MAP

EXHIBIT

1

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH - 1 VICINITY AND LOCATION MAP.dwg; January 27, 2022

TMK: (2) 2-032:067

TMK: (2) 2-032:068

PROPOSED 8" WATERLINE (CONNECTS TO EXISTING 8" WATER MAIN TO THE NORTH)

TRUE NORTH
SCALE: 1"=100'

PROPOSED SEPTIC TANK/TREATMENT BED AREA

PROPOSED SEWER LINE

AMPHITHEATER STAGE AND SEATING

MULTIPURPOSE BLDG.

PARKING LOT

PROPOSED STORMWATER RETENTION BASIN

PROPOSED 1/2" WATER LINE

PROPOSED STORMWATER RETENTION BASIN

PROPOSED SEPTIC TANK/TREATMENT BED AREA

POTENTIAL GARDEN AND PLANTING AREA

EXISTING NURSERY

MALALANI GARDEN

PARKING LOT

KA'AMANA STREET

PROPOSED SEWER LINE

PARKING LOT

K-6 OUTDOOR PLAY

PRESCHOOL OUTDOOR PLAY

EXISTING PARKING/ MARKETPLACE AREA

PRESCHOOL IMMERSION

K-6 IMMERSION

SENIOR DAY CARE

PROPOSED 1-1/2" WATER LINE

KULA HIGHWAY

PARKING LOT

PARKING LOT

POTENTIAL GARDEN AND VENDOR/SALES STAND AREA

HEALING CENTER AND POLICE SUB-STATION

LEGEND:

- PROPOSED 1-1/2 INCH WATER LINE
- PROPOSED 1/2 INCH WATER LINE
- PROPOSED 8 INCH WATER LINE
- PROPOSED SEWER LINE

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

PRELIMINARY SITE AND UTILITY PLAN

EXHIBIT
2

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH - 2 PRELIMINARY SITE AND UTILITY PLAN.dwg; March 25, 2022

NORTH

NOT TO SCALE

KCXD - KAIMU EXTREMELY STONY PEAT, 7 TO 25 PERCENT SLOPES, HSG A

KnaD - KEAHUA CLOBBY SILTY CLAY LOAM, 15 TO 25 PERCENT SLOPES, HSG C

KxbE - KULA-ROCK OUTCROP COMPLEX, 12 TO 40 PERCENT SLOPES, MLRA 160, HSG A

LEGEND:

SOIL BOUNDARY

TMK BOUNDARY

0 1 2

LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

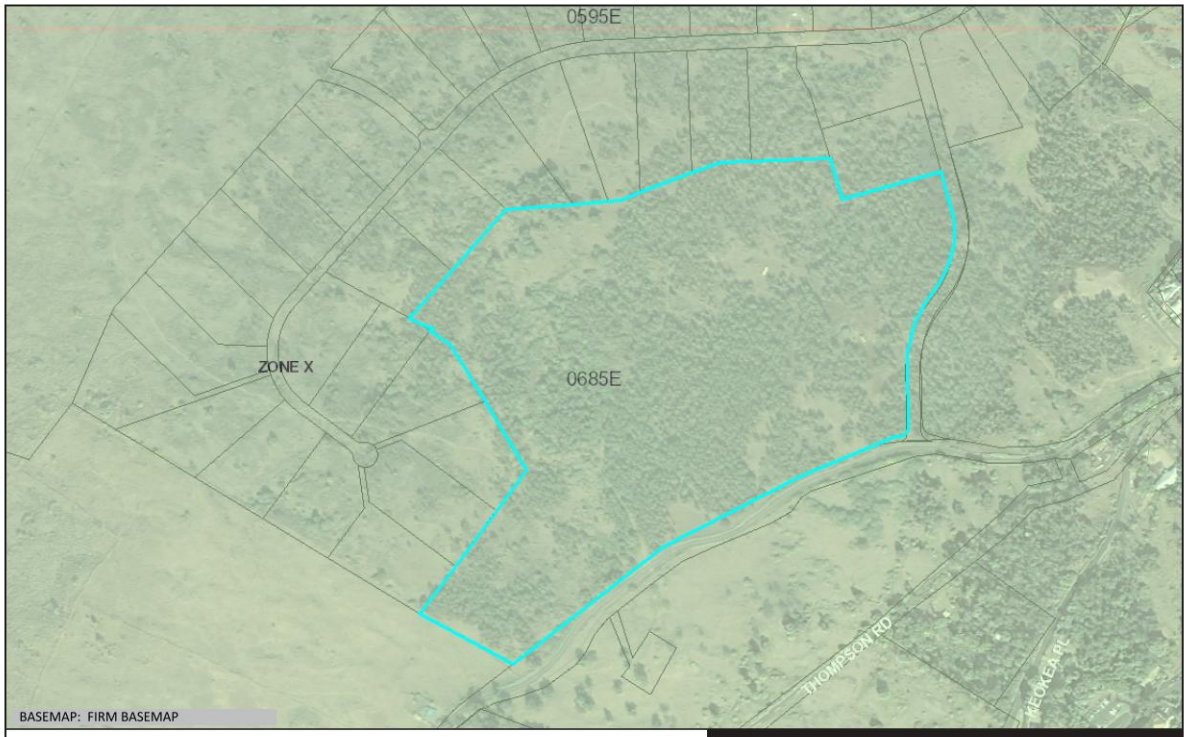
PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

SOILS MAP

EXHIBIT
3

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH - 3 SOILS MAP.dwg; January 26, 2022



Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	MAUI
TMK NO:	(2) 2-2-032:067
WATERSHED:	HAPAPA; WAILEA
PARCEL ADDRESS:	ADDRESS NOT DETERMINED KULA, HI 96790

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 04, 2015
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	1500030685E
PANEL EFFECTIVE DATE:	SEPTEMBER 25, 2009

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 400 800 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

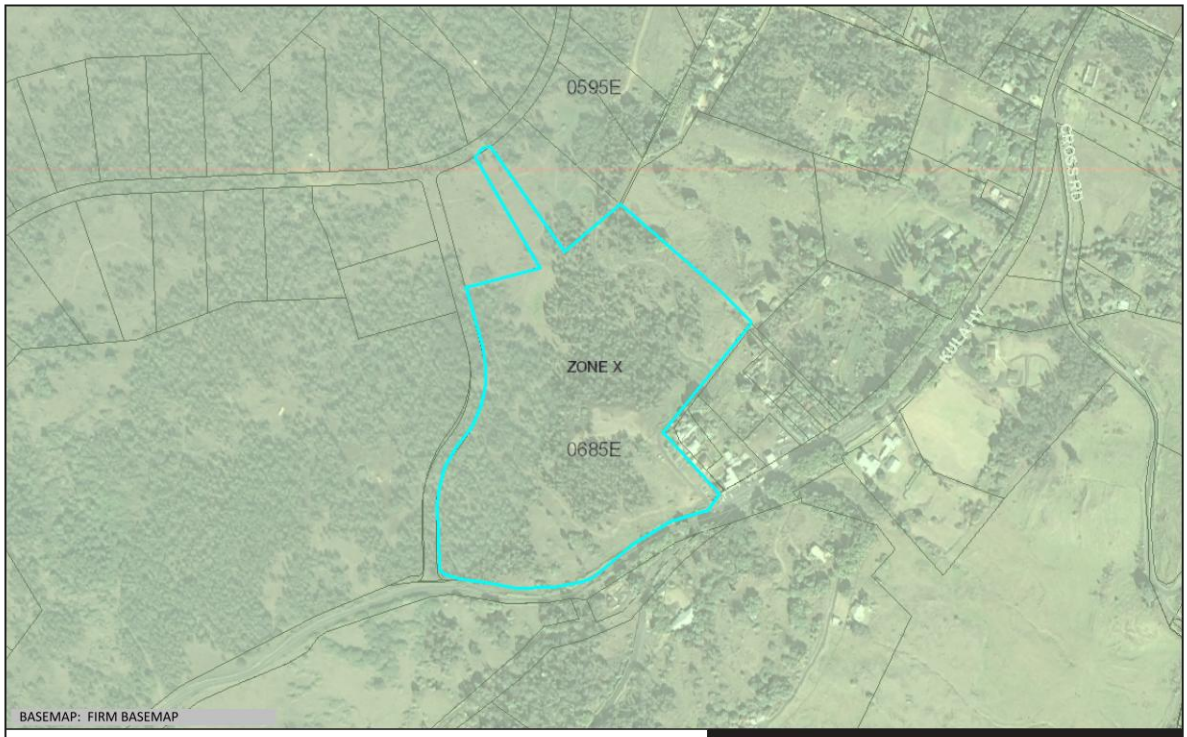
PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

FLOOD MAP
TMK (2) 2-2-032:067

EXHIBIT
4

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH – 4 AND 5 FLOOD ZONE MAP.dwg; January 26, 2022



Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	MAUI
TMK NO:	(2) 2-2-032:068
WATERSHED:	HAPAPA
PARCEL ADDRESS:	ADDRESS NOT DETERMINED KULA, HI 96790

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 04, 2015
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL - EFFECTIVE DATE:	1500030595E - SEPTEMBER 25, 2009 1500030685E - SEPTEMBER 25, 2009

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 400 800 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(Note: legend does not correspond with NFHL)

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

- **Zone A**: No BFE determined.
- **Zone AE**: BFE determined.
- **Zone AH**: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
- **Zone AO**: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
- **Zone V**: Coastal flood zone with velocity hazard (wave action); no BFE determined.
- **Zone VE**: Coastal flood zone with velocity hazard (wave action); BFE determined.
- **Zone AEF**: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

- **Zone XS (X shaded)**: Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
- **Zone X**: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

- **Zone D**: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

FLOOD MAP
TMK (2) 2-2-032:068

EXHIBIT
5

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH – 4 AND 5 FLOOD ZONE MAP.dwg; January 26, 2022

KEANUHEA PLACE

KA'AMANA STREET

TRUE NORTH
SCALE: 1"=250'

E-1
DRAINS TO
ADJACENT PROPERTY
47.3 AC.
Q50 = 32.4 CFS

TMK: (2) 2-032:067

TMK: (2) 2-032:068

E-2
DRAINS TO
ADJACENT PROPERTY
23.4 AC.
Q50 = 16.6 CFS

EXISTING MARKETPLACE/
PARKING LOT AREA

EXISTING NURSERY AREA

KULA HIGHWAY

THOMPSON ROAD

LEGEND:

12 — DRAINAGE AREA

FLOW DIRECTION

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

DRAINAGE AREA MAP:
PRE-DEVELOPMENT CONDITIONS

EXHIBIT
6

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH - 6 EXISTING DRAINAGE MAP.dwg; January 31, 2022

KEANUHEA PLACE

KA'AMANA STREET

TRUE NORTH
SCALE: 1"=250'

P-1
DRAINS TO
ADJACENT PROPERTY
47.3 AC.
Q50 = 38.5 CFS

TMK: (2) 2-032:067

TMK: (2) 2-032:068

P-2
DRAINS TO
ADJACENT PROPERTY
23.4 AC.
Q50 = 18.8 CFS

KULA HIGHWAY

PROPOSED LAYOUT
SEE EXHIBIT 2 FOR
DETAIL

THOMPSON ROAD

LEGEND:

12 — DRAINAGE AREA

FLOW DIRECTION

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

PRELIMINARY ENGINEERING AND DRAINAGE REPORT
DHHL KEOKEA FARM LOTS
MASTER PLAN PROJECT
TMK: (2) 2-2-032:067 AND TMK: (2) 2-2-032:068
KULA, MAUI, HAWAII

AustinTsutsumi & ASSOCIATES, INC.
Engineers & Surveyors

DRAINAGE AREA MAP:
POST-DEVELOPMENT CONDITIONS

EXHIBIT
7

Y:\2020\20-550 DHHL Keokea Farm Lots\PE & Drainage Report\Exhibits\EXH - 7 PROPOSED DRAINGE MAP.dwg; January 31, 2022

APPENDIX A – PRELIMINARY HYDROLOGY CALCULATIONS

APPENDIX A

RUNOFF SUMMARY
EXISTING CONDITIONS, 50-YEAR DESIGN STORM

Drainage Area Label	Flows To	Area (sf)	"A" Area (acres)	"C" 50-Yr Runoff Coeff.	Tc (min)	50-Yr 1-hr Rainfall (in)	"I" 50-Yr Design Intensity (in/hr)	"Q" 50-Yr Runoff (cfs)	50-Yr Runoff Volume (cf)
E-1	Adjacent Property	2,061,023	47.3	0.11	14.1	2.8	6.3	**32.4**	**58230**
E-2	Adjacent Property	1,019,977	23.4	0.11	14.4	2.8	6.2	**16.6**	**29913**
							TOTAL	**49.0**	

Notes:
1. Refer to Runoff Coefficient Calculations for determination of "C" value
2. The Time of Concentration "Tc" is calculated using Drainage Standard Plate 3.
3. One-Hour Rainfall and Design Intensities from NOAA Atlas 14 data (see attached).
4. The Rational Method is used to determine Runoff: Q = CIA.
5. Runoff Volume determined using triangular Rational Method Hydrograph ending at 1-hour.

APPENDIX A

RUNOFF COEFFICIENT CALCULATIONS
EXISTING CONDITIONS, 50-YEAR DESIGN STORM

Drainage Area Label	Flows To	C_{50} = 0.35		C_{50} = 0.10		Weighted Avg. Coeff.	
		Land-Use 1 Poor Grass/ Open		Land-Use 2 Grass/Open		TOTAL	
		Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Runoff Coeff.
E-1	Adjacent Property	1.7	3.7	45.6	96.3	47.3	**0.11**
E-2	Adjacent Property	1.4	5.9	22.0	94.1	23.4	**0.11**

Notes: 1. The project site contains a mix of poor grass, grass, and impervious surfaces.
Runoff coefficients are determined by composite coverage calculations.

APPENDIX A

RUNOFF SUMMARY
PROPOSED CONDITIONS, 50-YEAR DESIGN STORM

Drainage Area Label	Flows To	Area (sf)	"A" Area (acres)	"C" 50-Yr Runoff Coeff.	Tc (min)	50-Yr 1-hr Rainfall (in)	"I" 50-Yr Design Intensity (in/hr)	"Q" 50-Yr Runoff (cfs)	50-Yr Runoff Volume (cf)
P-1	Adjacent Property	2,061,023	47.3	0.13	14.1	2.8	6.3	**38.5**	**69321**
P-2	Adjacent Property	1,019,977	23.4	0.13	14.5	2.8	6.2	**18.8**	**33755**
							TOTAL	**57.3**	

Notes:
1. Refer to Runoff Coefficient Calculations for determination of "C" value
2. The Time of Concentration "Tc" is calculated using Drainage Standard Plate 3.
3. One-Hour Rainfall and Design Intensities from NOAA Atlas 14 data (see attached).
4. The Rational Method is used to determine Runoff: Q = CIA.
5. Runoff Volume determined using triangular Rational Method Hydrograph ending at 1-hour.

APPENDIX A

RUNOFF COEFFICIENT CALCULATIONS
PROPOSED CONDITIONS, 50-YEAR DESIGN STORM

Drainage Area Label	Flows To	C_{50} = 0.10		C_{50} = 0.95		Weighted Avg. Coeff.	
		Land-Use 2 Grass/Open		Cover 3 Impervious		TOTAL	
		Area (ac)	Area (%)	Area (ac)	Area (%)	Area (ac)	Runoff Coeff.
P-1	Adjacent Property	45.8	96.8	1.5	3.18	47.3	0.13
P-2	Adjacent Property	22.7	96.8	0.8	3.23	23.4	0.13

Notes: 1. The project site contains a mix of grass and impervious surfaces.
Runoff coefficients are determined by composite coverage calculations.

NOAA Atlas 14, Volume 4, Version 3 KULA HOSPITAL 267
Station ID: 51-5004
Location name: Kula, Hawaii, USA*
Latitude: 20.7042°, Longitude: -156.3592°
Elevation:
Elevation (station metadata): 3004 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

S. Perica, D. Martin, B. Lin, T. Parzybok, D. Riley, M. Yekta, L. Hiner, L.-C. Chen, D. Brewer, F. Yan, K. Maitaria, C. Trypaluk, G. M. Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	3.76 (3.49-4.26)	4.70 (4.20-5.35)	6.10 (5.42-6.97)	7.15 (6.30-8.24)	8.62 (7.49-10.0)	9.74 (8.33-11.5)	10.9 (9.17-12.9)	12.1 (9.94-14.6)	13.7 (10.9-16.8)	14.9 (11.5-18.7)
10-min	2.78 (2.59-3.16)	3.49 (3.11-3.97)	4.52 (4.02-5.17)	5.30 (4.67-6.11)	6.39 (5.56-7.44)	7.22 (6.17-8.50)	8.08 (6.80-9.60)	8.95 (7.37-10.8)	10.1 (8.07-12.5)	11.1 (8.56-13.9)
15-min	2.33 (2.17-2.64)	2.92 (2.61-3.32)	3.78 (3.37-4.33)	4.44 (3.91-5.12)	5.35 (4.65-6.23)	6.04 (5.17-7.12)	6.77 (5.69-8.04)	7.49 (6.17-9.04)	8.49 (6.76-10.5)	9.26 (7.16-11.6)
30-min	1.64 (1.53-1.86)	2.06 (1.84-2.34)	2.66 (2.37-3.05)	3.12 (2.75-3.60)	3.77 (3.27-4.38)	4.25 (3.64-5.01)	4.76 (4.00-5.65)	5.27 (4.34-6.36)	5.97 (4.75-7.35)	6.51 (5.04-8.19)
60-min	1.08 (1.00-1.22)	1.35 (1.21-1.54)	1.75 (1.56-2.00)	2.05 (1.81-2.37)	2.48 (2.15-2.88)	2.80 (2.39-3.30)	3.13 (2.63-3.72)	3.47 (2.86-4.18)	3.93 (3.13-4.84)	4.29 (3.32-5.39)
2-hr	0.717 (0.657-0.795)	0.915 (0.818-1.04)	1.19 (1.06-1.36)	1.40 (1.23-1.61)	1.67 (1.45-1.94)	1.88 (1.61-2.21)	2.09 (1.76-2.49)	2.30 (1.90-2.78)	2.58 (2.06-3.18)	2.79 (2.16-3.51)
3-hr	0.535 (0.489-0.591)	0.691 (0.619-0.790)	0.904 (0.806-1.03)	1.07 (0.938-1.22)	1.28 (1.11-1.49)	1.44 (1.23-1.69)	1.60 (1.35-1.91)	1.76 (1.46-2.13)	1.98 (1.58-2.44)	2.14 (1.66-2.69)
6-hr	0.336 (0.304-0.373)	0.434 (0.387-0.496)	0.572 (0.509-0.654)	0.679 (0.597-0.779)	0.819 (0.710-0.951)	0.925 (0.790-1.09)	1.03 (0.866-1.22)	1.14 (0.937-1.37)	1.28 (1.02-1.58)	1.39 (1.07-1.74)
12-hr	0.206 (0.186-0.230)	0.270 (0.240-0.307)	0.359 (0.320-0.411)	0.428 (0.378-0.492)	0.521 (0.453-0.605)	0.593 (0.507-0.696)	0.665 (0.560-0.790)	0.740 (0.610-0.891)	0.840 (0.669-1.03)	0.917 (0.710-1.15)
24-hr	0.125 (0.112-0.140)	0.167 (0.150-0.187)	0.224 (0.201-0.252)	0.270 (0.240-0.303)	0.332 (0.294-0.374)	0.381 (0.335-0.431)	0.430 (0.377-0.490)	0.482 (0.419-0.553)	0.554 (0.475-0.640)	0.609 (0.517-0.710)
2-day	0.083 (0.074-0.093)	0.110 (0.099-0.123)	0.148 (0.132-0.166)	0.178 (0.158-0.199)	0.218 (0.193-0.246)	0.251 (0.221-0.284)	0.284 (0.249-0.323)	0.319 (0.277-0.365)	0.367 (0.314-0.424)	0.405 (0.343-0.471)
3-day	0.059 (0.053-0.066)	0.078 (0.070-0.088)	0.106 (0.094-0.119)	0.127 (0.113-0.143)	0.158 (0.139-0.178)	0.182 (0.160-0.206)	0.207 (0.180-0.236)	0.233 (0.202-0.267)	0.269 (0.230-0.312)	0.299 (0.253-0.349)
4-day	0.047 (0.042-0.052)	0.062 (0.056-0.070)	0.085 (0.076-0.095)	0.102 (0.091-0.115)	0.127 (0.112-0.144)	0.147 (0.129-0.167)	0.168 (0.146-0.192)	0.190 (0.164-0.219)	0.221 (0.189-0.256)	0.246 (0.207-0.288)
7-day	0.031 (0.027-0.034)	0.041 (0.037-0.046)	0.055 (0.049-0.062)	0.067 (0.059-0.075)	0.083 (0.073-0.093)	0.095 (0.083-0.108)	0.108 (0.094-0.123)	0.121 (0.105-0.140)	0.140 (0.119-0.163)	0.155 (0.130-0.181)
10-day	0.024 (0.021-0.026)	0.031 (0.028-0.035)	0.042 (0.038-0.047)	0.051 (0.045-0.057)	0.062 (0.055-0.070)	0.072 (0.062-0.081)	0.081 (0.070-0.092)	0.091 (0.078-0.104)	0.104 (0.088-0.120)	0.115 (0.096-0.134)
20-day	0.015 (0.013-0.016)	0.019 (0.017-0.021)	0.025 (0.023-0.028)	0.030 (0.027-0.034)	0.037 (0.032-0.041)	0.042 (0.037-0.047)	0.047 (0.041-0.054)	0.052 (0.045-0.060)	0.060 (0.051-0.069)	0.065 (0.055-0.076)
30-day	0.011 (0.010-0.013)	0.015 (0.013-0.017)	0.020 (0.018-0.022)	0.023 (0.021-0.026)	0.028 (0.025-0.032)	0.032 (0.028-0.036)	0.035 (0.031-0.040)	0.039 (0.034-0.045)	0.044 (0.037-0.051)	0.048 (0.040-0.056)
45-day	0.009 (0.008-0.010)	0.012 (0.011-0.013)	0.016 (0.014-0.018)	0.018 (0.016-0.021)	0.022 (0.019-0.025)	0.025 (0.022-0.028)	0.027 (0.024-0.031)	0.030 (0.026-0.034)	0.033 (0.028-0.039)	0.036 (0.030-0.042)
60-day	0.008 (0.007-0.009)	0.010 (0.009-0.011)	0.013 (0.012-0.015)	0.015 (0.014-0.017)	0.018 (0.016-0.021)	0.020 (0.018-0.023)	0.022 (0.019-0.026)	0.024 (0.021-0.028)	0.027 (0.023-0.031)	0.029 (0.024-0.034)

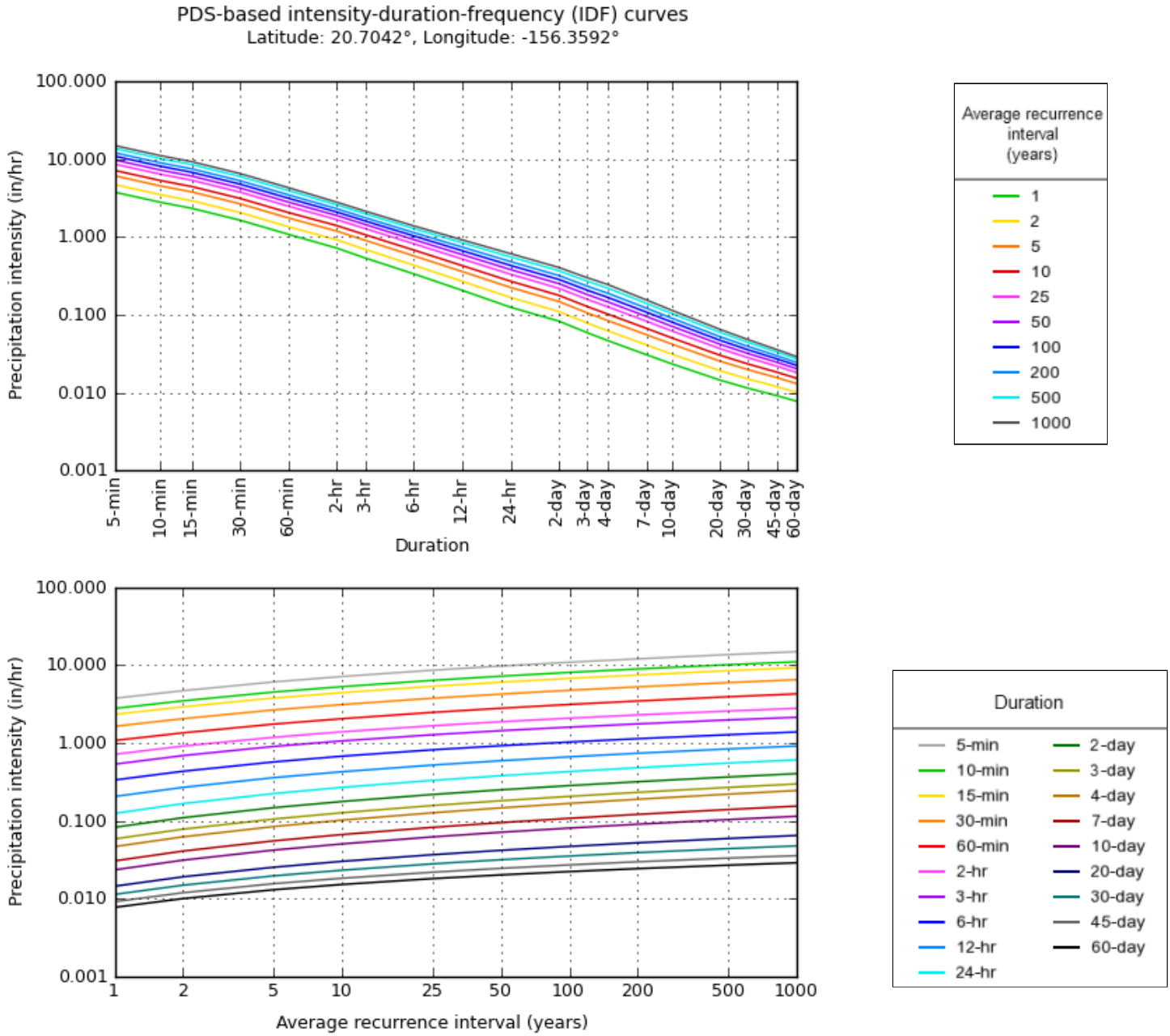
[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical



NOAA Atlas 14, Volume 4, Version 3 Created (GMT): Fri Oct 30 00:23:30 2020

Back to Top

Maps & aerials

Small scale terrain

APPENDIX B – PRELIMINARY WATER DEMAND CALCULATIONS

APPENDIX B

PRELIMINARY WATER DEMAND CALCULATIONS

TMK: (2) 2-032:067				
Multipurpose Building				
Room Type	***Type of Fixture**	***No. of Fixtures**	****FU Private low flow**	**Sub Total FU**
Kitchen:				
	Dishwasher	1	2.0	2.0
	Sink (3-comp, 2-faucet)	1	3.2	3.2
Toilet stalls:				
	Water Closet (Toilet) - FV	3	3.4	10.2
	Sink (1 faucet)	3	1.6	4.8
Shower stalls:				
	Shower heads in stall only	2	1.6	3.2
Other:				
	Hose Bib	4	3.0	12.0
			Total FU for Building =	35.4
Amphitheater				
Room Type	***Type of Fixture**	***No. of Fixtures**	****FU Private low flow**	**Sub Total FU**
Rest Room:				
	Water Closet (Toilet) - FV	1	3.4	3.4
	Sink (1 faucet)	1	1.6	1.6
Other:				
	Hose Bib	1	3.0	3.0
			Total FU for Building =	8
Preschool Immersion				
Room Type	***Type of Fixture**	***No. of Fixtures**	****FU Private low flow**	**Sub Total FU**
Prep Kitchen:				
	Sink (3-comp, 2-faucet)	1	3.2	3.2
Shower:				
	Shower heads in stall only	1	1.6	1.6
Toilet:				
	Water Closet (Toilet) - FV	5	3.4	17
	Sink (1-faucet)	5	1.6	8
Other:				
	Hose Bib	4	3.0	12
			Total FU for Building =	41.8

Notes:
*Number and type of fixtures based building descripitions provided in the Keokea Master Plan 10 year, dated January 2016
** Based on County of Maui, Department of Water Supply's water meter sizing worksheet for non-residential use

APPENDIX B

PRELIMINARY WATER DEMAND CALCULATIONS

TMK: (2) 2-032:067				
K-6 Immersion				
Room Type	***Type of Fixture**	****No. of Fixtures**	****FU Private low flow**	**Sub Total FU**
Prep Kitchen:				
	Sink (3-comp, 2-faucet)	5	3.2	16
Shower:				
	Shower heads in stall only	5	1.6	8
Toilet:				
	Water Closet (Toilet) - FV	25	3.4	85
	Sink (1-faucet)	25	1.6	40
Other:				
	Hose Bib	4	3.0	12
			Total FU for Building =	161

Senior Day Care				
Room Type	***Type of Fixture**	***No. of Fixtures**	****FU Private low flow**	**Sub Total FU**
Prep Kitchen:				
	Sink (3-comp, 2-faucet)	1	3.2	3.2
Shower:				
	Shower heads in stall only	1	1.6	1.6
Toilet:				
	Water Closet (Toilet) - FV	4	3.4	13.6
	Sink (1-faucet)	4	1.6	6.4
Other:				
	Hose Bib	4	3.0	12
			Total FU for Building =	36.8

TMK: (2) 2-032:067 Summary	
Total FU =	283
****Flow (GPM) =**	120
****Meter size =**	2"

Notes:
*Number and type of fixtures based building descripitions provided in the Keokea Master Plan 10 year, dated January 2016
** Based on County of Maui, Department of Water Supply's water meter sizing worksheet for non-residential use
*** Fixture Units (FU) converted to flow in gpm based on Chart A-2.1(1) of the Uniform Plumbing Code, Appendix A
**** Number of Fixtures for K-6 Immersion is assumed to be five times the amount of the Preschool Immersion based on estimated enrollment.

APPENDIX B

PRELIMINARY WATER DEMAND CALCULATIONS

TMK: (2) 2-032:068				
Healing Center				
Room Type	***Type of Fixture**	***No. of Fixtures**	**** FU Private low flow**	**Sub Total FU**
Kitchen:				
	Dishwasher	1	2.0	2.0
	Sink (3-comp, 2-faucet)	1	3.2	3.2
Toilet stalls:				
	Water Closet (Toilet) - FV	5	3.4	17
	Sink (1 faucet)	5	1.6	8
Shower stalls:				
	Shower heads in stall only	4	1.6	6.4
Other:				
	Hose Bib	2	3.0	6.0
			Total FU for Building =	42.6

TMK: (2) 2-032:068 Summary	
Total FU =	42.6
***Flow (GPM) =**	47
****Meter size =**	1"

Notes:
*Number and type of fixtures based building descripitions provided in the Keokea Master Plan 10 year, dated January 2016
** Based on County of Maui, Department of Water Supply's water meter sizing worksheet for non-residential use
*** Fixture Units (FU) converted to flow in gpm based on Chart A-2.1(1) of the Uniform Plumbing Code, Appendix A

APPENDIX C - PRELIMINARY WASTEWATER DEMAND CALCULATIONS

APPENDIX C

PRELIMINARY WASTEWATER DEMAND CALCULATIONS

TMK: (2) 2-032:067					
Building	*** Type of Establishment**	****Occupancy**	**Unit**	**Gallons Per Unit Per Day**	**Gallons Per Day**
Preschool Immersion	Day-care Center	30	Child	10	300
K-6 Immersion	School, Elementary	140	Student	15	2100
Senior Day Care	Rest Home	50	Person	100	5000
Multipurpose Building	Storage w/ offices and showers	10	Person	30	300
Ampitheater	Theater, Seating	200	Seat	5	1000
				TOTAL GPD	**8700**

TMK: (2) 2-032:068					
Building	*** Type of Establishment**	****Occupancy**	**Unit**	**Gallons Per Unit Per Day**	**Gallons Per Day**
Healing Center	Cottage or Ohana (600 S.F. max)	17	Unit	180	3060
				TOTAL GPD	**3060**

NOTES:

* Type of Establishment based on Appendix D Table I of Subchapter 3 of Chapter 62 of Title 11, Hawaii Administrative Rules, entitled "Individual Wastewater Systems" (IWS).

**Based building descripitions provided in the Keokea Master Plan 10 year, dated January 2016