NEIL ABERCROMBIE GOVERNOR



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Dean H. Seki Comptroller

Maria E. Zielinski Deputy Comptroller

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STATE OF HAWAII DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

JUN 2 4 2013

MEMORANDUM

- TO: Ms. Genevieve Salmonson, Interim Director Office of Environmental Quality Control Department of Health
- FROM:
- James K. Kurata On /1. / Carl Public Works Administrator
- SUBJECT: Final Environmental Assessment for the Maui Veterans Cemetery, Expansion and Improvements Makawao, Maui, Hawaii DAGS Job No. 15-14-7509 Tax Map Key (2) 2-4-002: portion of 007 and 009

The Department of Accounting and General Services hereby transmits the final environmental assessment and finding of no significant impact (FEA-FONSI) for the subject project for publication in the July 8, 2013 issue of *The Environmental Notice*.

We have enclosed a completed OEQC publication form, two printed copies of the FEA, and a CD containing a PDF file of the FEA and the publication form in MS Word. The OEQC publication form and project summary will also be e-mailed to your office.

If there are any questions, your staff may contact Mr. Joseph Earing of the Planning Branch at 586-0486.

JE:lnn

Attachments

c: Mr. Lloyd Maki, DOD-HIENG w/o attachments

AGENCY ACTIONS SECTION 343-5(B), HRS PUBLICATION FORM (FEBRUARY 2013 REVISION)

Project Name: Maui Veterans Cemetery, Expansion and Improvements

Island: Maui

District: Makawao

TMK: portion of (2) 2-4-002:007 and (2) 2-4-002:009

Permits: Land Use Permit, County of Maui grading and building permits

Proposing Agencies:

State of Hawaii, Department of Defense 3949 Diamond Head Road, Honolulu, HI 96816 and State of Hawaii, Department of Accounting and General Services Kalanimoku Building, 1151 Punchbowl Street, Honolulu, HI, 96813 Joseph Earing, 808 586-0486

Determination Agency: State of Hawaii, Department of Accounting and General Services Kalanimoku Building, 1151 Punchbowl Street, Honolulu, HI, 96813

Consultant: Belt Collins Hawaii

2153 North King Street, Honolulu, HI 96819 Jerilyn Hanohano, 808 521-5361

Status (check one only):

DEA-AFNSI	Submit the proposing agency notice of determination/transmittal on agency letterhead, a
	hard copy of DEA, a completed OEQC publication form, along with an electronic word
	processing summary and a PDF copy (you may send both summary and PDF to perchawaii@dob hawaii.gov): a 30-day comment period ensues upon publication in the
	periodic bulletin.
_x_FEA-FONSI	Submit the proposing agency notice of determination/transmittal on agency letterhead, a
	hard copy of the FEA, an OEQC publication form, along with an electronic word
	processing summary and a PDF copy (send both summary and PDF to
	oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the
	periodic bulletin.
FEA-EISPN	Submit the proposing agency notice of determination/transmittal on agency letterhead, a
	hard copy of the FEA, an OEQC publication form, along with an electronic word
	processing summary and PDF copy (you may send both summary and PDF to
	oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in
	the periodic bulletin.
Act 172-12 EISPN	Submit the proposing agency notice of determination on agency letterhead, an OEQC
	publication form, and an electronic word processing summary (you may send the
	summary to <u>oeqchawaii@doh.hawaii.gov</u>). NO environmental assessment is required
	and a 30-day consultation period upon publication in the periodic bulletin.
DEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting
	authority, a hard copy of the DEIS, a completed OEQC publication form, a distribution list,
	along with an electronic word processing summary and PDF copy of the DEIS (you may
	send both the summary and PDF to <u>oeqchawaii@doh.hawaii.gov</u>); a 45-day comment
	period ensues upon publication in the periodic bulletin.

FEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting authority, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to <u>oeqchawaii@doh.hawaii.gov</u>); no comment period ensues upon publication in the periodic bulletin.
Section 11-200-23	The second se
Determination	nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.
Section 11-200-27	
Determination	The accepting authority simultaneously transmits its notice to both the proposing agency and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.
Withdrawal (explain)	

Summary (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page):

Maui Veterans Cemetery in Makawao, Maui is nearing capacity for interment. The Department of Defense (DOD) and the Department of Accounting and General Services (DAGS) propose to expand the capacity of the existing cemetery by developing on adjacent property and improving the existing cemetery.

The State proposes to increase capacity by developing an adjacent 10 acres for in-ground burials and columbaria. A dedicated maintenance shelter, driveway and irrigation system will also be constructed on the 10-acre expansion area. Development of the expansion area includes grading, installation of a drainage basin for storm water, site preparations for in-ground burials, and construction of columbaria. Construction of an irrigation well and water tank may be developed in the expansion area in order to meet future water demands.

Development on the existing 7-acre parcel includes installation of a driveway for access to the expansion area; realignment of the parking lot; relocation of the flag pole to a formal flag assembly area; and installation of an irrigation system.

NEIL ABERCROMBIE GOVERNOR



Dean H. Seki Comptroller

Maria E. Zielinski Deputy Comptroller

STATE OF HAWAII DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

P.O. BOX 119, HONOLULU, HAWAII 96810-0119

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JE:lnn Attachments c: Mr. Lloyd Maki, DOD-HIENG w/o attachments (P)1141.3

FINAL ENVIRONMENTAL ASSESSMENT FINDING OF NO SIGNIFICANT IMPACT

MAUI VETERANS CEMETERY EXPANSION AND IMPROVEMENTS

Makawao, Maui, Hawai'i Tax Map Keys: portion of (2) 2-4-002:007 and (2) 2-4-002:009

DAGS Job No. 15-14-7509

July 2013

Prepared for: Office of Veterans Services Department of Defense, State of Hawai'i 489 Patterson Road Honolulu, Hawai'i 96819

Department of Accounting and General Services (DAGS) Kalanimoku Building 1151 Punchbowl Street

Honolulu, Hawai'i 96813

FINAL ENVIRONMENTAL ASSESSMENT FINDING OF NO SIGNIFICANT IMPACT

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Department of Accounting and General Services (DAGS) Kalanimoku Building

1151 Punchbowl Street Honolulu, Hawai'i 96813

Prepared by: BELT COLLINS HAWAII LLC 2153 North King Street, Suite 200 Honolulu, Hawai'i 96819

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APPENDICES

- A. Subdivision Map No. 2.3186
- B. Biological Resources Survey
- C. Archaeological Inventory Survey
- D. Cultural Impact Assessment
- E. Traffic Impact Assessment
- F. Comment Letters and Responses

ACRONYMS

ac	acre
CFR	Code of Federal Regulations
cfs	cubic foot per second
CIA	Cultural Impact Assessment
СТ	Census Tract
CMU	concrete masonry unit
DOD	Department of Defense
DOH	State Department of Health
DPW-Highways	Department of Public Works-Highways Division
DWS	Department of Water Supply
EA	Environmental Assessment
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
F.U.	fixture units
gpd	gallons per day
gpm	gallons per minute
ha	hectare
HAR	Hawai'i Administrative Rules
HRS	Hawaiʻi Revised Statues
ITE	Institute of Transportation Engineers
LUC	Land Use Commission
MSL	Mean Sea Level
mgd	million gallons per day
mph	miles per hour
МРК	Makawao Pukalani Kula
MVC	Maui Veterans Cemetery
NCA	National Cemetery Administration
OVS	Office of Veterans Services
SLH	State Laws of Hawaiʻi
STP	shovel test pit
SUP	Special Use Permit
ТМК	Tax Map Key
VA	Department of Veterans Affairs
WRD	County Wastewater Reclamation Division

GENERAL INFORMATION

Project:	Expand the capacity of the existing developing on adjacent property cemetery.	ng Maui Veterans Cemetery by and improving the existing
Location:	Makawao, Maui, Hawaiʻi	
Applicant:	State of Hawaiʻi, Department of Defense State of Hawaiʻi, Department of Accounting and General Services	
Recorded Fee Owner:	State of Hawai'i is currently in the process of purchasing a portion of parcel 7 from Jordan Santos	
Approving Agency:	State of Hawai'i, Department of A	Accounting and General Services
EA Preparers:	Belt Collin Hawaii, LLC 2153 North King Street Honolulu, HI 96819 Contact: Jerilyn M. Hanohano 808 521-5361	
Property Profile:		
ТМК	(2) 2-4-002:009	Portion of (2) 2-4-002:007
Land Area	7 acres	10 acres
State Land Use	Agriculture	Agriculture
County Zoning	Interim District	Agriculture
County Community Plan (1996)	Public/Quasi-Public	Agriculture
Existing Use	Cemetery	Agriculture
Proposed Use	Cemetery	Cemetery
Final Determination:	Finding of No Significant Impact	

1 1 INTRODUCTION

2 1.1 PURPOSE AND NEED

3 Maui Veterans Cemetery (MVC) in Makawao, Maui is nearing capacity for interment. The cemetery is in

- 4 need of facility upgrades and expansion in response to the evolving needs of the veteran as well as
- 5 compliance with Department of Veterans Affairs (VA) current regulations and policy standards.
- The proposing agencies are the State of Hawai'i, Departments of Defense (DOD) and Accounting and
 General Services (DAGS).
- 8 The approving agency for a determination of significance for this Environmental Assessment (EA) is the
 9 State, DAGS.

10 1.2 BACKGROUND

- 11 The existing cemetery is located on 7 acres of land near Makawao, Maui, Hawai'i. It is owned by the State
- 12 of Hawai'i and set aside by executive order for a veterans cemetery site under the control and
- 13 management of the County of Maui.¹ The Department of Public Works Highways Division (DPW-
- 14 Highways) of the County of Maui maintains the cemetery.
- 15 The State is in the process of purchasing 10 acres adjacent to the existing cemetery in order to increase
- 16 capacity. As of June 2012, the County of Maui reported 2,802 gravesites (including in-ground and
- 17 columbarium niches) are being maintained while 518 gravesites were available. Roughly 85% of the
- 18 gravesites are used. MVC needs additional burial acreage to meet future requirements.
- 19 The State proposes to increase capacity by developing an adjacent 10 acres for in-ground burials and
- 20 columbaria. A dedicated maintenance shelter, driveway, and irrigation system will also be constructed
- 21 on the 10 acre expansion area. Development of the expansion area includes grading, installation of a
- drainage basins for storm water, and construction of in-ground burials and columbaria. Construction of
- an irrigation well and water tank, needed to meet water demand, may be developed in the expansion
- area. Development on the existing 7 acre parcel includes installation of a driveway for access to the
- expansion area; realignment of the parking lot; relocation of the flag pole to a formal flag assembly area;
- 26 and installation of an irrigation system.

1.3 PROJECT COSTS AND FUNDING

- 28 The Office of Veterans Services (OVS), one part of the State DOD, oversees expansion and improvements
- 29 of State veteran cemeteries throughout the state to meet future needs. Funding for this project was
- authorized by Act 164, State Laws of Hawai'i (SLH) 2011, as amended by ACT 106, SLH 2012, Section 36,
- 31 Item F-1 and Section 38 which authorized up to \$5.3 million for the planning, land acquisition, design,
- 32 and construction for the expansion of burial space for the veterans cemetery in Makawao, Maui.² This
- 33 project is on the VA's fiscal year 2013 Priority List of Pending State and Tribal Government Cemetery

¹ Executive Order No. 3279, State of Hawai'i, February 12, 1985.

² House of Representatives, State of Hawai'i, Supplemental Appropriations Act of 2012.

- 1 Construction Grant Pre-applications and is therefore eligible for federal grants which are reimbursable
- 2 to the State through the applicant, DOD, OVS.

3 1.4 DISCRETIONARY PERMITS AND APPROVALS

- 4 Subdivision application for Tax Map Key (TMK) parcels (2) 2-4-002:001, 7, 9 and 10 are currently being
- 5 processed by the County of Maui. The application proposes to divide parcel 7 into multiple lots and
- 6 consolidate lots with parcels 1 and 9. For the MVC, a portion of lot 7 would be consolidated with parcel 1
- 7 to create a 17 acre parcel referenced as Lot "D" as shown on the subdivision application map.³ See
- 8 Appendix A for the subdivision application map.
- 9 The expansion area is zoned Agriculture by the County of Maui and is within the State of Hawai'i Land
- 10 Use Commission (LUC) Agricultural district. A Special Use Permit (SUP) is required for the development
- of a cemetery in agricultural zoned lands. Since the project area is less than 15 acres in size, the County
- 12 will process the SUP application.
- Construction documents must be approved by the director of the State Department of Health (DOH) forconstruction of a cemetery per HAR Chapter 22.
- 15 Grading and building permits issued by County of Maui are required before construction and
- 16 development of the site.

17 1.5 CONTENTS OF ENVIRONMENTAL ASSESSMENT

- 18 This EA was prepared in accordance with Section 343, Hawai'i Revised Statues (HRS) and Chapter 200
- of Title 11, Hawai'i Administrative Rules (HAR). This EA is required due to the use of state funds to
- 20 acquire the property and development of state lands.
- 21 This EA contains a description of the proposed project, an account of the affected environment, and
- 22 consideration of management and mitigation measures to address potential impacts.
- 23 Comment letters were received for the Draft EA and are contained, along with responses, in Appendix F.

³ Subdivision Map File No. 2.3186, May 2012, revised August 2012, January 11, 2013, and February 9, 2013.

1 2 PROJECT DESCRIPTION

2 2.1 LOCATION AND SETTING

- 3 The MVC is located on the northeast site of Baldwin Avenue next to Makawao Cemetery, approximately
- 4 2 miles northeast of the center of Makawao town. The current cemetery is located on TMK (2)-2-4-
- 5 002:009. The expansion would take place in a portion of TMK (2)-2-4-002:007. The existing MVC
- 6 occupies approximately 7 acres (ac) (2.9 hectares (ha)) in the southwest portion of the planned
- 7 combined property. The expansion area is approximately 10 ac (4.05 ha) which widens from west to
- 8 east roughly forming an elongated trapezoid. Combined, the two lots form an L-shaped parcel, which
- 9 will be referred as the project site or area.
- 10 The present cemetery and the expansion parcel include lands in two traditional *ahupua'a*: Makawao and
- 11 Hāli'imaile. The project site is located mostly in Makawao except for a northern portion of the expansion
- 12 area located in Hāli'imaile. See Figure 2-1 for Location Map.

13 2.2 EXISTING USES AND FACILITIES

- 14 MVC was opened in 1951 with the first burial on January 29, 1951. The cemetery provides interment
- 15 services to veterans and their family members. The existing MVC comprises of in-ground burials,
- 16 columbarium, committal shelter⁴ with storage for maintenance equipment, parking lot with nine
- 17 marked spaces, paved driveway, and flagpole. Only the flag pole is lit at night.
- 18 The proposed expansion area is currently grazed by cattle and is regularly mowed. There are a few
- 19 agricultural structures likely from the sugar plantation era on the expansion area. Otherwise there are
- 20 no permanent structures currently used on the expansion area.

21 2.3 DESCRIPTION OF PROPOSED PROJECT

- 22 The proposed project includes improvements to the existing cemetery and development of the
- 23 expansion area. Improvements and development would be in accordance to VA National Cemetery
- Administration (NCA) Facilities Design Guide. See Figure 2-2 for the proposed project site plan.

25 2.3.1 EXISTING CEMETERY IMPROVEMENTS

- 26 In order to connect to the expansion area, improvements to the existing cemetery would be constructed.
- 27 Other improvements would help formalize the existing features.
- 28 The existing driveway would be repaved and extended to the expansion area. The driveway would be
- run from Baldwin Avenue, along the eastern side of the existing property, and create a T-intersection on
- 30 the expansion area. The T-shaped driveway would terminate with cul-de-sacs at each end for vehicles to
- 31 turn around.

⁴ Committal shelter is a facility used for away-from-gravesite services.



FIGURE 2-1: LOCATION MAP

1 2

- 1 The existing driveway connection with Baldwin Avenue is approximately 110-feet wide with separate
- 2 stop lines and stop signs for right-turn and left-turn vehicles exiting the driveway. Ke'e Road intersects
- 3 with Baldwin Avenue south of the driveway with about half of the intersection encroaches on MVC
- 4 property. The proposed project would consolidate the driveway entries and Ke'e Road intersection into
- 5 one access point from Baldwin Avenue. This new entrance would be marked by a new entry sign and
- 6 landscape feature.
- 7 The existing parking lot would be relocated and expanded to provide up to 14 parking spaces. In order
- 8 to construct the new parking lot and driveway, two pine trees would be removed. Gate and fencing
- 9 would be installed for security.
- 10 The existing flag pole would be relocated closer to the committal shelter and a formal flag assembly area
- 11 would be created. The area would incorporate the existing memorials.
- 12 An automatic irrigation system would be installed at the existing cemetery. Weather sensor would be
- 13 used which would activate the irrigation system when needed. During rainy season, the weather sensors
- 14 would not trigger the irrigation system to water the landscaping and grass. Irrigation is further
- 15 discussed in Section 2.4.1. Although an automatic irrigation system is preferred, quick couplers are
- 16 being considered for installation at the existing cemetery.
- 17 2.3.2 PROPOSED EXPANSION AREA DEVELOPMENT
- 18 In-ground crypts, columbaria niches, and maintenance yard would be developed on the expansion area.
- 19 The in-ground crypts would be installed in phases. The first phase of development would occur on the
- 20 southwest portion of the expansion area near the northern boundary of the existing cemetery. Preplaced
- 21 concrete crypts would be installed during the first phase of construction consisting of about 500 in-
- 22 ground burial crypts and area for about 200 in-ground cremains.⁵ The final build-out of the expansion
- area would include up to 7,500 in-ground burial crypts and 2,900 in-ground cremains.
- 24 The area southwest of the T-intersection would be use for columbaria walk. This would be developed as
- a future phase of the projects. Up to 3,800 columbaria niches would be constructed.
- 26 The maintenance yard would be located off of the proposed driveway, located southeast of the
- 27 intersection. The maintenance yard would include a storage building for equipment, a yard for
- 28 maintenance vehicles, and soil storage bins. Since DPW-Highways stores large maintenance equipment
- 29 at their main maintenance yard located about 2 miles from MVC, the maintenance yard would be used to
- 30 store vehicles and large equipment out-of-sight during services.
- 31 Similar to the existing cemetery, an irrigation system would be installed at the expansion area. This
- 32 system would also utilize weather sensors. Irrigation is further discussed in Section 2.4.1.

⁵ Preplaced, in-ground burial crypts are intended for full-caskets and measure approximately 3-feet by 8-feet. Preplaced, in-ground cremain are used for interment of cremated remains and measure about 3-feet by 3-feet.



1 2

FIGURE 2-2: PROPOSED PROJECT SITE PLAN

2.4 **PROJECT INFRASTRUCTURE** 3

2.4.1 WATER AND IRRIGATION 4

5 **Current Water Consumption**

- 6 MVC is served by Maui County Department of Water Supply (DWS) through an existing 1-1/2 inch water
- 7 meter with a flow capacity of 100 gallons per minute (gpm). The combination of frequent natural
- 8 rainfall, weather-tolerant grass and the use of water conservation measures have enabled the DPW-

- 1 Highways to keep MVC's potable water consumption down to 73 gallons per day (gpd).⁶ During seasons
- 2 with little rainfall, DPW-Highways hand waters the cemetery through the existing hoses and bibs.

3 **Projected Water Consumption**

- 4 The proposed project would increase the existing water demand to roughly 116,000 gpd with the
- 5 addition of the maintenance building and irrigation for both the existing cemetery and expansion area.
- 6 The added demand is as follows:

7	•	Maintenance building	165 gpd
8	•	irrigation of expansion area	68,000 gpd
9	٠	Irrigation of existing cemetery	47,000 gpd

10 Meter Capacity versus Flow Demand

- 11 MVC's existing 1-1/2 inch water meter has a flow capacity of 100 gpm, which equates to about 65 fixture
- 12 units (F.U.) of demand. This should be more than sufficient to accommodate the proposed maintenance
- building and existing committal shelter. The two structures would require about 20 to 40 gpm (30 to 40
- F.U.). Irrigation is projected to increase the flow demand by an additional 120 to 225 gpm, which
- 15 exceeds the capacity of the existing meter. The additional demand would require installation of a second
- 16 meter or enlarging the existing meter to a 2 inch (160 gpm capacity) or 3 inch (320 gpm capacity) size.

17 Current Maui County Water Meter Issuance Policy

- 18 MVC is served by the DWS Upcountry Water System. Demand on the Upcountry Water System exceeded
- available water source capacity in 1993. Maui County Code 14.13.040 allows DWS to restrict the
- 20 issuance of new or larger water meters as a means of allocating available source capacity to those
- already served. Since November 2, 1994, the department has maintained a priority list of premises
- 22 organized by date of applications for new or additional water service were received for such premises.
- As of January 2013, the Code was amended which closed the "priority list" of meter applicants which
- 24 DWS has maintained since 1994 and mandated that DWS not issue meters outside the "priority list" until
- all remaining applicants on the list have been offered a water meter. MVC has not applied for an
- additional or enlarged water meter and the project parcels are not on the water meter priority list.

27 Proposed Water Use Plan

- 28 The proposed project would phase the water use. As part of the first phase of development, water usage
- would remain within the capacity of the existing 1-1/2 inch water meter. Quick couplers would be
- 30 installed at the existing cemetery as part of the irrigation system. Quick couplers connected to the
- irrigation water line can only be access through use of a special key. Watering would be conducted as
- 32 needed.
- An automatic irrigation system would be installed with the precast crypts during in the first phase of the
- 34 expansion area. Weather sensor would be used which would activate the irrigation system when
- needed. As a more reliable water source becomes available from DWS, the existing water meter would
- 36 be enlarged and an irrigation system would be operated and installed on the remaining project area.

⁶ Water consumption based on average from August 2010 to December 2012.

1 2.4.2 WASTEWATER

- 2 No new restroom facilities are proposed to be constructed and no additional wastewater requiring
- 3 sanitary treatment and disposal will be generated.

4 2.4.3 GRADING AND DRAINAGE

- 5 The terrain is relatively flat with a gentle slope towards the north side of the expansion area. Grading
- 6 would be required for the proposed construction of the driveway and burials. Grading for the driveway
- 7 will be in accordance with the VA and County of Maui standards.
- 8 The existing drainage of the MVC and neighboring Makawao Cemetery flows across the expansion area
- 9 and eventually to Māliko Gulch. Due to the additional impervious roadway and building improvements, a
- 10 detention basin would be formed on the expansion area. The proposed project would contain the runoff
- 11 in two onsite drainage basins.

12 2.4.4 LANDSCAPING

- 13 Landscaping would be used to enhance the project site. Celebration Bermuda grass would be the ground
- 14 cover used for cemetery plots and throughout the project site.
- 15 Shrubs such as Hibiscus and Day Lilies would be used at the entry sign along with other flowering
- 16 ground cover to highlight the entry from Baldwin Avenue. Other shrubs such as gardenia and hibiscus
- 17 would screen the parking lot.
- 18 The driveway into the expansion area would be lined with Crepe Myrtle trees along the eastern edge of
- the proposed property boundary. The existing Pepper Trees that line the existing cemetery would be removed.
- 21 The maintenance yard would be screened with Areca palm and a flowering ground cover such as
- 22 Walking Iris and White Agapanthus.
- 23 Within the cemetery expansion area, Shower trees would be used inside of the two cul-de-sacs.

24 2.4.5 ELECTRICITY AND COMMUNICATIONS

- 25 Both electrical and communication lines would connect to the existing utility pole located near the
- 26 existing committal shelter. Lines would run underground to the proposed maintenance yard to meet
- 27 electrical, communications, and security utility needs.

28 2.4.6 FIRE PROTECTION

- 29 The new maintenance facility would require a fire protection system. An existing fire hydrant #316,
- 30 connects to the existing eight-inch water main located on Baldwin Avenue. This line is supplied from
- 31 DWS' 2.0 million gallon Po'okela storage tank located approximately one mile south of MVC at an
- 32 elevation of 1,810 feet.

1 3 ALTERNATIVES

- Three alternatives are presented in this EA. The alternatives differ by water source and usage for
 irrigation.
- 4 Other locations in the State and on Maui were not considered for this project. There is only one veterans
- 5 cemetery on Maui and expansion of the existing site is feasible and preferred. The current location of
- 6 MVC is ideally situated near DPW-Highway's maintenance yard.

7 3.1 NO ACTION ALTERNATIVE

- 8 If the proposed action is not implemented, the VA would not be able to offer additional burial services
- 9 on Maui. Veterans desiring to be buried in a veterans cemetery would have to be interred at other
- 10 locations in the state. This could potentially increase the demand of burials at other veteran cemeteries.

11 3.2 ALTERNATIVE A

- 12 Alternative A is the proposed project as described in Section 2.3. Water usage would depend on the
- 13 availability of a reliable water source from DWS. When that becomes available, MVC would apply for a
- 14 second meter or enlarge the capacity of the existing meter.

15 3.3 ALTERNATIVE B

- 16 Alternative B is the same as the proposed project with the exception of water source. Instead of applying
- 17 to DWS for an additional meter or enlarged meter, a well would be drilled for non-potable water and the
- 18 water would be used to irrigate the cemetery only.
- 19 The well would be located in the expansion area near the maintenance yard, a pump installed, and a
- water tank would store irrigation water. The water from the well would be used to irrigate the whole
- 21 project site.
- 22 The well would be sized to meet the demand. An eight-inch cased well from a 15-inch boring would
- allow a rate of 150 gpm which would be the minimum to meet the demand.

24 3.4 ALTERNATIVE C

- 25 This alternative would use the water from the existing meter. A tank would be installed near the
- 26 maintenance yard and used to store up to 30,000 gallons of water. The irrigation system would use
- 27 water from both existing meter and water tank.

4 AFFECTED ENVIRONMENT, POTENTIAL 2 ENVIRONMENTAL IMPACTS, AND MITIGATION 3 MEASURES

4 For this analysis, the project site or project area comprises 17 acres consisting of the existing cemetery

5 and the expansion areas. The proposed project and alternatives were evaluated. Affected environment,

6 potential environmental impacts, and mitigation measures are the same for the proposed project and

7 alternatives except as noted in the table below and the following sections.

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Table 4-1: Summary of Environment and Resources

Environment/ Resource	Discussion and Determination
Land Use	The proposed project is an expansion of the existing cemetery and is permitted, with a Special Use Permit, within the designated land use and zoning. No impacts are anticipated
Access	There is an existing easement for the neighboring private Makawao Cemetery access. Access would be maintained. Exact location of the easement depends on the alignment of the proposed driveway.
	No impacts are anticipated.
Views	Proposed structures are similar to existing structure on the property and would not obscure views from the property. The proposed project would be similar to the existing MVC which maintains the open space of the expansion area.
	No impacts are anticipated.
Topography	Proposed project would not alter the terrain.
	No impacts are anticipated.
Soils and geology	Proposed project would not alter soils or geology.
	No impacts are anticipated.
Hydrology	Proposed project would not increase the offsite flow of water. Drainage basins would be used onsite to store stormwater before it goes off site.
	No impacts are anticipated.
Environmentally sensitive areas	Proposed project is not within a flood plain, tsunami zone, or erosion prone area. It is not in the beach/coastal area or in the vicinity of an estuary. It is not on geologically hazardous land.
	No impacts are anticipated.
Air quality	Proposed project does not affect traffic or other activities associates with air quality. During construction, dust would be expected. Best management practices, such as screening, would be implemented to avoid any temporary irritation. No impacts are anticipated.
Noise	Proposed project does not cause change to noise environment. Temporary noise would be expected during construction. No impacts are anticipated.

Environment/ Resource	Discussion and Determination
Water quality	Proposed project would not affect the groundwater quality. No impacts are anticipated.
Historic and archaeological resources	The proposed project does not alter the historic and cultural environment. Grading of the site would potentially disturb one historic feature. The impact to the feature would be mitigated through archaeological monitoring if the feature is removed or demolished during ground disturbance. No significant impacts are anticipated to adversely affect the environment.
Terrestrial biota and habitat	The flora and fauna found onsite are not rare, threatened, or endangered species. There are no wetlands or streams on the property. No impacts are anticipated.
Infrastructure	The proposed development would not result in any significant change to traffic, circulation or volume, wastewater demand, electrical demand, solid waste disposal, or drainage. The proposed project alternative would address water needs when a reliable source becomes available. Water demands for irrigation would increase over time while the cemetery is developed and fully constructed. Proposed project would increase demand on the County's water supply. Alternative B would construct irrigation well, pump, and water storage tank. There would be no increase the demand on County water supply but the well would pump water from the Makawao Aquifer Systems. Alternative C would put an immediate demand on County water supply. A water tank would be constructed near the maintenance facility. While each alternative creates different impacts to the water supply, no significant impacts are enticipated.
Public services	Proposed project would not affect the capacity of public services and facilities such as police and fire protection, emergency services, schools, and parks. No impacts are anticipated.
Energy use	Proposed project would not significantly increase energy usage. No impacts are anticipated.
Socioeconomics	Proposed project would not alter the socioeconomic environment of the Makawao region. No impacts are anticipated.

1 4.1 EXISTING AND SURROUNDING LAND USES

2 4.1.1 LAND USE

- 3 **Zoning.** The existing cemetery is zoned Interim and within the State agricultural district. The expansion
- 4 area is within the County and State agricultural district. Cemeteries are special use in agricultural
- 5 district. The purpose of the agricultural district is to promote agricultural development, preserve and
- 6 protect agricultural resources, and support the agricultural character and components of the County's
- 7 economy and lifestyle.
- 8 Makawao Cemetery is located adjacent to MVC. Makawao Cemetery is acquiring land through the same
- 9 subdivision as MVC.

1 Potential Impacts and Mitigation Measures

- 2 The proposed project is not in conflict with the existing zoning or land use and is co-located with
- 3 Makawao Cemetery.

4 4.1.2 SURROUNDING COMMUNITY

- 5 MVC is located within the Makawao-Pukalani-Kula (MPK) Community Plan District. The MPK
- 6 Community Plan was adopted in 1996. The Plan reflects the current and anticipated conditions of the
- 7 MPK region. See Figure 4-1 for the community plan for Makawao. MVC and Makawao Cemetery are
- 8 designated as Public/Quasi-Public.
- 9 MPK region and the area surrounding MVC are mostly agricultural and rural lands. Within the town of
- 10 Makawao, residential and commercial densities increase.

11 **Potential Impacts and Mitigation Measures**

12 The proposed project is not in conflict with the MPK Community Plan and is co-located with Makawao

13 Cemetery.

14 4.1.3 ACCESS

- 15 Access to MVC is always open however there is an interior gate which secures direct access to the
- 16 burials. The gate is open Monday to Friday from 7:00 AM until 3:00 PM and closed on Saturday and
- 17 Sunday.
- 18 There is an existing easement for the adjacent private Makawao Cemetery. The Makawao Cemetery
- 19 Association is reserved "a 20-foot easement and right-of-way for ingress and egress" across the existing
- 20 MVC property.⁷ Currently, visitors of Makawao Cemetery park on the grass area next to MVC's paved
- 21 driveway.

22 **Potential Impacts and Mitigation Measures**

- 23 The proposed project would not alter the current operating hours. The existing easement for Makawao
- 24 Cemetery Association would be maintained but possibly realigned depending on the exact location of
- the proposed driveway. A gate would be installed to control access to MVC. When MVC is closed, the gate
- 26 would limit access to one of the two entries into Makawao Cemetery. Parking would be eliminated on
- 27 the grass areas to formalize the driveway and accommodate a paved access way to Makawao Cemetery.
- 28 The proposed project would limit access to Makawao Cemetery when MVC is closed. Since access to
- 29 Makawao Cemetery would remain, no significant impact anticipated.

30 4.1.4 VIEWS

- The predominant view from within MVC is the remnant cinder cone of Pu'u o Malei visible to the north.
- 32 The agricultural pasture lands to the north are open and provide an unobstructed view of Pu'u o Malei.

33 **Potential Impacts and Mitigation Measures**

34 The proposed project would not interrupt the prominent view. No impacts are anticipated.

⁷ Executive Order No. 3279, State of Hawai'i, February 12, 1985.

^{12 /} Final Environmental Assessment - MAUI VETERANS CEMETERY EXPANSION AND IMPROVEMENTS



1 2

1 4.2 PHYSICAL ENVIRONMENT

- 2 This section discusses the physical environment of the project site such as topography and soils as well
- 3 as hazards.

4 4.2.1 TOPOGRAPHY

- 5 The project site is located on the lower northwestern slopes of Haleakalā, on a plateau south and
- 6 southwest of the southern fork of Māliko Gulch. The terrain is relatively level, due to previous
- 7 cultivation, existing cemetery, and current cattle grazing uses. Elevation of the project site is
- 8 approximately 1,536 feet above mean sea level (MSL) at the southern portion of the site which slopes
- 9 gently down towards the northwest boundary of the project site to 1,506 feet above MSL. The eastern
- 10 boundary of the expansion area slopes down towards the Māliko Gulch. See

11 **Potential Impacts and Mitigation Measures**

- 12 The proposed project does not significantly alter the existing terrain of the project site. Grading would
- 13 be required to set the in-ground crypts and construct columbaria, maintenance building, and driveway.
- 14 No major landforms would be impacted. No significant impacts are anticipated.

15 4.2.2 SOIL AND GEOLOGY

- 16 The project site is mostly covered by Makawao silty clay, which is designated as MfB in the *Soil Survey of*
- 17 the Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i, State of Hawai'i. The soil is described as sloping 3-
- 18 7 percent, a well-drained soil that develop in material weathered from basic igneous rock which is
- 19 primarily basalt in the project area. The substratum is soft, weathered, basic igneous rock. Runoff is
- slow, and erosion hazard is slight. The soil is primarily used for pasture, with a few acres used for
- 21 pineapple, truck crops, and homesites.

22 **Potential Impacts and Mitigation Measures**

23 No impacts are anticipated.

24 4.2.3 HYDROLOGY

- 25 The eastern boundary of the expansion area is at the top of Māliko Gulch.
- 26 The expansion area, in its current undeveloped state, generates storm runoff at a peak flow rate of
- 27 approximately 6.5 cubic foot per second (cfs). Runoff flows off of the site in two general directions.
- Approximately 4.2 cfs flows northeast and eventually enters Māliko Gulch which, in turn, conveys this
- runoff down the side of Haleakala some 6 miles to the coast where it drains into the ocean at Māliko Bay.
- 30 The remaining 2.3 cfs drains to the northwest, flowing overland and eventually entering an unnamed
- 31 gully which conveys it to the ocean at $P\bar{a}$ ia Bay.
- 32 Approximately 6 acres of land owned by Makawao Cemetery lies uphill of the MVC expansion area and
- drains about 3.9 cfs to Māliko Gulch through the east side of the expansion area.

34 **Potential Impacts and Mitigation Measures**

- 35 Pavement and additional hardscape associated with the proposed project would increase the amount of
- 36 onsite storm runoff to approximately 17.9 cfs. Two stormwater drainage basins with the capacity of
- 14,800 cubic feet are proposed on the expansion area. These would be constructed onsite to ensure the
- downstream flows off of the developed site do not exceed existing levels, thereby fully mitigating the

- 1 expected increase in peak flow attributed to the development of the cemetery expansion. These onsite
- 2 detention basins would serve to ensure compliance with Maui County's recently adopted storm water
- 3 quality ordinance.⁸
- 4 Offsite flows from Makawao Cemetery would remain unchanged, and continue to drain through MVC or
- 5 diverted into Maliko Gulch slightly upstream of its current point of entry. See Figure 4-2.

6 4.2.4 FLOOD HAZARD AREAS

- 7 Federal Emergency Management Agency (FEMA) Flood Hazard Zone for the project site is designated
- 8 "X", which is an area determined to be outside of the 0.2% annual chance floodplain.

9 Potential Impacts and Mitigation Measures

- 10 The National Flood Insurance Program does not have any regulations for development within Zone X.
- 11 No impacts are anticipated.



12 13

⁸ Maui County Code, Chapter 15-111: "Rules for the Design of Storm Water Treatment Best Management Practices," adopted November 9, 2012.

1 4.3 TERRESTRIAL BIOTA AND HABITAT

- 2 A flora and fauna survey of the project site was conducted on January 10, 2013. See Appendix B for
- 3 Biological Resources Survey. The survey identified and documented the plant species and vegetation
- 4 communities, presence and relative abundance of bird, mammal, amphibian, reptile, and large insect
- 5 species within and in the immediate vicinity of the project site. The survey did not find the presence and
- 6 abundance of any State or Federally listed candidate, threatened, or endangered species, species of
- 7 concern, and/or rare species.
- 8 **Flora.** The existing cemetery is landscaped with closely mowed Bermuda grass with scattered California
- 9 pepper trees and shower trees. The expansion area appears to be regularly mowed and grazed by cattle.
- 10 The knee-high vegetation consists of lovegrass, sourgrass, African bristlegrass, and balloon plant.
- 11 Scattered Christmas berry and black wattle trees provide shade for the cattle. A total of 31 plant species
- 12 were documented.

13

TABLE 4-2: PLANTS OBSERVED IN THE PROJECT SITE

Scientific name Common/Hawaiian r		Status	
Thuja occidentalis L.	thuja	Х	
Cynodon dactylon (L.) Pers.	Bermuda grass	Х	
Digitaria insularis (L.) Fedde	sourgrass	Х	
Eragrostis amabilis (L.) Wight & Am. Ex Nees	lovegrass	Х	
Setaria sphacelata (Schumach.) M.B.Moss ex Stapf & C.E. Hubb	African bristlegrass	Х	
Megathyrsus maximus (Jacq.) B.K. Simon & S.W.L. Jacobs	Guinea grass	Х	
Melinis repens (Willd.) Zizka	red Natal top	Х	
Schinus molle L.	California pepper tree	Х	
Schinus terebinthifolius Raddi	Christmas berry	Х	
Asclepias physocarpa (E. Mey.) Schltr.	balloon plant	Х	
Ageratum conyzoides L.		Х	
Calyptocarpus vialis Less.	straggler daisy	Х	
Conyza canadensis (L.) Cronquist var pusilla (Nutt.) Cronquist	Horseweed	Х	
<i>Emilia fosbergii</i> Nicolson	pualele	Х	
Sphagneticola trilobata (l.) Pruski	wedelia	Х	
Senecio madagascariensis Poir	fireweed	Х	
Youngia japonica (L.) DC.	Oriental hawksbeard	Х	
Ricinus communis L.	castor bean	Х	
Acacia mearsnii De Wild	black wattle	Х	
Cassia sp.	shower tree	Х	
Chamaecrista nictitans (L.) Moench ssp.	partridge pea	Х	
Crotolaria pumila Ortega	small rattle pod	Х	
Indigofera hendecaphylla Jacq.	creeping indigo	Х	

Scientific name	Common/Hawaiian name(s)	Status
Macroptilium lathyroides L. urb	cow pea	Х
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	Х
Sida rhombifolia L.	sida, Cuban jute	Х
Melaleuca quinquenervia (Cav.) S.T. Blake	paperbark, punk tree	Х
Oxalis corniculata L.	wood sorrel	Р
Passiflora suberosa L.	corkystem passionflower	Х
Triumfetta semitriloba Jacq.	bur bush	Х
Verbena litoralis Kunth	verbena	Х

Status:

P = potentially introduced plants brought by Polynesians

X = introduced or alien plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western

4 contact (circa 1778)

6 **Avifauna.** Four count stations were established within the project site to determine the relative

7 abundance of bird species. See Figure 4-3 for locations of bird count stations. The bird species observed

8 at the project site are typically found in landscaped and agricultural areas. Thirteen species were

9 documented; one species is a migratory bird, the Pacific golden plover, and the remaining species

10 observed are introduced to the Hawaiian Islands. No native birds were seen or heard at the project site.

- 11 The Pacific golden plover was only observed at the existing cemetery within the landscaped grassy
- 12 areas.
- 13

TABLE 4-3: BIRD SPECIES OBSERVED IN THE PROJECT SITE

Species	Common Name	Status	Relative Abundance
Acridotheres tristis	Common Myna	Ι	abundant
Alauda arvensis	Eurasian Skylark	Ι	common
Bubulcus ibis	Cattle Egret	Ι	common
Cardinalis cardinalis	Northern Cardinal	Ι	*
Carpodacus mexicanus	House Finch	Ι	common
Francolinus pondicerianus	Gray Francolin	Ι	*
Gallus gallus	Domestic chicken	Ι	*
Geopelia striata	Zebra Dove	Ι	abundant
Lonchura atricapilla	Chestnut Munia	Ι	abundant
Lonchura punctulata	Nutmeg Mannakin	Ι	common
Pluvialis fulva	Pacific Golden Plover	М	abundant
Streptopelia chinensis	Spotted Dove	Ι	abundant
Zosterops japonicus	Japanese White eye	Ι	common

14 Status:

15 I = introduced bird

16 M = migratory bird

17 * = seen/heard outside of project site

18



- 3 Hawaiian Hoary Bat. Visual and acoustic surveys for the endangered Hawaiian hoary bat were
- 4 conducted in the evening and night of January 10, 2013. No Hawaiian hoary bats were detected during
- 5 the visual survey and no echolocations were recorded by the ultrasonic detector during the driving
- 6 transect of the property.

1 2

- 7 Hawaiian hoary bats roosts are typically located in dense canopy foliage with open access for launching
- 8 into flight. The few trees on the proposed expansion area do not appear to be suitable roost trees for the
 9 bat.
- 10 **Blackburn's Sphinx Moth.** Searches for the endangered Blackburn's sphinx moth consisted of searches
- 11 for larval food plants, caterpillars, and sign. A light trap was deployed on the night of January 10, 2013 to
- 12 determine if adult moths were present in the area.
- 13 No larval host plants or adult host plans of the Blackburn's sphinx moth were observed in the project
- site and no caterpillars were found. No moths of any species were attracted to the light trap. Due to the

- absence of larval and adult food plants, the Blackburn's sphinx moth is not expected to be present at the
- 2 project site.
- 3 **Other Mammals and Invertebrates.** Cattle currently graze in the proposed expansion area of the
- 4 project site. Deer droppings were seen along the eastern edge of the project site in the vegetation that
- 5 borders the gulch. The common monarch butterfly was observed due to the presence of milkweed and
- 6 balloon plant in the expansion area. Other large insects observed included two common native dragon
- 7 fly species, the common green darner and the globe skimmer.

8 **Potential Impacts and Mitigation Measures**

- 9 The proposed project will not impact any listed threatened or endangered species. No rare, candidate,
- 10 threatened, or endangered plant or animal species or candidate species were found during the flora and
- 11 fauna survey of the project site. The plant and animal species assemblages are typical of those found in
- 12 agricultural and landscaped areas.
- 13 The one migratory bird species, the Pacific golden plover, was only observed on the grounds of the
- 14 existing cemetery. The project will likely benefit the species with the creation of more open habitat for
- 15 foraging.
- 16 While no owls were seen or heard during the night survey, the Hawaiian short-eared owl or *pueo* and
- 17 the introduced barn owl could potentially utilize the project site for hunting.
- 18 The Hawaiian hoary bats were not detected and are unlikely to roost in the existing trees on the project
- 19 site. The bats may use the airspace above the project site for commuting or foraging and the proposed
- 20 project is not expected to change this behavior or impact the species.
- Food plants for the Blackburn's sphinx moth are not present at the project site and the species was not
- found during the survey. Given the lack of suitable host plants, the Blackburn's sphinx moth is not
- 23 expected to occupy the project site. Thus, the expansion of the cemetery is not expected to have any
- 24 impact on the species.

25 4.4 HISTORICAL, ARCHAEOLOGICAL, AND CULTURAL ENVIRONMENT

26 4.4.1 HISTORICAL AND ARCHAEOLOGICAL

- 27 An inventory survey was conducted for the project site that included fieldwork and background
- 28 literature research. Survey was conducted on January 14 and 15, 2013, for the existing cemetery and
- 29 expansion area. See Appendix C for Archaeological Inventory Survey report.

30 Historic Context

- 31 Much of the area surrounding the project site was dominated by plantation fields in the mid- to late 19th
- 32 century, according to historical maps and other documents. The project area includes lands in two
- traditional *ahupua'a*, Makawao and Hali'imaile. At the time of the Mahele, Hali'imaile was awarded to
- Miriam Kekauonohi at Royal Patent 7512. The existing cemetery parcel is part of a large grant, Grant 64,
- 35 which was leased to William A. McLane as part of his extensive plantation sugarcane holdings.

- 1 The project site is located next to the Makawao Cemetery which was the original site of the Makawao
- 2 Union Church in 1861. The church was relocated and a new structure built in 1896. Many of Makawao's
- 3 notable people are buried at Makawao Cemetery.

4 Field Investigation and Findings

- 5 On-foot survey included a brief survey of the existing cemetery and a systematic inventory throughout
- 6 the expansion area. Shoveled test pits (STPs) were excavated to characterize subsurface soils,
- 7 sediments, and type of any subsurface cultural materials. Neither on-foot survey nor excavation of the
- 8 STPs produced significant cultural evidence in the project area. No historic pre- or post-Contact features
- 9 or other cultural deposits were found.
- 10 Six surface features, each reflecting the property's modern use were found in the expansion area and
- 11 recorded. The STPs revealed a composition of mixed and disturbed soils that reflect intense, modern,
- 12 large-scale agricultural disturbance to considerable depths. Charcoal and one kukui nutshell were
- 13 recovered from disturbed and mixed soil. No pre-fill cultural layers were encountered during
- 14 excavation. See Figure 4-4 for locations of surface features and STPs.
- 15 Feature 1 is a manhole box constructed of a type of concrete that is often found in late 19th- to early 20th-
- 16 century structures in Hawai'i commonly referred to as *kameki puna*, "old-type cement."
- 17 Feature 2 is a circular concrete masonry unit (CMU) block structure with six interior reinforcing walls.
- 18 CMU is reinforced with rebar and mortar. The north exterior section was found collapsed inward. It may
- 19 possibly have been used as a cistern.
- 20 Feature 3 is an isolated, broken block of concrete of *kameki puna* type. It was probably intended for use
- 21 in a structure, but presumably broke and was discarded.
- Feature 4 is another isolated, broken block of concrete similar to Feature 3 and may have had similar intended use.
- Feature 5 is a rounded, vesicular basalt boulder found embedded in the ground. Since this boulder is out
- 25 of place, STP was excavated adjacent to the boulder to determine if additional rocks were present
- 26 beneath the surface. The results suggest that the boulder is isolated and no other basalt rocks were
- 27 located with the immediate area. No cultural layers or materials were discovered.
- 28 Feature 6 is another isolated, broken block of concrete. It is embedded in the ground surface of an
- agricultural berm formed by a plow.

1 **Potential Impacts and Mitigation Measures**

- 2 Feature 1, manhole box, is more than 50-years old and appears likely to retain integrity of location. It
- and any associated soils may possess information to history, making it potentially eligible for
- 4 nomination to the National Register of Historic Places according to Criterion D.⁹
- 5 Since the feature is located in the proposed drainage basin, there is potential for the feature to be
- 6 disturbed during grading. If the feature is be removed or demolished, archaeological monitoring would
- 7 be conducted during the ground modification beneath and within a band of 5 meters wide around the
- 8 feature. If grading can be done without disturbing the feature, it would be left in place or buried.
- 9 Impacts to the historic feature would be mitigated through the actions described above and there would
- 10 be no adverse effect to the historic feature.
- 11 No impact is anticipated to the historic features contained in the Makawao Cemetery. The proposed
- 12 project would be similar to the existing open space setting and not impact the integrity of the Makawao
- 13 Cemetery.

⁹ In order for a property to be eligible for the National Register, it must meet one or more criteria and retain integrity as set forth in 36 Code of Federal Regulations (CFR) Part 60, "The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, building, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association...." Under Criterion D the properties "have yielded, or may be likely to yield, information important in prehistory or history."


1 4.4.2 CULTURAL

- 2 Cultural Impact Assessment (CIA) was completed in February 2013. The CIA includes historical and
- 3 culturally related documentary research; identifies individuals with knowledge of cultural resources,
- 4 practices, and beliefs found within the broad geographic area of the project site; identifies and describes
- 5 cultural resources; and assess the impact of the proposed actions on the cultural resources. See
- 6 Appendix D for the CIA.
- 7 **Location.** The project site is mostly located with Makawao. A portion of the expansion site is in
- 8 Hāli'imaile. These are part of a larger land division known as Hamakuapoko. See Figure 4-5.
- 9 **Pre-Contact and Post-Contact Environment.** Prior to and after the first people came to Maui, the
- 10 lands of the project area were considered lowland dry and mesic forest. The annual rainfall in this zone
- 11 is between 20 to 80 inches. The plains or lower slopes, dry ridge tops and cliffs would have supported
- 12 *pili (Heteropogon contortus)* grasslands or *kāwelu (Eragrostis variabilis)*. The dry or mesic shrubland
- 13 vegetation may have included 'a'ali'i (Dodonaea viscosa), 'ākia (Wikstroemia species), ko'oko'olau (Bidens
- species) and '*ūlei* (Osteomeles anthyllidifolia). Dry forest areas would have included '*ōhi*'a (Metrosideros
- 15 polymorpha), koa (Acacia koa), lama (Diopyros sandwicensis), wiliwili (Erythrina sandwicensis) and rare
- trees on ridges. Mesic forests of '*ōhi'a, koa* or *lama* and rarely olopua (Nestegis sandwicensis) or
- 17 *halapepe (Pleomele* species) could be found in gulches, on lower slopes and less-disturbed areas.
- 18 Prior to human settlement native birds populated the forests of Maui; they would have included *'elepaio*
- 19 (Chasiempis sandwicensis), 'apapane (Himatione sanguine), 'amakihi (Hemignathus virens) and the pueo
- 20 or Hawaiian Owl (Asio flammeus sandwichensis) a subspecies of Short-eared owl that is endemic to
- Hawai'i. The *pueo* continues today to be an *'aumakua* or family guardian for several Hawaiian families.
- 22 The Hawaiian hoary bat or '*ōpe'āpe'a* (*Lasiurus cinereus semotas*) was the only endemic terrestrial
- 23 mammal in Hawai'i prior to the first human settlement that has survived.
- After ancient settlement in this area the project lands would have been part of the ancient Hawaiian life
- 25 patterns which included gathering practices of woods, medicine plants and bird feathers. They were
- 26 most likely also used for Hawaiian cultivation practices such as sweet potatoes, yams, dryland taro, 'awa,
- 27 arrowroot, sugarcane, breadfruit and *kukui* or candlenut; in the gulches banana. According to the
- 28 *mo'olelo* of Kiha-a-Pi'ilani's time [ca 1500-1600s] when he was living in the Kula-Makawao area, there
- 29 was a famine and people subsisted on ferns and weeds such as *laulele* (butterfly weed/milkweed),
- 30 *pualele* (sow thistle) and *popolo* (black nightshade) until he helped to plant sweet potato.
- 31 During the early historic period these lands may have been part of the sandalwood trade practices -
- 32 cutting trees down for the China trade. Then by the early 1800s the lands were used for sugarcane crops,
- then ranching or pasturing cattle, agriculture (e.g., corn, wheat, pumpkin) followed by pineapple crops.
- 34 Today the lands are fallow with primarily alien brush vegetation.
- 35 **Legendary Entities.** The forested zones were considered the realm of Hawaiian deity, especially Kū
- 36 and sometimes Lono and Laka, but it was also where medicinal plants and hardwoods were gathered.
- 37 The project lands were heavily modified by agricultural and ranching activities during the early historic
- 38 period. They may have been modified during the pre-contact period as well as the *mo olelo* mentions
- 39 Kiha-a-Pi'ilani planting sweet potatoes in the Kula-Makawao area. Some of the forested lands may have
- 40 been cleared in the pre-contact period.



1 2

- 1 Lauhuki and Kili'oe were the mo'o guardians of the cool waters of Kālena and all of the ponds at
- 2 Makawao. However, the closest pool or swimming hole was up near Pu'u Pi'iholo, a distance from the
- 3 project lands. Makawao was noted for its drought.

4 Potential Impacts and Mitigation Measures

- 5 It is evident that at one time the project lands were part of an ancient Hawaiian life system. The *mo'olelo*
- 6 illustrate this in the stories of Kiha-a-Pi'ilani in Makawao and Kula [ca 1500-1600s]. A cultural practice
- 7 of these lands at one time was growing sweet potato and yams, staples of the Hawaiian people, as well as
- 8 cultivating other ethno-botanical plants such as *'awa*, and *koa* and *kukui* trees. However, there are no
- 9 traces of these plants now on the project lands. The project lands were greatly modified in the 19th and
- 10 20th centuries for sugarcane, ranching and pineapple; the lands are now fallow. Therefore, there the
- 11 Maui Veterans Cemetery Expansion project will have no significant impact to cultural resources and
- 12 practices.

13 4.5 SOCIO-ECONOMIC ENVIRONMENT

- 14 The proposed project is located off Baldwin Avenue, the road between the towns of Pā'ia and
- 15 Makawao. The project site lies in Census Tract (CT) 304.04, along with most of Makawao.
- 16 Hali'imaile, a rural residential area downslope from Makawao, is also in the census tract. See Figure
- 17 4-6 for map of Maui census tracts.



FIGURE 4-6: CENSUS TRACTS

1 Demographic and economic data gathered by the U.S. Census shows the Makawao area as

2 prosperous and a mix of residents similar to that of the County as a whole. See Table 4-4 and Table

3 4-5. However, information about persons without jobs and/or below the poverty line shows that

4 low-income people are present in slightly higher proportions in the immediate area than in the

5 County as a whole.

6

	Maui County	Maui Island	CT 304.04
Population			
Total	154,843	144,444	5,609
Ages 0 to 18 (%)	23.1%	23.7%	24.2%
Ages 18 to 64 (%)	64.1%	63.8%	65.0%
65 and up (%)	12.8%	12.6%	10.8%
Households			
Total	53,886	50,215	1,918
Percent with householder living alone, 65+	7.6%	7.4%	6.9%
Average household size	2.82	2.87	2.81
Race (alone or in combination): ¹			
White	50.4%	51.5%	61.5%
Black	1.5%	N/A	N/A
American Indian/Alaska Native	2.5%	N/A	4.4%
Native Hawaiian/Pacific Islander	47.0%	46.3%	44.3%
Asian	27.3%	25.6%	33.8%
Other	3.4%	N/A	2.6%
Percent Latino identity	10.1%	10.3%	14.4%
Population by Household Type			
Percent in households	98.2%	98.1%	96.3%
Percent in group quarters	1.8%	1.9%	3.7%
Persons in nursing facilities	681	681	0
Housing Units			
Total	70,379	65,232	2,037
Occupied	53,886	50,215	1,918
Vacant	16,493	15,107	119
Percent for seasonal, occasional use	60.4%	61.6%	26.1%

TABLE 4-4: 2010 DEMOGRAPHIC CHARACTERISTICS

7 Table Notes:

8 1. Census respondents can claim more than one racial identity, so totals are greater than 100%. Where counts are less

9 than 100 persons, no data are provided, and N/A is shown. Island data calculated by summing Census Divisions, Island

10 data not available when counts are not shown for particular divisions in Maui County.

11 2. SOURCE: From U.S. Census, decennial census 2010 using American FactFinder and tables combined by the State of

12 Hawai'i Department of Business, Economic Development and Tourism, posted at

13 http://hawaii.gov/dbedt/info/census/Census_2010/SF1/index_html.

14

TABLE 4-5: ECONOMIC CHARACTERISTICS

	Maui County	CT 304.04
Median household income (2007-2011)	\$64,583	\$68,657
Share of population below poverty line	9.2%	16.7%
Unemployment rate (2007-2011)	8.2%	13.1%

2 Table Notes:

3 1. Census "unemployment" tends to covary with, but not be identical to, unemployment as recorded by State Department
 4 of Labor and Industrial Relations.

- 5 2. SOURCE: US Census, American Community Survey, five year combined samples for 2007 through 2011.
- 6

7 Potential Impacts and Mitigation Measures

8 The proposed project would not alter the socio-economic environment. No impacts are anticipated.

9 4.6 HEALTH AND SERVICES

10 4.6.1 REFUSE COLLECTION

11 Solid waste is removed from the project site by DPW-Highways maintenance unless it can be reused

12 onsite, such as dirt removed for burials.

13 **Potential Impacts and Mitigation Measures**

14 The proposed project would not significantly increase refuse. No impacts are anticipated.

15 4.6.2 POLICE

- 16 Makawao and the surrounding area are served by Maui Police Department. The main police station is
- 17 located in Wailuku at 55 Mahalani Street. A substation is located at Eddie Tam Memorial Gym in
- 18 Makawao on Mahola Street. MVC is located within the Makawao District, which extends from Pāʻia to
- 19 Ha'ikū. The area is patrolled by Beat 31.
- 20 The MVC expansion will not increase the number of employees and entry to the cemetery would be
- 21 limited to hours of operations. Fences and security systems will remain in place to deter potential
- 22 vandalism and related opportunities.

23 **Potential Impacts and Mitigation Measures**

24 No impacts are anticipated.

25 4.6.3 FIRE AND SAFETY

- 26 First response for fire, medical, and/or rescue emergencies at the project site and the surrounding area
- is provided by the Department of Fire and Public Safety. Makawao Fire Station is located at 134
- 28 Makawao Avenue about 2.5 miles from the project site. In the event a first response alarm fire, Makawao
- 29 station would send an engine company.
- 30 The driveway improvements and extension into the expansion area will be built to accommodate a fire
- 31 truck.

1 **Potential Impacts and Mitigation Measures**

2 No impacts are anticipated.

3 4.6.4 SCHOOLS

- 4 Expansion of the MVC will not generate additional student population and therefore will not have an
- 5 impact on schools.

6 **Potential Impacts and Mitigation Measures**

7 No impacts are anticipated.

8 4.7 INFRASTRUCTURE

- 9 4.7.1 TRAFFIC
- 10 A traffic impact assessment was conducted to review the traffic implications of the proposed project on
- 11 Baldwin Avenue. On January 29 and 30, 2013, traffic counts were conducted at the Baldwin Avenue and
- 12 driveway intersection.
- 13 **Existing Road Conditions.** Baldwin Avenue is a two-lane road under the jurisdiction of the County of
- 14 Maui. The posted speed limit along Baldwin Avenue near the project site is 30 miles per hours (mph). An
- advisory speed limit of 20 mph is posted approximately 1,700 feet north of the project site and 1,400
- 16 feet south where Baldwin Avenue fronts Makawao School. Adjacent to the MVC driveway, the travel
- 17 lanes are 10 feet wide with 2 feet wide asphalt paved shoulders.
- 18 The existing cemetery is located at a 90-degree bend in Baldwin Avenue. The asphalt paved driveway
- 19 connection with Baldwin Avenue is approximately 110 feet wide, with separate stop lines and stop signs
- 20 for right-turn and left-turn vehicles exiting the driveway. Vehicles turning left into the driveway can
- 21 access the driveway from either the north or side adjacent to the right turn out of the driveway, or the
- south side adjacent to the left turn out of the driveway. The driveway is also used by visitors to the
- 23 Makawao Cemetery. Ke'e Road intersects Baldwin Avenue south driveway.
- 24 **Traffic Counts.** Traffic counts were conducted at the intersection to determine visitor traffic to the
- cemetery. Traffic counts were conducted during peak hours of traffic from 1:30 to 3:15 PM on January
- 26 29 and 6:45 to 8:30 AM on January 30.
- 27 During the morning peak hours, 251 vehicles traveled in the north direction toward Pā'ia and 131
- vehicles traveled in the south directions to Makawao. A total of 9 vehicles entered the driveway and 8
- 29 vehicles exited the driveway. However, only 2 vehicles entered the driveway to visit MVC. Other vehicles
- 30 which utilized the driveway were either County maintenance vehicles or vehicles using the driveway to
- 31 U-turn, or temporarily pull-off the road.
- 32 During the afternoon peak hours, 149 vehicles traveled in the north direction toward Pā'ia and 195
- vehicles traveled in the south directions to Makawao. A total of 7 vehicles entered the driveway and 6
- 34 vehicles exited the driveway. Only 2 vehicles entered to visit MVC. Other vehicles which utilized the
- driveway were either County maintenance vehicles or vehicles using the driveway to U-turn, or
- 36 temporarily pull-off the road.

1 **Estimated Project Traffic.** Traffic was estimated using three different methods or sources: *Trip*

2 *Generation, 8th Edition* by the Institute of Transportation Engineers (ITE) estimates, field count

3 estimates, and interview estimates.

4 ITE estimates were used to estimate the additional traffic generated by the proposed project. These

estimates, based on the reference, are show in Table 4-6. The low ITE projected traffic volumes should
 not impact traffic operations at the driveway

6 not impact traffic operations at the driveway.

7

TABLE 4-6: ITE ESTIMATED PROJECT TRAFFIC

Time	Total Trips	Directional Distribution	
		Entering	Exiting
Weekday AM Peak Hour of adjacent Street Traffic	2	1	1
Weekday PM Peak Hour of adjacent Street Traffic	9	3	6

8

9 Estimates based on field counts are shown in Table 4-7. The proposed project will increase the existing

10 burial area by approximately 1.7. The factor was applied to the visitor traffic counts observed in the

11 field.

12

TABLE 4-7: FIELD COUNT ESTIMATED PROJECT TRAFFIC

Time	Total Trips	Directional Distribution	
		Entering	Exiting
Weekday AM Peak Hour of adjacent Street Traffic	8	4	4
Weekday PM Peak Hour of adjacent Street Traffic	8	4	4

13

14 Project traffic was also estimated based on an average of the traffic observed by the cemetery caretaker

and frequent visitor. Using an average of 8 visitors to the existing cemetery, or 18 total trips, and

16 applying the 1.7 factor, the total projected vehicle trips is 28. Estimates are shown in Table 4-8.

17

TABLE 4-8: INTERVIEW ESTIMATED PROJECT TRAFFIC

Time	Total Trips	Directional Distribution	
		Entering	Exiting
Weekday AM Peak Hour of adjacent Street Traffic	28	14	14
Weekday PM Peak Hour of adjacent Street Traffic	28	14	14

18

19 **Potential Impacts and Mitigation Measures**

20 The proposed project will not increase traffic volumes at the driveway intersection with Baldwin

21 Avenue to affect operations of the driveway intersection. Existing cemetery visitor traffic volume and

22 traffic volumes along Baldwin Avenue are low. The estimated traffic volumes will not impact the level of

23 service operations of the driveway intersection.

- 1 4.7.2 WATER
- 2 Makawao, Pukalani, and Kula use the Upcountry system which is supplied primarily by surface-water
- 3 sources and composed of four interconnected sub-systems.
- 4 The major source of the Makawao system is the intake at the end of Wailoa Ditch system at
- 5 approximately the 1,100 ft elevation. The Kamole Water Treatment Plant with a capacity of 8 million
- 6 gallons per day (mgd) is located at this site. The Wailoa Ditch system is owned by East Maui Irrigation
- 7 Company and has a capacity of approximately 190 mgd.
- 8 Opana and Awalau Streams supply water to the Awalau intake. A separate irrigation system from the
- 9 Wailoa Ditch supplies the County Kula Agricultural Park.
- 10 The Kula system consists of an upper and lower system. The upper collets surface water from
- Haipuaena, Puohakamoa, and Waiakamoi Streams. The Olinda Water Treatment Plant has a capacity of1.7 mgd.
- 13 The lower system serves the Omaopio, Olinda, and Lower Kula communities and diverts water from the
- 14 Haipuaena, Puohakamoa, Waiakamoi, and Honomanu Streams. The system consists of over 13 miles of

15 waterlines, 7 pump stations, and 50 million gallon Pi'iholo Reservoir, and the Pi'iholo Water Treatment

- 16 Facility
- 17 The Upcountry system is supplemented by pumping groundwater during drought periods and voluntary
- 18 and mandatory restrictions are imposed during dry periods. These groundwater sources include the
- 19 Haiku well, Hamakuapoko Wells 1 and 2, and Kaupakalua well. See Table 4-9 for a summary of water
- 20 sources and Figure 4-7 for location of water sources.
- 21

TABLE 4-9: MAKAWAO PUKALANI, KULA WATER SOURCES

Sources	2000-2001 1,000 gallons	MGD
Kamole WTF	1,140,653	3.13
Olinda WTF	513,580	1.41
Pi'iholo	970,923	2.66
Haiku Well	50,241	.14
Hamakuapoko Well 1	19,143	.05
Hamakuapoko Well 2	27,576	.08
Kaupakalua Well	139,038	.38
	Total	7.84

22 Source: County of Maui, Infrastructure Assessment Update, May 2003.

23

- According to the Maui Infrastructure Assessment Update, completed in May 2003, the demand for the
- 25 MPK region was 6.40 mgd. The water demand is projected to increase to 11.05 mgd by the year 2020.



Image: State in willes 2 FIGURE 4-7: UPCOUNTRY WATER SYSTEM

3 **Potential Impacts and Mitigation Measures**

- 4 The proposed project and alternatives irrigation would increase the demand for water. Alternative A,
- 5 the proposed project, demand would be phased through a combination of irrigation system and hand
- 6 watering, as is currently done at the existing cemetery. The phase approach would allow time for other
- 7 water sources to become available. There would be little immediate impact to the water supply and
- 8 future demand would be addressed at that time.
- 9 For Alternative B, the water would be directly pumped from the Makawao Aquifer and stored on site.
- 10 The amount of water stored on site would be limited to the size of the well and pump. An estimated 150
- 11 gpm would be able to meet the minimum demand of the proposed project. Water pumped from the well
- 12 would be stored on site. While not increasing the demand to DWS, it would increase the demand on the
- 13 Makawao Aquifer.
- 14 For Alternative C, water from the existing meter would be stored on site. This immediate increase in
- 15 water demand would be limited to the 30,000 gallon tank.
- 16 In all alternatives, conservation methods would be used to lessen the project demand for irrigation. The
- 17 irrigation system would be activated by weather sensors, mostly in the dryer seasons. No adverse effect
- 18 to water supply is anticipated.

1 4.8 CUMULATIVE IMPACTS

2 4.8.1 REGIONAL DEVELOPMENT IN THE AREA

- 3 The Maui Island Plan is a comprehensive plan that provides direction for future growth, the economy,
- 4 and social and environmental decisions on the island through 2030. The Plan includes the planned
- 5 development for Maui and Directed Growth Boundaries. See Figure 4-8 for Growth Boundaries within
- 6 the Makwawao-Pukalani-Kula community.
- 7 Planned and committed development projects within the area are summarized in Table 4-10.



FIGURE 4-8: MPK DIRECTED GROWTH BOUNDARIES

Planned Growth Area	Type of Growth	Gross Site Acres	Dwelling Unit Count
Makawao Makai	Small Town Expansion	39	90
Seabury Hall	Small Town Expansion	63	Not applicable
Pukalani Expansion	Urban Expansion	56	Approximately 311
Pukalani Makai	Urban Expansion	45	250
Hāli'imaile	Small Town Expansion	330	825
'Ulupalakua Ranch	Rural Expansion	223	limited

TABLE 4-10: PLANNED/COMMITTED AND PLANNED PROJECTS

2

3 **Potential Impacts and Mitigation Measures**

4 The proposed project will not significantly impact the development of MPK community. The proposed

5 project does not change the character of the surrounding area and does not detract from the planned

6 projects.

7 4.8.2 REGIONAL DEMAND ON WATER

8 As discussed in 4.7.2, future water demands for the Upcountry system will outpace the current supply.

9 Long-range waters source development opportunities are presented in the Maui Island Plan, 2030.

10 Strategies include development f basal wells, use of water from ditch systems, expansion of storage

11 capacity, and maximization of water conservation and reclaimed water use.

12 **Potential Impacts and Mitigation Measures**

- 13 The proposed project, along with other proposed project within the region, would contribute to the
- 14 future water demands of the region. Strategies outlined in the Maui Plan would expand the existing
- 15 water sources to help meet future water demands. The proposed project would phase water usage to
- 16 allow for water to become available though these strategies.

1 5 FINAL DETERMINATION AND FINDINGS

- 2 This Draft EA demonstrates that the proposed project is not anticipated to have a significant adverse
- 3 effect on the environment and that an Environmental Impact Statement (EIS) is not warranted. A
- 4 Finding of No Significant Impact (FONSI) is therefore anticipated for this project.
- 5 The following findings and reasons demonstrate that the proposed project will not have significant
- 6 adverse impacts on the environment, and consequently, support the above preliminary determination.
- 7 Potential impacts have been evaluated and are addressed in terms of how the proposed project relates
- 8 to the significance criteria of HAR Section 11-200-12. Pursuant to HAR Section 11-200-12, *an action*
- 9 shall be determined to have a significant effect on the environment if it:

10 **1.** Involve an irrevocable commitment to loss or destruction of any natural or cultural resource;

- 11 The proposed project would not result in a loss or destruction of any natural or cultural resources. The 12 project expands the existing cemetery. There are no rare, threatened, or endangers species.
- 13 Historic resources are limited to plantation era structures which were documents in the AIS. Mitigation
- 14 measures, in the form of data collection or preserved in place, for the one historic feature would be
- 15 implemented to avoid adverse affects.

16 **2.** Curtails the range of beneficial use of the environment;

- 17 The proposed project would not impact the surrounding agricultural uses. The cemetery would
- 18 maintain views and open space.

19 3. Conflicts with the state's long-term environmental policies or goals and guidelines as expressed

20 in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or

- 21 executive orders;
- 22 The proposed project does not conflict with long-term environmental policies or goals. The project's
- 23 potential impact is water usage which is an issue for the MPK region. Potential impact would be
- 24 mitigated through conservation methods.

4. Substantially affects the economic welfare, social welfare, and cultural practices of the community or State;

The proposed project does not affect the economic welfare, social welfare, or cultural practices of thecommunity or State.

29 5. Substantially affects public health;

- 30 The proposed project would continue the cemetery use and provide a place for interment. The existing
- 31 cemetery operations would continue. Approval of construction documents for the expansion of the
- 32 cemetery is required from the DOH Director.

33 6. Involves substantial secondary impacts, such as population changes or effects on public facilities;

- 34 The proposed project would affect the capacity of public services and facilities such as police and fire
- 35 protection, emergency services, schools, and parks. There are no anticipated secondary impacts to
- 36 population or public facilities and the proposed action does not generate increased resident population.

1 7. Involves a substantial degradation of environmental quality;

- 2 The proposed project is not expected to have any significant negative impacts nor substantial
- 3 degradation of the environmental quality.

4 8. Is individually limited but cumulatively has considerable effect upon the environment or involves

- 5 *a commitment for larger action;*
- 6 No cumulative effects are anticipated.
- 7 9. Substantially affects a rare, threatened, or endangered species, or its habitat;
- 8 No rare, threatened, or endangered species or its habitat are located at MVC or the expansion area.

9 **10**. Detrimentally affects air or water quality or ambient noise levels;

- 10 The burial and interment would not impact air or water quality. Cemeteries are passive and do not
- 11 contribute to noise pollution.

12 **11.** Affects or is likely to suffer damage by being located in an environmentally sensitive area such

- 13 as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary,
- 14 *fresh water, or coastal waters;*
- 15 The MVC and expansion area is not located within any of these environmentally sensitive areas.

16 12. Substantially affects scenic vistas and viewplanes identified in country or state plans or studies; 17 or,

- 18 The views and vistas would not be impacted by the proposed action. Structure would be limited in
- height. Landscaping would similar to the surrounding landscape and enhance the rural character of theregion.

21 **13.** Requires substantial energy consumption.

22 The proposed project would not significantly increase energy usage.

AGENCIES AND INDIVIDUALS INVOLVED IN THE PREPARATION OF THE EA

3 6.1 CONSULTED AGENCIES AND INDIVIDUALS

- 4 The following agencies were consulted in preparation of the Draft EA.
- 5 United State Department of Veterans Affairs
- 6 State of Hawai'i Department of Defense, Office of Veterans Services
- 7 Maui County Department of Public Works
- 8 Maui County Planning Department
- 9 Maui County Department of Water Supply
- 10 Makawao Cemetery Association

6.2 COMMENTS RECEIVED DURING THE DRAFT EA COMMENTPERIOD

- 13 Along with publication in the April 23, 2013 issue of *The Environmental* Notice, copies of the Draft EA
- 14 were sent to consulted and select agencies and individuals. Comments were received during the Draft
- 15 EA comment period. Comment letters and responses are provided in Appendix F.

Agency/Individual	Draft EA Provided	Comment Letter Received
Maui County, Department of Public Works	Yes	May 14, 2013
Maui County, Department of Public Works, Highways Division	Yes	No comments received
Maui County, Planning Department	Yes	No comments received
Maui County, Department of Water Supply	Yes	May 20, 2013
State of Hawaii, Department of Defense, Office of Veterans Services	Yes	No comments received
State of Hawaii, Department of Defense, Engineering Office	Yes	No comments received
State of Hawaii, Department of Land and Natural Resources	Yes	May 22, 2013 from Engineering Division June 7, 2013 from Commission on Water Resources Management
State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division	Yes	No comments received
State of Hawaii, Department of Accounting and General Services	Yes	No comments received
Maui County Veterans Council	Yes	No comments received
Makawao Cemetery Association	Yes	May 20, 2013

APPENDIX A Subdivision map no. 2.3186



JOB NO: 211175SUB-FINAL-9FEB13.DWG

APPENDIX B BIOLOGICAL RESOURCES SURVEY

BIOLOGICAL RESOURCES SURVEY REPORT FOR THE EXPANSION OF THE MAUI VETERANS CEMETARY

Prepared for

Belt Collins Hawaii LLC

Prepared by

SWCA Environmental Consultants

BIOLOGICAL RESOURCES SURVEY REPORT FOR THE EXPANSION OF THE MAUI VETERANS CEMETARY

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SWCA Project No. 24972.00

February 2013

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1. INTRODUCTION

The Maui Veterans Cemetery (TMK 2-2-4-02:00, also known as the Makawao Veterans Cemetery) is located next to Makawao Cemetery in Makawao, Island of Maui. The Maui Veterans Cemetery is planning to expand from 7 to 17 acres (3-9 hectares) as it may reach capacity for burials in one and a half to two years. The Hawai'i State Department of Veterans Services (OVS) will be acquiring 10 acres (4 hectares) of adjacent land. The proposed parcel for the expansion (TMK 2-2-4-02:07) will be subdivided and a 10 acre lot will be created for the Maui Veterans Cemetery expansion. The proposed expansion will increase the burial capacity of the cemetery in the form of full-casket in-ground burials and both inground and above-ground internment of cremated remains. A small maintenance facility and roadways are also planned for the expansion area.

In support of the Maui Veterans Cemetery Environmental Assessment (EA) at Makawao, Maui, SWCA Environmental Consultants (SWCA) was tasked by Belt Collins to conduct a flora and fauna survey of the project site. The project site consists of the existing 7 acre cemetery and the proposed 10 acre expansion area (Figure 1).

This report summarizes the findings of the flora and fauna survey conducted by SWCA biologists Shahin Ansari (botanist) and Ling Ong (zoologist) on January 10, 2013. The objectives of the flora and fauna survey were to:

- 1. Identify and document the presence and relative abundance of plant species and vegetation communities within the project site;
- 2. Identify and document the presence and relative abundance of bird, mammal, amphibian, reptile, and large insects species within and in the immediate vicinity of the project site;
- 3. Identify the presence and abundance of any State or Federally listed candidate, threatened, or endangered species, species of concern and/or rare (either locally or State-wide) species found within the project site; and
- 4. Provide recommendations to prevent take of any State or Federally listed candidate, threatened, or endangered species, species of concern and/or rare (either locally or State-wide) species if found within the project site.

2. DESCRIPTION OF PROJECT SITE

The project site encompasses the Maui Veterans Cemetery (TMK 2-2-4-02:00) and the proposed 10 acre parcel (TMK parcel 2-2-4-02:07) adjacent to the cemetery. The project site (Figure 1) is bordered by Makawao Cemetery, agricultural land and a gulch to the east, Baldwin Avenue to the south and by agricultural land to the west and north.

The existing Maui Veterans Cemetery comprises in-ground burial sites and a columbarium. Over 2,589 people are interred at the cemetery (Imada 2012). Additional features present on site include: a small maintenance facility, a small parking lot, a paved road and a flagpole in the middle of the cemetery. The facilities are not lit at night, with the exception of the flagpole. The grounds are well maintained with closely trimmed Bermuda grass (*Cynodon dactylon*) with scattered trees. The proposed expansion area is agricultural land that is currently grazed by cattle and is regularly mowed.



Figure 1. Project Site (provided by Belt Collins LLC).

3. METHODS

Flora and fauna surveys of the project site were conducted on January 10, 2013.

3.1. Flora

Pedestrian surveys were conducted within the project site and all plant species were documented and notes were made on the plant communities. Areas more likely to support native plants (i.e., rocky outcrops, shady areas) were more intensively examined. Plants were identified in the field; however, plants which could not be positively identified were collected for later determination in the herbarium and for comparison with the most recent taxonomic literature.

Plants recorded during the survey are indicative of the season ("rainy" vs. "dry") and the environmental conditions at the time of the survey. It is likely that additional surveys conducted at a different time of the year would result in minor variations in the species and abundances of plants observed.

3.2. Fauna

Fauna surveys consisted of bird point counts and incidental observations of birds, mammals, reptiles, amphibians, insects, and other invertebrates. Visual and acoustic surveys for the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) were conducted in the evening and night of January 10, 2013. Searches for the endangered Blackburn's sphinx moth (*Manduca blackburni*) consisted of searches for larval food plants, caterpillars and sign. A light trap was deployed on the same night to determine if adult moths were present in the area.

3.2.1.Avifauna

For the avian surveys, four point count stations were established within the project site to determine the relative abundance of bird species (Figure 2). The location of the observer at each point count site was established in the field with a hand-held GPS receiver. Field observations of birds were recorded during 8-minute 164 feet (50 m) radius point counts using 10 x 50 binoculars with a 6.5 degree field of vision. The observer also listened for vocalizations. The relative abundances of species were estimated from the results. Birds observed between count stations were also noted.

3.2.2. Hawaiian Hoary Bat

SWCA biologists conducted evening visual and acoustic surveys for the endangered Hawaiian hoary bat, the only terrestrial mammal native to the Hawaiian Islands. Visual surveys for the Hawaiian hoary bat were conducted at from 6:03 pm (sunset) to 6:50 pm using night vision goggles (Kerif ITT PVS-7 F5001 Series) at the western edge of the proposed expansion area (Figure 2). This area was chosen as it is close to a large group of trees within the gulch, mainly black wattle (*Acacia mearnsii*) and kukui (*Aleurites moluccana*). Kukui has been documented as a roost tree species for the Hawaiian hoary bat (USFWS 1998).

An ultrasonic acoustic detector (Wildlife Song Meter SM2BAT) was also deployed at the same location from 6:00 pm to 7:20 pm to record ultrasonic calls from bats. From 7:30 - 7:45 pm, a driving transect of 1.14 mile (1.83 km) was conducted around the immediate vicinity of the project site with the bat detector microphone deployed outside of the vehicle (Figure 2).



SWCA Inc.

Maui Veterans Cemetery Expansion

Legend

Insect and Bat Survey Point — Driving Transect for Bats







Bird and Bat Survey Locations

Figure 2. Bird and Bat Survey Locations.

3.2.3. Blackburn's Sphinx Moth

Surveys for the food plants (Family: Solanaceae) of the Blackburn's sphinx moth caterpillar, particularly tree tobacco (*Nicotiana glauca*) were conducted during the botanical survey. Tree tobacco is a weedy species commonly found in agricultural and disturbed areas. Any larval host plants found would have been inspected for caterpillars and sign; however, no larval host plants were detected. The abundance of adult host plants, particularly morning glory (*Ipomea* spp.), the Hawaiian native caper or maiapilo (*Capparis sandwichiana*) and wild leadwort or 'ilie'e (*Plumbago zeylanica*) were also noted.

A survey for adult Blackburn's sphinx moths was conducted from 6:50 to 7:20 pm that same night. Blackburn's sphinx moths belong to the family of sphingid moths and this family is known to be attracted to light sources (Beck and Linsenmair 2006). However, the best time of night for the sampling for Blackburn's sphinx moth is currently unknown. The sampling for this study was conducted during a waning crescent, one night before the new moon. A light trap consisting of a 100 watt metal halide floodlight illuminating a white sheet 150 cm x 255 cm was used. The light trap was deployed at the western edge of the proposed expansion area (Figure 2).

3.2.4. Other Mammals and Insects, Reptiles, Amphibians

Mammals, reptiles, amphibians, insects, and other invertebrates seen or heard during the point count surveys, between count stations or during the night surveys were also documented.

4. RESULTS

No threatened or endangered plant or animal species or candidate species were found during the flora and fauna survey of the project site. The plant and animal species assemblages are typical of those found in agricultural and landscaped areas.

4.1. Flora

The existing cemetery is landscaped with closely mowed Bermuda grass (*Cynodon dactylon*) with scattered trees of Califonia pepper (*Schinus molle*) and *Cassia sp.* (Figure 3).

The 10 acre expansion area appeared to be regularly mowed and grazed by cattle (Figures 4 and 5). The knee high vegetation in the expansion area predominantly consists of lovegrass (*Eragrsotis amabilis*), sourgrass (*Digitaria insularis*), African bristlegrass (*Setaria sphacelata*) and balloon plant (*Ascelepias physocarpa*). Scattered Christmas berry (*Schinus terebinthifolius*) and black wattle trees provide shade for the cattle. The clumps of trees visible in the aerial photographs (Figure 1 and Figure 2) within the project site were not present during the survey.

A total of 31 plant species were documented in the proposed expansion area of which none were native species. A list of plant species observed in the project site during the survey is included in Appendix 1.



Figure 3. Manicured Landscape Within the Existing Cemetery.



Figure 4. Recently Mowed Eastern Portion of the Expansion Area.



Figure 5. Typical vegetation in the Western Portion of the Expansion Area.

4.2. Fauna

4.2.1.Avifauna

Four point count stations were established within the project site. The bird species observed at the project site were species typically found in landscaped and agricultural areas. Thirteen species were documented (Table1); one species is a migratory bird, the Pacific golden plover (*Pluvialis fulva*), and the remaining species observed are introduced to the Hawaiian Islands. No native birds were seen or heard at the project site. The Pacific golden plover was only observed at the existing cemetery within the landscaped grassy areas. While no owls were seen or heard during the night survey for bats or moths, the native owl, the Hawaiian short-eared owl or pueo (*Asio flammeus sandwichensis*) and the introduced barn owl (*Tyto alba*) could potentially utilize the project site for hunting.

Species	Common Name	Status	Relative Abundance
Acridotheres tristis	Common Myna	I	abundant
Alauda arvensis	Eurasian Skylark	I	common
Bubulcus ibis	Cattle Egret	I	common
Cardinalis cardinalis	Northern Cardinal	I	*
Carpodacus mexicanus	House Finch	I	common
Francolinus pondicerianus	Gray Francolin	I	*
Gallus gallus	Domestic chicken	I	*
Geopelia striata	Zebra Dove	I	abundant
Lonchura atricapilla	Chestnut Munia	I	abundant
Lonchura punctulata	Nutmeg Mannakin	I	common
Pluvialis fulva	Pacific Golden Plover	Μ	abundant
Streptopelia chinensis	Spotted Dove	I	abundant
Zosterops japonicus	Japanese White eye	I	common
	Total Species	13	

Table 1.Bird Species in the Project Site.

I = introduced, M = migratory

* - seen/heard outside of project site

4.2.2. Hawaiian Hoary Bat

No Hawaiian hoary bats were detected during the visual surveys. No echolocations were recorded by the ultrasonic detector when deployed at the western edge of the property or during the driving transect.

Hawaiian hoary bat roosts are typically located in dense canopy foliage (or subcanopy when canopy is sparse) with open access for launching into flight (Bonaccorso/USGS, pers. comm.). The few trees on the proposed expansion (Christmas berry and black wattle) do not appear to be suitable roost trees for the Hawaiian hoary bat. Of the few trees present in the existing cemetery (California pepper trees and *Cassia* sp.), Hawaiian hoary bats have been documented roosting in *Cassia* trees (USFWS 1998). However, given the open area around these isolated trees and the availability of more closely spaced trees of suitable species present in areas just beyond the project site, the likelihood of Hawaiian hoary bats roosting in the trees within the existing cemetery is small. Although not detected, the species may occasionally use the airspace above the project site for commuting or foraging.

4.2.3. Other Mammals

Cattle (*Bos taurus*) currently graze in the proposed expansion area of the project site. Deer (*Axis axis*) droppings were seen along the western edge of the project site in the vegetation that borders the gulch. A local resident commented that deer were common in the area. Dogs were heard barking in the vicinity of the project site, but these are likely to have been domestic dogs.

No other mammals were seen during the survey, though it is possible for feral dogs and cats (*Felis*) to enter the project site. Other mammals that can be expected on site include mice (*Mus musculus*), rats (*Rattus* spp.) and mongoose (*Herpestes javanicus*).

4.2.4. Blackburn's Sphinx Moth

Host plants of the adult Blackburn's sphinx moth are thought to be the flowers of morning glory, maiapilo or 'ilie'e (USFWS 2003). The caterpillar feeds primarily on Solanaceous plants, particularly the introduced tree tobacco in disturbed areas (Rubinoff and San Jose 2010). No larval host plants or adult host plants of the Blackburn's Sphinx moth were observed at the project site, and no caterpillars were found. No Blackburn's sphinx moths or moths of any species were attracted to the light trap that was deployed.

Due to the windy conditions, the paucity of all aerial insect species observed in the general area and the observed lack of adult food plants in the project site, the night survey for moths was curtailed at 7:20 pm after 30 minutes of deployment. The lack of aerial insects was verified by visual observations with the night vision goggles augmented by an infra-red spotlight. Wind speeds recorded at Kahului Harbor that night from 6:00 - 8:00 pm ranged from 6 - 12 knots (7 - 14 mph) with gusts up to 16.5 knots (19 mph).

Due to the absence of larval and adult food plants, the Blackburn's sphinx moth is not expected to be present at the project site.

4.2.5. Other Invertebrates

The most commonly observed large butterfly was the introduced monarch butterfly (*Danaus plexippus*). This species is a milkweed butterfly (subfamily Danainae), in the family Nymphalidae, named because milkweed is the host plant for both the adult and the caterpillar. Monarch butterflies were first documented in Hawai'i between 1841 and 1852, after the host plant, milkweed (*Asclepias crussavica*) was established. The balloon plant, another suitable host plant, is common within the proposed expansion area and likely accounts for the presence of the monarch butterflies.

Other large insects observed included two common native dragonfly species, the common green darner (*Anax junius*) and the globe skimmer (*Pantala flavescens*).

4.2.6. Reptiles and Amphibians

No reptiles of amphibians were observed or heard during the day or night surveys.

5. DISCUSSION AND RECOMMENDATIONS

No threatened or endangered plant or animal species were found during the flora and fauna survey of the project site (USFWS 2012). The expansion of the existing cemetery onto agricultural land is not expected to impact any listed threatened or endangered species.

Food plants for the Blackburn's sphinx moth are not present at the project site and the species was not found during the survey. Given the lack of suitable host plants, the Blackburn's sphinx moth is not expected to occupy the project site. Thus, the expansion of the cemetery is not expected to have any impact on the species.

Hawaiian hoary bats were not detected during the visual or acoustic surveys. They are unlikely to roost in the existing trees on the project site. Hawaiian hoary bats may occasionally use the airspace above the
project site for commuting or foraging and the proposed project is not expected to change this behavior or impact the species.

The one migratory bird species observed, the Pacific golden plover, was only observed on the grounds of the existing cemetery. This species frequents gardens, lawns and open spaces (Mitchell et al. 2005) and the proposed expansion will likely benefit the species with the creation of more open habitat for foraging.

The two native dragonfly species, the common green darner and globe skimmer are common on all Hawaiian Islands and are not expected to be negatively impacted by the project. No other non-native birds, mammals, insects, reptiles or amphibians are expected to be impacted by the project.

No native plants species were found within the project site, the proposed project is not expected to have any impact on native, threatened or endangered plant species. SWCA recommends that native Hawaiian plants be employed for landscaping in and around the cemetery to the maximum extent possible. Vegetation efforts could include planting with native species such as: 'ōhi'a (*Metrosideros polymorpha*), koa (*Acacia koa*), hao (Rauvolfia sandwicensis), naio (*Myoporum sandwicense*), 'ūlei (*Osteomeles anthyllidifolia*), kou (*Cordia subcordata*), and *Bidens* sp. (kookoolau). Additional information on selecting appropriate plants for landscaping can be obtained from the following sites:

- - http://www.nativeplants.Hawaii.edu/
- <u>http://www.botany.hawaii.edu/faculty/daehler/wra/default2.htm</u>
- http://www.plantpono.org/non-invasive-plants.php
- <u>http://www.hear.org/alternativestoinvasives/pdfs/mcaac_hpwra_a2i_list.pdf</u>

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Appendix A.

CHECKLIST OF PLANTS OBSERVED AT MAUI VETERANS CEMETERY AND THE PROPOSED EXPANSION AREA, MAKAWAO, MAUI ON JANUARY 10, 2013.

The following checklist is an inventory of all the plant species observed by SWCA biologists on January 10, 2013 during the survey of the Project Site at Maui Veterans Cemetery and expansion area located in Makawao, Maui. The plant names are arranged alphabetically by family and then by species into three groups: gymnosperms, monocots and dicots. The taxonomy and nomenclature of the flowering plants (monocots and dicots) are in accordance with Wagner et al. (1999a, 1999b); recent name changes are those recorded in Wagner et al. (2012).

Status:

P = Polynesian = introduced by Polynesians.

X =introduced/ alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact (Cook's arrival in the islands in 1778).

Scientific name	Common/Hawaiian name(s)	Status
GYMNOSPERMS		
Cupressaceae		
Thuja occidentalis L.	thuja	X
MONOCOTS		
Poaceae		
Cynodon dactylon (L.) Pers.	Bermuda grass	Х
Digitaria insularis (L.) Fedde	sourgrass	Х
Eragrostis amabilis (L.) Wight & Am. Ex Nees	lovegrass	Х
<i>Setaria sphacelata</i> (Schumach.) M.B.Moss ex Stapf & C.E. Hubb	African bristlegrass	Х
Megathyrsus maximus (Jacq.) B.K. Simon & S.W.L. Jacobs	Guinea grass	Х
Melinis repens (Willd.) Zizka	red Natal top	Х
DICOTS		
Anacardiaceae		
Schinus molle L.	California pepper tree	Х

Scientific name	Common/Hawaiian name(s)	Status
Schinus terebinthifolius Raddi	Christmas berry	Х
Asclepiadaceae		
Asclepias physocarpa (E. Mey.) Schltr.	balloon plant	Х
Asteraceae		
Ageratum conyzoides L.		X
Calyptocarpus vialis Less.	straggler daisy	X
<i>Conyza canadensis</i> (L.) Cronquist var pusilla (Nutt.) Cronquist	horseweed	X
Emilia fosbergii Nicolson	pualele	Х
Sphagneticola trilobata (l.) Pruski	wedelia	Х
Senecio madagascariensis Poir	fireweed	Х
Youngia japonica (L.) DC.	Oriental hawksbeard	Х
Euphorbiaceae		
Ricinus communis L.	castor bean	X
Fabaceae		
Acacia mearsnii De Wild	black wattle	X
Cassia sp.	shower tree	Х
Chamaecrista nictitans (L.) Moench ssp.	partridge pea	Х
Crotolaria pumila Ortega	small rattle pod	X
Indigofera hendecaphylla Jacq.	creeping indigo	X
Macroptilium lathyroides L. urb	cow pea	Х
Malvaceae		
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	Х
Sida rhombifolia L.	sida, Cuban jute	Х
Myrtaceae		
Melaleuca quinquenervia (Cav.) S.T. Blake	paperbark, punk tree	X
Oxalidaceae		
Oxalis corniculata L.	wood sorrel	P?

Scientific name	Common/Hawaiian name(s)	Status
Passifloraceae		
Passiflora suberosa L.	corkystem passionflower	Х
Tiliaceae		
Triumfetta semitriloba Jacq.	bur bush	Х
Verbenaceae		
Verbena litoralis Kunth	verbena	X

APPENDIX C ARCHAEOLOGICAL INVENTORY SURVEY

— Final Report —

Archaeological Inventory Survey for Environmental Assessment, Maui Veterans Cemetery, Makawao and Hāliʿimaile Ahupuaʿa, Makawao District, Maui, Hawaiʿi

Tax Map Key (TMK) 2-2-4-02:09 and Portion of 02:07

by

Trever Duarte and Jane Allen

Prepared for

Belt Collins Hawaii LLC 2153 North King Street Suite 200 Honolulu, Hawai'i 96819-4554

INTERNATIONAL ARCHAEOLOGICAL RESEARCH INSTITUTE, INC. JUNE 2013

— FINAL REPORT —

ARCHAEOLOGICAL INVENTORY SURVEY FOR ENVIRONMENTAL ASSESSMENT, MAUI VETERANS CEMETERY, MAKAWAO AND HĀLI'IMAILE AHUPUA'A, MAKAWAO DISTRICT, MAUI, HAWAI'I TAX MAP KEY (TMK) 2-2-4-02:09 AND PORTION OF 02:07

by

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June 2013

ABSTRACT

Under contract to Belt Collins Hawaii, LLC, of Honolulu, International Archaeological Research Institute, Inc. (IARII), has completed fieldwork and background literature searches for an inventory survey report concerning the Maui Veterans Cemetery, Makawao, Maui. The information in this report is provided for inclusion in an Environmental Assessment (EA) to cover a planned expansion of the cemetery. The client is managing the expansion project for the Hawai'i State Department of Defense Office of Veterans Services (OVS). The Maui Veterans Cemetery is located on the northeast side of Baldwin Avenue, next to the churchassociated Makawao Cemetery, northeast of the main area of Makawao town. The current Veterans Cemetery contains 636 interments and occupies approximately 2.9 hectares (ha) (7.2 acres [ac.]). The (approximately) 4.5-ha (10-ac.) main portion of the expansion parcel, on the north and northeast sides of the cemetery, widens from west to east, roughly forming an elongated trapezoid. The expansion parcel additionally includes a small, narrow roadway strip along the east side of the current Maui Veterans Cemetery.

Much of the area surrounding the project parcels was dominated by plantation fields in the mid- to late 19th century, according to historical maps and other documents. The project area includes lands in two traditional *ahupua'a*, Makawao and Hāli'imaile. At Mahele, Hāli'imaile, where the expansion parcel and probably a small corner of the current cemetery are located, was awarded to Miriam Kekauonohi as Royal Patent 7512. The existing cemetery parcel is part of a large grant, Grant 64, that was leased to William A. McLane as part of his extensive plantation sugarcane holdings.

On January 14 and 15, 2013, on-foot survey, including brief survey in the cemetery and systematic inventory throughout the expansion parcel, documented six surface features, including four (Features 1 [manhole box], and 3, 4, and 6 [isolated blocks]) made of a coarsely tempered concrete similar to a type known as *kameki puna*, which is often found at late 19th- and early 20th-century sites. Feature 2 is a more recent Concrete Masonry Unit (CMU) cistern or well. Feature 5 is an isolated rounded basalt boulder. Excavation of six shoveled pits established that a disturbed agricultural soil (Layer I), which produced recent plastic, a wire nail, and charcoal, caps the sequence throughout the area. Layer II, a deeper and less disturbed soil reached in one unit produced no cultural materials. A 280-centimeter-deep trench excavated in the current cemetery by grounds crew sectioned a third, basal layer, a Makawao series C-horizon soil containing deteriorating basalt, beneath the agricultural soils.

With the exception of the Feature 1 structure, these features have been documented sufficiently and are no longer considered potentially significant. No further archaeological investigations are recommended for these five features. Feature 1 is more than 50 years old and appears likely to retain integrity of location. It and any associated soils may possess information important to history, making it potentially eligible for nomination to the National Register of Historic Places according to Criterion D. Archaeological monitoring is recommended during its destruction and during ground modification beneath it and within a band 5 m wide surrounding the feature.

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I. INTRODUCTION

Under contract to Belt Collins Hawaii, LLC, of Honolulu, International Archaeological Research Institute, Inc. (IARII), has completed fieldwork and background literature searches for an inventory survey report concerning the Maui Veterans Cemetery, in Makawao, Maui. This survey report provides information for inclusion in an Environmental Assessment (EA), which is required for a planned project to expand the cemetery into an adjacent parcel in order to increase the numbers of both interment and cremation sites. The client is managing the expansion project for the Hawai'i State Department of Defense Office of Veterans Services (OVS). Roads and small maintenance facilities will be added in the expansion parcel, at locations that are not yet decided.

PROJECT AREA LOCATION

The Maui Veterans Cemetery is located on the northeast side of Baldwin Avenue, next to Makawao Cemetery, a short distance northeast of the main area of Makawao town (Fig. 1). The current cemetery contains 636 interments marked by simple white uprights (Photo 1; also, see photograph, http://www.findagrave.com, accessed February 11, 2013).

The existing Maui Veterans Cemetery occupies approximately 2.9 hectares (ha) (7.2 acres [ac.]) in the southwest portion of the planned combined property. The (approximately) 4.5-ha expansion parcel (10 ac.), on the north and northeast sides of the cemetery, roughly forms an elongated trapezoid that widens from west to east. The expansion parcel additionally includes a small, narrow roadway strip along the east side of the north portion of the current Maui Veterans Cemetery.

The current Maui Veterans Cemetery is located in Tax Map Key (TMK) (2)-2-4-002:09; the (2) refers to the Island of Maui and is omitted elsewhere in this document. Most of the expansion area is located in a portion of TMK 2-4-002:07 (Figs. 2, 3); the narrow road corridor along the east edge of the current cemetery, is located in TMK 2-4-002:09. (The adjacent but unrelated, church-associated, Makawao Cemetery occupies TMK 2-4-002:01.)

The cemetery and the expansion parcel include lands in two traditional *ahupua* '*a*, Makawao and Hāli'imaile (the *ahupua* '*a* is the basic Hawaiian land unit, typically reaching from mountains to sea to provide a broad range of resources to its residents [Pukui and Elbert 1986:9]). The two project-area *ahupua* '*a* are atypical: Hāli'imaile reaches the ocean in the north but ends partway to the mountains; Makawao begins where Hāli'imaile ends and reaches the lower northwest slopes of Haleakalā (Fig. 4).

Except for a tiny area in Hāli'imaile at the northwest corner of the current cemetery, it and the road-strip portion of the expansion parcel are located in Makawao Ahupua'a. The northwest third (approximate) of the main portion of the expansion parcel is located in Hāli'imaile; the remainder is located in Makawao (Fig. 5). Both *ahupua'a* are currently assigned to Makawao District, although, as will be discussed, that district did not exist until 1909. Traditionally, Hāli'imaile Ahupua'a was part of Hāmākua Poko District; Makawao either was part of Hāmākua Poko or was a separate land unit that was not part of any district.

ARCHAEOLOGICAL PROJECT OVERVIEW

This report is part of a two-report submittal package that has been prepared to provide information needed for an EA to be prepared by Belt Collins Hawaii to satisfy Hawai'i Revised Statutes Chapter 343. The second report is a Cultural Impact Assessment (CIA) prepared by Maria Orr and IARII.

All archaeological research for the project was conducted in accordance with Sections 106 and 110(f) of the National Historic Preservation Act (NHPA), as amended (16 U.S. Code Section 470 et seq.); the implementing regulations in 36 Code of Federal Regulations (CFR) Part 800; the Antiquities Act of 1906; the Archaeological Resources Protection Act of 1979 (ARPA), and ARPA-implementing regulations set forth in 32 Code of Federal Regulations (CFR) Part 229.

REPORT ORGANIZATION

This report includes seven text sections, three appendices, and a reference list. This section, Section I, introduces the project and the project parcels. Section II summarizes the available environmental and historical information concerning the site area. Section III includes the results of previous archaeological projects conducted nearby. Section IV summarizes the goals of the survey, and project logistics and methods. Section V describes the results of the survey, and Section VI summarizes the results in terms of the research goals, assesses site significance, and makes recommendations.

Appendix A contains all figures; Appendix B, all photographs. Appendix C presents the NHRP criteria for significance, and integrity requirements. The final report section lists References Cited.

II. PHYSICAL AND CULTURAL BACKGROUND INFORMATION

The primary sources consulted for physical environmental and cultural background information include IARII's library; the Hawai'i State Historic Preservation Division (SHPD) Library; the State Department of Accounting and General Services (DAGS) Survey Division and the DAGS map website (<<u>http://dags.hawaii.gov/survey/reg</u>>, last accessed January 11, 2013); the State Department of Land and Natural Resources (DLNR) Bureau of Conveyances, the Bishop Museum Library and Archives; the State Library; and on-line websites. All websites and other sources are cited in the text and listed in References Cited.

PHYSICAL ENVIRONMENT

The island of Maui is the second largest (1,883 km²) and second youngest island in the Hawaiian Islands. Its geographic location is central to the archipelago, with Moloka'i to the west, Lāna'i and Kaho'olawe to the south, and Hawai'i Island to the east. The presence of two degenerated shield volcanoes—the older erupted volcano forming the West Maui Mountains with Pu'u Kuku'i rising 1,764 meters above sea level (m asl), and the youthful Haleakalā to the east, reaching 3,056 m asl—create a dynamic ecological variation from the lava fields of Keonio'iō, which cover much of the island between the two, continuing westward to the tropical forest of 'Iao Valley, which is cut into the rocks of the very old West Maui caldera (Macdonald et al 1983:380-401). Maui's mountain systems create a rain shadow for the leeward (west) areas of the island, as well as for the neighboring islands of Kaho'olawe and Lāna'i. The effect of this widespread rain shadow has limited the development of perennial streams and rivers to the northeast sections of Hāna and Wailuku Districts.

The project area is located on the lower northwestern slopes of Haleakalā, on a plateau south of a south fork of Māliko Gulch (Fig. 6: the gulch along the northeast and east sides of the property). The project-area terrain is relatively level, due to both previous cultivation and current cattle grazing especially in the main part of the south section of the expansion parcel (Photos 2-4). Elevation in the project area is roughly 472 m above sea level (asl; 1550 ft.). The area receives an annual rainfall of 162.6 centimeters (cm) (64 inches [in.]), most of which falls between the months of October to April (Giambelluca et al. 2011, available, http://rainfall.geography.hawaii.edu>, accessed February 15-16, 2012).

GEOLOGY AND SEDIMENTS

Land in the project area and across most of the northwestern slopes of Haleakalā is dominated by the Kula Volcanic series, composed predominantly of hawaiite with lesser amounts of alkalic olivine basalt and ankaramite (Macdonald et al. 1983:390). The remnant cinder cone of Pu'u o Malei is visible in the north from the project area.

SOILS

The entire project area (including the Maui Veterans Cemetery and expansion area, and also Makawao Cemetery) is described by Foote et al. (1972:89-90, Map sheet 114 [Map symbol "MfB"]) as covered by Makawao silty clay, sloping 3-7 percent, a well-drained soil that develop in material weathered from basic igneous rock (primarily basalt in the project area). The substratum is soft, weathered, basic igneous rock. Runoff is slow, and the erosion hazard is slight. The soil is primarily used for pasture, with a few acres used for pineapple, truck crops, and homesites.

VEGETATION

A wire fence line currently bisects the project area to western and eastern sections (see Photo 3). The prevalent vegetation of the parcel is elephant grass (*Pennisetum purpureum*) with few Christmas berry (*Schinus terebinthifolius*) and castor bean (*Ricinus communis*) clusters in the western half of the parcel (Wagner et al. 1990). Jacaranda (*Jacaranda mimosifolia*), eucalyptus (*Eucalyptus sp.*), paperbark tree (*Melaleuca quinquenervia*), and olive (*Olea europaea*) trees grow along the cemetery's perimeter.

CULTURAL LAND USE: INFORMATION FROM LEGEND AND HISTORY

The first discussion below concerns certain evidence for traditional land uses and environmental characteristics that is provided by Hawaiian place names. The second discussion concerns both oral historical and written (documentary) historical evidence for the earliest period in Maui history and legend. The third discussion considers more recent historical evidence concerning the Maui Veterans Cemetery area. Portions of these three summaries are excerpted from Allen et al. (2004), with minor changes. The final discussion concerns the history of land use and ownership in the project parcels.

TRADITIONAL HAWAIIAN PLACE NAMES

The island of Maui was named for the demigod Māui (Pukui et al. 1986:148), who pulled the Hawaiian islands out of the sea and, from the summit of Haleakalā, snared the sun, to make the days longer and help his mother Hina to dry her *kapa* (traditional fiber cloth, used for clothing and other items in Hawai'i; Beckwith 1976:229-237; Sterling 1998:48,

citing 1881 article by A. O. Forbes). (*Kapa* in English is "tapa" [Pukui and Elbert 1986:130]; the cloth is made from forest and cultivated plants including primarily *wauke* [*Broussonetia papyrifera*; Polynesian introduction] and *māmaki* [*Pipturus albidus* or another *Pipturus* species, endemic] [Wagner et al. 1990:924, 1307-1310]). In another version of the story, told to Maxwell (2003:5), Māui stood with one foot on Kolekole (a cone on the southwest side of the summit crater) and the other on Hanakauhi, northwest across the crater. (Spellings of Hawaiian words here, and English translations of Hawaiian words, follow Pukui and Elbert [1986] and Pukui et al. [1986] whenever possible.)

Makawao, the name of the *ahupua* 'a where most of the current Maui Veterans Cemetery is located—and also today's district name, translates as "forest beginning" (Pukui et al. 1986:142). The *ahupua* 'a of Makawao climbs the northwest slope of Haleakalā and is a forested area. As the name of today's district, "Makawao" is less appropriate, since the district includes large and varied areas, many forested but others not.

Hāli'imaile, the name of the *ahupua 'a* where the northwest portion of the expansion parcel and a tiny portion of the current cemetery are located, translates into English as "*maile* vines strewn" (Pukui et al. 1986:39). *Maile* is the fragrant *Alyxia oliviformis*, which includes endemic twining lianas and shrubs that are occasional to common in all vegetation zones between 50 and 2000 m in elevation on all the main islands. *Hāli'i* alone translates as a covering, a spread, or to spread (Pukui and Elbert 1986:55). *Maile* is a favorite native plant and is often used in *lei* and decorations (Wagner et al. 1990:214-215). Sterling (1998:97, citing an 1863 newspaper article by J. W. Kaiole) mentions that Kahekili, the last ruler of Maui, was reportedly born at Hāli'imaile.

Hāmākua Poko (also written Hāmākuapoko) is the former, traditional district name for the area where Hāli'imaile and possibly Makawao Ahupua'a are now located (in 1909, as explained below, they were assigned to Makawao District). Hāmākua Poko is "short hāmākua," which is reportedly a poetic Hawaiian term that translates into English as "long corner" (Pukui et al. 1986:39). No additional explanation is available. It is possible that the reference is to the shape of the former district.

THE EARLIEST PERIOD IN HAWAIIAN HISTORY AND LEGEND

Hawai'i Island and then Maui were the first two Hawaiian islands born to Papa, the earth mother, and Wākea, the great sky god; Papa and Wākea later also produced Kaua'i and Ni'ihau, and they were the parents of the first Hawaiian man, Hāloa, the ancestor of all the Hawaiian people. O'ahu was the child of Papa with Lua. According to Malo (1980 [ca. 1836-1838]:243), the parents of Moloka'i and Lāna'i were Wākea and his daughter Ho'ohoku-kalani. According to Kamakau (1993:129), Wākea and Hina, a form of Papa, were the parents of Moloka'i, and Wākea and Ka'ulawahine those of Lāna'i.

A different story of the origins of the islands is told in an early chant interpreted by Fornander (1996:18-19, footnote 3). In this version, lumps of coral were caught by Tahitian

fisherman Kapuhe'euanu'u on his fishhook. Kapuhe'euanu'u, advised by his priest to perform religious rites and throw them back into the ocean, did so, and the pieces of coral grew into the islands of Hawai'i, then Maui, and then the rest.

Haleakalā, east Maui's mountain, is considered the *piko*, the navel, of Maui. Haleakalā includes slopes in all nine of east Maui's traditional (former) districts, eight of which meet at Pōhaku Pālaha, at the northeast edge of the crater and at the head of Kīpahulu Valley. The exception, which reached partway up the northwest slope, was Hāmākua Poko (see Tomonari-Tuggle and Tuggle 2007:Fig. 3).

HISTORICAL LAND UNITS

According to oral historical accounts (Beckwith 1976:383; Handy and Handy 1972:491; Kamakau 1993:152; also, Dixon et al. 2002), Maui was first officially divided into districts and smaller land units during the reign of Kaka'alaneo. Based on 25- to 30-year generational counts, Kaka'alaneo ruled Maui sometime between the 14th and early 16th centuries—sometime between ca. A.D. 1360 and 1538 (Fornander 1916-1920:6:313, 1996:71, 78 footnote, 107; Kolb 1991:66). Two Spaniards may have visited the islands during Kaka'alaneo's rule (Fornander 1996:107; Kamakau 1992:95 footnote, 324, and 1993:114). Three related and more commonly cited dates may support the dating of Kaka'alaneo's reign to the early part of the suggested range—A.D. 1330 for the reign of his father, Kaulahea I, and A.D. 1360 for two contemporaries of Kaka'alaneo, Ma'ilikukai'i of O'ahu and Kauholanui-mahu of Hawai'i Island.

Since the initial division of lands, Maui Island has been subdivided several additional times into districts and other land units above the *ahupua* 'a level, with boundary revisions and other major (and confusing) changes in the district arrangement. East Maui (Maui east of the isthmus), where the project area is located, seems to have been affected most significantly by these changes.

Traditional Maui Land Units

At Mahele—the redistribution of Hawaiian lands that began in 1848 (Chinen 1958:16; Kame'elehiwa 1992; Lyons 1903; Sterling 1998:3, citing 1935 work by R. D. King)—east Maui alone included nine districts. Clockwise from the northwest, the nine traditional districts of east Maui included Hāmākua Poko, Hāmākua Loa, Ko'olau, Hāna, Kīpahulu, Kaupō, Kahikinui, Honua'ula, and Kula. West Maui added two more, Lahaina and Kā'anapali Districts. In the central isthmus, Waihe'e, Waiehu, Wailuku, and Waikapu were *ahupua'a* independent of any district.

At Mahele, Hāli'imaile Ahupua'a was located in Hāmākua Poko District. The land occupied by the current (pre-expansion) Maui Veterans Cemetery was located in Makawao, which was either an *ahupua'a* within Hāmākua Poko District or was independent, as suggested by historical information compiled by Maly and Maly (2001:303,

<http://ulukau.org/>, accessed January 16, 2013): "The land of Makawao as an independent "*moku*," or as an *ahupua* 'a of Hāmākua Poko, has a complicated and unclear history. The earliest references . . . seem to tell us that Makawao was independent of Hāmākua Poko."

Maui Land Units Since 1909

The Session Laws of 1909 (revised in 1932) created a four-district system for the entire island of Maui, with Lahaina in the west, Wailuku incorporating the central isthmus, Makawao east of the isthmus, and Hāna the farthest east and southeast. Maui County today also includes three offshore districts, Lāna'i Island and District, and Kalawao and Moloka'i Districts on Moloka'i Island. Kaho'olawe Island is part of Makawao District.

Today, Makawao District includes the former Hāmākua Poko and Hāmākua Loa Districts in the north, inland portions of the former Kula and Honua'ula Districts in the southwest, and Kaho'olawe Island. Wailuku District includes the coastal portions of the former Kula District. Hāna District includes the former Hāna, Kīpahulu, Kaupō, and Kahikinui Districts, and part of the former Honua'ula District.

As noted, the project area, including the existing cemetery and the planned expansion parcel, includes lands in Makawao and Hāli'imaile Ahupua'a. Both *ahupua'a* are now parts of Makawao District.

Nineteenth-Century Changes in Land Use and Tenure in the Project Area

No available documents clarify how the project area and immediately surrounding lands were used before Western Contact. Since, as noted in 1846 by J. Jarves (see below), it was difficult to route sufficient water to the area for agricultural use, these lands may have supported dryland (non-irrigated) traditional crops such as unirrigated taro or sweet potato (*'uala; Ipomoea batatas*). Alternatively, most or all of the surrounding lands may have remained forested, perhaps exploited for collection of valued plants such as *wauke* and *maile*.

Changing Land Use

Maly and Maly (2001) mention the impacts cattle and cattle ranching were already having on areas including Hāmākua Poko (again, where Hāli'imaile Ahupua'a and possibly Makawao were then located) by the 1840s, only a few decades after their A.D. 1793 introduction to Hawai'i Island by Captain George Vancouver. The earliest recorded land transaction affecting land in the current project area reflects this early development of cattle ranching (Maly and Maly 2001:57):

Ranching interests were developed in the Huelo-Ha'ikū vicinity of Hāmākua Loa and across the district of Hāmākua Poko, extending up the mountain slopes and out into the Kula and Wailuku Districts (cf. Wilkes 1970...) [not seen for present report]. One of

the earliest communications regarding formalized ranching activities on lands in the Makawao-Hāmākua Poko vicinity, is dated September 10, 1838, and is in the form of a lease from Governor Hoapilikāne to Wm. McLane and Edwin Miner. The lease . . . granted them a 50 year lease of the land, with the right to water, and trail access to the shore, in order for them to export their cattle.

Sugar and commercial vegetation plantations also developed early in the Hāli'imaile-Makawao area. As reported in July and August 1846 in the newspaper *The Polynesian* by editor and writer J. Jarves, the Brewer Plantation, at Kawa'apae, Hāli'imaile—approximately 5 kilometers (km) inland from the north shore (north of the project area)—was operating successfully by then and its crops were being expanded to include temperate and tropical fruits and vegetables.

In Makawao, the only plantation seems to have been that of (William A.) McLane, mentioned by Maly and Maly (2001) in the quotation above. McLane's house was located at Pi'iholo (southeast of the project area). His sugar mill was operating less than a kilometer below his fields; Lyons's 1872 map shows an "Old McLean Mill," possibly the 1840s mill, about a kilometer southeast of the project area. In 1848, McLane owned or leased huge areas surrounding the current parcels, with fields throughout the project area and covering a large area east of it, the area that appears blank at the right margin of Figure 7 (portion of Metcalf 1848a), as well as other lands (see also Maly and Maly 2001:46-47).

The Polynesian's Jarves traveled from Lāhainā to Haleakalā, crossing Kahului and Hāmākua Poko and ascending the slope through Hāli'imaile and Makawao. Among other important observations Jarves made, as summarized and excerpted by Maly and Maly (2001:44-47), he noted that goats and cattle had "exterminated" both former grasses and trees on the Wailuku plain, and that wild cattle had caused significant changes in the uplands of Hāli'imaile and Makawao. Jarves also commented on the difficulty of getting water to the lands of Hāli'imaile and Makawao.

The numbers of cattle and sizes of grazing areas would eventually be brought under control by Kingdom laws and by business, which, by ca. 1875, developed in the form of large, independent ranches, which provided a plentiful supply of beef. Once reliable water sources were established, and irrigation of commercial crops became possible, the interest in sugar cultivation on plantations intensified in the region. In 1872, Metcalf (1872) and Lyons (1872) (Figs. 8-10) mapped extensive plantation sugar fields throughout the area surrounding the current parcels, as well as other areas around Makawao. The spread-out partial word "1 a n t a t i o n" in Figures 9 and 10, placed diagonally from upper left to end at the south boundary of McLane's land near the center right, suggests how extensive the (sugar) plantation lands were in the area.

The sizes of areas set aside for grazing on the kula (slope) lands of the Hāmākua region were now shrinking significantly. By 1900, cattle were increasingly relegated to narrower grazing lands far upslope (Maly and Maly 2001:57, citing the observations of W. Maxwell in 1900).

Changing Land Tenure and the Introduction of Private Property Law

Along with land changes, land-tenure changes came to Makawao far earlier than to many areas in the Islands. Along with only one other area, Mānoa, Oʻahu, Makawao was one of only two areas in the islands where a non-traditional land-tenure experiment began. On January 13, 1846, Minister of the Interior Gerrit P. Judd, on behalf of King Kamehameha III and Premier Keoni Ana (John Young), presented an official outline of the program (excerpted and discussed by Maly and Maly 2001:299), which was to provide, for the first time, fee-simple interest in land to native tenants who applied for it and purchased it. A document of ownership would establish the purchaser's ownership, and that of the applicant's heirs and representatives, forever, with protections similar to those offered foreign owners. As noted, Makawao and Mānoa, Oʻahu, were the two sites where land was first sold in fee-simple to applicants—they were the areas where private property law first took hold in the islands, in the forerunner of the Mahele.

A New England missionary, Reverend Jonathan Smith Green, was the land agent for the area. He was also the pastor of the wood-frame Makawao Church that stood until 1916 on the Makawao Cemetery parcel, next to the project area. As Photograph 5 shows, two palm trees that flanked the entrance to the former church still stand in the church cemetery. Part of the agreement he oversaw stipulated that each new native owner of land would cultivate a certain portion of the land area (to be appointed by Smith Green) for the land agent's use and support.

Judd's January 13, 1846, proclamation outlining the program and the lands involved, adds that the single portion of Makawao to be excepted from the program was the land leased earlier to William McLane for his plantation (Maly and Maly 2001:299-300). McLane's activities and tenure apparently continued unchanged through this period, as land tenure changed for Makawao's native Hawaiians from the old, cooperative traditional system to a new system based on private-property ownership.

Land Holdings in the Project Area at Mahele

As explained in the Introduction, the current, pre-expansion Maui Veterans Cemetery occupies approximately 2.8 ha (7 ac.) in the southwest portion of the combined property; this plot is TMK 2-4-002:09. The expansion parcel includes the large, 4.5-ha (10-ac.) lot north and northeast of the existing cemetery, in TMK 2-4-002:07 (see Figs. 2, 3), and additionally the small, narrow roadway strip along the east side of the existing cemetery, in TMK 2-4-002:09. (The church-associated Makawao Cemetery occupies TMK 2-4-002:01.)

The property map provided by Belt Collins Hawaii (see Fig. 2) suggests that both parcels are parts of William McLane's Grant 64, in Makawao Ahupua'a. The situation is less straightforward when the properties are mapped with GPS, which is more precise than historical surveying methods. As indicated in Figures 7-10 (portions of Metcalf 1848a and 1872, and Lyons 1872), the expansion parcel and possibly a corner of the existing cemetery

are actually located in Hāli'imaile Ahupua'a, in a parcel awarded at Mahele to Miriam Kekauonohi. Kekauonohi was the daughter of Kīna'u, granddaughter of Kamehameha I, and great-granddaughter of Kekaulike, ruler of Maui, and was the wife of Kamehameha II (Liholiho) until his death. She ruled Maui in 1842 (Day 1984:74).

This discussion mentions Kekauonohi's property below but focuses primarily on the land grant that includes most of the project area—and that was probably intended to cover both parcels entirely. In any case, all the land in both the current and expansion parcels is today apparently considered to be located in the property that was historically McLane's Grant 64 (see Fig. 2).

Royal Patent 7512, awarded to Kekauonohi. Two years after Smith Green and Judd introduced private property to Makawao, the actual Mahele began. In 1848, the parcel mentioned above, was awarded to Miriam Kekauonohi, who was born in 1805("?"; Day 1984:74) and died on June 2, 1851, shortly after Mahele. The property was extensive, including 1723.96 ha (4260 ac.) and covering most of the current project area and much more in the surrounding area. Royal Patent (RP) 7512—Land Commission Award (LCA) 11216 'Āpana (Portion) 27—included 1723.96 ha (4,260 ac.) (Hāmākuapoko, Maui, information provided by Hawaii State Archives; also, Hawaii Commission of Public Lands 1929:564) and was the largest claim affecting Hāmākua Poko District (the district at the time). This claim included primarily land in Hāli'imaile Ahupua'a and also a small part of Makawao Ahupua'a.

Abner Pakī, testifying regarding the land, stated that it had belonged "anciently" to the King's mother, after whose death it had fallen to Nahienaena. When Nahienaena died, it became the property of the King, for whom Kekauonohi (Wahinepio) had charge of the property (typescript provided by Hawai'i State Archives).

Grant 64, awarded to William McLane. As indicated earlier (quotation copied from Maly and Maly 2001:57), one of the earliest documents to mention ranching in the Makawao-Hāmākua Poko area is Governor Hoapilikāne's September 10, 1838, 50-year lease of land to William McLane and his partner Edwin Miner. In addition to the leased land, they gained water rights and trail access to the shore so that they could export their cattle. This transaction predated Mahele by 10 years. In 1847 and 1849, McLane acquired two parcels of land, Grants 64 and 157, in Makawao, totaling 278.8 ha, (688.94 ac.). At Mahele, as noted, McLane's lands were made exempt from claims or acquisition by commoners as their new private lots.

The 1838 land leased to McLane and Miner is believed to have included Grant 64, which is listed under McLane's name alone in the *Buke Mahele*. Grant 64, the current project-area parcel, encompassed 129.07 ha (318.94 ac.), according to the list in the Hawaii State Archives *Buke Mahele*; also see Maly and Maly 2001:327 [Table 3]). The shared land also included the large Grant 157 (149.73 ha, 370 ac.; Maly and Maly 2001:327), which, like Grant 64, is listed under only McLane's name in the *Buke Mahele*. Grant 157 is the large parcel labeled "McLane and Miner" in a second 1848 map prepared by Metcalf (1848b, not

included here) and is the parcel shown immediately east of Grant 64 in Figure 7 (Metcalf 1848a) assigned only to McLane. It is labeled "McLane 157" (not Miner) in Lyons's 1872 map (see Figs. 9 and 10).

As the maps indicate, McLane owned or leased huge areas including and surrounding the current parcels from before Mahele until at least ca. 1872. His ranching lands covered large areas, and his sugar-plantation fields covered the project area and large areas east of it, as well as other nearby lands (see also Maly and Maly 2001:46-47). McLane acquired fee-simple interest in parcels he acquired directly from the Government or from natives who had been granted Royal Patents (Hawaii State Archives, *Buke Mahele*, Mortgage Book 1:386-387 and Liber 4:61). McLane, with his wife, Maile Makalena, and initially Edwin Miner, retained their leasehold interest in land at Makawao for some time. Gradually, McLane divested himself of the large properties, selling them to sugar planters and others.

Twentieth Century Project-Area Land History

The two TMK properties involved in the project area have separate 20th-century ownership histories. Although the Hawai'i Bureau of Conveyances records and those at the Archives provide certain information, certain segments of the histories are unclear.

Current Veterans Cemetery Parcel and Expansion Roadway: TMK 2-4-002:Portion 009

The historical sheet for 1933 to 1958 (microfiche) at the Bureau of Conveyances indicates that the deed to TMK 2-4-002:009, the property where the existing cemetery and the roadway are located, was transferred in 1951. Lots 1 and 2, each one a 0.81-ha (2-ac.) portion of Grant 64, were transferred at that time from the Makawao Cemetery Association to the County of Maui. Figure 2 locates Lots 1 and 2, in the Veterans Cemetery parcel.

Main Portion, Cemetery Expansion Parcel: TMK 2-4-002:Portion 007

The main part of the expansion property, in TMK 2-4-002:007, is currently owned by an individual, Paul Turner; the total area of his land is listed as 52.5 ha (129.740 ac.). The list of transfers available at the Bureau of Conveyances includes the following, from earliest to most recent.

The 1933-1958 microfiche historical sheet indicates that, by 1958, the Hawaiian Commercial and Sugar Company, Limited, had sold (deeded) 2.74 ha (6.76 ac.) of land within TMK 2-2-4-002:portion 007 to the Makawao Cemetery Association.

No information is available for 1955-1987. The next transaction listed is a limited warranty deed dated March 30, 1989, and effective April 1, 1989, in which grantor Alexander & Baldwin, Inc., transferred the property (no hectarage or acreage listed) to grantee Alexander & Baldwin-Hawaii, Inc.

On November 28, 2008, grantor Alexander & Baldwin, Inc., transferred, again by limited warranty deed, 52.5 ha (129.740 ac.) to grantee Paul Turner, Tenant in Severalty.

A Confirmation of Boundary and Reciprocal Quitclaim Deed document was filed on December 21, 2009. The grantor's name is listed as Paul Turner; the grantee is listed as Makawao Cemetery Association. Finally, on April 5, 2011, grantor Paul Turner signed a mortgage with grantee Centennial Bank, Denver, Colorado, for the property.

As noted in the Introduction, Maui Veterans Cemetery (which is also known as Makawao Veterans Cemetery) contains 636 interments marked by white uprights. The listing of all individuals buried in the cemetery is available on the internet at <<u>http://files.usgwarchives.net/hi/maui/cemeteries/mauivet.tx</u>> and http://www.findagrave.com, both accessed February 11, 2013. The second source includes photographs of the cemetery.

III. PREVIOUSLY DOCUMENTED ARCHAEOLOGICAL RESOURCES

No previous archaeological studies have been undertaken within the boundaries of the current project area. The nearest areas studied previously include other portions of the two *ahupua* 'a (Fig. 11). Reports concerning work in Hāli 'imaile include Donham (1990), Folk et al. (1998), McGerty and Spear (2006), Pantaleo (2004), Pantaleo and Tsuha (2003), and Walker (1931). Reports concerning archaeological studies conducted in Makawao include Hill et al. (2007) and Willman et al. (2010). Pertinent studies conducted in neighboring *ahupua* 'a include those conducted by Bordner (1980), Connelly (1973), Donham (1992), Fredericksen and Fredericksen (1995, 1999), Fredericksen et al. (1991), Kennedy (1990, 1991), McPhatter and Rosendahl (1996), Pantaleo (2003), Pickett et al. (2003), and Sinoto and Pantaleo (2001) (Table 1).

Ahupua`a	Date	Author	Nature of Study	Findings
Hāli'imaile	1931	Walker	Reconnaissance survey	Kailua Heiau
	1990	Donham	Inventory survey (Parcel 5)	l complete, small, quadrangular basalt adze
	1998	Folk et al.	Inventory survey (55 ac.)	None
	2003	Pantaleo and Tsuha	Inventory survey	None
	2004	Pantaleo	Inventory survey with limited testing	Post-Contact site, Portuguese oven and cattle-weighing station
	2006	McGerty and Spear	Inventory survey (817 ac.)	56 sites identified
Makawao	2007	Hill et al.	Field inspection	None
	2010	Willman et al.	Archaeological monitoring	None
Maka'eha	1973	Connelly	Field inspection	Site 1062: 87 petroglyphs

Table 1. Previous archaeological investigations in areas near Maui Veterans Cemetery.

(Table 1, concluded)

Ahupua`a	Date	Author	Nature of Study	Findings
(Maka'eha, continued)	1980	Bordner	Reconnaissance survey	None
	1990	Kennedy	Archaeological investigations	50-50-05-2701: heiau
	1991	Kennedy	Inventory survey	Sites 2497, 2498, 2499: platform, <i>heiau</i> , rock mound
	1991	Fredericksen et al.	Archaeological testing	Site 2499: evidence for post-Contact use
	1992	Donham	Field inspection	Site 2920: 32 petroglyphs
	2001	Sinoto and Pantaleo	Inventory survey, testing	Corn Mill Camp (Site 5169) warehouses
	2003	Pantaleo	Inventory survey, testing	None; revisited Site 2701
Hōkūʻula	1995	Fredericksen and Fredericksen	Inventory survey	Site 3929: rock aggregation
	1999	Fredericksen and Fredericksen	Inventory survey	Sites 4677 and 4680: two post-Contact walls; 4678: shelter cave; 4679: shelter cave; and 4681: grave, probably post-Contact
A'apueo	1996	McPhatter and Rosendahl	Reconnaissance survey	Sites 4179, 4180, 4181: two petroglyph panels, boundary wall, agricultural terraces
	2003	Pickett et al.	Archaeological monitoring	Sites 5469, 5470 and 5473: Chinese Cemetery, drainage ditch, traditional firepit

HĀLI'IMAILE AND MAKAWAO AHUPUA'A

The earliest archaeological reports concerning today's Makawao District identify few traditional Hawaiian sites. Walker (1931) recorded Kailua Heiau (Walker's Site 58), near Kailua Gulch, half a mile west of Pā'ia Road, in Hāli'imaile Ahupua'a, northwest of the

current parcel. Walker (1931) reports that the *heiau*, which once incorporated a platform approximately 24 m long and 15 m wide (80 by 50 feet [ft.]), was probably destroyed by sugarcane cultivation (also see Sterling 1998:97 [Hamakua Poko Entry 5]).

Donham (1990) conducted an archaeological inventory survey for a 14.2-ha (35-ac.) parcel in the uplands of Hāli'imaile, assessing sites in an area slated for an upcountry Maui high school. Donham's (1990) Parcel 5 (west of Maui Veterans Cemetery, and the closest previously researched area to the current parcel, had been cultivated with pineapple but was newly plowed prior to conducting the survey. Although no surface features were recorded in Parcel 5, a small, complete, quadrangular basalt adze was identified. Parcels 1-4 are located in the *'ili* of Pukalani and Hōkū'ula. Parcel 1 contains archaeological properties that are considered potentially historic; "historic," in federal historic-preservation language, means that these properties are (in this case, potentially) eligible for nomination to the National Register of Historic Places (NRHP). Evidence for both pre- and post-Contact occupations was discovered in Parcel 4.

Folk et al. (1998) conducted an archaeological inventory survey in a 22.3-ha (55-ac.) section of Hāli'imaile west of Hāli'imaile village. The survey identified no sites of cultural significance other than modern (post-1900) irrigation ditches.

Pantaleo (2004) conducted an archaeological inventory survey on a 22.7-ha (56-ac.) parcel in Hāli'imaile, including Grove Ranch, northwest of the current project area. Two post-Contact properties were identified, State Sites 50-50-06-5554 and 5555, a Portuguese oven (*forno*) and a cattle-weigh scale, respectively. The brick oven was introduced by Portuguese immigrants who arrived in Hawai'i in 1878 for baking bread and cooking meat (Pantaleo 2004:28). In addition, 20 backhoe trenches were placed throughout the project area, resulting in no discoveries of subsurface cultural remains or deposits The two sites on this property, located about 1 km *makai* from (toward the ocean from; here, north of) the current project area, are the closest previously identified sites.

Pantaleo and Tsuha (2003; not yet seen) conducted an archaeological inventory survey of the area where the Pi'iholo well was planned, near Olinda Road, also in Hāli'imaile. While no surface features were recorded during the survey, cultural assessment research indicated that traditional use of the area may have been for seasonal resource exploitation including the harvesting of hardwood trees such as *koa* (*Acacia koa*) and collecting feathers (Pantaleo 2004:12, citing Pantaleo and Tsuha 2003).

McGerty and Spear (2006) conducted an archaeological inventory survey on approximately 330.6 ha (817 ac.) of land in Hāli'imaile. Fifty-six sites were identified, 14 traditional and possibly predating Contact, although three—petroglyphs, habitation sites, agricultural structures—could possibly have been constructed since Contact. The 42 remaining sites were recorded as post-Contact or modern ranching structures. These sites were all located along or within two gulches that served as project-area boundaries. Further testing was limited to four shovel test probes, one test unit, and one stratigraphic trench. While no cultural materials, features, or layers were identified during subsurface testing, a
range of basalt cores, debitage, and bi-faced flakes were found in six overhang sites (Sites 6029, 6032 Features 1 and 2; 6040, 6042, and 6043), as well as on the surface of the gulch floor (Site 6027). All 56 archaeological sites were assessed as significant according to Hawai'i State Historic Preservation Criterion D (for their information potential). Four sites, Sites 6033, 6035, 6036, and 6038, each containing petroglyphs were additionally assessed as significant according to Criteria A and E (respectively, for their workmanship and artistic value, and their cultural value), and preparation of a preservation plan was recommended for those sites. The closest of McGerty and Spear's (2006) archaeological sites to the current parcel, post-Contact Sites 50-50-05-5989-5991, in the southwest portion of their site area, lie over 1.5 km *makai* (north) of Maui Veterans Cemetery.

Hill et al. (2007) conducted an archaeological field inspection of a section of roadway slated for improvement in Makawao Town (Makawao Ahupua'a). Four post-Contact structures were recorded, a cut-basalt retaining wall, a stacked basalt boulder and cobble boundary wall, a stacked and faced basalt retaining wall, and a cut-basalt curbstone alignment. An inventory survey-level investigation was recommended.

Also in Makawao Ahupua'a, Willman et al. (2010) performed archaeological monitoring during excavation for installation of septic tanks at Makawao Elementary School, removal of existing cesspools, and conversion of cesspools to seepage tanks. No cultural layers, subsurface features, or traditional materials were encountered during the construction.

MAKA'EHA, HĀMĀKUA POKO, ŌMA'OPIO, AND A'APUEO AHUPUA'A

As explained earlier, modern Makawao District includes, among other areas, inland portions of the former, traditional Kula District. The *ahupua* 'a where the following archaeological projects were conducted are all located in the easternmost portion of former Kula District, short distances northwest or southwest of Maui Veterans Cemetery, across the west boundaries of Hāli 'imaile and Makawao Ahupua'a (see Fig. 7). Like the project area, all are now located in Makawao District.

Connelly (1973) conducted an archaeological field inspection of Site 50-50-05-1062, where 87 petroglyphs had been recorded earlier (Connelly 1973; also see Sterling 1998:259 [Kula Entry 61, Canoe Petroglyphs]). The site is located in Maka'eha Ahupua'a near the present Kamehameha Schools campus, southwest of Maui Veterans Cemetery.

Donham (1992) performed an archaeological field inspection of Site 50-50-05-2920, a set of 32 petroglyphs in the north section of Kaluapulani Gulch, in Maka'eha, near the Kula 200 Subdivision.

Bordner (1980) encountered no surface features during a reconnaissance survey of the proposed Makawao Subdivision, between Apana Road and Kailua Gulch, in Hāmākua Poko Ahupua'a, northwest of the current project area. The area was said to have been a

plantation camp. No archaeological surface features were identified and no further work was recommended.

Kennedy (1990) conducted archaeological investigations in Pukalani, southwest of Makawao town (formerly in Kailua Ahupua'a, Kula District; in Maka'eha Ahupua'a today). Site 50-50-05-2701 appears likely to be a *heiau*. Five test units were excavated within the feature to determine its function and chronological placement. Two radiocarbon dates were obtained from Test Unit (TU) 3, within the structure's interior. The charcoal from the upper layer produced a modern date, while unidentified charcoal from Layer III/1 returned a date of 200 ± 60 B.P., A.D. 1515-1955 (2-sigma calibration) (Table 2). Other materials recovered during testing include a basalt flake, volcanic glass, and *kukui* (candlenut; *Aleurites moluccana*, Polynesian introduction [Wagner et al. 1990:598]) nutshell. Additional historical and cultural research for Site 50-50-05-2701 (Pantaleo 2004) identifies this site as Mo'omuku Heiau, a platform *heiau* believed to be a *heiau luakini* or *po'okanaka* (human sacrificial *heiau*). This identification was made using a combination of information obtained during interviews with individuals and *kupuna* (elders) who are familiar with the project area and *heiau*, and information from Walker's (1931) description of Site 224—Mo'omuku Heiau (see also Sterling 1998:257 [Kula Entry 51, "Moomuku?" Heiau, Walker Site 224]).

Kennedy (1991) conducted an inventory survey of 10.5 ha (26 ac.) within the proposed Pukalani Highlands property in Pukalani (as noted, formerly in Kailua Ahupua'a, now in Maka'eha). Three structures of traditional types were recorded: 50-50-05-2497 and 2498 (rock-filled platforms), and 2499 (mound feature). The three sites were interpreted by the author as probable agricultural *heiau* and or burial mounds. Two radiocarbon dates were obtained from Site 2498. The dates are stratigraphically inverted, and the calibrated age ranges do not overlap at 2 sigma. Although this is taken as evidence of mixing within the deposit (which would be expected for *heiau* construction fill), the date obtained from a charred kukui nutshell (Beta-42172)-as noted above, a Polynesian introductionnevertheless provides a reliable indication of human activities in the area sometime between A.D. 1034 and 1381 (95.4% probability) (see discussion, Dye 2011). Later that same year. Fredericksen et al. (1991) conducted additional archaeological testing at Sites 50-50-05-2497, 2498, and 2499. Their dating results, obtained from unidentified charcoal at Site 2498, indicate the earliest use of the structure around A.D. 1357-1795 (2-sigma calibration). This date overlaps at 2 sigma with Beta-42173 (A.D. 1482-1955), suggesting the structure's use sometime between the late 14th and late 18th centuries.

Sinoto and Pantaleo (2001) conducted inventory survey and directed backhoe excavation of 11 trenches in Pukalani, Maka'eha Ahupua'a, recording four features that are connected with an early 20th-century site. Site 50-50-06-5169, the Corn Mill Camp, began operations around 1932 as part of the newly merged Haleakala Pineapple Company. Sinoto and Pantaleo (2001:12-13, 17, 33-34, Figs. 9-22) describe four wood and concrete warehouses with tin roofs (Features 1-4), all associated with the camp; and detail the soils that were exposed during backhoe excavation throughout the project area.

Site	Ahupua`a	Radiocarbon Laboratory No.	Unit or Feature	Material Dated	Provenience	C14 Year	Error (±)	C12/13	Calibrated Date (2- sigma)	Reference
50-50-10- 2498	Formerly Kailua; now Maka'eha	Beta-42172	Test Unit (TU)-3	<i>Aleurites moluccana</i> nutshell	24 cm below surface (cmbs)	800	80	-20.9	A.D. 1034- 1381	Kennedy (1991)
		Beta-42173	TU-3, Trench 4	Unidentified charcoal	28 cmbs	250	50	-25.8	A.D. 1482- 1955	Kennedy (1991)
		No data (n.d.)	Test Trench (TT)-2	Unidentified charcoal	140-153 cm below datum (cmbd)	340	70	N.d.	A.D. 1347- 1795	Fredericksen and Fredericksen (1991)
		N.d.	TT-2	Unidentified charcoal	110-120 cmbd	30	70	N.d.	Modern	Fredericksen and Fredericksen (1991)
50-50-10- 2499	Formerly Kailua; now Maka'eha	N.d.	TT-1	Unidentified charcoal	Beneath rock feature (inferred as 0 cmbs)	260	60	N.d.	A.D. 1461- 1954	Fredericksen and Fredericksen (1991)

 Table 2.
 Radiocarbon dates processed for previous archaeological projects.

(Table 2, concluded)

Site	Ahupua`a	Radiocarbon Laboratory No.	Feature	Material Dated	Provenience	C14 Year	Error (±)	C12/13	Calibrated Date (2- sigma)	Reference
50-50-10- 2701 (Moʻomoku Heiau)	Ōma'opio (Sterling 1998:257)	N.d.	TU-3	Unidentified charcoal	Layer II/1	110	60	N.d.	Modern	Kennedy (1990)
		N.d.	TU3	Unidentified charcoal	Layer III/1	200	60	N.d.	A.D. 1515- 1955	Kennedy (1990)
50-50-10- 5469	A'apueo	Beta-180945	Firepit	Unidentified charcoal	N.d.	100.96	0.66%	-24.1	Modern	Pickett et al. (2003)
		Beta-180944	Feature 10	Unidentified charcoal	N. d.	290	50	-23.1	A.D. 1459- 1952	Pickett et al. (2003)

Also in Maka'eha, Sinoto (2003) surveyed a residential subdivision parcel in Pukalani and profiled the soils exposed in 26 backhoe trenches throughout the property. No new discoveries were made, but the project established a buffer zone to protect Site 50-50-05-2701, the probable *heiau* recorded earlier by Kennedy (1990, 1991) during construction.

Fredericksen and Fredericksen (1995), conducting archaeological inventory survey of a parcel in Maka'eha (formerly H $\bar{o}k\bar{u}$ 'ula) Ahupua'a, identified a surface site, Site 50-50-05-3929—a rock aggregation. Subsurface testing at Site 3929 produced a mixture of materials including post-Contact bottle glass, metal, metal-cut animal bone, and ceramics, and traditional Hawaiian materials such as *kukui* nut, waterworn pebbles, and marine shell.

Fredericksen and Fredericksen (1999) also conducted archaeological inventory survey for water tank installation and waterline improvements in a portion of Maka'eha (formerly H $\bar{o}k\bar{u}$ 'ula) Ahupua'a nearly directly south of the current project area (see Fig. 11), near the Maka'eha-Makawao 'a boundary. Five archaeological sites were identified; Sites 50-50-10-4677 to 4681 include two post-Contact retaining walls, two shelter caves that may be traditional, and a grave that probably dates to the period since Contact. These properties were not affected by the construction project, and no further investigations were recommended.

McPhatter and Rosendahl (1996) conducted a reconnaissance survey of approximately 101.2 ha (250 ac.) of the proposed Pukalani Terrace Subdivision III in A'apueo Ahupua'a, resulting in the identification of Sites 50-50-05-4179, 4180, and 4181, all of traditional types. The three sites consisting of two petroglyph panels, a boundary wall, and agricultural terraces, respectively, were recommended for preservation.

Pickett et al. (2003) conducted archaeological monitoring during excavation for the Kulamalu Commercial Subdivision in A'apueo, after being notified by the client that disturbed human skeletal remains had been discovered. The site, designated Site 50-50-05-4179, contains coffin burials and burial pits, evidence for burning episodes, an animal burial, and glass bottles and glass beads associated with the animal burial. Site 50-50-05-4179 was recommended for permanent preservation.

NEAREST PREVIOUSLY IDENTIFIED ARCHAEOLOGICAL PROPERTIES

The closest previously recorded sites consist of historical-period ranching and agricultural features. A Portuguese brick oven and a cattle-weighing station, Sites 50-50-05-5554 and 5555 respectively (Pantaleo 2004), lie about 1 km *makai* (north) of the current project area; and agricultural terraces, rock mounds, terrace walls, Sites 50-50-05-5989 to 5991 (McGerty and Spear 2006), lie about 1.7 km *makai*. Pantaleo (2004) recorded traditional sites consisting of rockshelters, modified outcrops, and petroglyphs within Kailua Gulch and an unnamed gulch, over 2 km *makai* of the cemetery. Table 3 lists the sites that have been recorded in areas near the current area.

Site No. (50-50-)	Reference	Name/Description	Function	Period	Excavation (X = Yes)
05-1062	Connelly (1973)	87 petroglyphs	Symbolism	Traditional Hawaiian	
05-2497	Kennedy (1991), Fredericksen and Fredericksen (1991)	Rock-filled platform	<i>Heiau</i> (agricultural)/burial mound	Traditional	Х
05-2498	Kennedy (1991), Fredericksen and Fredericksen (1991)	Rock-filled platform	<i>Heiau</i> (agricultural)/burial mound	Traditional	Х
05-2499	Kennedy (1991), Fredericksen and Fredericksen (1991)	Mound	Burial	Traditional	Х
05-2701	Kennedy (1990)	Rock platform	Moʻomuku Heiau	Traditional	Х
05-2920	Donham (1992)	32 petroglyphs	Symbolism	Traditional	
05-3929	Fredericksen and Fredericksen (1995)	Rock aggregation	Temporary habitation	Traditional/post- Contact	Х
05-4179	McPhatter and Rosendahl (1996)	Petroglyph	Symbolism	Traditional	
05-4179	Pickett et al. (2003)	Multiple coffin burial	Burial	Post-Contact	Х
05-4180	McPhatter and Rosendahl (1996)	Wall	Boundary demarcation, ranching	Post-Contact	

Table 3. Previously identified archaeological properties.

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Site No. (50-50-)	Reference	Name/Description	Function	Period	Excavation (X = Yes)
05-4181	McPhatter and Rosendahl (1996)	Terraces	Agriculture	Traditional/post-C	Contact
05-5989	McGerty and Spear (2006)	Terraces, rock mounds	Agriculture	Post-Contact	
05-5990	McGerty and Spear (2006)	Terrace facing	Agriculture	Post-Contact	
05-5991	McGerty and Spear (2006)	Structure	?Agriculture	Post-Contact	
05-5992	McGerty and Spear (2006)	Refuse deposit	Refuse disposal	Post-Contact	
05-5993	McGerty and Spear (2006)	Refuse deposit	Refuse disposal	Post-Contact	Х
05-5994	McGerty and Spear (2006)	Flume	Irrigation	Post-Contact	
05-5995	McGerty and Spear (2006)	Rock overhang/lava tube	Temporary habitation	Traditional	Х
05-5996	McGerty and Spear (2006)	Walls, enclosure	House complex	Post-Contact	Х
05-5997	McGerty and Spear (2006)	Paved terrace complex	Habitation	Post-Contact	
05-5998	McGerty and Spear (2006)	Rock mound	Agriculture	Post-Contact	

Site No. (50-50-)	Reference	Name/Description	Function	Period	Excavation (X = Yes)
05-5999	McGerty and Spear (2006)	Wall, fence	Ranching/boundary	Post-Contact	
05-6000	McGerty and Spear (2006)	Rock mound	Clearing mound	Post-Contact	
05-6001	McGerty and Spear (2006)	Terraces	Agriculture	Post-Contact	
05-6002	McGerty and Spear (2006)	ar C-shape structure Ranching Post-Co		Post-Contact	
05-6003	McGerty and Spear (2006)	Wall, fence	Ranching	Post-Contact	
05-6004	McGerty and Spear (2006)	Paved terrace complex	Ranching	Post-Contact	
05-6005	McGerty and Spear (2006)	Wall, paved terrace	Ranching	Post-Contact	
05-6006	McGerty and Spear (2006)	Rock wall	Ranching	Post-Contact	
05-6007	McGerty and Spear (2006)	Wall	Ranching	Post-Contact	
05-6008	McGerty and Spear (2006)	Terrace	Agriculture	Post-Contact	
05-6009	McGerty and Spear (2006)	Refuse deposit	Refuse disposal Post-Contact		

Name/Description Period Excavation Site No. Reference Function (50-50-) (X = Yes)05-6010 McGerty and Spear Modified outcrop/rock Post-Contact Agriculture (2006) mound 05-6011 McGerty and Spear Terrace complex Traditional/post-Contact Agriculture (2006)05-6012 McGerty and Spear Wall Ranching Post-Contact (2006) 05-6013 McGerty and Spear Modified outcrop/terrace Agriculture Post-Contact (2006) complex 05-6014 McGerty and Spear Agriculture Terrace Post-Contact (2006) 05-6015 McGerty and Spear Modified outcrop, terrace Habitation Post-Contact (2006) McGerty and Spear Agriculture 05-6016 Terrace Post-Contact (2006)05-6017 McGerty and Spear Rock mound Planting Post-Contact (2006)McGerty and Spear L-shaped terrace Post-Contact 05-6018 Habitation (2006)05-6019 McGerty and Spear Irrigation (Kahuikoa Post-Contact Flumes Ditch flumes) (2006) McGerty and Spear Agriculture 05-6020 Traditional Terrace

(Table 3, continued)

(2006)

(Table 3, continued)

Site No. (50-50-)	Reference	Name/Description	Function	Period	Excavation (X = Yes)
05-6021	McGerty and Spear (2006)	Terrace	Agriculture	Traditional	
05-6022	McGerty and Spear (2006)	Concrete foundation	Ranching	Post-Contact	
05-6023	McGerty and Spear (2006)	Stacked, faced rock wall	Stream retention	Post-Contact	
05-6024	McGerty and Spear (2006)	Terrace	Agriculture	Post-Contact	
05-6025	McGerty and Spear (2006)	Rock wall	Ranching	Post-Contact	
05-6026	McGerty and Spear (2006)	Modified outcrop, terrace	Agriculture	Post-Contact	
05-6027	McGerty and Spear (2006)	Walls, terrace	Agriculture/ranching	Post-Contact	Х
05-6028	McGerty and Spear (2006)	Modified outcrop	Slope retention	Post-Contact	
05-6029	McGerty and Spear (2006)	Rock overhang	Temporary habitation	Traditional	
05-6030	McGerty and Spear (2006)	Modified overhang	Temporary habitation	Traditional	
05-6031	McGerty and Spear (2006)	Modified outcrop, terrace	Agriculture	Traditional	

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Site No. (50-50-)	Reference	Name/Description	Function	Period Excava (X = Y	ntion es)
05-6032	McGerty and Spear (2006)	Overhang complex	Temporary habitation	Traditional	
05-6033	McGerty and Spear (2006)	Petroglyph	Symbolism	Traditional	
05-6034	McGerty and Spear (2006)	Barrel dump	Refuse disposal	Post-Contact	
05-6035	McGerty and Spear (2006)	Petroglyph	Symbolism	Traditional	
05-6036	McGerty and Spear (2006)	Petroglyph	Symbolism	Traditional	
05-6037	McGerty and Spear (2006)	Modified outcrop, wall	Ranching	Post-Contact	
05-6038	McGerty and Spear (2006)	Petroglyph	Symbolism	Traditional	
05-6039	McGerty and Spear (2006)	Wall	Ranching	Post-Contact	
05-6040	McGerty and Spear (2006)	Rockshelter	Temporary habitation	Traditional	
05-6041	McGerty and Spear (2006)	Rock wall	Ranching	Post-Contact	
05-6042	McGerty and Spear (2006)	Rock overhang	Temporary habitation	Traditional/post-Contact	

Site No. (50-50-)	Reference	Name/Description	Function	Period	Excavation (X = Yes)
05-6043	McGerty and Spear (2006)	C-shaped structure	Habitation	Traditional	
05-6044	McGerty and Spear (2006)	Rock wall	Ranching	Post-Contact	
06-5554	Pantaleo (2004)	Portuguese brick oven (forno)	Cooking	Post-Contact (since A.D. 1878)	
06-5555	Pantaleo (2004)	Cattle-weighing station	Ranching	Post-Contact	
10-4677	Fredericksen and Fredericksen (1999)	Rock facing	Agriculture (retaining wall)	Post-Contact	
10-4678	Fredericksen and Fredericksen (1999)	Rock facing	Agriculture (retaining wall)	Post-Contact	
10-4679	Fredericksen and Fredericksen (1999)	Rockshelter/cave	Temporary habitation	Traditional	
10-4680	Fredericksen and Fredericksen (1999)	Rockshelter/cave	Temporary habitation	Traditional	
10-4681	Fredericksen and Fredericksen (1999)	Rock mound	Burial	Post-Contact	

(Table 3, concluded)

ANTICIPATED RESULTS

Pantaleo (2004:12-13) and Willman et al. (2010) both conclude that intensive largescale commercial agricultural activities have disturbed, or destroyed any pre-Contact and possibly any early post-Contact remains that may once have existed in Makawao Ahupua'a. The same appears likely for Hāli'imaile. Pantaleo (2004: 12-13) further suggests that pre-Contact use in the area was probably limited, including no permanent settlements, instead emphasizing agricultural and temporary habitation sites centered on gulches and drainages that supplied water, and seasonal exploitation of forest resources including birds (for both meat and feathers) and large trees such as *koa* logs (for canoes and other woodwork).

For the current project area, Donham's (1990) Parcel 5, the isolated basalt adze find, and Willman et al.'s (2010) stratigraphic observations are relevant. Parcel 5 (Donham 1990) is located less than 1 km west of Maui Veterans Cemetery; however, the intense grading that accompanies large-scale commercial agriculture, and that is prevalent in this vicinity, decreases the probability that additional materials will be discovered on the surface. The surface provenience of the basalt adze is not the original provenience. It is not possible to associate the artifact with its original cultural layer or feature. Given the post-Contact and modern history and extent of large-scale agriculture in the area, it is also unlikely that any subsurface features or cultural layers remain intact at depths within the plow zone. Some deeper deposits might be intact or contain undisturbed portions. Willman et al.'s (2010:52) stratigraphic observations concerning the fills and disturbed deposits they encountered to 350 cm below surface (cmbs) clearly indicate that some areas in the vicinity of the cemetery are heavily disturbed even far below the typical plow zone.

IV. RESEARCH GOALS AND PROJECT PLANNING

The research goals that guided the fieldwork are summarized first here. The names and credentials of the field personnel are provided next, along with the dates when the project took place. The final subsection summarizes the field and archival-research methods used during the project.

RESEARCH GOALS

The research goals of the inventory survey and testing, as the fieldwork began, involved primarily establishing the presence or absence of certain types of archaeological evidence that historical documents suggest might be found, and understanding any cultural discoveries within their environmental and cultural contexts.

It was anticipated that the surface would be disturbed and that few or no in-situ, undisturbed sites would be found. As mentioned earlier, however, historical documents mention certain practices and land uses that produce specific types of archaeological deposits and materials that might be discovered, particularly during subsurface investigation. Deposits that might be discovered could include agricultural soils, either irrigated or dryland; and features such as terraces or retaining berms in either type of agriculture, soil mounds in dryland areas, or ditches in irrigated fields. Materials that might be discovered include single rocks that appear out of their natural place (e.g., historically documented "boundary stones"); rocks in rows, stacks, or concentrations (e.g., dams to divert water from nearby water sources, or rocks of retaining walls and planting mounds); and items used during ranching (e.g., tools, horseshoes or other equestrian equipment).

Soils, sediments, rock types, and overall stratigraphy were to be described, studied in the field, and interpreted in order to understand the natural physical context of any discoveries. Any connections or discernible relationships between cultural components discovered during testing—for instance, between a post mold and an occupation or agricultural layer—were to be documented and analyzed in order to understand the cultural context of the discovery.

PERSONNEL AND SCHEDULE

The Principal Investigator for the project is Tim Rieth, M.A. Jane Allen, Ph.D., is the senior Project Director and has also completed the archival background research for this project. Trever Duarte, M.A., is the co-Project Director and conducted the fieldwork, assisted by Robert Pacheco, M.A. Fieldwork involved two days of inventory survey and test excavation, conducted on January 14 and 15, 2013, by Duarte and Pacheco. The Geographical Information Systems (GIS) maps of the property, surrounding areas, and areas test-excavated during the fieldwork were prepared by Christopher Filimoehala, M.A., and Tim Rieth, M.A., with assistance provided by Thomas Arakaki, M.F.A., and Darby Filimoehala, B.A.

FIELD METHODS

Two field methods were used to investigate the project area: on-foot survey and excavation of shoveled test pits (STPs). Systematic survey was conducted by two surveyors walking approximately 5 m apart along parallel lines (transects) across the project area. The surveyors used the east-west project-area boundaries to establish azimuths for the transects. Feature locations were recorded with sub-meter accuracy with a Trimble Pro-XH Global Positioning System (GPS) unit, using the North American Datum of 1983 in Universal Transverse Mercator Zone 4 North. Digital photographs were taken for all features and STPs. At the time of the survey, the vegetation was low—either machine-cut or grazed by neighboring cattle, which provided relatively high ground visibility.

Upon completion of the surface survey, six STPs were excavated, with the intent of characterizing subsurface soils, sediments, and the types of any subsurface cultural materials discovered, as well as their density across the project area. The units were excavated south to north in areas with greatest potential to allow observation and study of the stratigraphic record across the long axis of the project area (Fig. 12). An additional, deep, stratigraphic profile was available for observation, as the Makawao Veterans Cemetery grounds crew completed a machine-excavated trench for a stacked burial plot near the southwest roundabout in the cemetery roadway (for location of roundabout, see Figs. 2, 12).

Each STP was an approximately 0.50×0.50 m square. Prior to excavation, the area was cleared of vegetation with garden sickles. Each unit was excavated with a round-nosed shovel and trowel to a minimal depth of 50 cmbs, 75 cmbs where possible. Excavation proceeded by natural or cultural layer, with internal divisions added within a given layer as needed. The matrix was examined for cultural materials as it was excavated and was dryscreened through 6-millimeter (mm) (1/4-in.) mesh. Traditional Hawaiian materials including charcoal were collected; diagnostic or unusual post-Contact artifacts would also have been collected if any had been discovered. Recent post-Contact materials (e.g., bottle glass) were not collected but were briefly mentioned in the project field notebooks.

The collected materials were placed in sealed containers inside paper bags and were listed in a sequentially numbered field catalog. The information recorded on each bag and in the list includes project name and area location, trench or unit designation, layer number if known, deposit type (e.g., basaltic soil, gravelly fill), depth (cmbs), feature number if assigned, material type, comments, recorder's name, and date. Natural soils, and cultural soils other than fills, were profiled—illustrated and fully described—following the instructions provided by the U.S. Soil Survey Manual (U.S. Department of Agriculture Soil Survey Staff 1951, 1962, 1993), the IARII soil-profiling guide (Allen 2009), and an undated supplement to the *Soil Survey Manual* (on file, IARII). The last document is distributed in laminated form to field personnel for use as a field guide. The following soil characteristics are profiled: color (following Munsell Color 2000), including moisture condition (wet, moist, dry) when color read; texture; structural grade, size, and form (or absence of structure); dry or moist consistence; wet consistence (stickiness, plasticity); cementation; root and pore frequency and size and pore type; presence of charcoal or other cultural materials; and lower boundary distinctness and topography. Any noted sedimentary structures such as internal bedding planes are also described, as are other characteristics that help clarify the depositional and soil-forming history of the area. Fills are mentioned briefly in field notes but are not generally profiled in detail unless they contain significant cultural finds.

The documents prepared during the fieldwork include the field notebooks and field catalog, as mentioned above. Archaeological features are illustrated by either drawings or scaled photographs and are described on standardized forms. Soil profiles are also recorded on standardized forms. A photographic record is kept current, listing frame number, subject, orientation, photographer's name or initials, and date.

ARCHIVAL METHODS

Archival background research conducted for this report and also for the accompanying CIA included searches of libraries and websites. The Hawai'i State Historic Preservation Division (SHPD) library in Kapolei was searched for any historical and other information included in earlier archaeological reports. The in-house IARII report and map libraries and the Hawai'i State Department of Accounting and General Services (DAGS) Survey Division map library were also searched. The Bishop Museum Library and Archives had been searched earlier for a project area conducted in a nearby area (Allen et al. 2004). Research assistant Darby Filimoehala conducted research regarding land titles and former land uses at the State Archives and the State Bureau of Conveyances.

Numerous on-line databases were used. A few of the most useful include the DAGS map website (<http://dags.hawaii.gov/survey/reg, accessed January 11, 2013), the Hawaiian Electronic Library (<http://ulukau.org/>, accessed January 16, 2013) website; sites concerning Maui Veterans Cemetery and the adjacent church-associated cemetery (e.g., <http://en.wikipedia.org/wiki/Makawao_Union_Church>, accessed January 16, 2013; <http://files.usgwarchives.net/hi/maui/cemeteries/mauivet.txt>, accessed February 11, 2013; <http://files.usgwarchives.net/hi/maui/cemeteries/mauivet.txt>, accessed February 11, 2013; <http://mauinews.com/>, accessed February 7, 2013; and <http://www.findagrave.com/>, accessed February 11, 2013). The Waihona 'Āina website (<https://www.waihona.com/>, accessed January 16, 2013), a searchable tool for accessing information connected with Mahele, the Boundary Commission, Royal Patents, and Land Grants, was also searched. (The Land Commission Records office was created by an act of the U.S. Congress in 1846

and operated until 1855 [e.g., Chinen 1958].) provides a searchable tool for accessing information associated with Māhele, the Boundary Commission, Royal Patents, and Land Grants.

Many maps were reviewed, in part to research patterns of land use and ownership in the mid- to late 19th century. As noted, three historical maps (Metcalf 1848a, 1872; Lyons 1872) provided the base maps for Figures 7-10.

V. RESULTS

No historic (NRHP-eligible), intact and in-situ archaeological sites or deposits were discovered during either on-foot survey or STP excavation. Six surface features, each reflecting the property's modern use, were recorded and assigned temporary (field) numbers. Features 1-6 are described first here.

The depositional sequence revealed in six STPs excavated across the expansion parcel includes mainly mixed and disturbed soils to considerable depths, reflecting intense, modern, large-scale agricultural disturbance. Charcoal and one *kukui* nutshell were recovered from disturbed and mixed soil, Layer I, as mentioned below. No pre-fill cultural layers were encountered during excavation.

RESULTS OF SURFACE SURVEY: FEATURES 1-6

The current cemetery was briefly checked for any unrecorded features; none were found. The cemetery is in use, and only marked graves were observed. One hundred percent of the 4.1-ha (10-ac.) planned expansion parcel was surveyed by two IARII archaeologists (Duarte and Pacheco) over the course of one day. The six surface features discovered and mentioned above were all discovered in the expansion parcel.

Feature 1 is a manhole box constructed of a type of concrete, containing coarse inclusions such as angular basalt pebbles, that is often found in late 19th– to early 20th-century structures in Hawai'i and that is commonly referred to as *kameki puna*, "old-type cement." Similar concrete, however, could possibly have been used by individuals later in the 20th century. The feature measures 1.5 m square and is 1.7 m high (Photos 6-7). The upper surface of the manhole box is flat, with an opening 0.6 m in width and 0.8 m in length. A rusted rebar ladder allows access from the opening into the interior of the box (Photo 8). A formed channel measuring 0.25 m in width and 1.5 m in length runs along the base of the interior, possibly functioning as a conduit for a water pipe. Feature 1 is located on the western project boundary line, in the southern half of the expansion parcel (Fig. 12).

Feature 2, a circular Concrete Masonry Unit (CMU) block structure with six interior reinforcing walls, measures 3.25 m diameter and reaches a maximum height of 1.2 m (Photo 9). A concrete apron 0.1 to 1.5 m wide extends off the base course around the structure. The ceramic tile is reinforced with rebar and mortar. Currently, the north exterior section has collapsed inward, causing the three northern reinforcing walls to collapse in domino style. Feature 2 is located 2 m north of Feature 1 (see Fig. 12). It may possibly have been used as a cistern.

Feature 3 (Photo 10) is an isolated, broken block of concrete of *kameki puna* type that measures 0.45 m in length, 0.25 m in width, and 0.15 m in height. It was probably intended for use in a structure (at an unknown location and for unknown use) but presumably broke and was discarded.

Feature 4 (Photo 11) is another isolated, broken block of concrete that may also be an early type (*kameki puna*). It is slightly larger than the Feature 3 block, measuring 0.67 m long, 0.31 m wide, and 0.15 m high. Feature 4 is located approximately 5 m west of Feature 3 and may have been intended for use in the same structure.

Feature 5 (Photo 12), a rounded, vesicular basalt boulder found embedded in the ground in the east half of the expansion parcel, measures 0.42 m in length, 0.20 m in width, and 0.18 m in height. A recent break scar appears on the upper surface. Since this boulder is out of place here, making it possible that it had been deposited and used culturally, possibly as a boundary marker or in a wall, STP 3 was excavated next to its northeast face to determine whether additional rocks were present beneath the surface. The results suggest that the boulder is isolated; no other basalt rocks were located within the immediate area. No cultural layers or materials were discovered.

Feature 6 (see Fig. 12) is a third isolated, broken block of concrete that may also be early (*kameki puna*). It is the smallest of the three, measuring 0.25 m in length, 0.20 m in width, and 0.14 m in height. It is embedded in the ground surface of an agricultural berm formed by a plow.

In summary, the surveyed parcel contains no surface post-Contact or traditional features. The recorded features reflect ground disturbance by large-scale agricultural activity across the project area during the current era. As noted, Feature 1 is made of a type of concrete that is often called *kameki puna*, which is common at late 19th- and early 20th-century sites in Hawai'i. It could alternatively represent more recent construction by an individual farmer or other resident. The isolated blocks (Features 3, 4, and 6) are also made of concrete that resembles *kameki puna*. The distribution of these small blocks suggests the extent to which commercial agricultural has disturbed the project area. Feature 2, the CMU cistern or well, represents recent construction methods and materials.

Feature 5, the small rounded basalt boulder, may possibly be a remnant of a traditional or post-Contact wall or other structure that once stood somewhere nearby. None of the surface features are recommended for preservation. The Feature 5 boulder was selected for testing during the project.

RESULTS OF TEST EXCAVATION

The six STPs excavated across the project area uncovered no cultural materials or pre-fill cultural layers. The horizontal distribution of soil types in the STPs indicates that the area has been intensely disturbed by prior agricultural use of the parcel, which included plowing and deposition of similar mixed, plowed soils and fills across the parcel. At the northeastern end of the parcel—near the gulch, a decomposing bedrock layer was observed at shallower depths below surface, likely due to erosion of former overlying soils, and to the sloping natural landscape. Table 4 describes and interprets the soils sectioned in the six STPs.

Location	Layer	Depth (cmbs)	Description	Soil-Forming or Depositional History	Notes
STPs 1-3, 5-6	Ia-b	0-75	Dark reddish brown to dark brown (5YR 3/3 to 7.5YR 3/4, moist) silt loam to silty clay loam; moderate, fine to medium, granular structure; very friable to friable, slightly sticky to sticky, slightly plastic to plastic; few to many, fine to very fine, roots; 15-40% subangular to subrounded, basalt pebbles to cobbles; base not reached.	Disturbed, probably includes fills; modern agricultural use	Contains black plastic tarp fragments
STP 4	Ι	0-40	Dark reddish brown (5YR 3/4, moist) gravelly silty clay loam; moderate, fine to medium, granular structure; friable, sticky, plastic; many, very fine to fine roots; ~30% subangular, cinder pebbles to cobbles; abrupt, smooth boundary.	Disturbed, probably includes fills; modern agricultural use	No tarp; a 3 1/2" wire nail 10 cmbs, scattered charcoal, <i>kukui</i> nutshell fragment 20- 30 cmbs (not associated with any feature or traditional cultural layer)
	Π	40-75	Dusky red (10R 3/3, moist) gravelly silty clay loam; moderate, fine to medium, granular structure; very friable, slightly sticky, slightly plastic; few, medium roots 50-70 cmbs; 20% subrounded, decomposing basaltic rock; base not reached.	C horizon	High iron content; peds attracted to magnet. Layer III in deep cemetery unit

Table 4. Soil profiles, Shoveled Test Pits (STPs), Maui Veterans Cemetery expansion parcel.

The first unit, STP 1, was excavated near the southwest boundary of the current cemetery, within a modern, plowed agricultural field. This STP was excavated to 75 cmbs. A single layer was observed during excavation, containing a nearly homogenous distribution of thin black plastic tarp fragments (Photo 13). No subsurface features or cultural materials other than fills and the tarp were discovered.

The second unit, STP 2, was also placed in the southwest half of the current cemetery parcel, within the same agricultural field. Excavation was again terminated at 75 cmbs. A single layer was observed during excavation, containing a similar distribution of thin black plastic tarp. No subsurface features or significant cultural materials were discovered.

The third test unit, STP 3, excavated in the northeast portion of the expansion area, is the one that was opened beside the northeast face of the round, vesicular basalt boulder (Feature 5), to investigate stratigraphy and any possible cultural associations. This STP (Photo 14) was terminated at 50 cmbs. A homogenous distribution of thin black plastic tarp was found throughout the STP. No subsurface features or significant cultural materials were discovered.

The fourth STP was excavated near STP 3, in the northeast boundary of the expansion area. The STP is roughly located 100 m from the edge of the gulch (see Fig. 12). This STP was excavated to 75 cmbs and exposed two soil layers. Layer I produced a 3½-in. wire (modern) nail between 0 and 10 cmbs, and two pieces of charcoal found dispersed (and collected) between 22 and-32 cmbs. Layer II consists of a gravelly silty clay loam containing decomposing basaltic rock but no observed cultural materials. No subsurface features were discovered. The materials present (and the absence of black plastic tarp) in Layer I suggests that modern activity has been limited in this area.

The fifth STP was excavated in the south-central portion of the expansion area. Only Layer I was sectioned to the base of excavation at 75 cmbs. A homogeneous distribution of thin black plastic tarp was found throughout the STP. No subsurface features or premodern cultural materials were discovered.

The final STP, STP 6, was excavated a few meters north of the barbed fence line that marks the north edge of the cemetery (the south edge of the expansion area). This STP, like most of the others, sectioned only Layer I to the base of excavation at 75 cmbs. A homogeneous distribution of thin black plastic tarp shreds was found throughout the STP. No subsurface features or premodern cultural materials were discovered.

Table 5 describes the soils that were sectioned in a trench excavated by the grounds crew for emplacement of a stacked burial in the current cemetery. The trench was excavated at the north edge of the cemetery, near the northwest corner and about 2 m southwest of the paved roundabout (see Fig. 12). The trench was 2.55 m long, 1 m wide, and a maximum of 280 cmbs deep.

Three main stratigraphic layers were identified (Photo 15), with two internal layers in Layer I (a, b). The Layer I/II boundary was encountered at 35 cmbs in this unit. Layer II, the agricultural layer, continues to 119 cmbs; Layer II also continues to this depth in at least the STP 4 portion of the expansion area and may be present in other portions not tested.

Depth (cmbs)	Layer	Description (Soil Profile)	Soil-Forming or Depositional History	Notes
0-33	Ia	Dark brown (10YR 3/3, moist) silt loam; moderate, fine to medium, granular structure; friable, slightly sticky, slightly plastic; few, fine, roots; 15% subrounded, basalt pebbles to cobbles; abrupt, smooth boundary.	Rich, fertile; likely imported topsoil (fill)	
33-36	Ib	Light yellowish brown (10YR 6/4, moist) sand; structureless, non- cohesive structure wet or dry; no roots or rocks; abrupt, smooth boundary.	Marker/headstone fill	Interpretation and use explained by cemetery grounds crewmember
36-115	Π	Dark reddish brown (5YR 3/4, moist) gravelly silt loam; moderate, fine to medium, granular structure; friable, slightly sticky, slightly plastic; few, fine, roots; 20% subangular to subrounded, basalt and cinder pebbles to cobbles; abrupt, smooth boundary.	Modern agricultural use	Equivalent to Layer I in the STPs
115-280	III	Very dark brown (7.5YR 2.5/2.5, moist) very gravelly loam; moderate, fine to medium, crumb structure; friable, slightly sticky, slightly plastic; weakly cemented; no roots; ~40% subangular to subrounded, basalt pebbles to small boulders; base not reached.	C horizon	Soil and decomposing basalt bedrock.

Table 5. Profile, deep trench, Maui Veterans Cemetery.

The deepest layer exposed in the trench is Layer III, which reached a depth of 280 cmbs. Layer III is a C horizon composed of soil and decomposing basaltic rock. No premodern cultural layer or subsurface features were present in the trench faces.

PORTABLE MATERIALS - ARTIFACTS, MIDDEN, AND OTHER ITEMS

No traditional shell or bone midden was discovered during either surface survey or test excavation. The only possibly traditional items recovered were found in STP 4 Layer I (Table 6). The (unidentified) charcoal might, uncertainly, represent either traditional or post-Contact use. The *kukui* nutshell found in STP 4 Layer I represents a Polynesian-introduced traditional species, but *kukui* trees are still common today, and their nuts are collected. Since the layer (I) from which these materials were recovered postdates Contact, the charcoal was not identified, and neither material was submitted for radiocarbon dating.

Bag No.	Material	Location; Layer; Deposit Type; Depth in cmbs	Function	Date Collected	
1	Charcoal (found dispersed)	STP 4; I; mixed agricultural soil; 22-32	Fuel; possibly agricultural soil fertilizer	January 15. 2013	
2	Charred kukui nutshell	STP 4; I; mixed agricultural soil; 22-32	Fuel; possibly food or medicinal use	January 15. 2013	

 Table 6.
 Collected portable materials, Maui Veterans Cemetery expansion parcel.

No traditional artifacts were discovered during surface survey or subsurface testing. The only artifacts encountered include the wire nail (not collected) discovered in STP 4 Layer I and the many fragments of black plastic tarp, an agricultural mulching material, that were found throughout Layer I in several STPs, although not in STP 4.

VI. SUMMARY

The results of the survey and testing are briefly discussed here. The first summary applies the results to the research goals. The final summary discusses possible site significance and recommendations.

RESULTS APPLIED TO THE RESEARCH QUESTIONS

As indicated earlier, the goals of this project were primarily to establish the presence or absence of certain types of archaeological evidence (mainly agricultural deposits, waterdiversion features, and boundary markers) that historical documents suggested might be found. Soils and stratigraphy were described and examined in order to interpret any cultural discoveries within their environmental and cultural contexts.

Historical maps and other documents stressed the importance of Makawao Ahupua'a in the 19th century for the introduction to Hawai'i of private-property law, and for the establishment of introduced commercial (mainly sugar-plantation) agriculture. One writer also stressed the difficulty of routing sufficient irrigation water to the Makawao plantations. The archaeological results of survey throughout the project area, and the evidence discovered during testing in the planned expansion parcel, are consistent with the historical evidence.

Surface Features 1, 3, 4, and 6 include a manhole-box remnant and isolated blocks all made of a concrete type generally called *kameki puna* that is associated with late 19thand early 20th-century structures in the islands. Although, as noted, similar concrete may alternatively have been made more recently by individuals, it is likely that the four features represent structures that were used during sugar-plantation days. Feature 2 is a more recent structural remnant that is also probably agricultural; it is probably a cistern or well that was used in the mid-20th century to store irrigation and domestic water, which was so difficult to get to the Makawao plantations during the early days of commercial cultivation. Feature 5 is a waterworn basalt boulder that is out of its natural place here and was undoubtedly deposited culturally. Its purpose remains unknown; no cultural information was recovered during testing.

Soil and stratigraphic evidence suggests that Layers I and II are both derived from the Makawao silty clay described for the area by Foote et al. (1972:89-90, Map sheet 114). Layer I has been disturbed and mixed relatively recently, as reflected by the black plastic tarp fragments it produced. Layer II is an earlier agricultural subsoil that reflects less intrusive disturbance than Layer I but that, as an agricultural soil, would have been disturbed to some degree during cultivation. Only Layer I produced cultural items.

SITE SIGNIFICANCE AND RECOMMENDATIONS

The six features discovered are considered potentially historic (NRHP-eligible) according to Criterion D, their potential to produce information important to history or prehistory. Appendix C provides definitions of the NRHP criteria and integrity requirements. Also, see http://www.achp.gov/NCP-PA.html#III; the U.S. National Park Service's (2002) Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf; and the National Register Bulletins available at http://www.nps.gov/history/nr/publications/bulletins.htm, all accessed January 16, 2013).

Feature 2 may be less than 50 years old and is not considered significant. Features 3-6 are isolated items, lacking integrity, and are not considered significant. It is believed that all significant information likely to be obtained from Features 2-6 has been collected.

A single feature, Feature 1, the manhole box, may produce important information during grading or excavation in the expansion parcel. The feature is apparently in place, so may possess integrity of location. It is built of concrete that is likely *kameki puna*, an old type; it also contains very rusted iron rebar, which is often found incorporated in the concrete of early 20th-century (and possibly late-19th-century) structures. Feature 1 may provide, especially, information concerning the history of plantation agriculture in Makawao. Additionally; if it has protected the soils beneath it for a century, Layer II might also produce traditional or early post-Contact materials in their original contexts.

To ensure that any information Feature 1 may provide is recognized and collected, archaeological monitoring is recommended during destruction and removal of Feature 1, and during grading and excavation in the soils beneath it and in a band approximately 5 m wide around the feature. No further archaeological investigations are recommended for Features 2-5, which are believed to have been investigated sufficiently.

APPENDIX A:

FIGURES



Figure 1. Maui Veterans Cemetery and expansion parcels on portion, U.S. Geological Survey 1992, *Haiku Quadrangle, Hawaii-Maui County*. GIS map based on topographic map, bar scale (original scale 1:24,000).



Figure 2. Project-area map (2012) prepared by Akamai Land Surveying, Inc., Makawao, including Land Commission Award and Grant information. Provided by Belt Collins Hawaii.



Figure 3. Aerial photomap, project area and surrounding Tax Map Key properties. GIS map (Bing map; ©2010 DigitalGlobe © 2010 GeoEye © 2013 Microsoft Corporation).



Figure 4. Maui ahupua'a. Note project area, at Hāli'imaile/Makawao Ahupua'a boundary. GIS map, bar scale.



Figure 5. Aerial photomap, project area and surrounding *ahupua'a*. GIS map (Bing map; ©2010 DigitalGlobe © 2010 GeoEye © 2013 Microsoft Corporation).



Figure 6. Aerial photomap, project area in landscape. Note gulch outside east/southeast boundary of parcel, Baldwin Road along southwest boundary. GIS map (Bing map; ©2010 DigitalGlobe © 2010 GeoEye © 2012 Microsoft Corporation).



Figure 7. Portion, copy of Metcalf's (1848a) map of Makawao, Maui, Hawaiian Government Survey Registered Map 186. Project area added.



Figure 8. Portion, copy of Metcalf's (1872) map, Makawao land sales, indicating McLane's name for Grant 64. Hawaiian Government Survey Registered Map 743. Project area added.



Figure 9. Portion, Lyons's (1872) map *Makawao Maui*. Hawaiian Government Survey Registered Map 603. Project area added.


Figure 10. Enlarged portion of Lyons's (1872) map *Makawao Maui*. Note McLane's name, Grant 64. Hawaiian Government Survey Registered Map 603. Project area added.



Figure 11. Map, archaeological project areas researched previously in areas near the current parcels.



Figure 12. Map, surface features recorded and shoveled test units (STPs) excavated, Maui Veterans Cemetery and expansion parcel.

APPENDIX B:

PHOTOGRAPHS



Photograph 1. Maui Veterans Cemetery, sign in parking lot. To southwest. January 2013.



Photograph 2. Overview, expansion parcel, Maui Veterans Cemetery. To southwest. January 2013.



Photograph 3. Overview, showing wire fence separating cemetery and expansion parcels. To south. January 2013.



Photograph 4. Archaeologist Trever Duarte and distant friends. Cattle kept grass grazed short, perfect for visibility. January 2013.



Photograph 5. Makawao Cemetery (adjacent to project area). Two royal palms that flanked entrance to former wooden church. To east. January 2013.



Photograph 6. Feature 1, exterior. Manhole box. January 2013.



Photograph 7. Feature 1, close-up of exterior, showing old type of concrete, rusted rebar. January 2013.



Photograph 8. Feature 1, interior, with rusted iron rungs descending to floor. January 2013.



Photograph 9. Feature 2, collapsing CMU cistern or well. January 2013.



Photograph 10. Feature 3, block of old type of concrete. To north. January 2013.



Photograph 11. Feature 4, another concrete block, old type of concrete. To north. January 2013.



Photograph 12. Feature 5, rounded, vesicular, basalt boulder. To west. January 2013.



Photograph 13. Shoveled test pit, showing black plastic tarp that appeared in Layer I in most STPs. January 2013.



Photograph 14. Unit excavated (STP 3) to investigate area beneath and around Feature 5 boulder. January 2013.



Photograph 15. Deep excavated trench, near northwest corner of Maui Veterans Cemetery, current parcel. West face. January 2013.

APPENDIX C:

NATIONAL REGISTER OF HISTORIC PLACES SIGNIFICANCE CRITERIA AND INTEGRITY REQUIREMENTS (U.S. NATIONAL PARK SERVICE 2002)

NATIONAL REGISTER OF HISTORIC PLACES (NRHP) CRITERIA FOR SIGNIFICANCE AND INTEGRITY REQUIREMENTS

Archaeological properties are assessed for their potentially historic (significant) status: historic sites are eligible for nomination to the NRHP; they must satisfy at least one of the **criteria** listed below and must also retain **integrity**.

The NRHP criteria are set forth in 36 Code of Federal Regulations [CFR] Part 60 (available, <http://www.nps.gov/history/nr/regulations.htm>, accessed Dec. 3, 2010) and in National Register Bulletins, e.g., Bulletins 15 and 36. Bulletin 15, *How to Apply the National Register Criteria for Evaluation* (U.S. National Park Service 2002), is available at <http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf>, accessed November 30, 2012). Bulletin 36, *Guidelines for Evaluating and Registering Archaeological Properties* (Little et al. 2000 [U.S. National Park Service 2000]), is available at <http://www.nps.gov/nr/publications/bulletins/pdfs/nrb36.pdf>, accessed November 30, 2012. The criteria and related considerations follow:

Criteria for evaluation. The quality of significance in American history, architecture, archeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association and

(a) that are associated with events that have made a significant contribution to the broad patterns of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Criteria considerations. Ordinarily cemeteries, birthplaces, or graves of historical figures, properties owned by religious institutions or used for religious purposes, structures that have been moved from their original locations, reconstructed historic buildings, properties primarily commemorative in nature, and properties that have achieved significance within the past 50 years shall not be considered eligible for the National

Register. However, such properties will qualify if they are integral parts of districts that do meet the criteria or if they fall within the following categories:

(a) A religious property deriving primary significance from architectural or artistic distinction or historical importance; or

(b) A building or structure removed from its original location but which is significant primarily for architectural value, or which is the surviving structure most importantly associated with a historic person or event; or

(c) A birthplace or grave of a historical figure of outstanding importance if there is no appropriate site or building directly associated with his productive life.

(d) A cemetery which derives its primary significance from graves of persons of transcendent importance, from age, from distinctive design features, or from association with historic events; or

(e) A reconstructed building when accurately executed in a suitable environment and presented in a dignified manner as part of a restoration master plan, and when no other building or structure with the same association has survived; or

(f) A property primarily commemorative in intent if design, age, tradition, or symbolic value has invested it with its own exceptional significance; or

(g) A property achieving significance within the past 50 years if it is of exceptional importance. This exception is described further in the National Park Service's Bulletin 22, entitled *Guidelines for Evaluating and* Nominating Properties That Have Achieved Significance Within the Past Fifty Years (available, <http://www.nps.gov/history/nr/publications/bulletins>, accessed Sept. 16, 2008).

National Register Bulletins including Bulletins 15 and 36 stipulate that, in order to be listed in the NRHP, a property must not only satisfy one criterion or more ,but also must retain integrity. Bulletin 15 Section 8 states: "Integrity is the ability of a property to convey its significance." "The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance." Properties either retain integrity or they do not retain integrity. Seven aspects of integrity are recognized: integrity of location, design, setting, materials, workmanship, feeling, and association.

Discussing archaeological sites in particular, Bulletin 15 (section entitled Determining the Relevant Aspects of Integrity—Criteria A and B) stipulates that:

Archeological sites eligible under Criteria A and B must be in overall good condition with excellent preservation of features, artifacts, and spatial relationships to the extent that these remains are able to convey important associations with events or persons.

For archaeological sites and other properties that are significant according to Criterion D, Bulletin 15 (Determining the Relevant Aspects of Integrity—Criterion D) indicates that:

[L]ess attention is given to their overall condition, than if they were being considered under Criteria A, B, or C. Archeological sites, in particular, do not exist today exactly as they were formed. There are always cultural and natural processes that alter the deposited materials and their spatial relationships.

King (2008:96) suggests the following considerations during assessment of an archaeological site:

"Would a person from the property's period of significance recognize it?" If the answer is "yes," it has integrity; if "no," it doesn't. . . . A place that has been radically transformed may—even as a result of its transformation—convey something important about the past to a viewer.

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APPENDIX D Cultural impact assessment

- Final --Maui Veterans Cemetery Expansion Cultural Impact Assessment Ahupua'a of Makawao and Hāli'imaile Traditional District of Hamakua Poko Maui Island, Hawai'i [TMK 2-2-4-02:09 and portion 07]



Prepared for International Archaeological Research Institute, Inc. And Belt Collins Hawaii LLC

> By Maria "Kaimi" Orr Kaimipono Consulting Service LLC June 2013
Cover Page: *Kowali* or Morning Glory, relative of the sweet potato. In the mo'olelo, Kiha-a-Pi'ilani used the vines of the *kowali* to gather up cuttings of sweet potato for planting in Makawao-Kula.

EXECUTIVE SUMMARY

This project is in response to a request from *International Archaeological Research Institute, Inc.* (IARII) for a Cultural Impact Assessment (CIA) of Maui Veterans Cemetery, Makawao, Maui (TMK 2-2-4-02:09 and portion 07). This study is part of a larger project that will include an Archaeological Inventory Survey (AIS) conducted by IARII and an Environmental Assessment (EA) prepared by Belt Collins Hawaii LLC.

The project lands are located Makawao, in the *ahupua* 'a of Makawao and Hāli`imaile, District or *moku* of Hamakua Poko, Maui Island (now also referred to as Makawao District). This CIA is in compliance with Act 50 SLH 2000 (HB 28 H.D.1) [Appendix A] as it amends the State of Hawai`i Environmental Impact Statement law [Chapter 343, HRS] to include "effects on the cultural practices of the community and State. [It] also amends the definition of 'significant effect' to include adverse effects on cultural practices." The purpose of a CIA is to gather information about traditional cultural practices, ethnic cultural practices and pre-historic and historic cultural resources that may be affected by the implementation of a development project or undertaking in accordance with the State of Hawaii Environmental Council *Guidelines for Assessing Cultural Impacts* (Adopted on November 19, 1997) [Appendix B]. The *level of effort* for this CIA include ethnographic research (two oral historics) of people who are connected to these lands in various ways and an archival cultural/historical background review of the literature (including internet research).

This report is organized into five parts or chapters. Chapter 1 describes the project area in terms of location, in the context of *ahupua*`a, district and island, as well as a generalized description of the natural environment (e.g., geology, flora and fauna) and built environment (e.g., any current features). Chapter 2 explains the methods and constraints of this study. Chapter 3 summarizes a review of the historical and traditional (cultural) literature in the context of the general history of Hawai'i, the island of Maui, the traditional districts or *moku* of Makawao and Hamakua Poko, and local histories of the *ahupua'a* of Makawao and Hāli'imaile. Chapter 4 presents the ethnographic analysis based on the supporting raw data (oral history transcripts) as it pertains to land, water and cultural resources and use in the project area and vicinity. It also includes background data of the ethnographic consultants. Chapter 5 summarizes the findings of this cultural impact study based on supporting data from Chapters 1 through 4 and presents a cultural impact assessment and recommendations.

According to the archival material reviewed, one of the most significant cultural events that occurred in this area was Kiha-a-Pi'ilani, youngest son of Maui ruling chief Pi'ilani, gathering sweet potato slips from the farmers of these lands to plant in the Makawao-Kula lands. Another significant event was the birth of Maui's last *ali'i nui* or ruling chief Kahekili II in Hāli'imaile; he was the son of Maui ruling chief Kekaulike and younger brother of Kalola, wife of Hawai'i's ruling chief Kalani'opu'u, and Kamehameha-nui, successor to Kekaulike.

It is evident that at one time the project lands were part of an ancient Hawaiian life system. The *mo'olelo* illustrate this in the stories of Kiha-a-Pi'ilani in Makawao and Kula [ca 1500-1600s]. A cultural practice of these lands at one time was growing sweet potato and yams, staples of the Hawaiian people, as well as cultivating other ethnobotanical plants such as '*awa, and koa* and *kukui* trees. However, there are no traces of these plants now on the project lands. The project lands were greatly modified in the 19th and 20th centuries for sugarcane, ranching and pineapple; the lands are now fallow. Therefore, there the Maui Veterans Cemetery Expansion project will have no significant impact to cultural resources and practices.

ACKNOWLEDGEMENTS

Mahalo nui loa to the following ladies who helped to identify potential ethnographic consultants for this Cultural Impact Assessment: Ms. Julia Wayman, office manager of Makawao Union Church and Ms. Lesley Bruce, historian of things Maui. To Ms. Jo-Ann Aki, Ms. Clare Apana and Ms. Shirley Kahai *mahalo* for trying....

Mahalo nui loa to Ms. Laurel Murphy for the last minute telephone interview and follow-up emails (she just got back from her vacation, was sick, tired and jetlagged). Her *Maui News* weekly column "Keiki o Ka `Aina" was a help as well....

A very special *Mahalo nui loa* to Ms. Mary "Maizie" Cameron Sanford for agreeing to be interviewed. Ms. Sanford is the youngest, most energetic and knowledgeable 83-year old that I have ever met - who has done so many incredible things in her life! Her family history alone indicates that she comes from a long line of doers; of people who made history every day, of people who made a difference in their communities...she is a great example.....

MAHALO!

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1.0 INTRODUCTION

This project is in response to a request from International Archaeological Research Institute, Inc. (IARII) for a Cultural Impact Assessment (CIA) of Maui Veterans Cemetery, Makawao, Maui (TMK 2-2-4-02:09 and portion 07). This study is part of a larger project that will include an Archaeological Inventory Survey (AIS) conducted by IARII and an Environmental Assessment (EA) prepared by Belt Collins Hawaii LLC.

The project lands are located in Makawao, in the *ahupua'a* of Makawao and Hāli'imaile, District or *moku* of Hamakua Poko, Maui Island (now also referred to as Makawao District). This CIA is in compliance with Act 50 SLH 2000 (HB 28 H.D.1) [Appendix A] as it amends the State of Hawai'i Environmental Impact Statement law [Chapter 343, HRS] to include "effects on the cultural practices of the community and State. [It] also amends the definition of 'significant effect' to include adverse effects on cultural practices." The purpose of a CIA is to gather information about traditional cultural practices, ethnic cultural practices and pre-historic and historic cultural resources that may be affected by the implementation of a development project or undertaking in accordance with the State of Hawai'i Environmental Council *Guidelines for Assessing Cultural Impacts* (Adopted on November 19, 1997) [Appendix B]. The *level of effort* for this CIA include ethnographic research (two oral histories) of people who are connected to these lands in various ways and an archival cultural/historical background review of the literature (including internet research).

This report is organized into five parts or chapters. Chapter 1 describes the project area in terms of location, in the context of *ahupua* '*a*, district and island, as well as a generalized description of the natural environment (e.g., geology, flora and fauna) and built environment (e.g., any current features). Chapter 2 explains the methods and constraints of this study. Chapter 3 summarizes a review of the historical and traditional (cultural) literature in the context of the general history of Hawai'i, the island of Maui, the traditional districts or *moku* of Makawao and local histories of the *ahupua* '*a* of Makawao and Hāli'imaile. Chapter 4 presents the ethnographic analysis based on the supporting raw data (oral history transcripts) as it pertains to land, water and cultural resources and use in the project area and vicinity. It also includes background data of the ethnographic consultants. Chapter 5 summarizes the findings of this cultural impact study based on supporting data from Chapters 1 through 4 and presents a cultural impact assessment and recommendations.

1.1.0 SCOPE OF WORK

The CIA scope-of-work (SOW) [Appendix C] was based on the Environmental Council *Guidelines for Assessing Cultural Impacts* (1997) and focuses on three cultural resource areas (traditional, historical and ethnographic), conducted on two levels: archival research (literature/document review) and ethnographic data (oral histories).

1.1.1 Scope of Work: Cultural Impact Assessment [in accordance with Environmental Council *Guidelines* (1997)]

- 1) conduct historical and other culturally related documentary research;
- identify individuals with knowledge of the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua*'a; or with knowledge of the area potentially affected by the proposed action [e.g. past/current oral histories];

- 3) identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- 4) assess the impact of the proposed action on the cultural resources, practices and beliefs identified.

Traditional resources research entailed a review of Hawaiian *mo'olelo* (stories, legends or oral histories) of late 19th and early 20th century ethnographic works. Historic research focused on the literature compiled. Ethnographic research focused on current interviews with knowledgeable individuals.

1.1.2 Basis for Generating CIA Studies

The project was generated because the Maui Veterans Cemetery is proposing to expand by purchasing an adjacent parcel to the north-northeast. The map below (Figure 1) indicates the area to be purchased,



Figure 1. Cemetery locations (from BCH 2012)

1.2.0 PROJECT AREA

The project is in Makawao, Maui, on Baldwin Avenue and includes Makawao Cemetery lands (Figure 1).

1.2.1 Project Location. The project encompasses an area within the *ahupua'a* of Hāli'imaile and Makawao in the *moku* of Hamakua Poko in an area called Makawao (Figure 2 and 3.) on the northern slopes of Pu'u Haleakalā,



1.2.2 Natural Environment and Terrestrial Ecosystems. The project area is located on the lower northwest slopes of Haleakalā in an area where the lands were historically associated with pineapple cultivation; traces of the old fields can still be seen (see Figure 1). According to Pratt and Gon (In Juvik and Juvik 1998:121) an ecosystem is a community of organisms interacting with its physical environment. The following segments describe the natural environments and ecosystems of the project area and vicinity.

1.2.2.1 Geology of Maui. The island of Maui is 77 kilometers long and 42 kilometers wide, 1,902 square kilometers, with 240 kilometers of shoreline. The highest points on the island is Mt. Haleakalā (Red Hill) at 3,055 meters or 10,023 feet above sea level and Pu⁴u Kukui of Mauna Kahalawai or the West Maui mountains at 1,764 meters or 5,788 feet above sea level (Macdonald et al 1983:3; Juvik and Juvik 1998:308). The island of Maui consists of two major volcanoes; the older Mauna Kahalawai (1.3 million years) and younger Haleakalā or East Maui (0.75 million years).

Haleakalā Volcano in its rejuvenated stage is considered an active volcano that last erupted in 1790 above La Perouse Bay. However, its frequency of activity is not well established and eruptions could occur every several hundred years. Haleakalā's three rift zones extend northwest, east and southwest. Its rejuvenated stage lava is less than 400,000 years old. The shield-stage lava is 1.1 Ma-900,000 years ago and its postshield-stage lava is 860-410,000 years ago. Haleakalā is a potentially dangerous volcano that could erupt in the next hundred years (Clague In Juvik and Juvik 1998:43-44).

The most important soils for traditional agriculture were the alluvial deposits along permanent streams that extended from the mountains to the coast (Earle 1978:25). Hāli'imaile/Makawao soils consist primarily of *Kula Volcanic* (Juvik and Juvik 1998:42) and *Mollisols*, a normally well-drained relatively young soil that develop on lava and posses high fertility (Juvik and Juvik 1998:92).

1.2.2.2 Native Flora. Before human settlement the project area was considered 'lowland dry and mesic forest, woodland (Pratt and Gon In Juvik and Juvik 1998:122). The annual rainfall in this zone is between 20-80 inches; it is warm to hot with seasonal drought. The plains or lower slopes, dry ridge tops and cliffs would have supported *pili (Heteropogon contortus)* grasslands or $k\bar{a}welu$ (*Eragrostis variabilis*). The dry or mesic shrubland vegetation may have included shrublands of 'a 'ali'i (Dodonaea viscosa), ' $\bar{a}kia$ (*Wikstroemia* species), *ko* 'oko 'olau (*Bidens* species) and ' $\bar{u}lei$ (Osteomeles anthyllidifolia). Dry forest areas would have included ' $\bar{o}hi$ 'a (*Metrosideros polymorpha*), koa (Acacia koa), lama (*Diopyros sandwicensis*), wiliwili (*Erythrina sandwicensis*) and rarer trees on ridges. Mesic forests of ' $\bar{o}hi$ 'a, koa or lama and rarely olopua (Nestegis sandwicensis) or halapepe (Pleomele species) could be found in gulches, on lower slopes and less-disturbed areas. More diverse mesic forests were once widespread (Pratt and Gon In Juvik and Juvik 1998:127).

The forested zones were considered the realm of Hawaiian deity, especially $K\bar{u}$ and sometimes Lono and Laka, but it was also where medicinal plants and hardwoods were gathered. In the early 1800s, native sandalwood or *'iliahi* (*Santalum freycinetianum*) was exploited for export from lowland mesic forests on all islands.

1.2.2.3 Native Fauna. Prior to human settlement native birds populated the forests of Maui; they would have included 'elepaio (Chasiempis sandwicensis), 'apapane (Himatione sanguine), 'amakihi (Hemignathus virens) and the Pueo or Hawaiian Owl (Asio flammeus sandwichensis) - a subspecies of Short-eared owl that is endemic to Hawai'i. The Hawaiian hoary bat or 'ōpe'āpe'a (Lasiurus cinereus semotas) is the only endemic terrestrial mammal in Hawai'i from prior to the first human settlement, that has survived. They roost in native and nonnative vegetation from three to twenty-nine feet above ground

level and are rarely observed using lava tubes, cracks in rocks, or man-made structures for roosting. They begin foraging just before or after sunset depending on the time of year; altitude also may affect activity patterns. 'Ōpe'ape'a feed on a variety of native and non-native night-flying insects, including moths, beetles, crickets, mosquitoes, and termites and similar to other insectivorous bats, their prey is located using echolocation (USFWS 1998).

The *Pueo* or Hawaiian Owl (*Asio flammeus sandwichensis*) is a subspecies of Short-eared owl that is endemic to Hawaii. The *pueo* is one of the various $n\bar{a}$ 'aumākua (ancestor spirits) in Hawaiian culture. *Pueo* inhabit forests and grasslands throughout the islands of Hawaii, although their numbers are declining rapidly, particularly in the last two decades.... *Pueo* are now listed as an endangered species. This taxon was first named by Andrew Bloxam (as the species *Strix sandwichensis*). He saw it, although did not collect a specimen, while in the Hawaiian Islands in 1825 as the naturalist on board HMS *Blonde*. It is now considered to be a subspecies of the Short-eared Owl, *Asio flammeus*, although Storrs Olson does not consider it to be distinct from *Asio flammeus*.

Pueo nest on the ground, which makes their eggs and young susceptible to predation by the introduced small Asian mongoose (*Herpestes javanicus*) and other predators, as well as by bulldozers. *Pueo* appear to be somewhat resistant to the avian malaria that has decimated many other endemic bird populations in Hawaii; however, they have recently become victim to a mysterious "Sick Owl Syndrome", or SOS, in which large numbers of *pueo* have been found walking dazedly on roads, leading to death by collision. The cause of Sick Owl Syndrome is unknown; it is suspected that pesticide toxicity may be responsible, particularly through secondary rodenticide poisoning. However, it has also been hypothesized that the cause may be an infectious agent or a variety of other causes [Wiki-Pueo 2012].

1.2.2.4 Polynesian Flora and Fauna. Around 0-600 A.D. Polynesian voyagers settled on the main Hawaiian Islands and brought with them their culture, cultigens (flora and fauna), food and stowaway animals. Their activities and introductions modified first the coastal and valley environments, then the forested and leeward zones. Early Polynesian introduced animals included the Southeast Asian pig (*Sus scrofa*), jungle fowl (*Gallus gallus*), dog (*Canidae* sp), and the Polynesian rat (*Rattus exulans*) (Juvik and Juvik 1998:126-127). Their pigs, dogs and chickens impacted the native flora and fauna and the lands were also modified to plant new species. Coconut trees (*Cocos nucifera*), *hala* or screwpine (*Pandanus species*), *kukui* or candlenut (*Aleurites moluccana*), $k\bar{i}$ or ti (*Cordyline fruticosa*), '*ulu* or breadfruit (*Artocarpus species*) and *ko* or sugarcane (*Saccharum officinarum*) were introduced in coastal zones and *kula* zones. Later some mesic areas were converted from forests to dryland *kalo* (taro) (*Colocasia esculenta*) and '*uala* (sweet potato) agriculture (Pratt and Gon In Juvik and Juvik 1998:127).

The following excerpts from E.S. C. Handy (1978) indicate that sweet potatoes were cultivated during the pre-contact era within Hamakua Poko and Kula [Hāli`imaile/Makawao lies between these regions].

Hamakua Poko (Short Hamakua) and Hamakua Loa (Long Hamakua) are two coastal regions where gently sloping *kula* lands intersected by small gulches come down to the sea along the northern coast line of East Maui.... The number of very narrow *ahupua* 'a thus utilized along the whole of Hamakua coast indicates that there must have been a very considerable population. This would be despite the fact that it is an area of only moderate precipitation because of being too low to draw rain out of trade winds flowing down the coast from the rugged and wet northeast Ko'olau area that lies beyond. It was probably a favorable region for breadfruit, banana, sugar cane, arrowroot; and for yams and '*awa* in the interior. The slopes between gulches were covered with good soil, excellent for sweet-potato planting (Handy and Handy 1978:498).

Kula...occupies most of the central plain of Maui, created by the joining of the two volcanic domes of West and East Maui. *Kula* means open country, or plain as distinct from valley or stream

bottom, and has long been used as a term to distinguish between dry, or "*kula* land" and "wet taro land." This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams.

Kula was always an arid region, throughout its long, low seashore, vast stony *kula* lands, and broad uplands. Both on the coast...and on the lower westward slopes of Haleakalā a considerable population existed. So far as we could learn Kula supported no Hawaiian taro...Kula was widely famous for its sweet-potato plantations. *'Uala* was the staple of life here (Handy and Handy 1978:510-511).

1.2.2.5 Modern Introduced Flora and Fauna. After contact many more species were introduced into the Hawaiian Islands. In the coastal areas *kiawe (Prosopis pallid)* was introduced and literally took over the landscape in some areas. Cattle were introduced early and food lands were modified as pasturelands. Another introduced animal has recently created havoc on Maui.



They're cute, but axis deer, grazing here on the slopes of Haleakala, have become a serious threat to the environment and economy of Maui.... The axis deer population has grown out of control on Maui and is damaging native forests and farm crops, an official with the Nature Conservancy said. Eric Nishibayashi, a conservancy wildlife biologist, estimated the numbers will reach about 9,000 deer by the year 2003 and 20,000 by 2008, if left Cindy Lawrence, the unchecked. Maui County Farm Bureau coordinator, said several growers

have reported crop damage. "It's a severe problem," said Lawrence... The deer have also caused an estimated \$35,000 to \$55,000 in crop losses to Maui Pineapple Co., said John Brooks, its Hāli'imaile plantation field superintendent. Brooks said besides eating the plant seedlings, the deer have broken fencing, allowing cattle to enter pineapple fields and destroy crops (Kubota 2001). (Photo 2 by Eric Nishibayashi/The Nature Conservancy)

Sugarcane became a mono-crop as plantations also modified the landscape; wetlands and fishponds were drained or modified for cattle grazing, sugar crops, development then urbanization (Pratt and Gon In Juvik and Juvik 1983:127-128). And some former sugar lands were later converted to pineapple mono-crops.

Hala-kahiki or Pineapple (*Ananas comosus*). Areas adjacent to the project lands were once cultivated in *hala-kahiki* (screwpine from a foreign land) or pineapple for several decades. Pineapple was first discovered on the island of Guadeloupe by Columbus in 1493. It was supposedly first recorded in Hawai'i by Don Francisco de Paula y Marin, a Spanish horticulturist and advisor to Kamehameha I. The most dominant commercial pineapple variety in Hawai'i was the *Smooth Cayenne (Ananas comosus)* imported from Jamaica in the 1886 by Capt. John Kidwell (Clare and Morrow 1930:54), whose ancestor came from Cayenne, French Guinea and crossed with a South American variety (n. a. 1930:2). However, Taylor (1976) writes that Captain Cook found pineapple in Hawaii when he 'discovered' the islands in 1778, indicating that the Polynesians had brought it with them when they arrived (Taylor et al. 1976:162), or perhaps the Spanish or Portuguese brought it with them in the 1500s.

David Dwight Baldwin, son of Dr. Baldwin, is credited as one of the first to plant pineapples on Maui in 1890, but it wasn't until several years later (1920) that pineapple became a viable crop. Pineapple as a commercial crop was first planted on O'ahu by Captain John Kidwell in Mānoa (Baldwin 1946:5). David Baldwin planted in Ha'ikū, but it wasn't until 1903 that the Haiku Fruit & Packing Company, Ltd. was chartered; his younger brother Henry P. Baldwin served as president and David became vice-president; Henry "Harry" Alexander Baldwin was Secretary and W. A. Baldwin was appointed manager. In 1906 other companies were encouraged to plant for their cannery; these included the Grove Ranch division of Maui Agricultural Co. (lower Ha'ikū); Haleakala Ranch Co. (Makawao 1500-2700 foot elevation), but it wasn't until 1920 that pineapple became a "really" viable crop (Baldwin 1938:8-13; 1946:5). There were several reasons for this such as incompetence, devastating rains of 1914, slumping mainland market (Baldwin 1938:10-13) and the lack of general knowledge about crop fertilization (Baldwin 1946:6-7).

Several people in the nearby Ha'ikū area tried their hands at growing pineapple but later gave up: James Lindsay (1897-1911), Clarence White (1906-1915) who sold his holdings to Harold W. Rice (1915) and Krauss (1912-) (Baldwin 1946:5-11). In 1917 the Hawaiian Pineapple Co. sold its holdings in Haiku Fruit & Packing Company to a Maui *hui* headed by Harold Rice who also affected the joining of Haiku and Maui Pineapple Company, a Japanese company located at Pauwela Village [founded in 1910]. Rice sold his stock the following year. The Company then ventured into Hana, buying the Kipahulu Sugar Company and planting pineapple in Mu'olea and Kīpahulu. This move however, was a complete disaster and by 1927 Hana pineapple was abandoned. The Great Depression sealed their fate and the company was sold to Hawaiian Pineapple Company of Honolulu (Baldwin 1938:12-15).

In 1925 J. Walter Cameron was called from Honolulu to be the manager of the pineapple department of Haleakala Ranch Co. where they cultivated pineapple at marginal lands in Pulehu; four years later they separated from the ranch and incorporated as Haleakala Pineapple Company. The Haleakala fields and the Maui Agricultural Co fields at Kaluanui and the Hāli'imaile section were very productive until the market slump late 1929. In April of the same year, Libby McNeil & Libby exercised their option and absorbed the Pauwela Pineapple Co. They began to discourage independent growers in favor of planting their own fields, as opposed to Hawaiian Pineapple Company of Ha'ikū who encouraged growers. By 1932 heavy losses and market depression led to a reorganization of Maui Agricultural Co. merging with Haleakala Pineapple Co. and incorporated as Maui Pineapple Company Ltd. [MPC] with headquarters at Hāli'imaile and J. Walter Cameron as manager. In 1934 MPC exercised an option regarding interest in the California Packing Corp. and bought out all the interests; this venture was financed by Alexander & Baldwin, Ltd., marketing agents and financial factors of MPC (Baldwin 1938:24-27).

In1938 Maui County (Baldwin Packers [Lāhainā]; Maui Pineapple Company [Kahului]; Hawaiian Pineapple Company [Ha'ikū and Moloka'i]; Libby, McNeil & Libby [Ha'ikū and Moloka'i] and California Packing Corporation-Lanai) was producing half of the pineapples grown in the Territory of Hawaii. By 1941 MPC developed the contour planting system, which greatly improved production, but this was hampered by the drought of 1943-44 and World War II, when several key personnel joined various branches of the Service and wartime restrictions on materials prevented harvesting using a newly developed mechanized system (Baldwin 1946:16-20).

In 2009, Maui briefly got out of the pineapple business when Maui Pineapple Company stopped operations after 97 years. However, in 2010 a group of former MPC executives and some investors formed the Hāli'imaile Pineapple Company, Ltd. (HPC) and resumed pineapple operations leasing farm lands, equipment and buildings from MPC. They continue to grow and market pineapple under the Maui Gold Brand (Wiki-MLPC 2013). [See pp 30-40 for more on Baldwins and companies.]

2.0 METHODS

This Cultural Impact Assessment was conducted January 2013 to February 2013. The study consisted of three phases: (1) cultural and historical archival literature review; (2) ethnographic survey (oral history interviews), analysis of ethnographic data (past oral histories) and (3) report writing.

2.1.0 Personnel. The personnel consisted of the author (ethnographer) who has a master's degree in Anthropology, with a graduate curriculum background in the archaeology track as well as anthropology theory, cultural resource management, ethnographic research methods, and public archaeology; an undergraduate curriculum background that included Hawaiian History, Hawaiian Language, Hawaiian Archaeology, Pacific Islands Religion, Pacific Islands Archaeology, Cultural Anthropology, as well as a core archaeology track, Geology, and Tropical Plant Botany; and ethnographic field experience that includes over 375 interviews to date.

2.2.0 Level of Effort. The level of effort for this study included a broad archival research literature review and an ethnographic review and analysis [2 interviews].

2.3.0 Theoretical Approach. This CIA is loosely based on *Grounded Theory*, a qualitative research approach in which "raw data" (transcripts and literature) are analyzed for concepts, categories and propositions. Categories were pre-selected as part of the overall research design. However, it is not always the case that these research categories are supported in the data. Categories were generated by forming general groupings such as "Land Resources and Use," "Water Resources and Use," and "Cultural Resources and Use." Conceptual labels or codes are generated by topic indicators (i.e., flora, fauna). In the *Grounded Theory* approach, theories about the social process are developed from the data analysis and interpretation process (Haig 1995; Pandit 1996). This step was not part of this cultural impact assessment as the research sample was too small.

2.4.0 Archival Research. Primary source material included genealogies, oral histories and other studies and reports. Secondary source material included translations of 19th century ethnographic works, historical texts, indices, various reports and Hawaiian language resources (i.e., proverbs, place names and dictionary).

2.5.0 Ethnographic Section Process:

2.5.1 Consultant Selection (Oral Histories). The selection of the consultants was based on the following criteria:

- Had/has Ties to Project Location(s)
- Known Hawaiian Cultural Resource Person
- Known Hawaiian Traditional Practitioner
- ✤ Referred By Other People

2.5.2 Interview Processes. The formal interview process included a brief verbal overview of the study. Then the ethnographic consultant was provided with a consent or 'agreement to participate' form to review and sign (Appendix D). An ethnographic research instrument (see Appendix E) was designed to facilitate the interview; a semi-structured and open-ended method of questioning based on the person's response ('talk-story' style). Each interview was conducted at the convenience (date, place and time) of each consultant. The interviews were conducted using a cassette tape recorder. The interviewee was allowed to choose where she wanted to have her interview conducted. Notes were also taken, but more

attention was given to listening intently to the consultant. A *makana* or gift was given to the consultant in keeping with traditional reciprocal protocol.

The second interview was conducted by telephone at the request of the consultant; she was having some physical issues that precluded an email interview and preferred just a brief telephone interview.

2.5.3 Ethnographic Research Constraints.

- Due to the limited time only one formal interview was conducted;
- The second interview was a brief telephone interview at the request of the interviewee because of time constraints and physical issues; she did not want to do her biography, however she has written a number of articles for *Maui News* where she gives her background information and writes about the Makawao/Upcountry area, people and issues;
- Another Baldwin-Alexander referral could not be reached in spite of leaving phone messages;
- A long-time *kupuna* of the area could not be reached as she moved from Makawao to Lahaina and does not have a land line listed in the telephone directory;
- Another long-time Makawao resident (archaeologist) who knew all the cowboys from Makawao also moved to the west side a listed phone number was never answered;
- Lastly, two very well-known cultural practitioners and 'Maui Treasures' from the Makawao-Kula area died within the last five years and can't be replaced.

2.5.4 Transcribing-Editing Process. The taped interview was transcribed by a hired transcriber and edited by the ethnographic investigator. The consultant was emailed an explanation of the transcript review process, along with the interview transcript, and a 'release of information' form. This process allows for corrections (i.e., spelling of names, places), as well as a chance to delete any part of the information if so desired or to make any stipulations if desired. The consultant was also informed of the two-week time limit for their review after which it will be assumed that the raw data can be selectively used.

2.5.5 Ethnographic Analysis Process. The analysis process followed a more traditional method, as a qualitative analysis software program was not necessary. The interview was manually coded for research thematic indicators or categories (i.e., personal information; land resources and uses; site information-traditional and/or historical; and anecdotal stories). For the purpose of this CIA, it was also not necessary to go beyond the first level of content and thematic analysis. However, sub-themes or sub-categories were developed from the content or threads of each interview [e.g., land resources; cultural resources].

2.6.0 Summary of Findings and Cultural Impact Assessment. The Summary of Findings section is based on both archival and ethnographic data: Summary of Significant People and Events (e.g., Legendary Entities, *Ali'i Nui*), Summary of Historic People and Events, and Significant Practices Pre-Contact and Post-Contact. This section also includes 'Environmental Council Guidelines Criteria in Relation to Project Lands' and the Cultural Impact Assessment and recommendations or mitigation if any are made.

2.7.0 Report. The report includes the description of the project area; the explanation of methods; a review of the historical and traditional (cultural) literature; the ethnographic analysis; summary of findings and cultural impact assessment.

2.8.0 Project Constraints. The primary constraint for this project was the limited time; a close second was not being able to actually go on-site to ground truth and take photographs. So the cultural assessment

is based entirely on archival material and ethnographic data since the project site has been heavily modified by historic agricultural and pasturing activities.

3.0 CULTURAL and HISTORICAL BACKGROUND REVIEW

The Cultural and Historical Background Review entailed a review of previous reports that included primary and secondary source literature. Examples of primary source material include maps, Land Court records, newspaper articles, genealogies, oral histories and other studies. Secondary source material includes translations of 19th century ethnographic works, historical texts, indexes, archaeological reports, internet research and Hawaiian language resources (i.e., proverbs, place names and Hawaiian language dictionary). A review of selected archival material is presented in this section.

3.1.0 Traditional Literature. The ethnographic works of the late 19th and early 20th century contribute a wealth of information that comprise the traditional literature—the *mo'olelo, oli,* and *mele*—as well as glimpses into snippets of time, and a part of the Hawaiian culture relatively forgotten. The genealogies handed down by oral tradition and later recorded for posterity, not only give a glimpse into the depth of the Hawaiian culture of old, they provide a permanent record of the links of notable Hawaiian family lines. The *mo'olelo* or legends allow *ka po'e kahiko*, the people of old, the *kupuna* or ancestor, to come alive, as their personalities, loves, and struggles are revealed. The *oli* (chants) and the *mele* (songs) not only give clues about the past, special people and *wahi pana* or legendary places, they substantiate the magnitude of the language skills of *na kupuna kahiko*.

3.1.1 Genealogies. *Po'e ku'auhau* or genealogy *kahuna* (masters) were very important people in the days of old. They not only kept the genealogical histories of chiefs "but of *kahuna*, seers, land experts, diviners, and the ancestry of commoners and slaves …an expert genealogist was a favorite with a chief." During the time of 'Umi-a-Līloa, genealogies became *kapu* (restricted) to commoners, which is why there "were few who understood the art; but some genealogists survived to the time of Kamehameha and even down to the arrival of the missionaries" (Kamakau 1992:242).

There are several chants from Hawai'i and other Polynesian islands referred to as migration chants that expand on the travels of ancient Polynesians and not only explain why they traveled from place to place, and where the traveled, they also give their genealogy illustrating how families are connected from one Polynesian island-nation to another. Examples are the chants and stories by Kamakau and Kepelino about Hawaii-loa a famous ancient navigator and discoverer of the islands named after him (PVS 1999).

Ruling chiefs of the various islands came from combinations of genealogies or branches. Malo (1971) wrote about the connection between the *maka'ainana* and the chiefs. "Commoners and *ali'i* were all descended from the same ancestor, Wākea and Papa" (Malo, 1971:52). Surviving genealogies illustrate that the ruling families of each island were interrelated quite extensively. The chiefs of O'ahu, Kaua'i, Hawai'i, Maui and Moloka'i had one common ancestry. Families branched out, but conjoined several times in succeeding generations (Kamakau in McKinzie, 1983: xxv). Not only were the chiefs or *ali'i* related to each other, they were also related to the commoners. In *Ruling Chiefs*, Kamakau states that "there is no country person who did not have a chiefly ancestor" Kamakau (1992:4). Genealogies were very important to the chiefs, because ranking was very important.

One could defend and/or prove their rank by knowing or having one's genealogist recite one's genealogy. "To the Hawaiians, genealogies were the indispensable proof of personal status. Chiefs traced their genealogies through the main lines of 'Ulu, Nana'ulu, and Pili, which all converged at Wākea and Papa (Barrère, 1969:24). Two well-known genealogy chants are the *Kumuhonua* and the *Kumulipo*.

3.1.2 Kumuhonua. The *Kumuhonua* first published by Fornander in 1878 in *The Polynesian Race* Vol. I was based on information from Kamakau and Kepelino. Kumuhonua, the man, was of the Nana'ulu line, and the older brother of Olopana and Mo'ikeha (McKinzie 1986:14-15 vII). Barrère (1969) explains that

some of the *Kumuhonua* legends were recorded by Kamakau and Kepelino between the years 1865 and 1869, however, the 'genealogy' of the *Kumuhonua*, published by Fornander, was given to him "to provide credibility to the legends...this 'genealogy' (was) constructed from previously existing genealogies--the *Ololo (Kumuhonua)* and the *Paliku (Hulihonua)*, which are found in the *Kumulipo* chant (see Beckwith 1951:230-234) and interpolations of their own invention" (Barrère, 1969:1).

3.1.3 Kumulipo. Feher (1969) asks several notable Hawaiian scholars to write passages in his *Kumulipo: Hawaiian Hymn of Creation-Visual Perspectives*. In the Introduction Momi Naughton states "The *Kumulipo* belongs to a category of sacred chants known as *pule ho'ola'a ali'i*, 'prayer to sanctify the chief,' which was recited to honor a new-born chief (Feher, 1969:1). In her passage, Edith McKinzie states:

"The *Kumulipo* is a historical genealogical chant that was composed by the court historians of King Keaweikekahiali'iokamoku of the island of Hawai'i about 1700 AD in honor of his first born son Kalani-nui-'i-a-mamao. This important chant honors his birth and shows the genealogical descent of both the *ali'i* (chiefs) and the *maka'ainana* (commoners) from the gods, in particular Wakea..." (Feher 1969:1).

In a passage by Roger T. Ames, he corroborates this idea and states that "what is of particular humanistic interest is the way in which the *Kumulipo* as a repository of cultural authority served Hawaiian society in transmitting its cultural legacy and organizing its community. In doing so it combines both a linear sense of temporal development and the richness of one particular moment in time" (Feher 1969:3).

3.1.4 Hawaiian Genealogies. Edith McKinzie completed the first volume of *Hawaiian Genealogies* in 1983, based on genealogy articles translated from 19th Century Hawaiian newspapers such as *Ka Nonanona* and *Ka Nupepe Kuokoa* in the late 19th century and early 20th century. These articles were in response to a call to preserve the Hawaiian heritage. Some of the information came from Malo's (1838) *Mo'olelo Hawaii* (Hawaiian History), and in Fornander's (1880), *The Polynesian Race* (Book I) (McKinzie 1983:1).

Youngblood (1992) found that he could draw on both Fornander and Beckwith's translations of *The Kumulipo* to sketch a socio-political history of Hawai'i (Youngblood 1992:34). In his re-creation he found that stemming from Wākea and Papa are two major Hawaiian genealogies: the *Nana'ulu* and the '*Ulu*. The *Nana'ulu* was the wellspring for the *ali'i* of O'ahu and Kaua'i, while the '*Ulu* line supplied the chiefs of Maui and Hawai'i Island.

Using thirty years to account for one generation, McKinzie determined that Wākea was born ca AD 190; Umi-a-Līloa ca 1450; Keawekehahialiiokamoku ca 1650, Kalanihuiikupuapaikalanui Keoua ca 1710; and Kamehameha I ca 1740" (McKinzie 1983:12). Volume One of *Hawaiian Genealogies* was published in 1983 and Volume Two of *Hawaiian Genealogies* was published in 1984 (1986 and 1997) with information extracted from genealogical lists published in thirteen newspapers from 1858 to 1920. It compliments genealogies found in other works, such as Fornander's (1880) *An Account of the Polynesian Race* and David Malo's (1903) *Hawaiian Antiquities* (McKinzie 1986: v).

The following excerpt is from Kamakau's article in *Ka Nupepa Kuokoa* October 7, 1865, and was translated by McKinzie (1986). It illustrates some of the mid-19th century sentiment regarding genealogies:

I na maka'ainana, he mea wai wai ole, no ka mea ua papa ko lakou mau makua o hoohalikelike, a hoohanau keiki o ke kuaaina a pii aku i na li`i. Nolaila ia ao ole ia ai na keili a na makaainana, ma kahi makuakane a makuahine, a kupuna aku no.... Ia kakou i ka poe o keia wa, aole waiwai o keia mea he mooalii aole a kakou mau kuleana nui iloko. Aka, ma ko kakou noonoo iho he waiwai nui. Ua komo kakaou iloko, ua waiwai na li`i na kupuna; a ua waiwai pu kakou i koo kakou ike ana. No ka mea, ua kapu i ka makaainana aole e ike i keai mea. Aka, no ka pii ana i ka naauao a me ke akamai o na keiki a na makaainana; nolali, ua noa na wahi kapu, ua pii waleia. O ke koeana mai o na kupuna oia kahi waiwai.

To the commoners, a genealogy was of no value because their parents forbad (sic) it lest comparisons should occur and country children be born and rise up as chiefs. Therefore, the children of the commoners were not taught beyond father, mother, and perhaps grandparents.... To us, the people of this time, there is no value of this thing of a chiefly lineage; we have no great interest in it. But in our thoughts it is of great value. We have entered into discussion of it; the chiefs valued the chiefs and ancestors; and we also value our knowledge of it. Because it was forbidden to the commoners, they were not to know this. However, due to the rise of wisdom and skill of the children of the commoners, therefore, all of the ranking privileges were no longer restricted; it was only lifted. What remains of the ancestors is something of value (McKinzie 1986:18-19).

Table 1 below illustrates how interconnected the royal lines were, especially between Maui and O'ahu and Maui and Hawai'i Island kingdoms.

Kane	Wahine	Keiki	
Kahai	Hina-ulu-ohia	Wahieola (Kipahulu Chief b/Punalu'u, Ka'u)	
Wahieola	Koʻolaukahili	Laka (built heiau in Punalu`u to honor father)	
Laka	Hïkäwaelena	Luanu'u 1	
Luanu'u (Kauai ruling chief)	Kapokulaiula	Kamea	
Kamea	Popomaili	Pohukaina	
Pohukaina	Huahuakapalei	Hua (Lahaina/Hana chief)	
Hua	Hikimolulolea	Pau (born in Waianae, Oahu)	
Pau	Kapohaakia	Huanuikalalailai (born at Kawelo, Oahu)	
Huanuikalalailai	Kapoea	Paumakua (Chief of Koʻolau/Mokapu, Oahu)	
"	Moleai	Kuhelani	
"	Hoʻohokukalani 2	Manokalililani	
Paumakua (½ sibs)	Manokalililani	Haho (born in Waialua, Oahu)	
Haho	Kauilaianapa	Palena-a-Haho (born on Pu`u Kauiki, Hana)	
Limaloa-Lailea	"	Hikawai-nui	
Palena-a-Haho (ali'i nui) 1/2 sibs	s Hikawai-nui (twin)	Hanala'anui (born at Mokae, Hana, Maui)	
[Hana-la'a-nui is the ancestor o	f Hawaii Island chiefs: La`au, Pili, Kalapana	, Kuaiwa, Kiha, Liloa, Hakau, Umi,	
Keawenuiaumi]			
Palena-a-Haho	Hikawainui (twin)	Hanala'aiki (born at Mokae, Hana, Maui)	
Hanala'anui	Mahuia	Lanakawai	
Lanakawai	Kukamolimolialoha	Pilika`aiea (Samoa?)	
Hanala'aiki	Kapukapu	Mauiloa	
Mauiloa	Kauhua	Alo	
Alo /Alau	? Moeiekana/Moekeaea (twin)	Kuhimana	
"	" (twin)	Kaumana I (w)	
Kuhimana* sibs	Kaumana/Ka'ana	Kamaloʻohua	
"	**	Waoha'akuna (w) connected to Ma'ilikukahi	
*When Kuhimana was killed at Battle of Kaeleiki a distraught Kaumana killed herself, falling onto his corpse.			
Kamaloʻohua **	Kapu	Loe	
**Two legends connected to Ka	**Two legends connected to Kamalo'ohua (1) he was kidnapped by Kauai Mo'i Kalaunuiohua (2) arrival of fair-skin people.		

Table 1. Maui Line [McKinzie (1983, 1986); and Kamakau (1992); Fornander (1969)].

Loe	Waha'akuna/Waoha'akuna	Kahokuohua (ali'i nui of Molokai)
Kahokuohua (Molokai ali'i nui)	Hikakaiula	Kapohanaupuni (w) (became Hilo chiefess)
"	"	Kaulaheanuiokamoku I***
***According to Kama	kau, Kaulaheanuiokamoku I was born a	t Kukaniloko , Lihue, O`ahu
Kaulaheanuiokamoku I (sibs)	Kapohanaupuni (Hilo chiefess)	Kakae
" (sibs)	1	Kaka`alaneo
[Kaka	'alaneo and Kakae later ruled Maui j	ointly]
Kaka'alaneo (court in Lahaina)	Kaualua	Kaihiwalua
"	Kanikaniaula	Ka'ulula'au (banished to Lanai)
"	?	Wao (w) (had Auwaiawao dug in Lahaina)
Kaihiwalua	Kahekilimanuahumanu	
Piliwale (Ewa—Oʻahu <i>aliʻi nui</i>))	Paakanilea (Lihue, Kaua'i)	Kukaniloko (Oʻahu Ruling Chiefess)
"	"	Kohepalaoa (Piʻilani's mother)
Luaia (Maui ruling chief)	Kukaniloko (Oʻahu ruling chief)	Kalanimanuja (w) (Oʻahu Moʻi)
Kakae ('Jao /Olowalu-Mauj <i>ali`i nui</i>)	Kapohauola (maternal aunt)	Kahekilinniahumanu 1
[Kanohauola was also wife	of Fhu son of Hawaii Moʻi Kuaiwa (y	whose father was Kalaunujohua) & Kamanawa]
Kahekili 1 (Kāne-Hekili)	Haukanuimakamaka (Kauai)	Kawaukaohele (Pi`ilani's father)
"	"	Kalaanuingho'ana'ani'ani (Di'ilani's wf.)
Kawaukaohele (Kawaokaohele)	Kanalana	Bilani [cousin of Oabu chief Kalanimanuja]
Kawaukaohere (Kawaokaohere)	Kepalaoa	
(Kalonanui was son of Oʻabu <i>aliʻi m</i>	Masililaikabi & Kananukaa)	Kalallakua-a-Kalpullolua
(Kalonaliui was soli of O aliu <i>ali i nu</i>		Leislahalaha (D/D an O'ahu)
Ralamakua (Halawa/ walkiki Chi)	Keleanuinonoanaapiapi	Lateroneione (B/R on O anu)
Pi liani		
Pi ilani (Cousins)	Laielohelohe (O ahu/Maui lines)	
		Pi ikea (married 'Umi-a-Liloa /Hawaii chief)
		Kalaaiheana 2De Fries Family
		Kihapiilani
"	Kumunuikapokii	Nihokela \rightarrow W.C. Lunalilo
"	Kuamookea	Kauhiiliulaapiilani
Lonoapiilani	Kealana`awauli	Ka`akaupea (w)
(Kealana'awauli was	the great granddaughter of Kahakuakan	e, Ali'i aimoku of Kauai)
"	"?	Moihala (w) → Sarai Hiwauli I`i
Umi-a-Liloa (½ sibs)	Kapukini-a-Liloa (3 ^{ra} wife)	Keli`iokaloa (eldest son) succeeded/usurped
"	"	Kapulani
"	"	Keawenuia`umi (usurped older brother)
Umi-a-Liloa (Hawaii ruling chief)	Piikea (Maui chiefess)	Aihakoko
"	"	Kumalaenuiaumi (Hilo <i>ali`i</i>) →Lili`uokalani
'Umi-a-Liloa (Hawaii Is)	Ku'i-hewa-maka-walu	Papaikaniau I
Hoolae (Kauiki, Hana Chief)	Kaululena (Waiakea Chfs)	Koleamoku
Nihokela (uncle/niece)	Kaʻakaupea	Pi'ilaniwahine (granddaughter of Lonoapiilani)
Kihapiilani	Kumaka (Hāna)	Kamalalawalu (Maui Chief)
"	Koleamoku	Kauhiokalani→Aea family p 89
"	Umahauuleiohua	Kapuiholani Kuaimanuu →Luahine Family
"	Hilima	Keaweau
"	"	Moemoe \rightarrow Heleluhe family
(Kumalaenuiaumi - Hilo chief	Kunuunuipuwala'au	Makua – Hilo chief)
Kauhiokalani	Kauamanu	Makaku
Kamalalawalu	Kapu-kini-akua (father/Kona chief)	Kauhiakama (k) [Kamakau 1992:60]
Kamalalawalu (cousins)	Pi'ilaniwahine (Hilo/O'ahu)	Kauhiakama (k) [McKinzie 1986:12]
11	"	Umikalakauehuakama (k) \rightarrow Kawaihae line
"	"	PaiKalākauaakama (k)

~~	"	Piilanikapu/Piilanikapokulaniokama (w)
دد	"	Ka'unohohoikapelapuokakae (w)

"	"	Kekaikuihalaokeku`imanano (w)
Kauhiakama	Kapukini-2	Kalanikaumakaowakea (Maui king)
Kalanikaumakaowakea	Kaneakauhi	Lonohonuakini
"	Makakuwahine	Umialiloa-2
Lonohonuakini	Kalanikauanakinilani	Kaulaheanuiokamoku
Kaulaheanuiokamoku	Papaikaniau II (Hawaii)	Kekaulike (Father of Kahekili 2)
Kaulaheanuiokamoku	Kalani-kau-lele-i-a-iwi (Hawaii Is)	Kekuiapoiwa Nui
Kekaulike (cousins)	Kahawalu (dau of Pelei'oholani)	Kauhiaimokuakama (Chief of Hana district)
"	Holau	Manuha'aipo (Queen of `Ī'ao)
"	"	Ke-kau-hiwa-moku
"	11	Ka`eokulani (Kauaʻi moʻi/f/Kaʻumu alii)
Kekaulike (1/2 sibs)	Kekuiapoiwa Nui	Kamehameha Nui (Ruling Chief of Maui)
"	"	Kalola
"	11	Kahekilinui'ahumanu 2 (Iron king of Maui)
		[Kahekili II was born in near-by Hāli'iimaile]
"	11	Ku-hoʻoheihei-pahu
Kekaulike	Haʻaloʻu	Na-mahana-i-kaleo-nalani → Ka'ahumanu
"	"	Ke-kua-manoha
Kekaulike	?	Ahia
"	?	Nahulanui
"	?	Naajakalani
"	?	Manuailehua
Kamehameha Nui (sibs)	Kalola (Maui/Hawaii)	Kalanjakuajokikilo/Kalanjwajakua (Kapu) w
"	"	Kuakiniokalani
Kamehameha Nui	?	Pe'ape'a-maka-walu (fam at Kauiki, Hana)
"	?	Kalani-ulu-moku
"	?	Kalani-hele-mai-i-luna
Kalei'o-u'u/Kalani'opu'u (Hawaii)	Kalola (Maui)	Kīwala'ō (Hawaii ruling chief)
Keoua-kalani-kupua-i-kalani-nui	"	Liliha nui
$K_{\bar{i}}$ wala' \bar{o} (1/2 sibs)	Liliha nui	Kalani-kau-i-Ka'alaneo/ Ke'opu-o-lani
Kahekili II	Kau-wahine	Kalani-ku-pule
"	"	Koʻalaukani (k.)
"	"	Kalola 2
"	"	Kau-lili-kauoha
"	"	Kalilinakauoha
Kahekili	Luahiwa (Molokai)	Manono Ka-ua-kapeku-lani
Kalanikunule	'Ualanu'e (Molokai)	Kau-neka-moku
Ke'eaumoku (son of Keawenoenoe)	Namahana (Maui)	Pele-io-holani 2
[Ke'eaumoku's sister y	vas Kekela: their mother was Kalani-kai	1-lele-ia-iwi ½ s sister of Keawel
Ke'eaumoku	Namahana	Kuakini
"	"	Kaʻahumanu
	"	Onija (I vdia Pija Namahana)
	н	Kaheiheimalie
	n	Kahekili Keesumoku 3
Kamahamaha I	Katony a lani (Mayi/Hayyaji)	Libolibo/Kamahamaha U
	"	Linomio/Kamenamena II
	11	Nauikeuon/Kamenamena III
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3.2.0 Mo'olelo. Legends, stories or *mo'olelo* are a great cultural resource as well as entertaining. Leib and Day (1979) state in their annotated bibliography of Hawaiian legends, that legends "are a kind of rough history." They noted Luamala's idea of the value of legend and myth in the serious study of a culture and her following quote: "To a specialist in mythology, a myth incident or episode is as objective a unit as an axe, and the differences and similarities of these units can be observed equally clearly and scientifically." Leib and Day also expressed concern about authenticity, and sometimes found it difficult to determine if a legend was a primary or secondary source.

The following definitions of terminology, including the Hawaiian classification of prose tales—*mo* 'olelo or *ka* 'ao, come from their work (Leib and Day 1979: xii, 1):

used to refer to that which is handed down orally in the way of folklore		
a rather inclusive term, covering the beliefs, proverbs, customs, and		
literature (both prose and poetry) of a people		
a story of the doings of godlike beings		
deals with human beings and used interchangeably with 'myth'		
because the collectors and translators of the tales often failed to make the strict distinction		
"pure fiction"		
deals with historical matters and somewhat didactic in purpose included tales of the gods, as well as tales of historical personages many have recurring patterns, plots, and types of characters		

3.2.1 History of Mo'olelo Collecting. According to Leib and Day (1979) a substantial number of legends were collected and written in Hawaiian, during the century following Cook's arrival in Hawai'i. A few accounts of the mythology were printed in the journals of missionaries and travelers, and a few of the Hawaiian lore were printed in languages other than English.

3.2.2 Ali'i nui of Maui. In the legends or mo'olelo collected by Fornander, Kamakau, and others, we can get a glimpse into the lives of some of these people listed in the genealogies. To reproduce any legend completely would take too long, therefore only excerpts are generally used. The history of the Maui *ali'i* begins in very ancient times in Hāna on the eastern coast of Maui and in Honokahua/Honolua on the northern coast of Maui, also known as an ancient land of Maui *ali'i*. One descendant of the 'Ulu line, King Hua, had a particularly notorious place in the history of Maui as explained in the following synopsis of Youngblood's (1992) story.

Legend of Hua. This powerful 12th century Mo'i (sic) of East Maui is reputed to have brought about a three-year scourge of drought and famine that ravaged not only Maui but also half of the Big Island and, to lesser extents, the other islands. During that period there were two separate kingdoms on Maui, and it wasn't until nearly three centuries later, under Pi'ilani, that the Hāna Coast was united politically with the central and west-end portions of the island. During the 300 years between Hua and Pi'ilani in the mid 15th century, it seems that a family of the Nana'ulu line was in control of the Hāna Coast. The rest of the island was ruled by descendants of the Maui 'Ulu line. It wasn't a stable time for *maka'ainana*, the common Hawaiian, due to persistent efforts of each ruler to become *mo'i* of all Maui (Youngblood, 1992:35, 38).

Hua-nui descendants. According to legends, two of Hua's descendants, Hanala'anui and Hanala'aiki, became the progenitor's of the Hawai'i and Maui lines. These were twin children of Hikawainui, the mother of Palena. They were born in Kahinihiniula in Mokae next to Hamoa, Hana; certain districts of Maui were named after these children. The following excerpt is from Kamakau (1991).

Hanala'anui and Hanala'aiki. Paumakua, chief of Ko'olau and Mokapu (O'ahu) was the son of Hua-nui. He married his sister Mano-kapili-lani and they had a son Haho who was born in Wai'alua, O'ahu. Haho's child was Palena-a-Haho...Palena (a-Haho) was born on the hill of Ka'uiki (sic), in Hāna, Maui at the site Hananaiku; he ruled and died on O'ahu...his grave is Kalua-o-Palena in Kalihi, O'ahu.... Palena-a-Haho who with Hi-ka-wai-nui had the twins Hanala'anui and Hanala'aiki who were born at Kahinihini'ula, at Mokae...(Hāna) and a certain *moku'aina* land was named after these boys...The twins were progenitors of Hāna people...and because of their good deeds...their descendants gave the land their names. This was after the division of the island into *ahupua'a, 'okana,* and *moku'aina*... Hanala'anui was the ancestral chief for those of Hawai'i and Hanala'aiki for those of Maui.... (However) there is a dispute...Hanala'anui really belonged to Maui.... In the division and separation of the Maui ancestral genealogies, the line of succession of Maui chiefs was made clear. It can be found in the genealogy of Hanala'aiki to the time of Kahekili by turning to the ancient traditions of deeply versed persons. Here are made plain the places in which the chiefs were born, their deeds, and places in which their corpses were laid (Kamakau 1991:101, 150-152).

Beckwith's (1970) version is as follows:

Hanala'anui and Hanala'aiki. Maui chief Haho, son of Paumakua and grandson of Hua-nui-kala'ila'i, was the traditional founder of the *Aha'ali'i* or ranking body of chiefs whom were distinguished by the use of the sacred cord called *aha*. They cultivated a metaphorical form of speech to conceal their words from the uninitiated.... Between the periods of Hua and Pi'ilani, that is, between Moikeha's time and that of Umi on Hawai'i, the twins were born at Kahinihini in Mokae, Hamoa. 'Little and big sacred one of Hāna' called Hana-la'a-nui and Hana-la'a-iki, from who respectively the chiefs of Hawai'i and Maui are descended. From Kiha and his wife Koleamoku are descended the great Kaupō families of Ko'o and Kaiuli. From them, Kahekili's wife Kauwahine, mother of Kalanikūpule, the last ruling chief of Maui, and of a daughter, Kailikauoha, who became the wife of the Maui chief Ulumehe'ihe'i Hoapili and mother of Liliha, beloved wife of Boki of sandalwood fame (Beckwith 1970:387, 389).

Kamalo-o-hua and Ohana. While Kamalo-o-hua (great-great grandson of Hanala'aiki) ruled over the greater part of Maui, a chief who was doubtless a near relation, and who was called Wakalana, ruled over the windward side of the island and resided at Wailuku. During his time tradition records that a vessel called "Mamala" arrived at Wailuku. The captain's name is said to have been Kaluiki-a-Manu, and the names of the other people on board are given in the tradition as Neleike, Malaea, Haakoa, and Hika. These latter comprised both men and women, and it is said that Neleike became the wife of Wakalana and the mother of his son Alo-o-ia, and that they became the progenitors of a light-colored family, "po'e ohana Kekea;" they were white people, with bright, shining eyes, "Kananka Keokeo, a ua alohilohi na maka" (Fornander 1880:80).

After the reign and times of Kamalo-o-hua nothing worthy of note has been recorded of the Maui chiefs until we arrive at the time of Kakae and Kaka'alaneo, the sons of Kaulahea I (Kaulaheanuiokamoku I), three generations after Kamalo-o-hua.... Kakae's brother, Kaka'alaneo, appears, from the tenor of the legends, to have ruled jointly with Kakae over the islands of Maui and Lāna'i. He was renowned for his thrift and energy. The brothers kept their court at Lahaina*, which at the time still preserved its ancient name of Lele, and tradition has gratefully remembered him as the one who planted the breadfruit trees in Lahaina, for which the place in after times became so famous (Fornander 1880:80). [*Other records indicate that Kakae preferred to reside in Wailuku – in Īao]

Kaka'alaneo was a great uncle of Pi'ilani. The following synopses about Kaka'alaneo and Kukanaloa are excerpts from Beckwith (1970). There appears to be a time-conflict with the arrival of the light-skinned foreigners. Fornander (1880) indicates they arrived during Kamalo-o-hua's reign, while Beckwith

indicates the foreigners arrived four generations later during the time Kaka'alaneo. There are many stories, but it isn't until the stories about Pi'ilani and his children that we see any mention of Makawao or Hāli'imaile.

Lonoapiilani-Kihapi'ilani Pilikia. We see a very different view of the brothers, Lonoapiilani and Kihapi'ilani, and their *pilikia* or conflicts in Kamakau's versions (1991 and 1992). Kamakau presents a brief overview of Kihapi'ilani in the following excerpts, which includes Makawao-Kula:

Kihapi'ilani Overview. Kihapi'ilani was taken by the *kahuna* and raised at the *heiau* of Mau'oki at Kamo'ili'ili (Mo'ili'ili, O'ahu). He was taught to be an orator and warrior. When he was twenty he was ordered home to become heir apparent, but when he got to Kalae on Molokai he found that his father Pi'ilani had died at Lahaina. The first-born Lono-a-Pi'ilani became the *ali'i nui* of Maui (Kamakau 1991:49; 1992:22).

Pi'ilani died at Lahaina, Maui, and the kingdom of Maui became Lono-a-Pi'ilani's. He was the oldest son by Lā'ieloheloheikawai, next came Pi'ikea, Kalai'aiheana then Kiha-a-Pi'ilani. It was said that there were two heirs Lono and Kiha but Kiha wasn't present at his father's death because he was in O'ahu where he was born and reared. So it went to Lono. Pi'ilani commanded that Lono have the kingdom and Kiha dwell in peace under him. In the first years his reign was well and people content.

Lonoapiilani took care of Kiha and he cared for the people by giving them food. Then Lonoapii became angry with Kiha. They both farmed in the *ahupua* 'a of Waihe'e. Lono's taro patch was smaller while Kiha's was bigger. Lono got angry and abused Kiha and they fought. Lono tried to kill Kiha so he fled in secret to Molokai to the fortress of Paku'i then later to Lāna'i ...from there he sailed to Kapoli in Ma'alaea, and from thence to the upland of Honua'ula. Someone saw him and it was reported to Lono. Kiha fled to Lahaina where he was hunted, but the gods saved him.

He and his wife went to the gulch of Kuanu'u and round back to the boundary of Honoa'ula and Kula to a place named Ke'eke'e. Later to Kula/Makawao--many people went there to play games and to go swimming in a pool called Waimalino as Kula and part of Makawao were waterless lands....

There was a famine in Kula and Makawao, and the people subsisted on laulele, pualele, popolo, and other weeds. One night Kiha went to clear a patch of ferns to plant sweet potatoes, and on that same night he made a large one that would naturally require the labor of eighty men to clear. When morning came, the huge patch was noticed, an immense one indeed. The people said skeptically of this great undertaking, "Where will he find enough potato slips to cover the patch?" Next day, Kiha went to Hamakuapoko and Hāli`imaile to ask for potato slips. The natives gave him whole patches of them wherever he went. "Take a big load of the slips and potatoes, too, if you want them" [they said]. He went to clean a number of morning glory vines and returned. The owners who gave him the content of their patches had gone home. He pulled up the vines and whatever potatoes adhered to them, and allowed them to wilt in the sun. After they had wilted, he laid out the morning glory vines to bind them, laid the sweet potato vines on them, and tied them. He went on doing this until he had enough loads for ten men to carry. Then he made a carrier (*'awe 'awe*) of morning glory vines, placed the bundles of slips in it, and lifted it with great strength unto his back. The sunshine beat down on his back, the *'uki'ukiu* breeze blew in front of him, the *'Ulalena* rain added its share, and intense heat reflected from the *'ulei* vines.

One old man remarked to another, "There must be a chief nearby for this is the first time that a rainbow is spread before the trees." As they were speaking a man came from below with a huge load on his back, and they called to him to come into the house. He shifted his load, saw the old men, Kau-lani and his companion, let down his burden, and entered. Each of them gave him a bundle of popolo greens and sweet potato which he ate until he was satisfied. They asked, "Where

are you going?" He answered, "I am returning to the boundary of Kula and Makawao." "Are you a native of the place?" they inquired. "Yes," he replied. They said, "There is not a native from Kula to Hamakua with whom we are not acquainted. You are a stranger." "Yes, I am a stranger." They said, "The god has revealed your identity. You are a chief, Kiha-a-Pi'i-lani." He answered, "I am he. Conceal your knowledge of me and tell no one." They said, "The secrets of the god we cannot tell to others, because you have been mistreated. The man that can help you lives below Hamakua poko, at Pā'ia. His name is 'A-puni." When they had finished talking, Kiha returned to his dwelling place with his huge bundle of sweet potato slips. One bundle of slips was sufficient to cover every mound of the whole field. No sooner were they planted than a shower fell, and the chief who made efforts at farming was pleased (Kamakau 1991:22-24).

He later went to Pā'ia for help, but was directed to Kaluko in the upland of Ke'anae, then to Lanahu in Wākiu, then by Weua-Lanahu to Kawaipapa (Hāna) to consult [*kahuna*] Kahu'akole at Waipuna'alae. Kiha became a ward of Kahu'akole. He dwelt at Kawaipapa at a place called Kinahole. His wife's name was Kumaka whom he made his sister.

Hāna had a chief to govern it, Ho'olaemakua. It belonged to the ruling chiefs from ancient days, and the ruler was a descendant of the chiefs of Hāna. He belonged to a family that was noted for strong people, and Ho'olaemakua was numbered among them. He was small in size, but his hands had a very strong grip. Ka'hu'akole felt that if Ho'olaemakua sided with Kiha then war could be fought against Lono to take the kingdom from him. Ka'uiki was the strongest fortress there was.

Ho'olae had a daughter, Koleamoku, and Kahu'akole believed that when she became Kiha's wife her father would aid him.... Kiha's constant bathing reddened his cheeks to the color of a cooked crab and his eyes as bright as those of the *moho'ea* bird. Kolea surfed at Keanini in the bay of Kapueokahi (Hāna Bay). Kolea fell for Kiha, but her father was against it because she was betrothed to the ruling chief Lono-a-Pi'ilani. Kiha told her that he was the son of Ka'hu'akole. When Kiha didn't show up at surfing (one day) she went to the upland of Waika'ahiki to Waikaloa and to Kawaipapa where she and Kiha got married. When news that Kolea had married the son of Kahuamoku (same as Ka'hu'akole) her father became angry and he disowned her.

They had a son named Kauhiokalani and he became ancestor to some chiefs and commoners. Kiha asked Kolea to take their son to Ho'olae to make amends...and to ask for some farm lands... 'If your father should offer you all of Hāna, do not accept. These are the lands for us: Honoma'ele, Ka'eleku, Kawaipapa, and the two Wananalua.' Her father wanted to give her the district of Hāna, extending from Pu'ualu'u to 'Ula'ino. She said these are the lands my husband asks for 'Honoma'ele, Ka'eleku, Kawaipapa, the two Wananalua and Koali.'

He said "Your husband is no commoner. He is a chief, Kiha. Your child is a chief. I shall not take Kiha's part. I shall remain loyal to his older brother till these bones perish. Your husband does not want farmlands for the two of you, but is seeking means to rebel against the kingdom. "The lands of Honoma'ele and Ka'eleku supply the 'ohi'a wood and 'ie'ie vines of (the forest of) Kealakona to build ladders to the fortress. Kawaipapa supplies the stones of Kanawao that are used in battle, and then the fortress will be well supplied. The Wananalua lands hold the Ka'uiki fortress and the places below it. Koali is the fortress of Kue. I shall not take your husband's side."

Her father said he would give assistance only when Kiha was willing to abide under Lono's rule...then he took his grandson to rise. Kiha was angry when he heard this and wanted vengeance and to rule all of Maui. He decided to go to Hawai'i to consult his brother-in-law, 'Umi-a-Liloa. Kiha's first wife (Kumaka) was a chiefess of Hāna and Kīpahulu. Kiha took her to Hawai'i...they landed at Kohala, then to Maka'eo in Kailua where he told his entourage to wait for him while he visited his sister.

Kiha told 'Umi that his father had commanded that they share the kingdom of Maui, but his brother took it all for himself and wanted to kill him. 'Umi decided to help Kiha who had been wronged. Lono heard that war canoes were being built in great numbers. The *kauila* wood of Napu'u and Kahuku, the *o'a* and *koai'e* were being made into clubs to be used against Maui----they trembled in fear. After a year they were ready. When the first canoes reached Hāna, the last ones were still on Hawai'i.... Ho'olae was at Ka'uiki building a tower and ladders to reach the top.... The first canoes reached Kīpahulu and (were) coming towards Kapueokahi (Hāna Bay).... The Hawai'i canoes hardly reached the spring of Punahoa when Ho'olae killed the men who manned the spring. The canoes were forced to land at Waika'ahiki...the men who landed at Kihahale walked to Waikoloa in front of Kawaipapa where they fought with slings.... Ho'olae stayed close to a rock now called Ho'olae Rock...and was victorious over the warriors of Hawai'i who fled to open sea... (from) the expert stone-tossers of Wākiu and Honokalani, and the quick slinging lads of Ka'eleku....

The losing warriors of Hawai'i sailed for Wailuaiki at Ko'olau. When the canoes reached Wailuaiki they were dismantled and set upright...then they headed for battle. Upon reaching 'Ula'ino, the fighting commenced at Makaolehua, and in 'Akiala, at La'ahana, at Kawaikau (old name for the Honoma'ele Stream), at Nenewepue, at Kameha'ikana's kukui tree, and all the way along to Honokalani and Wākiu, into the pandanus grove of Kahalaoweke, down to Pihele, to the flats of Kalani and the spring of Punahoa. Ho'olaemakua proved to be a worthy foe...and very clever---he set up the giant image called Kawalaki'i and dressed it in war apparel (Kamakau 1992:24-30).

Finally a warrior named Pi'imaiwa'a figured out the ruse of the ki'i and destroyed it. Ho'olae escaped. Kiha commanded that Ho'olae's daughter Kolea and her son not be hurt (Kolea was his second wife during his stay in Hāna). Ho'olae was finally found in the back of Nahiku at a place called Kapipiwai and killed ("Revengeful indeed was the haughty O'ahuan!") When Lono heard the news he trembled with fear of death and died in Wailuku. Kiha tried to find his body but it had been hidden. They sent for a prophet from Kauai to tell them where the corpse was buried. He said it was in Wailuku in a land called Pa'uniu, but Kiha's men could not find it. Kiha divided the lands...'Umi left his son 'Aihako'ko' to remain with Kiha and he went back to Hawai'i (Kamakau 1992:31).

Beckwith (1970) first published her *Hawaiian Mythologies* in 1940. The following are excerpts from her version of the story of Kihapi'ilani.

Legend of Kihapi'ilani. The name of Kiha is preserved locally about the island of Maui in connection with his feats of leaping from a height into a pool of water, called *lelekawa*, and for the famous paved road about the island with the building of which he oppressed the people. Men are said to have stood in line and passed the stones from seashore to upland. Parts of the road are still in place and may be followed where the trail cuts in a straight line up and down the deep gorges that break the windward slope of the island.

Kihapi'ilani was brought up on O'ahu, but when his uncle scolds him for wasting food he goes off to Lahaina to find his true father. He is dissatisfied to take the place of a younger son. After their father's death Lono takes pains to humiliate him. The brothers come to blows. Kiha is defeated and saves himself only by leaping off a cliff down the hill Pakui. He hides himself in the Kula district at Kalani-wai in the Makawao region with his wife Kumaka of a Hāna family of chiefs, whom he passes off as his sister....

He consults various *kahunas* as to the course he should pursue to win the rule from his brother. He goes back to O'ahu, learns surfing and, returning to Hāna district, surfs with the daughter of Ho'olae (Chief of Hāna). The couple are repudiated by the father, but after a son is born, a reconciliation is effected and Kiha sends his wife to ask of Ho'olae such lands as will give him control of the fortress Kauiki. Ho'olae recognizes at once that this is no common man to whom his daughter Kolea-moku has born a child, but the chief Kihapi'ilani. He nevertheless loyally refuses to desert his old chief Lono. Kiha retires to Hawai'i and succeeds in winning Umi's cooperation through the influence of his sister Pi'ikea. After the death of Lono, Umi sends an army to establish Kiha in the succession. Ho'olae defends Kauiki for Lono's son and sets up a wooden image so huge as to frighten off Umi's men... Eventually Pi'imaiwa'a (one of Umi's warriors) discovers the trick and they defeat Lono's warriors. Kiha has Lono's son put to death and asks that the lands may be made over to Pi'ikea's sons. The two lads come to Maui, but are despised and done to death and Kiha is established as ruler over his father's lands. It is his famous son Kama-lala-walu (son of eight branches) who gives the name Maui-of-Kama to the island (Beckwith 1970:387-388).

3.2.3 Mo'olelo of Makawao and Vicinity. In 2001 *Kumu Pono & Associates* (Kepa and Onaona Maly) produced a report for East Maui Irrigation Company that included *mo'olelo* of Hamakua Poko and Hamakua Loa. The following is an excerpt from that report explaining the *mo'olelo*, followed by a section of the *mo'olelo* that mentions place names in Makawao and vicinity; water holes and caves; and *mo'o* (lizard *aumakua*) of Makawao.

"He Moolelo Kaao Hawaii no Laukaieie..." (A Hawaiian Tradition of Laukaieie) was published in the native language newspaper, *Nupepa Ka Oiaio*, January 5th 1894 to September 13th 1895. The *mo* 'olelo was submitted to the paper by Moses Manu (the native historian mentioned earlier, with family ties to 'Ōhi'a, Ko'olau). The story is a rich and complex account with island-wide references to—places; descriptions of place name origins; history and *mele*; interspersed with accounts from other traditions and references to nineteenth century events.

The following narratives (translated by Maly), have been excerpted from the *mo* 'olelo, and include an overview of the tradition and those narratives which recount the travels of Makanikeoe (one of the main figures in the *mo* 'olelo. During his travels, Makanikeoe sought out caves, and tunnels that served as underground trails, and through the description of his travels, we learn about some of the important places and resources of the lands in the Ko'olau - Hāmākua region— (Maly and Maly 2001:33).

Makanikeoe turned and looked at a stone islet standing in the sea that is struck by the waves on all sides. This stone islet was covered with birds, the kōlea, 'ūlili, and 'akekeke. He also saw two kama'āina men who were trying to catch the birds with nets like fishermen. Because this was the custom of catching birds in his native land of Waipi'o, Hawai'i, he called out to the men offering to teach them how to fish for birds in this manner. The two kama'āina were astonished at the skills of this visitor who caught the birds with nets. Makanikeoe then looked about this little stone islet and dove into the ocean where he found and entered a cave. He followed the cave upland, for it was dry and there was no water. He came out at the pali by Hālauoloolo along the stream of Kākipi. <u>Another branch of the cave came out above Ho'ikaōpūai'uwala, at Makawao</u> (Maly and Maly 2001:37).

From this place he then traveled to <u>the cool pond of Kālena</u> and then he went to the top of the hill, <u>Pi'iholo</u>, from where he could look out upon the beauty of the land. <u>While he was atop Pi'iholo</u> the 'ūkiukiu mist rains and the 'ulalena surrounded him, and the līhau dropped from the leaves of the koa of Kokomo and the famous kukui grove of Liliko'i. There, while upon the hill he saw two young women whose features were like that of Hinaulu'ōhi'a [a goddess of the forests and water at Waipi'o, Hawai'i] sitting along the side of <u>the stream of 'Alelele</u>. In his mysterious manner, Makanikeoe appeared before these two young women. Startled, they dove into the stream of 'Alelele and entered a cave, and in a short time these mysterious women arose below Wai'alalā. There, the women took their mysterious body forms and Makanikeoe called out to them. He learned that <u>their names were Lauhuki and Kili'oe, and that they were the mo'o guardians of the</u> cool waters of Kālena and all of the ponds at Makawao (Maly and Maly 2001:38) **3.2.4 Mo'olelo and Sources.** The following is a list of mo'olelo and sources from the *Hawaiian Legends Index Vol II and III* by the Hawaii State Public Library System (HSPLS) (1989) that mention Makawao and Hamakua Poko (there were no legends that mention Hāli'imaile).

Kelea, the surf-rider of Maui 'Kihapiilani'	In Kalākaua, Legends and Myths of Hawaii In Fornander, Fornander Collections of Hawaiian Antiquities and Folklore v 1 pp 236-255.
'Lolale Seeks a Wife' 'The Kukui Tree'	In Thorpe, In the Path of the Trade Winds <u>In</u> Fornander, Fornander Collections of Hawaiian Antiquities and Folklore v 2 pp 670-677.
'Tradition of Kihapiilani'	In Thrum, More Hawaiian Folk Tales pp77-86.

3.2.5 '**Ō**lelo No'eau. '*Ō*lelo no'eau or proverbial/traditional sayings usually had several layers of meanings. They reflected the wisdom, observations, poetry and humor of old Hawai'i. Some of them referenced people, events or places. '*Ō*lelo no'eau were compiled by Pukui between 1910 and 1960 with both translations and an explanation of their meaning (Williamson et al. in Pukui 1983:vii), which are often more *kaona* (hidden or double meaning) than obvious. There were no '*ō*lelo no'eau listed for Hāli'imaile or Hamakua Poko, only for Makawao.

<i>'Ōlelo no 'eau</i> Translation Meaning	<i>E hu'e mai 'oe i ke koai'e o Makawao</i> Try uprooting the <i>koai'e</i> tree of Makawai! I defy you to tackle a lad of Makawao! A boast of a native of Makawao (Pukui 1997:37 #298).
<i>'Ōlelo no 'eau</i>	<i>Ka ua 'Ūkiu o Makawao.</i>
Translation	The <i>'Ūkiu</i> rain of Makawao.
Meaning	Refers to Makawao, Maui (Pukui 1997:173 #1602).
<i>'Ōlelo no 'eau</i>	<i>Keiki holoholo kuāua o Makawao.</i>
Translation	The lad of Makawao who goes about in the rain.
Meaning	Said of a native of that place who is not afraid of being wet (Pukui 1997:184 #1705).
<i>'Ōlelo no 'eau</i>	O 'Alelele ke kawa kaulana o Makawao.
Translation	'Alelele the famous diving pool of Makawao.
Meaning	Refers to Makawao, Maui (Pukui 1997:257 #2355).
<i>'Ōlelo no 'eau</i> Translation Meaning	<i>Ulu Kukui o Liliko'i.</i> <i>Kukui</i> grove of <i>Liliko'i.</i> This <i>kukui</i> grove in Makawao, Maui was much visited by travelers, for it was a favorite spot of the chiefs. The nuts gathered from the trees produced a fragrant, tasty relish (Pukui 1997;314 #2869).

3.2.6 Rains of Hamakua Poko and Vicinity (Sterling 1998:7; 97)

Nau/Kehau	The wind of Kula
'Ualena	The rain of Pi'iholo
'Ukiu/Ukiukiu	The rain of Makawao; soft drizzle
Elehei	The rain of Lilikoa [?Liliko'i]
Puukoa/Ua Pokoa	The rain of Kokomo

3.2.7 The Winds of Makawao (Sterling 1998:7; 99)

Apa'apa'a	A wind that comes from all directions
Hoʻeha-ili	Stinging wind
Hoʻolua	A wind that brings a rain that looks like it is standing still when seen out on the ocean
Kiu	The sharp wind, brings a tone of music that rises a semi tone
Kamaaina	Calm, still wind – undisturbed, tranquil
Puahiohio	Whirlwind

3.3.0 Place Names of Hali'imaile and Makawao.

Table 2. Place names in	n Hāli`imaile, Makawao and vicinity
'Alelele	Gulch; just before Kokomo coming from Makawao (Sterling 1998:97).
Hāliʻimaile	Land division and village, $P\bar{a}$ 'ia qd, East Maui. Lit. <i>maile vines strewn</i> (Pukui et al., 1974:39); Kahekili is said to have been born here – he was Maui's last ruling chief (Sterling 1998:97).
Hāmākua Poko	Former district and land division, Ha'ikū qd. Lit. short Hamakua (Pukui et al., 1974:39).
Hōkūʻula	Land division, Makawao (Pukui et al. 1974:47); Kula district, northwest boundary of Hāli`imaile Sterling 1998:242).
Kahaupali	Where Mauna'olu College is located (Sterling 1998:97).
Kaheheleia	<i>'Ili</i> name in Hāli'imaile Ahupua'a where Paele claims to have two sweet potato <i>mo 'o</i> and three <i>wiliwili</i> trees (LCA#10783-N.R.543v6).
Kailua	Land Division, land section, ditch, village, hill (1,269 feet), gulch, Pā'ia area. Lit. <i>two seas/currents</i> (Pukui et al. 1974:69); northern boundary of Hāli'imaile Ahupua'a.
Kaioleakalani	Rock at south (30°) east boundary (Kekauonohi RP#7512, LCA#11216M-Bk 25 Pg 235).
Kaluanui	'Ili name in Hāli'imaile Ahupua'a (<i>Nūpepa Kuokoa</i> 23 August 1864-Vol 1 No. 39 pg 3).
Kapalaea	Also Kapalaiain nearby Makawao at Kula border known in legends as the place that Kiha-a-pi'ilani lived while hiding from his brotherwhere he went to the stream and where he planted sweet potatoes (Sterling 1998:98-99); also location of Haleakala Ranch (Sterling 1998:97).
Kokomo	Also Koakomo or koa tree entrance (Sterling 1998:97; Pukui et al. 1974:116).
Kuʻaihulumoa	Gulch; joins Maliko Gulch (Sterling 1998:97).
Lilinoe	Area where Walter Cameron home is (Sterling 1998:97); Lit <i>mists</i> (Pukui et al. 1974:133).
Makaehu	Kula side or the Makawao-Kula boundary adjacent to Kapalaea (Sterling 1998:99).

Makawao	Sweet potato grew from Pukalani to Makawao as far up as Pookela Church (Sterling 1998:97); two Pu'u 'honua (place of refuge) were located in Makawao, one just above Grove Ranch, the other in the midlands; Makawao was designated Government Lands in the Mahele (Sterling 1998:98); Lit. <i>forest beginning</i> ((Pukui et al. 1974:142).
Maliko Gulch	Gulch and bay, Pāʿia qd. Lit. budding (Pukui et.al. 1974:144).
Olopua	Name of rock in ravine marking boundary between Wailuku and Hāli1imaile (BC).
Palauʻili	Where Makawao Union Church is located; where Baldwin lost his arm (Sterling 1998:97).
Paliʻuli	Where Rainbow Park is now located (Sterling 1998:97).

3.3.1 Significant Places/Events in Hāli`imaile, Makawao and Vicinity.

Ulu maika Course. According to the boundary description of the *ahupua* 'a of Hāli' imaile (Kekauonohi RP#7512, LCA#11216M-Bk 25 pg 235) the lands ran along an ancient Ulu maika course for 1,678 feet on the north (14° 33") (Waihona 2007).

Heiau. Platform *heiau* located near Kailua Gulch half a mile west of Pā'ia Road, destroyed for sugarcane cultivation (Walker 1930:152 in Sterling 1998:97).

Pu'uhonua Heiau. According to Thrum (1893:10) two "places of refuge" heiau were constructed by an ancient Maui king Waa, one just above Grove Ranch to the east and one in the midlands (Sterling 1998:98).

Birthplace of Kahekili. According to J. W. Kaiole in *Ka Nūpepa Kuokoa* June 20, 1863, Kahekili, son of Ka-lani-kui-hono-i-ka-moku [Kekaulike] and Ke-ku`i-apo-iwa was born in the ahupua'a of Hāli'imaile (Sterling 1998:97).

3.4.0 Historic References.

By and large "Historic References" pertain to notable historic events and overviews of important places and land tenure within the project area and district. One of the most significant practices in the history of the Hawaiian people was their concept of the stewardship of the land. However, over time, these practices were replaced by more western methods of land tenure and use, as the lands of Makawao and Hāli'imaile went from the domain of the *ali'i nui* to the monarchy, to various individuals and entities. The history of land use in this area went from traditional *ahupua'a* land management and use (fishponds, kalo lo'i, breadfruit) to sugar and military-related activities in the early 1800s to military, tourism, recreation and light industry today.

3.4.1 History of Land Divisions. It was during the time of Kahaukapu of Hawai'i and Kaka'alaneo of Maui [also said to be the time the Spanish first came with Ku-kanaloa (Kamakau 1991:324] that the division of lands is said to have taken place under a *kahuna* named Kalaihaohi'a. He portioned out the lands into districts, sub-districts, and smaller divisions, each ruled over by an agent appointed by the landlord of the next larger division, and the whole under control of the ruling chief over the whole island or whatever part of it was his to govern (Handy and Handy 1978:491; Beckwith 1970:383). Each island was divided into *moku* or districts that were controlled by an *ali'i 'ai moku*. Within each of the *moku* on

each island, the land was further divided into *ahupua* 'a and controlled by land managers or *konohiki*. The boundaries of the *ahupua* 'a were delineated by natural features such as shoreline, ridges, streams and peaks, usually from the mountain to the sea, and ranged in size from less than ten acres to 180,000 acres (Moffat and Fitzpatrick 1995:24-29, see also Chinen 1958:3). But sometimes "only the line of growth of a certain tree or grass marked a boundary; and sometimes only a stone determined the corner of a division" (Chinen 1958:1). The ideal *ahupua* 'a, from mountain to the sea, enabled a chief and his followers to obtain fish and seaweed at the seashore, taro, sweet potatoes and bananas from the lowlands, and forest products from the mountains. However, this more often than not, was not the case (Chinen 1958:3). Ahupua'a were also political sub-divisions for taxation purposes during the *Makahiki* period (Handy and Handy 1978:48).

Each *ahupua* 'a was often divided and sub-divided several times over (i.e., '*ili, kuleana, mo* 'o, *pauka, kōele, kiha pai*), answerable to *ali* '*i* where the lesser division was located. However the '*ili kupono* or the *ili ku* was "completely independent of the *ahupua* 'a in which it was situated...tributes were paid directly to the king himself" (Chinen 1958:4). Rights to lands were mutable or revocable; a ruling chief or any "distributor" of lands could change these rights if displeased, or as favors—usually after a victorious battle, and after the death of the *ali* '*i nui* or ruling chief (Chinen 1958:5). During the period 1839 to 1855, several legislative acts transformed the centuries-old Hawaiian traditions of *ali* '*i nui* land stewardship to the western practice of private land ownership. In the first stage, King Kamehameha III (Kauikeaouli) divided up his lands among the highest-ranking *ali* '*i* (chiefs), *konohiki* (land managers), and favored *haole* (foreigners) (Chinen 1958:7-14; Moffat and Fitzpatrick, 1995:11, 17). This historic land transformation process was an evolution of concepts brought about by fear, growing concerns of takeovers, and western influence regarding land possession. Kamehameha III, in his mid-thirties, was persuaded by his *kuhina nui* and other advisors to take a course that would assure individual personal rights to land.

One-third of all lands in the kingdom would be retained by the king; another one-third would go to *ali'i* or chiefs as designated by the king. In 1846 he appointed a Board of Commissioners, commonly known as the Land Commissioners, to "confirm or reject all claims to land arising previously to the 10th day of December, AD 1845." Notices were frequently posted in *The Polynesian* (Moffat and Fitzpatrick 1995). However, the legislature did not acknowledge this act until June 7, 1848 (Chinen 1958:16; Moffat and Fitzpatrick, 1995:48-49), known today as *The Great Mahele*. "The *mahele* did not actually convey title to the various *ali'i* and *konohiki*; it essentially gave them the right to claim the lands assigned to them--these lands became known as the *konohiki* lands. The *konohiki* chiefs were required to present formal claims to the Land Commission and pay a commutation fee, which could be accomplished by surrendering a portion of their land to the government." The government could later sell these lands to the public in the form of Grants. Upon payment of the commutation fee, the Minister of Interior issued a Royal Patent to the chief or *konohiki*. The last one-third was originally designated to the *maka'ainana*, but not acted on--instead it was set aside to the government, "subject always to the rights of the tenants" (Moffat and Fitzpatrick 1995:41-43; see also Chinen 1958:15-21).

'Ili kupono were the only *'ili* (parcel) recognized in this process, all the *'ili* and lesser divisions were absorbed into the *ahupua* 'a claim (Chinen 1958:20). In 1892 the legislature authorized the Minister of Interior to issue Royal Patents to all *konohiki* or to their heirs or assignees where the *konohiki* had failed to receive awards for their lands from the Land Commission. The Act further stipulated "that these Royal Patents were to be issued on surveys approved by the Surveyor General of the kingdom" (Chinen 1958:24; Moffat and Fitzpatrick 1995:41-43). Kamehameha III formalized the division of lands among himself (one-third) and 245 of the highest-ranking *ali* 'i and *konohiki* (one-third) between January 27 to March 7, 1848. He acknowledged the rights of these individuals to various land divisions in what came to be known as the *Buke Mahele* ('sharing book') or *The Great Mahele*. These lands, however, were all
"subject to the rights of native tenants" or *kuleana* lands, with reversionary rights to *ahupua* 'a and *ili kupono* claimants if the tenant died without heirs (Chinen 1958: 29-30). The *Great Mahele* marked the end of the feudal system in the kingdom (Chinen 1958:15).

3.4.2 Mahele Land Distribution. A Mahele search provided the following information regarding the lands of the Hamakua Poko District.

The *ahupua* 'a of Hāli'imaile was awarded [Royal Patent #7512] to chiefess Mikaheka Kekauonohi who was a daughter of Mataio Kekuanaoa and Kinau; half-sister of Kekauluohi and Kamamalu; granddaughter of Kamehameha I and Kalakua; wife of Kamehameha II [Liholiho]; and governor of Kauai in 1842. After the death of Liholiho, she ran off with another man, but later married Levi Haalelea who inherited her lands. Kekauonohi's mother Kinau was the daughter of Kamehameha I and Kalakua (daughter of Ke'eaumoku and Namahana; and half-sister of Ka'ahumanu). Kalakua and Hoapili were the parents of Kekauluohi (mother of Lunalilo) and Kamamalu (favorite wife of Liholiho/Kamehameha II). Namahana was the daughter of Kekaulike and Ha'alo'u and half-sister of Kauhiaimokuakama, Kamehamehanui, Kalola, Kahekili (last king of Maui) and Ka'eo (father of Kau'muali'i, last king of Kaua'i). Kekauonohi died in 1851 leaving her lands to her then current husband Levi Haalelea (Day 1984:74-99).

The *ahupua* 'a of Makawao with the exception of lands already in the possession of William McLane (#157) were set aside as Crown Lands.

3.4.2.1 Crown Lands (Personal lands of the King) of Hamakua Poko.

The following *ahupua* 'a in the Hamakua Poko District were claimed by Kauikeaouli or Kamehameha III and designated Crown Lands or reverted to Crown Lands following commutation by heirs and successors (Baker 1989):

3.4.2.2	Crown/Kingdom Land*	Heir	`Ili	Page
	-			_
	Hikina (1/2)	W. P. Leleiohoku		22
	Pā'ia	John Jones Huanu		41
	Makawao**	(He Moku-the District)		58
	Paniau	× , , , , , , , , , , , , , , , , , , ,		167
	*later Government Lands			

**In the *Buke Mahele* (1848:205), Kamehameha III relinquished the land of Makawao, placing it in the Government (*Aupuni*) inventory. The *Buke Mahele* also identified Makawao as a separate district (*moku*), apparently not a part of the Hāmākua Poko District (Maly and Maly 2001:294).

[There were] no claims registered by native Hawaiian applicants. Only one specific reference to a land right for a parcel in Makawao was recorded under *Helu* 426, to foreign residents, Wm. A. McLane and Edwin Miner. The actual record (in Native Register Volume 2) was a copy of a deed of lease, granted to McLane and Miner by Maui Governor, Hoapilikāne, in 1838 (Maly and Maly 2001:294).

The following is also from Maly and Maly (2001:294-295) regarding the lands of McLane and Miner in Makawao.

September 10, 1838 Hoapilikāne, Governor of Maui; to Wm. A. McLane and Edwin Miner Land Assignment – Portion of Makawao (Helu 426):

Here is this document, reporting on the full understanding of Hoapilikāne, the Governor of Maui and William A McLane and Edwin Miner for a land at Makawao, Maui; Hoapilikāne gave a land at Makawao to William A. McLane and Edwin Miner for the term of fifty years from that day forward. It was for them and their own heirs. Here is the fee for the land from year to year, one hundred dollars.

The land is thus described. On the west of the gulch called Punaokeawe, the cultivated field there, begins the boundary, and runs to the east to a gulch called 'Alelele; there is a marked corner of the land there. From this corner, run to the uplands along the channel at Manaia. There is a corner. Then from this corner, run to the gulch on the west of Manawainui. From that corner run to the boundary first mentioned at Punaokeawe.

This land is only for William A. McLane and Edwin Miner, from the water (pond) of 'Alelele to the place where the stones roll into the gulch of Punaokeawe. The boundaries above and below are marked by stones. These boundaries were marked by William A. McLane, Edwin Miner, and some men with Hoapilikāne.

Here also is this. The road for transporting their cattle is set aside, from said land to the landing at shore.

Here also is this. Hoapilikāne has restricted (*ho 'okapu*) said land for the term of fifty years, and no man may go to live on said land without the authorization of William A. McLane and Edwin Miner.

Here also is this, about the water. William A. McLane and Edwin Miner may take water for their livestock, and no one can block them from the said water.

Here also is this. When the fifty years are ended and the land is returned to Hoapilikāne or his heirs, the houses, walls, everything growing, and all other things cannot be taken.

Here also is this. William A. McLane and Edwin Miner swear that they will build schools for all of the people who they employ.

Here also is this. William A. McLane and Edwin Miner agree that the men they hire shall dwell with them. They shall not refuse the working men, the land. They shall pay each year, three dollars for each man, hired. They two agree to fulfill all the words written in this document.

Executed at Wailuku, on this tenth day of September, in the year of the Lord, one thousand eight hundred and thirty eight.

By Hoapilikane, Governor of Maui. I confirm the words above spoke.	Kamehameha III
Witnesses	(signed)
William Richards	Wm. A McLane
Kanakaole	Edwin Miner
[Copy in Native Register Volume 2:153 1	55; 1848; Maly, translator. See Register
Map No. 603 for reference points.]	· · · · · ·

William McLane (his wife, Maile Makalena), and Edwin Miner retained their leasehold interest in land at Makawao for a few years, and then gave it up. McLane acquired fee simple interest in parcels he acquired directly from the Government, or from natives who had been granted Royal Patents (see Mortgage Book 1:386_387 and Liber 4:61). In 1847 and 1849, William McLane acquired two parcels of land (totaling 688.94 acres) at Makawao (Grants 64 and 157). In addition to the ranching interests, McLane developed a sugar plantation (McLane's Plantation) on a portion of his Makawao holdings, parcels of which were later sold to various individuals, and for a while were operated as the Dow and Parks' Plantation (see Register Map No.'s 186 and 603 for locations described in boundary references of Makawao, as well as those which were a part of the McLane holdings) (Maly and Maly 2001:303).

The following lands were designated Konohiki lands in the Hamakua Poko District and were awarded to the following (Baker 1989):

3.4.2.3	Konohiki Lands Awardee		Page	
	Komohana (1/2)	W. P. Leleiohoku	105	
	Hāli'imaile	Mikaheka Kekauonohi	106	

The following is the Royal Patent #7512, Konohiki Lands of Hāli'imaile awarded to Mikaheka Kekauonohi (see above) with boundary descriptions.

3.4.2.4 Royal Patent/Konohiki Lands (Waihona 2007)

Royal Patent Number (RP) Patentee:	#7512 Kekauonohi, M	LCA Number Book	# 11216*M 25
Island:	Maui	Page	235
District:	Hamakuapoko	ТМК	
Ahupua`a:	Hāli'imaile	Miscellaneous	

No. 7512, Kekauonohi, M., Hāliʻimaile Ahupuaʻa, District of Hamakuapoko, Island of Maui, Volume 25, pps. 235-238 [RP Reel 13, 01063-01066.tif] Indexed [Great Seal] [NOTE: Some of her property runs along Grant #64 which belongs to William McLane.] No. 7512

Upon Confirmation by the Land Commission.

WHEREAS, the Board of Commissioners to quiet Land Titles have by their decision awarded unto M. Kekauonohi, Land Commission Award 11216 Apana 27, an estate of Freehold less than Allodial, in and to the land hereafter described, and whereas S.R. Dole, Esq., one of the present owners of Haliimaile Ahupua'a in Hamakuapoko Maui has applied to the Minister of the Interior for a Royal Patent for said Ahupua'a and the Government Commutation having been relinquished by a Resolution of the Privy Council during the reign of Kamehameha III.

THEREFORE, Lunalilo Kalākaua, by the Grace of God, King of the Hawaiian Islands, by this Royal Patent, makes known to all men, that he has, for himself and for his successors in office, this day granted and given absolutely, in Fee Simple, unto M. Kekauonohi all that certain piece of land situate at Halimaile, Hamakuapoko in the Island of Maui, and described as follows: Beginning at an Iron stake in the road from Makawao to Kahului at the common corner of the East Maui Plantation of the Hobron Plantation and of Royal Patent 2342 to Kekahuna from which the granite post on Pi^ciholo bears South 55° 39" East true, the boundary runs

1st North 62° 57" West true, North 71° 20" West magnetic, 1854 feet to a kukui tree, along land purchased by T.H. Hobron from the Ha'ikū Sugar Co. (according to W.H. Pease's survey corrected) Thence

2nd North 73° 26" West true (North 82° West magnetic) 5509 feet;

3 And North 38° 12" West true (North 46° West magnetic) 1202 feet along the same to a corner of Alexander and Baldwin's purchase from Ha'ikū Sugar Co., which is 158 feet South 36° 45" East true from a granite post by the road to Kahului, Thence 4th North 51° 24" West true 10939 feet along Alexander & Baldwin Purchase to the boundary of land sold by the Ha'ikū Sugar

ROYAL PATENT, Upon Confirmation by the Land Co

Co. to a company of 28 natives; Thence

5th South 51° 15" West true (South 43° West magnetic) 1619 feet along land sold to natives, to iron pin, Thence 6th North 89° 45" West (South 81° 15" West magnetic) 300 feet along land sold to natives to the rock called Olopua in a ravine. which forms the boundary between this land & Wailuku; Thence 7th South 26° 40" East true (South 35 1/2° East magnetic) along said ravine 1304 feet along Wailuku to a place called Puupili; 8th South 21° 17 East true (South 30° East magnetic) 1680 feet along ravine to a marked rock called Kaioleakalani about 170 feet above the road to Kahului, thence 9th South 17° 04" East true (South 25 3/4° East magnetic) 1592 feet to a pile of stones at Kauliana on West side of the ravine. 10th South 32° 18" East true (South 40 3/4° East magnetic) 1390 feet to a marked rock by the path [page 236] at Puhinali; 11th South 35° 07" East true (South 42 1/4° East magnetic) 3508 feet to a Wiliwili tree on West bank of the gulch, which is the corner of Wailuku and the district of Kula. From this point the middle of this gulch is the boundary between Hali imaile & Kula, 12th North 70° 03" East true (North 61 1/2° East magnetic) 330 feet to large marked rock in the wall at the bottom of the ravine; 13th South 54° 50" East true [(South 63 1/4° magnetic] 558 feet to the junction of two stone walls in the gulch. Thence 14th South 57° 29" East true 482 feet along the bottom of the gulch to corner of stone wall; Thence 15th South 2° 40" East true 878 feet along bottom of the gulch, 16th South 37° 41" East true 1400 feet along bottom of the gulch, 17th South 50° 12" East true 824 feet along bottom of the gulch, 18th South 47° 33" East true 1108 feet along bottom of the gulch; 19th South 75° 42" East true 958 feet along bottom of the gulch; 20th South 64° 43" East true 247 feet along bottom of gulch to the corner of the former Brewer Plantation, 21st South 52° 44" East true 1995 feet along the gulch; 22d South 39° 12" East true 1058 feet along the gulch; 23d South 72° 28" East true 1653 feet along the gulch; 24th South 32° 02" East true 2738 feet along the gulch; 25th South 14° 53" East true 2475 feet along the gulch; 26th South 40° 54" East true 506 feet along the gulch to the top of falls in the gulch, which is the corner of the former Brewer Plantation & of the land purchased from Mrs. Haalelea by J. Clark, 27th South 81° 52" East true 376 feet along the bottom of the gulch and 28th South 60° 57" East true 528 feet along the same to the boundary of Makawao, Thence 29th North 35° 29" East true 521 feet along Grant 216, Thence 30th North 14° 33" East true 1678 feet along the same, along an ancient Ulu maika course, to an iron stake at the corner of the former Brewer Plantation and of Grants 216 & 499, Thence. 31st North 53° 48" East true (North 46 East magnetic) 4200 feet along Grants 499 & 216, Thence 32d North 53° 28" East true 1248 feet along Grant 64 to East Maui Plantation, Thence 33d North 43° 15" East magnetic 1627 feet along Grant 64, and 34th North 52° 30" East magnetic 1455 feet along Grant 64 to Southwest bank of the Maliko gulch; Thence 35th North 36° East magnetic 980 feet along Grant 64, down the path to bottom of deep gulch, separating this land from Ha'ikū; 36th the boundary follows down to centre of Maliko gulch in Northwesterly direction to the upper SE corner of Hamakuapoko; 37th Beginning again [Page 237] at starting point of this description at iron stake in Makawao road near a School house, run North 60° 07" East true (North 51° 21" East magnetic) 2655 feet along Grant 2342 to Kekahuna & Grant 187 to John Richardson, 38th North 69° 33" East true (North 58 1/2° magnetic) 1002 feet to the bottom of Maliko gulch to the southeast upper corner of Hamakuapoko mentioned above.

[page 238] Containing Four thousand two hundred & thirty Acres, more or less, excepting and reserving to the Hawaiian Government all mineral or metallic mines of every description.

To Have and to Hold the above granted Land in Fee Simple, unto the said M. Kekauonohi, Heirs and Assigns forever, subject to taxes to be from time to time imposed by the Legislative Council, equally upon all Landed Property held in Fee Simple. In Witness whereof, I have hereunto set my hand, and caused the Great Seal of the Hawaiian Islands to be affixed, this 26th day of November, 1880.

By the King, /signed/ Kalākaua R [Rex] The Minister of the Interior, H.A.P. Carter [Royal Patent No. 7512, Kekauonohi, M., Hāli'imaile Ahupua'a, District of Hamakuapoko, Island of Maui, 4230 Acres, 1880.]

A letter dated 4/10/1850, from the Hawaii Archives, notes that this land was purchased from Kekauonohi by Mr. Montgomery, and then sold to Chas. Wm. Vincent prior to 1850 [HAS 2007].

3.4.2.5 Kuleana Lands. *Kuleana* in its old definition meant "a portion or share" or "a man's rights, affairs, interest," but became a legal term under the Great Mahele of 1848; once granted a kuleana was independent of an *ahupua'a* or 'ili kupono. After the Mahele former tenants of land were granted fee simple title to their lands, which included their cultivated lands and their house sites. During the *Mahele* the *kuleana* were defined, surveyed and measured by configuration not by map survey (Handy and Handy 1978:54). These lands were claimed during a process and granted by the Land Commission. (See also Makawao Model Farm discussed by Maly and Maly [2001:293; 299-304] as an "experiment" in place of *kuleana* lands.) Rev J.S. Green was appointed land agent by Minister if Interior Gerrit P. Judd for this program (Maly and Maly 2001:299).

A parcel of land was set aside, and is referred to as "The Model Farm" (see Register Map No. 186, Makawao –T. Metcalf, 1848; and Royal Patent Grants issued to grantees as a part of the Makawao Land Program (Maly and Maly 2001:299).

As a part of the Makawao Land Program, J.S. Green was granted an 87.7 acre parcel at Makawao, Royal Patent No. 68, in 1847 (Privy Council Volume 6A:290-291). The land was sold to Green at approximately \$1.00 per acre (Maly and Maly 2001: 302).

3.4.2.6 Land Commission Awards (LCA). Native and foreign testimonies provide land use information from claimants and witnesses who described the LCA lands and how they acquired these lands. A Land Commission Award (LCA) search of the *Waihona 'Aina Corp* (2013) database produced the following information regarding Mahele claims for Makawao made between 1847 and 1852.

LCA	Claimant	District	<u>Ahupua'a</u>	ʻIli	Awarded
00426	McLane	Makawao	Makawao		No
02537	Kaneaukauakahi	Makawao	Makawao7		1

According to Waihona 'Āina Corp. Database, McLane was not awarded his LCA claim however he did purchase a land grant in Makawao (see below).

00157	McLane, William A.	Maui	Hamakuapoko Makawao	2-2-4-03, -12

3.4.2.7 Land Grants: McLane and Gower. Two land grants are of interest in Makawao; William A. McLane (#157) and John T. Gower (#216). In their report Maly and Maly (2001) described McLane's Makawao land interest. A Land Grant search in the Waihona 'Aina database produced about 75 grants in the *moku* of Hamakua Poko with only Makawao as the place name associated with these grants.

3.4.2.7.1 McLane (#157) Descriptions:

One of the earliest communications regarding formalized ranching activities on lands in the Makawao-Hāmākua Poko vicinity, is dated September 10, 1838, and is in the form of a lease from Governor Hoapilikāne to Wm. McLane and Edwin Miner. The lease (cited in this study – section titled "*Moku o Makawao (District or Section of Makawao)*") granted them a 50 year lease of the land, with the right to water, and trail access to the shore, in order for them to export their cattle (Maly and Maly 2001:57).

1840 and 1841, Commander Charles Wilkes of the United States Exploring Expedition, toured the Hawaiian Islands (Wilkes 1845, Vol. IV; reprint 1970). In April 1841, Wilkes and party toured the island of Maui, and Wilkes' narratives provide readers several descriptions of the lands and activities in the Wailuku and Kula District, including portions of the Hāmākua-Ko'olau region.

Among the topics discussed by Wilkes were — cultivation of the land, including the development of foreign crops; the barren nature of the isthmus plain, noting its lack of water; the perseverance of the native community in construction of the protestant church of Hāmākua Loa; the McLane-Miner sugar plantation at Hāmākua Poko; and the presence of wild cattle, dogs and goats in the summit region of Haleakalā [*Commander Charles Wilkes: The United States Exploring Expedition of 1840–1841*].

At present, beside the patches of the natives who cultivate this region tolerably extensively, Mr. <u>McLane's is the only plantation.</u> It occupies a most delightful situation. His house — and a real Yankeefied look it has, with its red sides and porticoed front, stands in the midst of a *koa* grove [*makai* and west of Pi'iholo]... well kept fields of cane extend in front of the house over 100 acres; fences enclose it in part and separate it from verdant pasture ground; corn and pumpkins have their allotted space; clumps of trees here and there resemble orchards...

...McLane's sugar mill is about a half-mile below his house. The sugar of this region ripens the same as at Mr. Torbert's place and is of excellent quality. The produce to the acre is about one ton. At present the mill is worked by animal power, but Mr. McLane proposes erecting a wind-mill as more economical... [*The Polynesian* August 1846 In Maly and Maly 2001:46-47].

3.4.2.7.2 Gower's Grant [1850] was on the border of Hāli'imaile and Makawao and adjoining McLane/Miner lands at one section:

Ahupua'a	District	Grant #	Grantee	Acres	ТМК	

MakawaoHamakua PokoGr. #216John T. Gower404Acs2-2-4-01No. 216, Gower, John T., Makawao Ahupuaa, District of Makawao, Island of Maui, Vol. 2, pps. 83-86 [LG Reel 1, 00638-00641.tif]

Kamehameha III, By the Grace of God, King of the Hawaiian Islands, by this Royal Patent, makes known, unto all men, that he has for himself and his successors in office, this day granted and given, absolutely, in Fee Simple unto John T. Gower, his faithful and loyally disposed subject for the consideration of Eight Hundred & Eight Dollars (\$808.00), paid into the Royal Exchequer, all that certain piece of Land situated at Makawao in the Island of Maui and described as follows:

Commencing at makai North corner of Palalu's joining McLane & Co. new purchase and running

South 56° West 11 Chains along makai side of Palalu's to his West corner, thence

South 49° 45' East 7 1/10 Chains to North corner of Kaopuaiai's land, thence

South 42° West 12 5/100 Chains to West corner of Kaopuaiai's land, thence

South 45° 45' East 9 1/2 Chains along Kaopuaiai's to North corner of Kamanaulu's land, thence

South 44° 30' West 32 66/100 Chains along and to West corner of Kamanaulu's land, thence

South 45° 15' East 2 82/100 Chains to stake, angle, thence

South 66° East 11 64/100 Chains along Kamanaulu's to North corner of Kamanohili's land, thence

South 45° 45' West 17 95/100 Chains along to West corner of Kamanohili's land to Kula gulch, thence

North 44° 15' West 9 85/100 Chains along down gulch to stake, angle, thence

North 58° West 20 Chains along gulch angle, thence

South 58° 45' West 17 Chains to wiliwili tree at bottom & bend of gulch, thence

North 43° 45' West 14 1/2 Chains to large wiliwili stump on East side of gulch, thence

North 29° 15' East 6 4/100 Chains to stake & stones near house at West corner of Kaaea's land

South 72° 15' East 5 34/100 Chains to stake at South corner of Kaaea's lot, thence

North 46° East 15 Chains along & to East corner of Kaaea's land, thence

North 49° 45' West 5 Chains to North corner of Kaaea's land to Hali'imaile, thence

North 46° East 45 8/10 Chains along Hāli'imaile to the McLane & Co. new purchase & North corner of this, thence

South 49° 45' East 38 1/10 Chains to place of commencement.

Rights of Native tenants to be respected. [page 84]

Received of John T. Gower the sum of Eight Hundred and Eight Dollars for land as per Patent No. 216.

Treasury Office

Containing 404 Acres, more or less, excepting and reserving to the Hawaiian Government, all mineral or metallic mines of every description.

To have and to hold the above granted Land in Fee Simple, unto the said John T. Gower his Hawaiian Heirs and Assigns forever, subject to the taxes to be from time to time imposed by the Legislative Council equally, upon all landed Property held in Fee Simple.

In Witness whereof, I have hereunto set my Hand, and caused the Great Seal of the Hawaiian Islands to be affixed, at Honolulu, this 19 day of February, 1850

(Signed) Kamehameha (Signed) Keoni Ana [page 85].

[Land Patent Grant 216, Gower, John T., Makawao Ahupuaa, District of Makawao, Island of Maui, 404 Acres, 1850]

3.4.3 Reverend Jonathan Green (1796–1878). Jonathan Smith Green was born in Lebanon, Connecticut to Beriah and Elizabeth (Smith) Green. He later graduated from Andover Seminary and married Theodosia Arnold (1792-1859) in 1827. They came to Hawai'i (1828) as part of the third company from the American Board of Commissioners for Foreign Missions along with Rev. Lorrin Andrews and Dr. Gerrit P. Judd. He was assigned to Lahaina, Maui until 1831, then to Hilo for one year. In 1833 they moved to Wailuku, Maui, where he built one of the first permanent houses there. In 1836 the Greens founded a girls' boarding school called the Wailuku Female Seminary now the Bailey House Museum. In 1842 Rev. Green and Andrews resigned from the Congregational Church because both men did not agree with the church's position on slavery, which they were against. Rev. Green refused to wear cotton clothing, since it was generally picked with slave labor. He became an independent pastor in 1843 and experimented with agriculture and at the request of a local chief Kiha, he founded the Hawaiian church Po 'okela in Makawao (200 Olinda Rd) on lands donated by Kamehameha III. His wife Theodosia died in 1859 - they had four children. From 1857 Rev. Green conducted English services in his Makawao house then in 1861 a foreign church was commissioned by the Kingdom Minister of Interior Prince Lot who would later become Kamehameha V. The Makawao Foreign Church and Congregation located on the current grounds of the Makawao Cemetery and would later become Makawao Union Church.

In 1863 Rev. Green went back to America and married his second wife Asenath Cargill Spring (1820– 1894). Henry Perrine Baldwin, his wife Emily Alexander Baldwin, and their children joined his church in 1870. H.P. Baldwin served as organist for over forty years. Rev. Green died on January 5, 1878; his wife Asenath Green would maintain the church [old and new] until her death in 1894. The family is buried at the Makawao Union Church cemetery. Rev. Green's son Joseph Porter Green (1833-1886), later served at the church and was elected to the legislature of the Hawaiian Kingdom in 1860. J. Porter Green married Hariette Fowler Parker (1837–1912) in 1864 and their daughter Mary Theodosia Green (1865– 1936), married Henry Harrison Wilcox (1868–1899) who was son of Abner (1808–1869) and Lucy Wilcox, missionaries from Kauai (Wiki-Green 2012).

3.4.4 Makawao Union Church. As mentioned above the first wooden Makawao Foreign Church and Congregation or Makawao Union Church was built at the current site of Makawao Cemetery in 1861 by Rev. Jonathan Smith Green. Rev. Green died in 1878 and his second wife Ansenath Green took over. In 1888 one of their most influential parishioners Henry Perrine and Emily Alexander Baldwin offered the church a site for a new building on the foundation of the former Paliuli Sugar Mill near what is called

Rainbow Gulch and Rainbow County Park. *Paliuli* is roughly translated to "garden of Eden." The New England style white frame structure church was dedicated on March 10, 1889. Rev. John Kalama, a native Hawaiian pastor served at both Makawao Union Church and *Po'okela* Church until his death in 1896.

This new wooden church was torn down in 1916 and replaced by a stone Gothic Revival style church in 1917. This church was designed by Charles William Dickey (1871–1942), whose mother was the sister of Emily Alexander Baldwin. The church was not damaged by the 1938 earthquake. The Makawao Union Church was placed on the Hawaii Register of Historic Places (# 50-05-1610) on June 29, 1985 and on the National Register of Historic Places listings in Hawaii (# 85003227) on December 17, 1985 (Wiki-MUN 2011). Photographs below are from Wikipedia website-Makawao Union Church (Photos 3, 4).



Photo 3. 1909. Wood church built in 1889.



Photo 4. Stone church built in 1917.

3.4.5 Makawao Cemetery. The site of the first Makawao Union Church continued as Makawao Cemetery (3300 block of Baldwin Avenue); Maui Veterans Cemetery was later created adjacent to it. Aside from Rev. Jonathan Smith Green and his family, many of Makawao's notable people are also buried there and include H.P. and Emily Alexander Baldwin and their family; Annie Monatgue Alexander [daughter of William P. Alexander and sister of Samuel T. Alexander] and Charles Henry Dickey, parents of Charles William Dickey, a famous Hawaiian architect [e.g., the stone Makawao Union Church, Alexander & Baldwin Building, Halekulani Hotel, Kamehameha Schools campus buildings] and James Dole the founder of Dole Plantation (Wiki-MUC 2011). Photographs below are from Wikipedia-Makawao Union Church and Cemetery Gallery (Photos 5, 6).



Photo 5. Gates to Makawao Cemetery. Photo 6. A few of the burial sites in Makawao Cemetery.

3.4.6 Maui Veterans Cemetery. Based on the roll from USGW Archives (2004) Old Section of Maui Veterans Cemetery, the earliest burial was in 1918 – Anthony R. Matos, a WWI veteran who died on July 30th. The online roll of veterans buried at Maui Veterans Cemetery (101 pages) Old Section included veterans from WWI, WWII, Korean War and Vietnam; several were 'killed in action' (KIA). According to an article in Maui News (Jan 9, 2012), the cemetery is in desperate need to expand with very little time left before they reach capacity.

Makawao Veterans Cemetery may reach capacity for burials in one and a half to two years, so plans are being laid for the purchase of a 10-acre adjoining property. The state Legislature approved \$5 million last session for the planning, purchase and development of the cemetery expansion, said Ronald P. Han Jr., the director of Hawaii State Veterans Services, in a phone interview last week from Oahu.... With World War II veterans now reaching their 80s and 90s, Han said he's concerned and wants to make sure that they go to their final resting place with honor

and dignity.... With the acquisition of the 10acre addition, the cemetery could be set for five to 10 years down the road, he said.... County real property tax records show Paul Turner as the owner of the surrounding parcel, which is 129.7 acres. Turner said last week that he is working with Jordan Santos, whose father is buried in the cemetery, on a "complex subdivision." Both he and Santos want the cemetery addition to happen. When asked if he believed the subdivision could be completed before the cemetery reaches capacity, Turner replied: "I hope so. It continually gets delayed" (Imada 2012).



Photo 7.Maui Veterans Cemetery (MUC 2011)

3.4.7 Baldwins and Alexanders of Maui. Dr. Dwight Baldwin (1798–1886 second child of twelve children) and Charlotte Fowler Baldwin (1805–1873), were part of the fourth company of American missionaries in Hawai'i arriving in 1831 (Alexander 1935). Dr. Baldwin was not only an ordained minister, he was also a physician who served fellow missionaries, *ali'i* and the *maka'āinana*; first in Kohala and Waimea and all the way to Hilo. Then for health reasons he was transferred to Lāhainā (Lyons n.d.; Wiki-DB 2012) in 1835 where they occupied the former Spaulding house (Alexander 1935). During the smallpox epidemic in 1853, Dr. Baldwin served as a government physician for Maui, Moloka'i and Lāna'i and is credited with keeping the disease at bay (JWC n.d). After seventeen years of service, Dr. Baldwin was granted (ca. 1853) 2,675 acres of land in the *ahupua'a* of Māhinahina and Kahana for farming and grazing (KR 2003: H-2). This later became part of the Baldwin Estate of lands in West Maui. The Baldwins had eight children: David Dwight Baldwin (1831–1912), Abigail Charlette (1833–1913), Charles Fowler Baldwin (1837–1891), Henry Perrine Baldwin (1842–1911), Emily Sophronia (1844–1891), Harriet Melinda (1846–1932) a son, Douglas Hoapili Baldwin, who died young in 1843 (Wiki-DB 2012) and a daughter Mary Clark (born after Abigail) who also died young (Sanford 2013c).

In 1890 **David Dwight Baldwin** (1831–1912), the oldest son of Dr. Baldwin is credited as one of the first to plant pineapples on Maui, but it wasn't until several years later (1920) that pineapple became a viable crop. Pineapple as a commercial crop was first planted on O'ahu by Captain John Kidwell in Mānoa (Baldwin 1946:5).

Henry Perrine Baldwin (1842-1911) or 'H.P.' was born in Lāhainā, the sixth of the eight children of Dr. Dwight Baldwin and Charlotte Fowler Baldwin. Henry grew up in Lāhainā, was educated at Punahou and although he first wanted to get a medical education, he started managing a rice plantation, then went into

sugar, first working for his brother David Dwight, followed by a long-lasting partnership with his soon-to-be brother-in-law, **Samuel T. Alexander**. Samuel Thomas Alexander and Henry Perrine Baldwin grew up in Lahaina. Later Alexander went to the mainland for work and college, while Baldwin stayed on Maui to work for his brother raising sugarcane in Lahaina. Alexander came back to work as manager of the Waihe'e sugar plantation and hired Baldwin as his assistant. This was the beginning of a lifelong



Samuel T. Alexander

relationship. In 1869 the partnership of Alexander & Baldwin (A&B) invested in twelve acres of land between Pā'ia and Makawao, followed soon after with the purchase of 559 acres of land. In 1870 they planted their first sugarcane and Baldwin married Alexander's



Henry P. Baldwin

sister. H.P. and Emily Whitney Alexander Baldwin had eight children (Henry's older sister Abigail married Samuel and Emily's brother William De Witt Alexander, who was a noted Hawaiian historian [Lyons v1:4]). In 1876 the partners started the 17-mile Hāmākua-Ha'ikū irrigation ditch that crossed several ridges and ravines to irrigate 3,000 acres of cane fields belonging to them and neighboring plantations. They competed with Claus Spreckels [see box below] to compete for the first ditch of its kind.

Alexander and Baldwin completed their ditch in two years, founding the Hamakua Ditch Company (aka East Maui Irrigation) the oldest subsidiary of A&B. (Photo 8. H.P. Baldwin; Photo 9. Samuel Alexander).

Claus (aka Adolph Claus J.) Spreckels (1828-1908) was born in Germany; he left in 1846 for America where he became an industrialist in Hawai'i and California. In 1852 he married Anna Christina Mangels and had thirteen children (five lived to adulthood). Spreckels was involved in Hawai'i government and industry starting with the Kingdom during the era of Kalākaua to the Territorial years.

While in Hawaii, he purchased the *Pacific Commercial Advertiser* in 1880 and became a publisher. This paper later became known as the *Honolulu Advertiser* and, prior to its demise in 2010, was one of the largest newspapers in circulation in the United States. Spreckels' conservative, pro-monarchy slant caused him to fall from favor in the business community, and he eventually sold the newspaper. Claus Spreckels also lent his assistance to William Matson when he first founded Matson Navigation Company. Spreckels financed many of Matson's new ships including Matson's first ship called *Emma Claudina* named for Spreckels' daughter. Matson had been captain of a vessel, engaged chiefly in carrying coal to the Spreckels Sugar Refinery and later worked aboard the Spreckels family yacht (Wiki-CS 2013). Spreckelsville on Maui is named after him.

Although H.P. Baldwin lost an arm in a mill accident, that did not deter him (Day 1984:7-8). He became famous when he climbed down a rope with only one arm into Maliko Gulch (every day according to Sanford 2013c) to show his workers it could be done; they followed him thereafter (Day 1984:8; Wilcox 1996:60; Dorrance and Morgan 2000:59). Alexander later moved his family to California (1883) and Baldwin ran the firm for almost thirty years (Day 1984:8). Other ventures of A&B included establishing the *Hawaiian Sugar Company* on Kauai (1889); acquiring control of the *Hawaiian Commercial & Sugar Co.* in Pu'unene and operating a fleet of vessels between Hawai'i and the mainland—these were eventually replaced by steamers of the *American-Hawaiian Line*, then the freighters of the *Matson*

Navigation Co., a subsidiary of A&B until 2012 (Sanford 2013c). From 1887 to 1903 H.P. Baldwin also served in the legislature; he devoted much of his income to community works (Day 1984:8).

3.4.8 Sugar and Pineapple Industries in Upcountry. Hāli[•]imaile Plantation has a couple of versions on how it started. An internet search (Island Properties 2005) stated that it was started in 1848, while a paper (Maclennan 1995) in *The Hawaiian History Journal* (vol 29) states it was started in 1849.

When Kamehameha III proclaimed that the Makawao area would be the nation's first experiment in private land ownership, he exempted from sale a tract of land that was one of the first used to experiment with growing sugar in the Makawao area. The Hāli'imaile Plantation was established in 1848 and was operated by William A. McLane. It changed hands and names a number of times in the ensuing years (Island Properties 2005).

Hāli'imaile Plantation began in 1849 on leased land which was subsequently purchased. The owners were Stephen Reynolds, a Honolulu merchant, and Alfred W. Parsons, a merchant and judge in Lahaina. Reynolds bought out Parsons, sold his interest to Robinson & Co., and then repossessed the plantation when Robinson could not meet its obligations. Hāli'imaile experienced difficulties ranging from a mill (ca. 1852) that broke down regularly to drought, insufficient workforce, and conflict among Chinese and Hawaiian workers. After Reynolds death (1857), Charles Brewer II bought the property and mill, changing the name to the Brewer Plantation. It was sold to Judd, Wilder, and Judd in 1863. The mill burned in 1864 and the machinery was sent to O'ahu (Maclennan 1995:45; 40).

The Hāli'imaile plantation climbs gradually up the windward side of the dormant volcano, Haleakalā. Pineapple is grown at elevations between 1,000 and 1,500 feet, where the cooling mists of Haleakalā's cloud cover intensify the fruit's flavor. The granular red volcanic soil on the windward side of Haleakalā retains warmth and provides excellent drainage. The plants are arranged on a north-south axis to take full advantage of the afternoon's cooling trade winds (MPC 2007).

3.4.9 Diversified Industries of Upcountry. In 1900 Alexander & Baldwin incorporated as an agency for sugar plantations such as Hawaiian Commercial & Sugar Company and Maui Agricultural Company, Ltd., an A&B creation and managed by H.A. Baldwin (Sanford 2013c). In 1906 Frank F. Baldwin succeeded his father H.P. Baldwin as manager of HC&S; and became both president and manager in 1911 when his father died. In 1908 HC&S and MA Company jointly organized East Maui Irrigation Company, Ltd to manage their ditch system and divide water between them.

In1917 Maui Agricultural Company, Ltd. built the first distillery in the US for producing alcohol from molasses; the plantations vehicles operated on molasses alcohol instead of kerosene or gasoline during World War I. The company also grew corn which they grounded at their Ha'ikū factory, supplying the Territory of Hawaii. Maui Agricultural Company, Ltd. once had a thriving pineapple department; in 1932 the department became a part of Maui Pineapple Company. In 1948 HC&S and Maui Agricultural Company merged forming one of the largest sugar producers. The following year HC&S abandoned its Pu'unene railroad for the new trucking era.

HC&S had small but thriving dairy and beef cattle operations for many years; the cattle (Grove Ranch) were inherited from the Maui Agricultural Co. HC&S ranch department raised Aberdeen Angus cattle on 6,000 acres of land above Hāli^cimaile. The dairy sold pasteurized milk for the first time in 1948, but HC&S sold its Pu'unene Dairy to Haleakala Dairy in mid-1951. In 1962 HC&S merged with and became a division of A&B. HC&S had three subsidiary companies, which became subsidiaries of Alexander & Baldwin: East Maui Irrigation Company, Limited; Kahului Railroad Company which it had owned since 1899; and Kahului Development Co., Ltd. HC&S president **Asa Baldwin** became a vice-president of

A&B, Inc. Since 1965 the company has been modernizing its sugar equipment; between 1985 and 1990 their factories were completely computerized.

3.4.10 Maui's Pineapple Industry. David D. Baldwin was one of the pioneers of the pineapple industry on Maui (1890) in Ha'ikū (it had also been planted in elsewhere on Maui), but it wasn't until 1903 that the Haiku Fruit & Packing Company, Ltd. was chartered; his younger brother H. P. Baldwin served as president and he became vice-president; Henry "Harry" Alexander Baldwin was Secretary and William A. Baldwin was appointed manager. In 1906 other companies were encouraged to plant for their cannery; these included Grove Ranch division of Maui Agricultural Co. (lower Ha'ikū); Haleakala Ranch Co., owned by H.A. and S.A. Baldwin (Sanford 2013c), (Makawao 1500-2700' elevation), but it wasn't until 1920 that pineapple became a really viable crop (Baldwin 1938:8-13: There were several reasons for this such as incompetence, 1946:5). devastating rains of 1914, slumping mainland market (Baldwin 1938:10-13) and the lack of general knowledge about crop fertilization (Baldwin 1946:6-7).



Photo 10. Harry Baldwin

Several people in the nearby Ha'ikū area tried their hands at growing pineapple but later gave up: James Lindsay (1897-1911), Clarence White (1906-1915) who sold his holdings to Harold W. Rice (1915) and Krauss (1912-) (Baldwin 1946:5-11). In 1917 the Hawaiian Pineapple Co. sold its holdings in the Haiku Fruit & Packing Company to a Maui *hui* headed by Harold Rice who also affected the joining of Haiku and Maui Pineapple Company, a Japanese company located at Pauwela Village [founded in 1910]. Rice sold his stock the following year. The Company then ventured into Hana, buying the Kīpahulu Sugar Company and planting pineapple in Mu'olea and Kīpahulu. This move however, was a complete disaster and by 1927 Hana was abandoned. The Great Depression sealed their fate and the company was sold to Hawaiian Pineapple Company of Honolulu (Baldwin 1938:12-15).

In 1925 **J. Walter Cameron** was called from Honolulu to be the manager of the pineapple department of Haleakala Ranch Co. where they cultivated pineapple on marginal lands in Pulehu; four years later they separated from the ranch and incorporated as Haleakala Pineapple Company. The Haleakala fields and the Maui Agricultural Co fields at Kaluanui and the Hāli'imaile section were very productive until the market slump late 1929. In April of the same year, Libby McNeil & Libby exercised their option and absorbed the Pauwela Pineapple Co. They began to discourage independent growers in favor of planting their own fields, as opposed to Hawaiian Pineapple Company of Ha'ikū who encouraged growers. By 1932 heavy losses and market depression led to a reorganization of Maui Agricultural Co. merging with Haleakala Pineapple Co. and incorporated as Maui Pineapple Company Ltd. (MPC) with headquarters at Hāli'imaile and J. Walter Cameron as manager. In 1934 MPC exercised an option regarding interest in the California Packing Corp. and bought out all the interests; this venture was financed by Alexander & Baldwin, Ltd., marketing agents and financial factors of MPC (Baldwin 1938:24-27).

In1938 Maui County [Baldwin Packers-Lāhainā (aka Honolua Ranch); Maui Pineapple Company-Kahului; Hawaiian Pineapple Company (Ha'ikū and Moloka'i); Libby, McNeil & Libby (Ha'ikū and Moloka'i) and California Packing Corporation (Lāna'i)] was producing half of the pineapple grown in the Territory of Hawaii. By 1941 MPC developed the contour planting system, which greatly improved production, but this was hampered by the drought of 1943-44 and World War II, when several key personnel joined various branches of the Service and wartime restrictions on materials prevented completing harvesting using a newly developed mechanized system (Baldwin 1946:16-20).

3.4.11 Maui Land & Pineapple (MLP). Maui Pineapple Company began in 1909 as the Keahua Ranch Company and became the Maui Pineapple Company in 1932. In 1962, the parent company A&B merged Maui Pineapple Company with Baldwin Packers. In 1969 the Cameron family, descendants of H. P. Baldwin and his son Harry A. Baldwin, in a "buy out" from parent company A&B, acquired Maui Pineapple Company, Ltd. (devoted to agricultural operations) and later changed the company name to Maui Land & Pineapple Company, Inc. (ML&P) and ML&P went public. The ML&P owned a multipurpose processing facility in Kahului, Maui, where its fresh fruit packing and processing operations were consolidated. The facility also provided refrigerated storage, freight consolidation and warehousing to the greater Maui farming and agricultural community.

Maui Pineapple Company's headquarters were located in Kahului, Maui with a satellite division, Kapalua Farms, located near Kapalua Resort, which was also owned by its parent Company (Wiki-ML&P). In 1976 J. Walter Cameron died and his son Colin C. Cameron was elected Chairman of the Board of ML&P and its subsidiaries (KR 2003: RT; see also Bruce 8/29/78:4). Colin Cameron died in 1992 and his sister Mary C. Sanford was elected Chairman of the Board and Gary L. Gifford was named President and CEO of ML&P; in 1995 Donald A. Young succeeded Gary Gifford. (KR 2003: RT).

Table 3. Chronology of Events to ML&P (Bartholomew 1994; Maclennan 1995; Wilcox 1996; Garcia 2000; Wiki-MLP 2013)

1838	<i>Miner & McLane Plantation</i> started by Edwin Miner and William McLane [Grant #157] under agreement with Maui governor Hoapili;.
1849	John T. Gower [Grant #216] becomes a partner with Miner & McLane (it ends in the 1850s); <i>Hāli`imaile Plantation</i> started by Stephen Reynolds and Alfred W. Parsons on leased land;
1857	Stephen Reynolds dies; <i>Hāli 'imaile Plantation</i> bought by Charles Brewer II; changes name to <i>Brewer Plantation;</i>
1863	Brewer Plantation sold to Judd, Wilder and Judd;
1860s	T.H. Hobron starts <i>Grove Ranch</i> on 3,000 acres in Hāli'imaile and Pā'ia; his Waihe'e sugar mill is managed by Samuel Alexander and his field boss is H.P. Baldwin;
1869	Henry Perrine Baldwin and Samuel Thomas Alexander purchase 12 acres of Bush Ranch in Sunnyside area of Makawao for \$110 (A&B Inc. 2013);
1970	Alexander & Baldwin purchase 559 acres of grazing land at Sunnyside down what is now Baldwin Avenue from Makawao, for \$8,00 known as Bush Ranch, formerly part of Haiku Sugar Co. – their property abutted Thomas Hobron's <i>Hāli 'imaile Plantation</i> (Murphy 2012; A&B 2013); A&B first crop of sugarcane produced (Lassalle 2003);
1870s	Sanford B. Dole buys out mortgages of Grove Ranch and becomes one-fourth owner;
1871	James McKinney Alexander (second son of William P. and Mary Ann Alexander, younger brother of William DeWitt Alexander and Emily Alexander Baldwin) founded <i>Seaside Farm</i> half a mile east, past Kaunoa (Murphy 2012);
1875	Pa'ia Plantation established by A&B - closed in 2000 (Lassalle 2003);
1876	H.P. Baldwin losses arm in mill accident;

	The <i>Hamakua Ditch Company</i> was organized and owned by the Haiku Sugar Company, T. H. Hobron/Grove Ranch Plantation, Samuel Alexander, his brother James Alexander and Henry P. Baldwin (KBR 2009);
1878	Claus Spreckels establishes Hawaiian Commercial & Sugar Company;
1880	Spreckels Sugar Mill established by Claus Spreckels – town of Spreckelsville grew around the mill (Lassalle 2003); Sanford B. Dole claims ownership of Hāli`imaile Ahupua`a in fee simple;
1883	Alexander and Baldwin formalized their partnership by incorporating their sugar business as the <i>Pā</i> 'ia <i>Plantation</i> also known at various times as <i>Samuel T. Alexander & Co., Haleakala Sugar Co.</i> , and <i>Alexander & Baldwin Plantation</i> . By spring of 1900, A&B had outgrown its partnership organization and plans were made to incorporate the company, allowing the company to increase capitalization and facilitate expansion (A&B Inc 2013);
1888	Haleakalā Ranch established (HRC 2005);
1890	David Dwight Baldwin starts Maui pineapple industry with plantings in Ha'ikū;
1898	Alexander & Baldwin purchase Hawaiian Commercial & Sugar Company;
1900	The Articles of Association and affidavit of the president, secretary and treasurer were filed with the treasurer of the Territory of Hawaii and <i>Alexander & Baldwin, Limited</i> became a Hawaii corporation. The Board of Directors include Joseph P. Cooke, Wallace M. Alexander, James B. Castle, Henry Baldwin and Samuel Alexander (A&B Inc 2013);
1902	HC&SC start Pu`unene mill operation;
1903	<i>Haiku Fruit & Packing Company</i> (HF&P) established as pioneer pineapple operation; <i>Maui Agricultural Company</i> forms from Ha`ikū and Pā'ia Plantations;
1904	HF&P Co builds cannery in Ha'ikū; Samuel Alexander dies after getting hit on the head from a falling boulder at Victoria Falls, Africa (A&B Inc 2013);
1905	A&B bought part of the Matson Navigation Company (KBR 2009);
1906	The <i>California and Hawaiian Sugar Company</i> (C&H) was founded and operated from 1921 to 1993 as an agricultural cooperative marketing association owned by the member sugar companies in Hawaii (HARC 2013);
1908	Hamakua Ditch Company becomes <i>East Maui Irrigation Co.</i> – from Nahiku to Maliko (KBR 2009);
1909	Keahua Ranch Co. incorporated [Maui Pineapple Company (MPC) started as Keahua Ranch];
1911	H.P. Baldwin dies and is buried at Makawao Cemetery;
1912	Pineapple planted at Honolua Ranch/Baldwin Packers;
1921	Maui Agricultural Company has merged seven East Maui companies: Haiku Sugar Plantation; Pā'ia Plantation, Kailua Plantation; Kula Plantation; Makawao Plantation; Pulehu Plantation and Kalialinui Plantation:

1925	Hāli 'imaile Store built by Maui Agricultural Co.;
1926	Kahului Cannery built by California Packing Corp (CPC). MPC transports pineapple to this cannery;
1927 1929	Camp Hāli 'imaile built; Keahua Ranch Co. name changed to Haleakala Pineapple Co., Ltd.; Haleakala Ranch Company and Keahua Ranch Co., Ltd form as Maui Pineapple Company;
1932	Maui Pineapple Company Ltd. incorporated; consolidates pineapple operations of Haleakala Pineapple Co. and Maui Agricultural Co.;
1934	Maui Pineapple Company purchases Kahului Cannery from CPC;
1947	Maui Pineapple Company takes over Hāli 'imaile Store;
1948	<i>Maui Agricultural Company</i> (Pā'ia) merges with <i>Hawaiian Commercial & Sugar Company</i> (Pu'unene) consolidating <i>Alexander & Baldwin's</i> sugar plantations on Maui under HC&S with A&B owning 35 percent of the company stock;
1962	Hawaiian Commercial & Sugar Company merges with Alexander & Baldwin and becomes a division of A&B
1962	Baldwin Packers, Ltd. and Maui Pineapple Co., Ltd. merge with Haleakala Pineapple Co., Ltd. as Haleakala Pineapple Co. (August); Haleakala Pineapple Co. changes its name to Maui Pineapple Company, Ltd. (December); Alexander & Baldwin, Inc. becomes parent company of Maui Pineapple Company, Ltd.;
1965	Hāli 'imaile Village subdivided; houses and lots (176) sold as fee simple to employees;
1969	Cameron family (descendants of H. P. Baldwin) acquires <i>Maui Pineapple Company, Ltd.</i> from parent company A&B and change the name to <i>Maui Land & Pineapple Co. Inc.</i> (ML&P); Colin Campbell Cameron became its president and CEO until his death in 1992; A&B owns Matson Navigation Company outright (KBR 2009).
1975	ML&P incorporated <i>Kapalua Land Company, Ltd.</i> as its subsidiary dedicated to resort development; and <i>Maui Pineapple Company, Ltd.</i> as its subsidiary devoted to pineapple and other agricultural operations (Wiki-MLP 2013);
1993	The member companies sold their interests in C&H to Alexander & Baldwin, Inc. in Honolulu, and the refining company's status changed from a cooperative to a corporation (HARC 2013);
1998	Alexander and Baldwin, Inc. sold its majority share in C&H to an investment group retaining a 40% common stock interest in the recapitalized company (HARC 2013);
1999	Steve Case of AOL becomes investor buying Weinberg stake in ML&P
2007	Kahului Cannery closes (PBN 2007);
2009	Maui Land & Pineapple Company re-organized into two operating segments; Maui Pineapple Company ceased its pineapple operations (Wiki-MLP 2013);
2010	A group of former MPC executives and investors resume pineapple operations in January forming a new company <i>Hāli'imaile Pineapple Company, Ltd.</i> under <i>Maui Gold Brand;</i> Steve Case increases his company holding to 60% (Wiki-MLP 2013; Osher 2009);

2013 Paul Turner current owner of lands surrounding Maui Veterans Cemetery (Imada 2012) – 129.7 acres.

4.0 ETHNOGRAPHIC DATA REVIEW AND ANALYSIS

The Ethnographic Survey (oral history interview) is an essential part of the Cultural Impact Assessment (CIA) because the ethnographic data helps in the process of determining if an undertaking or development project will have an adverse impact on cultural properties and practices or access to cultural properties and practices. The following are initial selection criteria:

- Had/has Ties to Project Location(s)
- Known Hawaiian Cultural Resource Person
- Known Hawaiian Traditional Practitioner
- Referred By Other People

The consultants for this CIS/A were selected because they met the following criteria: (1) consultant grew up, lives or lived in Hāli'imaile, Makawao and vicinity; (2) consultant is familiar with the history and mo 'olelo of Hali'imaile, Makawao and vicinity; or (3) consultant was referred by staff of Makawao Union Church or another consultant. Copies of signed "Consent" and "Release" forms are provided in (Appendix F and Appendix G).

4.1.0 Research Themes or Categories. In order to comply with the scope of work for this cultural impact assessment (CIA), the ethnographic survey was designed so that information from ethnographic consultants would facilitate in determining if any cultural resources or practices or access to them would be impacted by the implementation of the Maui Veterans Cemetery project (expansion onto Makawao Cemetery lands). To this end the following basic research categories or themes were incorporated into the ethnographic instrument: Consultant Background, Land Resources and Use, Water Resources and Use, Cultural Resources and Use; Anecdotal Stories and Project Concerns. Except for the 'Consultant Background' category, all the other research categories have sub-categories or sub-themes that were developed based on the ethnographic raw data (oral histories) or responses of the ethnographic consultants. These responses or clusters of information then become supporting evidence for any determinations made regarding impacts on cultural resources and/or practices including access.

4.2.0 Ethnographic Consultant Background and Demographics. Usually each person interviewed is asked to talk about their background; where they were born and raised, where they went to school and worked, and a little about their parents and grandparents. This category helps to establish their connection to the project area, their area and extent of expertise, and how they acquired their proficiency. In other words, how they meet the selection criteria. Ethnographic consultants either have family or personal ties to the project vicinity and/or are familiar with the history of the area.

Consultant	Born	Hawn	Lived/Lives	Work	Connection
Mary Sanford	1930	No	Makawao/Kaluanui	Maui	Baldwin/Land
Laurel Murphy	NA	No	Kihei	Maui	Baldwin Family

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4.2.1 Biographic Profiles. There is always a danger of not allowing the consultant's "voice" to be heard; of making interpretations that are not theirs; and of asking leading questions. To remedy this, the "talk story" method is used and allows for a dialogue to take place, thereby allowing the consultant to talk about a general topic in their own specific way, with their own specific words. All of the excerpts used are in the exact words of each consultant or paraphrased to insert words that are "understood" or to link sentences that were brought up as connected afterthoughts or related additions spoken elsewhere in the

interview. The following excerpt(s) in "Consultant Background" provides a summary of each consultant, as well as information about their parents and grandparents. They are presented below according to their first names as some people may have the same last names.

Mary Cameron Sanford. My name is Mary Cameron Sanford...I was born in 1930. I was nicknamed as a baby "Maizie," which is why a lot of people know me just as Maizie Sanford. I

grew up in Makawao. My parents lived in a house just down the road from the cemetery, just above Kaluanui, which was my grandparents' home on what is now called Baldwin Avenue; it wasn't named that until the war [WWII] — the military had to name everything. A lot of my family and ancestors are buried at Makawao Cemetery. I grew up on Maui, went to school at Kaunoa, and then when World War II started was sent away to the mainland, as so many young folk were, to relatives or schools. I came back in the 8th grade and graduated from Kaunoa and was sent away again to the mainland to high school. And then I went to college on the mainland. When I came back I staved on Maui for a number of years. I got married in 1957 to Wallace G. Sanford - he was at the Pineapple Research Institute, head of the Agronomy and Soil Department, and had just gotten his Ph.D., so we lived in Honolulu. Actually, I'm still here in Woodlawn Terrace Place. We raised three children here and I'm the only one at home now.



Photo 11. Maizie and Hector

My mother is Frances Baldwin Cameron. She was the daughter of Harry (Henry) and Ethel Baldwin. They lived first in Hamakuapoko and then they moved to *Kaluanui*, which they built in 1917. My mother grew up there, partly, and then when my mother married my father, J. Walter Cameron, my grandparents built a house for them next door, which was named *Ke Anuenue*, very appropriately — there's lots of rainbows there, right on the edge of the rain belt. That's where I grew up. After my mother died, the house was sold to the Fords. It's out of our hands and it was remodeled.

Harry [Henry Alexander] was the son of Henry Perrine (H. P.) Baldwin. H. P. was the son of Dr. Dwight Baldwin, who was the original missionary in the family. Dr. Baldwin was stationed in Lahaina. He had a number of children, but H. P. is my direct ancestor. H. P. had a lot of energy, a lot of business sense, and a lot of aloha. He was involved with a great deal of what went on, on Maui in the 1800s. He died in 1911. Besides being a sugar grower and politician (he was in the legislature during the days of the kingdom), he also was a great philanthropist. After he and his wife Emily Alexander had eight children, one son, Fred Baldwin, died of appendicitis, and they started the Fred Baldwin Memorial Foundation in honor of him.

There were six boys. Fred died, so there were five left. Only one, Arthur*, went to the mainland and never came back. But the others stayed. Harry, my grandfather, was the oldest. He and his youngest brother Sam [Samuel Alexander] were eventually co-owners of Haleakalā Ranch. And then there was Frank who had the H C & S plantation. Will [William Dwight] was a doctor but he didn't practice terribly long. He owned land in Haiku that had been in the family, one of their first homesteads. And he planted a lot of grapefruit and avocado trees and was interested in growing those. But as a doctor, during WWI he went on a Red Cross mission from Hawai'i to Vladivostok to help with the terrible conditions there. I wrote an article about that. It was very bad, they had an epidemic. There were all kinds of epidemics, they were very bad. The Trans-Siberian railroad would be full of cars of people dying. It was really quite something. This was after the war had ended. Everything was in chaos over there. [*Arthur graduated from Yale and Harvard; law firm *Garfield McGregor & Baldwin* – partner James Rudolph Garfield was son of US President James Abram Garfield; James was with his father when the President was killed (Wiki-HPB 2012)].

My father is J. Walter Cameron and he came from Massachusetts; so he was not born in Hawai'i. After he married my mother, he of course stayed here. He was in Honolulu one year at the Honolulu Advertiser, and then his father-in-law, Harry, wanted him to come to Maui and be the manager of the fledgling pineapple company that was at first part of Haleakalā Ranch. Then it got put on its own [Maui Pineapple Company]. My father didn't know anything about pineapple but he hired people that did and he was a good business man. And that's when the house, Ke Anuenue, was built for my parents. That's where my brother Colin Cameron and I grew up. My father was into a number of different businesses here on Maui, but basically he was the head of Maui Pineapple Company, before it became Maui Land and Pineapple Company. And then my brother Colin succeeded him as head.

His father was named Colin Campbell Cameron, which my brother was named for, it skipped a generation. But he [Grandfather Colin] worked in the Boston area for J. Walter Thompson Advertising Agency. He knew J. Walter Thompson well, so J. Walter's father Colin named his son for J. Walter Thompson. And just because Mr. Thompson was called J. Walter, then my father was too, even though "James" was there, he wasn't called James. Nobody ever called him James. He [J. Walter Cameron] was on his way to the Orient, on a business trip as a courier. But it's very vague in my mind because they didn't talk too much about it. He stopped in Honolulu on the way and got acquainted with people. Then he got sick in Asia and came back to sort of recuperate. He was rather an outgoing person and he met my mother on a blind date. And they found a mutual interest and he stayed on, didn't go back to Massachusetts. He didn't really want to go back to Massachusetts anyway. They lived in Honolulu for a year after they were married. He worked at the Advertiser, but then he went on to Maui and became involved in different kinds of businesses.

Another thing that he liked was the *Maui News*; he had newspaper blood in him. Because H. P. Baldwin and H. A. Baldwin had owned stock in the *Maui News*, my father got into that and bought stock. Eventually he became the Publisher and President of it. So when he retired from the pineapple company, he went down to the *Maui News*, had an office. He also was into different philanthropical enterprises. He helped out a great deal with the Kula Sanitarium. And that got him interested in the non-profits that were helping people. He had the idea to start what became the Cameron Center. It took him 25 years to get the funds and interest the nonprofit groups to come together under one roof with lower maintenance costs and he got donations from the Feds, the Territory, the State, County and private donors. His name is on the *J. Walter Cameron Center*.

It wasn't until later that archaeology sort of entered my life. After I finished college, I came back and took courses from Kenneth Emory at the University and then he gave me a job at the Bishop Museum. We used to go out and explore and I learned a lot about Hawaiian sites there. But there were only surface things.... I was a gofer. It was on a McInerny grant of \$100 a month — that was what I was hired to do; go to the Blueprint shop for maps and catalog artifacts from digs.

Laurel Murphy. Laurel was born and raised in Honolulu, but has lived on Maui for the past twenty years. She is a former staff writer for The Maui News; her "Keiki o ka 'Aina" column appears each Tuesday. She is currently also writing a book about the Baldwin Family.

4.3.0 Land Resources and Use.

Land resources and use changes over time. Evidence of these changes is often documented in archival records. Cultural remains are also often evident on the landscape and/or beneath the surface and provide information regarding land resources and use. However, oral histories can give personal glimpses of how the land was utilized over time and where the resources are or may have been. Mrs. Sanford had lots of information on land use, not only for Makawao and vicinity, but the project and adjacent lands as well.

Makawao Cemetery and Maui Veterans Cemetery

The Makawao Cemetery was started (I think it's on the website), back in 18-something [ca 1861] — where it was called the "Foreign Church." Reverend Green had a Hawaiian church, *Po'okela*, which is still in existence. It was all in Hawaiian. Of course the missionaries knew Hawaiian but not all of their descendants did. So the foreign church was for the English-speaking people and my great-grandfather, H. P. Baldwin, was a faithful churchgoer and the organist there. And even after he lost his arm, he got an organ that he could use his feet with. All of my maternal relatives, practically, are buried there [Maizie].

The cemetery is still there and my mother for years was on the Board of Makawao Cemetery. I sort of succeeded her; I'm still on the Board. The people on the Board have connections with the cemetery, they have relatives buried there. It's a very good, interested Board. We meet four times a year. The latest project, which is probably our biggest, is the acquiring of the extra acreage that is now owned by a man named Paul Turner. And it is going to be connected with the same sale of land to the Maui Veterans Cemetery. And that is on land that in my youth was just cattle pasture, lots of haole koa on it. And then it became pineapple-growing land...I was away at school during that period. But I do remember seeing pineapples as a teenager. I can get these dates for you later [Maizie].

After the pineapple land, I don't know what was grown on it, but it was still owned by Alexander & Baldwin, and then it got sold, not quite sure when. We can get those dates later. Now that section is up for sale. And Makawao Cemetery is anxious to get it for future expansion because the Makawao Cemetery seems to be a fairly popular cemetery. It's a very attractive one, in a beautiful location, and it's well-maintained. It has a variety of headstones, the earliest being slate stones that Reverend Green and his wife are buried at because the church was in that particular corner [SE ?], closer to Makawao [Maizie].

They [H.P. and Emily Alexander Baldwin] built the Fred Baldwin Memorial Home and a lot of the residents of the home (nicknamed "The Old Man's Home), are buried in the Makawao Cemetery in a section all by itself, off to one side...the home was a memorial to help people. And there were indigent people that had retired here that didn't have family, and no means of support. And so the home was built for them [old men] to come to and retire in [Maizie].

My parents lived in a house just down the road from the cemetery [Maizie].

A lot of my family and ancestors are buried at Makawao Cemetery [Maizie].

Makawao Cemetery was where the original Makawao Union Church was located, which was started by Rev. Jonathan Green in the 1830-50s as a *haole* spinoff of Po'okela [the Hawaiian church] located in Olinda and built in 1830. It was a wooden church. You can tell where it once sat – when you enter the gate, to the right there are two rows of grey stone that belong to Rev. Jonathan Green and his wife and others. They face west whereas all the others face east so you can ascertain where the original church was from there [Laurel].

That's how it began and became the *haole* cemetery where sugar supervisors were buried and the Baldwin family since 1905 when son Fred Chambers Baldwin was buried there. Henry [H.P.] died in 1911- he of course began the A&B domain; his wife Emily died in 1943; Harry [Henry Alexander] the oldest son and head of Maui Ag died in 1946 and his wife Ethel in 1967 is next to him. Samuel [Alexander] Baldwin [d1950] the youngest son of H.P. and Emily, and his wife Kathrine are buried there; William Baldwin [d1945] the second son and head of Alexander Settlement is there – he lived in the old Haiku Sugar Co. manager's house at the foot of Kokomo Road that has been resold many times and is now a landmark mansion. Maizie, the granddaughter of Harry Baldwin – has her family plot there. Her brother Colin Cameron [d1992] who built Kapalua and Maizie's husband [Walter G. Sanford] are buried there [Laurel].

My family plot was started by H.A and Ethel Baldwin with the burial of their sons Leslie Alexander Baldwin (1901) and later Jared Smith Baldwin (1914). My grandparents, my parents, my sister-in-law (1986), my son Allan Gordon Sanford (1990), my brother Colin Cameron (1992), and my husband Wallace G. Sanford (1992) are all buried there. There isn't much room left, maybe one more headstone [Sanford 2013c].

You should go and visit the cemetery; find H.P. Baldwin – the family is all around him. This is basically what I know or can remember right now. I don't know what land and how it expanded. The Makawao Cemetery - prominent scions of the Maui sugar industry are buried there [Laurel].

Bush Ranch-Cemetery

The cemetery grounds could have been part of Henry Baldwin and Sam Alexander's original purchase of the Bush Ranch in 1871 (900ac), which became the original A&B Plantation, in which case the two partners would have given the land. The Baldwin home was about three miles down the road in Sunnyside, and I seem to recall that the plantation began where the home is. My best guess is that it (cemetery) was part of East Maui Plantation (later East Maui Cattle Co.) and the owners were called upon to give it [Laurel].

McLane Lands

It was cattle pasture; I don't know who owned it. And this was pineapple fields from behind the houses on Baldwin Avenue all the way to Maliko Gulch, when I was a teenager. That was in Maui Pineapple country, before A & B took it over [Maizie].

Pasture, never sugar in my memory, then pineapple. It might have been sugar a generation before. I don't think it was Haleakalā Ranch, because the cows in there were Black Angus and there was a lot of *haole koa* growing. It's definitely not a ranch pasture; it was disconnected from the ranch. Ranch pastures were above Makawao...It must have been part of Grove Ranch, which was connected with Maui Ag Company because I think they had the Black Angus [Maizie].

Maliko Gulch [The project property runs adjacent (S) to the upper north rim of Maliko Gulch.]

Maliko Gulch starts at the ocean and it goes up past Olinda, it's the biggest gulch in Maui, my grandfather used to say. It divided Hamakuapoko from Haiku [Maizie].

Kaluanui Road goes below *Kaluanui House*, goes down through Maliko Gulch and then up on the other side, on the road to Kokomo and down to Haiku... It is a County road and goes through Maliko and curves around and goes up — Kokomo's there and Haiku's down here [Maizie].

Reverend Green's Lands

"Green," you see that? The preacher he also had some land and he was growing corn. There were

a lot of entrepreneur types, trying different crops. I know my grandmother remembers driving up to Makawao from Hamakuapoko and there were wheat fields up in Makawao. They tried all kinds of things [Maizie].

There were so many parcels above Makawao, and some of them had Hawaiian names. Laurel did go to the archives in Honolulu and go through all the records, where everything is registered from the very beginning. From the very early days, this is right after the Mahele. Different people bought, Green bought land to grow corn and wheat on, and a whole bunch of other people [Maizie].

Kaluanui

Kaluanui [down the road from the cemetery], which was my grandparents' home on what is now called Baldwin Avenue. It wasn't named that until the war [WWII], the military had to name everything.... My mother is Frances Baldwin Cameron. She was the daughter of Harry and Ethel Baldwin...they moved to *Kaluanui*, which they built in 1917. My mother grew up there, partly, and then when my mother married my father, J. Walter Cameron, my grandparents built a house for them next door, which was named *Ke Anuenue*...that's where I grew up.... *Kaluanui* is still there. *Kaluanui* would be down Baldwin Avenue here and it would be in this little cluster [Maizie].

[From] Makawao [Maui] Veteran's Cemetery, there's a curve in the road where the Banyan Tree B & B is — at one time my grandmother lived there. And then you go down maybe half a mile,

where it's straight, and there are several houses along there. The house with the Italian cypresses lining the driveway, and the gate in front that was put up by the new owners — that was my parents' house – *Ke Anuenue*. Then there was a pasture which is now mostly filled with the Montessori School. The house right next to Montessori School is *Kaluanui*, which is now owned by the Hui No'eau Visual Arts Center...that used to be my grandparents' house. And the Hui No'eau, over the years, has restored it very well, so it still looks the same [Maizie].



Photo 12. Italian Cypress trees



My grandfather loved horses. So he got me on a horse very early and we used to go horseback riding twice a week. And I loved him so much and I loved everything about growing up there. He lived at Kaluanui and the stables were there. We'd go riding from there into the pineapple fields and the cane fields, and occasionally into the pastures. It was just a wonderful time; I loved it [Maizie].

Photo 13. Little Maizie on 'Sir Grey'

Hāli'imaile

I recall that the entire 4,000 or so acre ahupua'a of Hāli'imaile, which included the East Maui Plantation, was sold right after the first Mahele in the late '40s by Kekauonohe (i?), granddaughter of K1, wife of K2, then governor of Kaua'i. She and her husband operated a small sugar plantation there which became Hāli'imaile Plantation when Judge Parsons purchased it, then selling a half interest to Stephen Reynolds [Laurel].

Corn Mills and Cornmill Camp.

There was more than one corn mill. I did some research on it. There was one corn mill right in the middle of Makawao town, right about where Komoda's Store is. And that was started by von Tempsky and he ground corn for cattle feed and other things. When he became manager of Haleakalā Ranch, that corn mill was abandoned. And then the ranch built another one over at Pukalani, just on Makawao Road opposite the Superette, and that was called Cornmill Camp. There were houses built there and a corn mill. The corn crop and the soil, everything kind of failed after World War I. The buildings of Cornmill Camp were then utilized for the pineapple workers. The pineapple company was coming up and they could use the land, but they still kept the name Cornmill Camp.

Baldwins, Maui Lands and Businesses

Maui Pineapple Company. Well it had been branched off from the ranch and that's the one that my father was the manager of. And there was stock in the family. I guess my grandfather owned quite a bit of it. A & B owned Baldwin Packers on the west side, which was another pineapple company. And they owned a lot of land over there. And they took over Maui Land & Pineapple. I wish I knew the details of the dates and everything. I can get that to you very quickly once I get to Maui because that part is important [Maizie].

Maui Pineapple Company. For the pineapple company, the only villages were Hāli'imaile and Cornmill Camp. The other camps were for sugar workers. Hāli'imaile was started by my father and they started with better housing and all kinds of amenities that the sugar camps didn't have. That was just Maui Pineapple Company. But there were just the two camps that the pineapple workers lived in (Hāli'imaile Village and Cornmill Camp) [Maizie].

A&B, HC&S and Matson. They [H. P. Baldwin and his brother-in-law Sam Alexander] knew some engineering from mainland colleges and they formed this partnership. There were so many sugar plantations and they kept changing ownership in the early days. Alexander & Baldwin, Ltd. was not just owner of sugar plantations, but as a sugar broker they needed transportation of the finished product to the mainland, so Matson was a subsidiary. Just recently they broke Matson out from A & B Co. Ltd. And of course A & B now only has one sugar plantation left, which is Hawaiian Commercial & Sugar Co. Ltd. (H C & S). But they own a lot of land and they do a lot of development. The land came from purchasing property in the old days that were not used very much because it was so dry back then. But with the ditch they could irrigate it [Maizie].

A&B Today. Now there's nobody, I think, in the family (my relatives) that are on the Board of A & B. It's like with the other so-called "Big Five" they're all owned by people on the mainland. The Board of A & B is not mainland-oriented, but they are more interested in development and making money. The original founders wanted to make money for themselves and other people and founded a great deal of enterprises that helped the people of the islands. It was a different orientation [Maizie].

Maui Agricultural Company and HC&S. My grandfather, Harry Baldwin, son of Henry Perrine Baldwin, was President and Manager of Maui Agricultural Company which consolidated the sugar plantations over in the Ha'ikū, Hamakuapoko, and Hāli'imaile areas. Then his brother Frank Baldwin was head of H C & S, which was centered in central Maui, around Pu'unene. I don't know where the Spreckelsville plantation was, I don't know how extensive that was but it got absorbed into the HC&S sugar plantation too after Spreckels left [Maizie].

Maui Agricultural Company. That was a consolidation of Haiku Plantation and some others, by my grandfather, Harry. And that had the mill in $P\bar{a}$ 'ia, great big mill which is still being torn

down. The office building is still there, used by East Maui Irrigation. Pā'ia was a pretty big town. It had a nice big store and a lot of things.

Haleakalā Ranch. It was Fred Baldwin that starting buying up little parcels. He really liked ranching and was a great horseman....Fred Baldwin was still going to school when he died. It was his cousin, Charles Hodge Alexander, who really liked ranching, Fred did too. He started buying up little parcels and the Baileys and a bunch of other people were in on buying some too. There were small little *kuleanas* (sic) that were owned by Hawaiians that were given them during the Mahele. And the *ali'i* had some and sold theirs, but that was over in Hāli'imaile — bigger tracts. Eventually there was a fair amount acquired for Haleakalā Ranch and besides cattle, they tried other kinds of crops here and there, like the corn crop. When it was finally consolidated, the owners turned out to be Harry Baldwin and Sam Baldwin, they co-owned the ranch and then my grandfather gave an extra few shares to Sam so that he could be the majority owner. And he liked ranching, of course my grandfather loved horses too, but Sam ran the ranch and it passed down through his son Richard, who was nicknamed "Manduke" Baldwin, and then Richard's son Peter. But now the ownership of the ranch is spread out amongst quite a few younger generations. But it's still family-owned. This June they're planning all kinds of celebrations for little over a week for the 125th anniversary of the ranch [Maizie].

Haleakalā Ranch. Emily Alexander married H. P. and so the Alexander family came in. Charles Hodge Alexander was buying up the parcels — he was the son of Reverend William Alexander and his wife Mary Anne, who was a missionary and the teacher at Lahainaluna, and they lived later in Wailuku in what is now the Alexander Settlement House [next to Bailey House Museum]. His son Charles Hodge [Charles was the brother of Samuel T. Alexander].had an accident falling into a gulch. He was a wonderful rider but something happened and he injured his head and was never the same again. Eventually he died. And that's when the others in the family took over...Baldwin cousins, the Baileys and a bunch of others...the [Baileys] were bought out.... Charles Hodge Alexander married a Thurston, Helen Thurston and her nickname was Helen Blazes, because she was I guess quite a wild character and she's the one that inherited what lands he had purchased for a ranch. That's what was the nucleus of Haleakala Ranch and she sold it to the Baldwins [Maizie].

Mauna Olu Seminary/Seabury Hall.

Where Maluhia is now, just above Makawao town. You know where Seabury Hall School is? It's right in front of that along Olinda Road. That was built by H. P. and Emily as their last home and after he died, Emily stayed on until she died, and then it was in the family. Seabury Hall was built originally by Dr. Will Baldwin and his wife, but it was next to the house that his mother and father lived in [Maizie].

Rice Ohana Connection.

One of H. P. Baldwin's sisters, Charlotte, married Harold Rice. Wendy is the granddaughter of Harold Rice. Her father is Henry Rice and his brother is still alive. Henry went into banking and the other brother went into Big Island ranching [Maizie].

4.4.0 Water Resources and Use

The Hawaiian word for fresh water is *wai*; the Hawaiian word for wealth is *wai wai*. This is because of the value the ancient Hawaiians placed on fresh water, which was crucial for growing taro, the staple of the Hawaiian people using the *'auwai* or irrigation system. Fresh water was also crucial in the lifecycle of stream inhabitants such as the *'o 'opu* and *'opae*, as well as some of the marine life that depended on the benefits of brackish water areas. Fresh water was valuable in other ways such as natural springs and crop irrigation components.

Drought, Prayer for Rain and Reciprocation.

That's because H. P. swore that — there's a famous story before the ditch. This is when he was out looking at his sugar plantation that was dying in the drought. He got off his horse and prayed to God that if he would be blessed with rain to save the crops and his enterprise, that he would forever give part of his earnings back to God. Of course being the son of a missionary, he was very interested in helping the church and helping people. My great-grandmother Emily [his wife], she helped so many people. All through her life, she lived to be over 98 years old, she sent so many people to school. She did a lot of things quietly, she supported the Alexander Settlement. And my grandfather Harry Baldwin, he said anybody that came to him he always helped where he could, except he drew the line at "wife-beaters" [Maizie].

East Maui Irrigation (EMI) Ditch.

H. P. Baldwin and his brother-in-law Sam Alexander were the ones that dug the ditch that brought the water over. This is very simplistic. They joined forces and did the engineering and brought the water over from the wet side to central Maui for sugar cane plantations, originally. And that was quite a feat. They knew some engineering from mainland colleges and they formed this partnership [Maizie].

There was big competition between Alexander & Baldwin [A&B] and Spreckels while the ditch was being built. If H. P. and Alexander hadn't brought the ditch in on time then Spreckels who was building another ditch was going to take over. You can read more about this history [Maizie].

Maliko Gulch.

[Water] Not all the time. I guess it must have some water all the time...way up in the mountains some of it can get dry, but there are still pools of water [Maizie].

It wasn't used for fishing, but it goes all the way down to the ocean and then there's a landing there. It's not a very good beach, it's a rocky beach. But it's the opening of where the stream goes. It's very good SCUBA diving, I understand — just on the other side of it, Maliko.

['O'opu, hihiwai, prawns, or 'opae] Not that I ever heard about. It might have on the lower section. We never went swimming there or anything. I know that above there must be quite a few pools [Maizie].

Pu`u Pi`iholo

Above Makawao and over towards Pi'iholo Pu'u — Pi'iholo is a very prominent hill and there is a stream there and I know people have gone swimming there for generations. And in fact, the girls that lived in the first seminary, Mauna Olu Seminary, they used to go over there and swim. That was kind of where they bathed [Maizie].

Kaluanui/Ke Anuenue

But when the house [*Ke Anuenue*] was built there was this old reservoir. It had walls but then the other side was open. And there had been a few houses [Maizie].

4.5.0 Cultural Resources and Use

This category represents traditional Hawaiian cultural resources and practices and other ethnic resources and practices. The traditional Hawaiian cultural resources and practices, includes the pre-contact era, as well as cultural practices after contact. Cultural Resources can be the traditional *wahi pana* or sacred places, any cultural gathering place, or the tangible remains of the ancient past. One of the most significant traditional Hawaiian cultural resources is the *heiau* or places of worship. Other places of great significance for all cultures are the burial places of loved ones.

Hawaiian Traditions. In the Grove Ranch area, which was right across the street from *Kaluanui*, the buildings in the little village were there before *Kaluanui* was built, and there was a Portuguese



oven in the pasture. That was fun to go and look at. And my grandfather and I would go over to Maliko Gulch and look at the ditch. There was nothing particularly Hawaiian. There weren't any heiau around there. But when my parents' house was built [*Ke Anuenue*], there must have been a Hawaiian site there somewhere before it had been part of the plantation (Maui Agriculture). There was an old

reservoir on the grounds that was empty. Certain artifacts were found and here's one of them, from right where the garage was built. Not a particularly fancy one [poi pounder] also [*ulu maika*], But it (little village) had been abandoned long before. No houses were torn down to build my parents' house [Maizie].

Photos 14 and 15 Kaluanui poi pounder and ulu maika

Makawao Paniolo. Well a lot of them were cowboys and worked on the ranch. I'm not sure if others were farmers. But there were certainly lots of Portuguese. I have a great-niece that's married into a Makawao cowboy family named Montalvo — lots of relatives, but they're all part of that Paniolo tradition. There's a Fourth of July Parade — they're still doing that, right through Makawao town. And there used to be signs along the sidewalk that said "No horses on the sidewalk." We were definitely a cowboy town [Maizie].

4.6.0. Anecdotal Stories and Tidbits.

Often consultants share stories are not necessarily pertinent to the project, but never-the-less should be shared. Such is the case with the stories and/or tidbits below.

Uncle Jared Baldwin/Kenneth Emory Story. There's a story about my uncle and his friend Kenneth Emory, who as boys went riding into the crater. At that time Haleakalā Ranch also owned the crater. And they went goat hunting, this is what they did. One time they were in the crater and got hungry for ice cream. I guess they were tired of eating just goat. So they rode out of the crater all the way down to Makawao. After Olinda there were no paved roads, just dirt roads. Just before they got to the town, they kicked up their horses and they roared in, and pulled up in front of the store with the soda fountain. They got off the horses and walked in there and they acted just like they were in a Wild West movie. They pounded on the counter and asked for ice cream! And they ate ice cream and they went back up. Can you imagine the poor horses? All the way back up! It's a long ride [Maizie].

Emory/Smith Neighbors. Actually his father [Emory] was an architect, and he and his partner built a number of buildings here, one of which is the Honolulu Advertiser building. They're still talking about tearing it down, which is a shame. He (Kenneth) was brought here [to Hawai'i] as a tiny kid. He grew up in Honolulu, in Nu'uanu. My mother and her brother Jared's mother Ethel (Smith) Baldwin, was the daughter of William Owen Smith. The Smiths lived in Honolulu and so the kids would visit often and got to know the Emorys [who lived] next door. He (Smith) was a lawyer and attorney general and he was also involved with the Overthrow. And he later became Liliuokalani's attorney for her estate. Because of his involvement with the Overthrow, he has a bad reputation among the Hawaiian activists. But H. P. Baldwin, a contemporary, was on the opposite side, he did not want the Overthrow. When H. P. Baldwin stood up in the legislature during the days of the Kingdom and he made a speech that they weren't doing it right; he was booed...because the others didn't like to hear what he had to say – objecting to the way they were going about it [Maizie].

Kenneth Emory-Family Friend. Well he was a family friend, so I knew him before I was a teenager. But when I took his courses at the University I got to know him really well, and on a different footing, as a teacher and an archaeologist - a foremost one at the Bishop Museum. His first trip into the Haleakalā Crater for a Bishop Museum survey opened his eyes, "This is what I want to do for the rest of my life." Kenneth was like a mountain goat, he could walk all over the mountain surveying [Maizie].

Kenneth Emory-Inez [MacPhee] Ashdown Clash. My grandfather was partner with her father [Angus MacPhee], with the Kaho'olawe Ranch over on the island of Kaho'olawe. Inez was his daughter and my mother never respected her. After her father died, she and her mother and another member of the family kept writing letters to my grandfather begging for more money, thinking he should be supporting them in lots of ways. Her letters are whining, and then she set herself up on Maui as an authority of all kinds of anthropology and archaeology. She did write a book on Kaho'olawe. Once she took Kenneth and me in a car over to the west side, she was going to show him sites and we stopped and she pointed to a great big rock and said, "That's the princess that was turned into a rock because she fell in love with a commoner on Moloka'i." She had this elaborate Hawaiian myth and Kenneth didn't say much to her but it was obviously a rock that had been moved there when they built the road. And it was not an ancient Hawaiian artifact. So he didn't pay very much attention to the stories she used to tell [Maizie].

Mary Pukui and Bishop Museum. I was kind of scared of her [Mary Pukui]. She was sort of formidable. But I think she was very nice. But I was this lowly person and Kenneth Emory would bring to the Museum leis of *pua kenikeni*, because he had a huge tree, and the flowers were always falling down. You could make a *lei* so quickly. He used a wire with string. He had me go around to the different departments. I'd take one to her and give one to Dorothy, the secretary for the head of the Museum at the time, and to Ellie Williamson (Ellie went with her to record) and others...Dr. Alex Spoehr – he left the Museum and went to the East-West Center then he couldn't stand the politics. But his son Hardy Spoehr is still here and for a long time he was working at the Kaho'olawe restoration...I knew Marie Neal and Margaret Titcomb at the Museum [Maizie].



Photo 16. Ellie, Emory, Sinoto and Maizie (rt), Russ Apple (back).

'Iolani Luahine. I met 'Iolani Luahine. I was expeditioning over on the Big Island with Kenneth. The Bishop Museum was hired to do the survey for Honaunau before it was a National Park. We drove around and Kenneth knew everybody. We were sitting around at Hulihe'e Palace grounds and there were a bunch of like-minded people interested in Hawai'i and she ['Iolani Luahine] was the curator there. And the stories were so much fun. She was quite different when we saw her just dancing. When she danced she exuded an enormous amount of *mana*. She was marvelous dancing. And she was a lot of fun. And there was laughing and people making jokes and laughing.

Once at the Art Academy, years ago and the other time was at the University in the amphitheater. You just don't forget that. The movies of her don't show that. I mean they show how wonderfully she could dance. But they don't show spirit and the electricity. I was really privileged; the electricity that came out of her fingertips [Maizie].

Emory Digs - Kuliou'ou Cave and Refugee Cave. Kenneth took us students on archaeological digs, one was in a cave at Kuliou'ou [O'ahu]. And we dug and we talked. The really exciting things were the tattoo needles. They were carved out of fish bones or bones. They were very delicate, like a comb. Little needles. That's the only place that we've ever found tattoo needles. And being right there next to where the fishpond was.... Mostly [I found] little bits and pieces. This little chip, I was allowed to keep this. When I working for Kenneth I did a lot of numbering or cataloging. This is a chip off of a stone that was being made into an adze. But the really exciting thing...was over on the Big Island. We went into a refugee cave that somebody had told Kenneth about. It was not in Honaunau, but it was next to it. It was where the refugees hid from the Kamehameha wars; he was fighting battles with the different chiefs, to get supremacy on the Big Island. And there was a series of interconnected lava tubes, lower ones and upper ones. We crawled in and Amy Greenwell helped out too. We had hats, just like in that picture. We found an amazing amount of things like fishhooks. And I found one little section...I put my hand down and had seen a little gleam of a fishhook. I called "Dr. Emory!" And Yosi Sinoto was with us too. And we kept digging through the dust and the fishhooks were sort of just hanging off of our fingers. And it was a cache of fishhooks that had been dropped by what was very obviously a master fishhook maker. There were some blanks, but most of these were two-piece fishhooks, the kind that were put together and tied. But of course, by then anything that was vegetable had been eaten by the cockroaches. You look up and you can see them on the ceiling in all those lava tubes; enormous Kona cockroaches. So we kept our hats on all of the time....I remember when we found

a single fishhook we would put it in the wooden matchbox and take them back to get catalogued. One day I dropped one box and left it there, and the next day when we went back, the cockroach had eaten most of the box but of course left the fishhook. There were lots of stuff and of course the features. The whole Honaunau area, you couldn't beat, there was everything. It was such a thrill. Kenneth had gotten a lot of information from Stokes. Stokes had gone around the island and written up a lot of stuff. There was every possible kind of site, there were *konani* boards, and the *Pu'u Honua heiau*. There was one little tide pool that was named Pohaku-nana-lā and we put on our bathing suits, and we lay down, and we were supposed to see the sun as a blue pearl. Well, we lay down in it and we looked up through the water and we didn't really see that. But that was the name of the pool. And there were the structures, the platforms, the special stones, the Holua slides up on the hill, the features, coral in the water, there was a coral feature the shape of a dog or *'ilio*, and all the little shrines; small little platforms – fishing shrines. It was so much fun. It [photographing] was done carefully for the report and went to the National Park...I think the things are still there at the Park because the Park would not have destroyed them.





Photo 17. Maizie with Yosi Sinoto, and Kenneth Emory at South Pt. outside the fishing shrine pointing to petroglyph.

Photo 18. S. Kona Fishhooks



Photo 19. Maize and Dr. Emory.

Honaunau Ki'i and Ka'ai. They [ki'i or tiki] were duplicates because the artist that saw them when they were still being used, he drew them - not Captain Cook's artist. So they duplicated it. [The originals] disintegrated or were destroyed. Actually, most of the burials that were there were taken to the Royal Mausoleum. But a number of years ago, the two ka'ai, Lonoikamakahiki and Līloa – their sennit [aha] caskets, were taken away by somebody from Bishop Museum, where they had been housed. They were so special. And Yosi said it was an inside job. It's so awful to think that they're maybe stuffed somewhere in a cave disintegrating. The workmanship, Yosi said, that was a different type of sennit-making than the usual type. So they were really special. They contained the bones of those famous chiefs. I'm just so sad to think that those things are not being protected and not available for future history [Maizie].

5.0 SUMMARIES and ASSESSMENT

This cultural impact assessment (CIA) is based on two guiding documents: Act 50 and Environmental Council Guidelines (1997) [see Appendices A & C].

5.1.0 Act 50 [State of Hawai'i 2000]. H.B. NO. 2895 H.D.1 was passed by the 20th Legislature and approved by the Governor on April 26, 2000 as *Act 50*. The following excerpts illustrate the intent and mandates of this Act:

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit" in Hawai'i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

5.2.0 Summary of Findings

The following summaries are based on the information presented in the previous sections: the traditional (cultural) and historical literature background review and the ethnographic data and analyses. References are not cited unless it is new information and not already cited in the text above. These summaries condense the information above, but also serve to focus on a few significant individuals and events in history in relation to the project lands, in the *ahupua*'a of Makawao and Hāli'imaile, Districts of Makawao and Hamakua Poko, Maui Island, as well as give a broad overview of land, water and cultural resources and uses in the general area, as they reflect cultural resources (properties) and practices and access to them.

5.2.1 Summary of Significant People and Events. According to traditional and historical material, most of the land in Hawai'i has gone through land modifications over time, including the lands of Makawao and Hāli'imaile Ahupua'a, and have witnessed the comings and goings of many significant people. Some of these people may have contributed substantially not only to the history of this area, but of Maui Island and the rest of the Hawaiian Islands as well. There were several people and events noted in the oral histories. Some of these significant entities traversed these lands or vicinity.

5.2.1.1 Legendary Entities. The forested zones were considered the realm of Hawaiian deity, especially Kū and sometimes Lono and Laka, but it was also where medicinal plants and hardwoods were gathered. The project lands were heavily modified by agricultural and ranching activities during the early historic period. They may have been modified during the pre-contact period as well as the *mo olelo* mentions Kiha-a-Pi *olelo* mentions were potatoes in the Kula-Makawao area. Some of the forested lands may have been cleared in the pre-contact period.

Lauhuki and Kili'oe were the *mo'o* guardians of the cool waters of Kālena and all of the ponds at Makawao. However, the closest pool or swimming hole was up near Pu'u Pi'iholo, as distance from the project lands. Makawao was noted for its drought.

5.2.1.2 *Ali'i Nui*. The *ali'i nui* would have jurisdiction over all of Maui's lands, but a few are still remembered in the *mo'olelo* that connect them to the project area and vicinity such as Lono-a-Pi'ilani, his brother Kiha-a-Pi'ilani and a descendant of theirs, Kahekili II, the last *mo'i* or king of Maui who was born in near-by Hāli'imaile.

5.2.1.3 Historic People and Events. There are a plethora of significant historic people and events that are connected to the project lands and vicinity:

- 1838 Governor Hoapilikāne (Maui) gives a 50-yr lease to William McLane and Edwin Miner for ranchingit is confirmed by Kamehameha III and witnessed by William Richards and Kanakaole — they retained these lands for a few years then gave them up;
- 1840-1841 Commander Charles Wilkes of the US Exploring Expedition describes the William McLane-Edwin Miner plantation of... "well kept fields of cane extend in front of the house over 100 acres; fences enclose it in part and separate it from verdant pasture ground; corn and pumpkins have their allotted space; clumps of trees here and there resemble orchards...McLane's sugar mill is about a half-mile below his house. The sugar of this region ripens the same as at Mr. Torbert's place and is of excellent quality. The produce to the acre is about one ton. At present the mill is worked by animal power, but Mr. McLane proposes erecting a wind-mill as more economical;"
- 1843 Rev. Jonathan Smith Green founded the Hawaiian church *Po'okela* at the request of Chief Kiha on lands donated by King Kamehameha III in Olinda;
- 1847 Rev. Green granted an 87.7 acre parcel at Makawao (RP 68) as a part of the Makawao Land Program or Makawao Model farm Minister of Interior was Dr. Geritt P. Judd;
- 1847-1849 William McLane, wife Maile Makalena and Edwin Miner purchase two parcels of land (totaling 688.94 acres) at Makawao (Grants 64 and 157) for ranching and for sugar plantation (McLane Plantation/Dow and Park's Plantation);.[Also LCA 426];
- Kamehameha III claims Makawao as Crown Lands with the exception of McLane/Miner lands; but in 1848 he relinquished Makawao as Government Lands;
- 1849 John T. Gower (Grant 216) becomes a partner with Miner & McLane (it ends in the 1850s)
- Hāli 'imaile Plantation is started by Stephen Reynolds and Alfred W. Parsons on leased land in Hāli 'imaile;
- 1850 Kamehameha III awards John T. Gower (Grant 216) 404 acres of Makawao lands adjoining McLane-Miner and Kaaea's lands (Grant 499);
- 1857 Rev. Jonathan Green conducts English service in his Makawao home;
- 1857 Stephen Reynolds dies and *Hāli imaile Plantation* is bought by Charles Brewer II; changes name to *Brewer Plantation*;
- 1860s T.H. Hobron starts *Grove Ranch* on 3,000 acres in Hāli'imaile and Pā'ia ; his Waihe'e sugar mill is managed by Samuel Alexander and his field boss is H.P. Baldwin;
- 1861 the Makawao Foreign Church and Congregation is commissioned by Kingdom Minister of Interior Prince Lot who later becomes Kamehameha V – Rev. Jonathan Green is the pastor of the wooden church built on the current Makawao Cemetery; it was torn down in 1889;
- 1863 Brewer Plantation is sold to Gerrit P. Judd, Samuel Wilder and Albert Judd
- 1869 Henry Perrine Baldwin and Samuel Thomas Alexander form partnership with purchase of Bush Ranch called *Alexander & Baldwin* (A&B) the partners plant their first sugarcane crop the following year;
- 1870 H.P. Baldwin and wife Emily Alexander Baldwin join the Makawao Union Church congregation; H.P. becomes the organist;
- 1870s Sanford B. Dole buys out mortgages of Grove Ranch and becomes one-fourth owner;
- 1876 Alexander & Baldwin begin the Hamakua Ditch project (later to become East Maui Irrigation Co. they finish two years later;
- 1876 industrialist Claus Spreckels competes with Alexander & Baldwin to build a viable irrigation source;

- 1878 Rev. Jonathan Green dies and is buried in Makawao Cemetery;
- 1880 Sanford B. Dole claims ownership of Hāli'imaile Ahupua'a in fee simple;
- 1880 King Kalākaua declares Hāli'imaile as Konohiki lands and awards it to chiefess Mikaheka Kekauonohi (RP 7512), granddaughter of Kamehameha I her lands adjoin the following lands (Hāli'imaile and Makawao) in various places: East Maui Plantation, Hobron Plantation, RP 2342/Kekahuna, Haiku Sugar Company purchased by T.H. Hobron, lands of Alexander and Baldwin purchased from Haiku Sugar Company, former Brewer Plantation lands, ancient Ulu maika Course near Brewer Plantation and Grant 216/Gower and Grant 499/Kaaea, and along Grant 64/McLane to Maliko Gulch her husband Levi Haalelea later inherits her lands;
- 1889-1896 Rev. John Kalama is pastor of both new wooded Makawao Union Church and Po'okela Church;
- 1890 David Dwight Baldwin starts Maui pineapple industry with plantings in Ha'ikū;
- 1903 Haiku Fruit & Packing Company, Ltd is chartered and H.P. Baldwin becomes president, David D. Baldwin vice-president, Harry Alexander Baldwin secretary and William Baldwin manager;
- 1906 Frank F. Baldwin succeeded his father H.P. Baldwin as manager of HC&S;
- 1910 Maui Pineapple Company founded in Pauwela (a Japanese company);
- 1910s Kenneth Emory friend of the Baldwins...rides up to Haleakala Crater....
- 1911 H.P. Baldwin dies, is buried at Makawao Cemetery and son Frank takes over HC&S as president and manager Asa Baldwin became vice-president;
- 1917 Charles William Dickey designed new stone Makawao Union Church (3.9 miles north of Makawao Cemetery), which replaced the wooden church built in 1889;
- 1917 the Hawaiian Pineapple Company sold its holdings in the Haiku Fruit & Packing Company to a Maui *hui* headed by Harold Rice;
- 1918 first WWI veteran Anthony R. Matos was buried at Maui Veterans Cemetery
- 1922 Harry Baldwin elected to fulfill the term of Prince Jonah Kūhiō Kalaniana'ole in DC as Congressional Delegate;
- 1925 J. Walter Cameron becomes manager of the pineapple department of Haleakala Ranch Co.;
- 1929 the pineapple division of Haleakala Ranch Co. splits and incorporates as Haleakala Pineapple Co.;
- 1932 reorganization of Maui Agricultural Co. merging with Haleakala Pineapple Co. and incorporated as Maui Pineapple Company Ltd. [MPC] with headquarters at Hāli'imaile and J. Walter Cameron as manager;
- 1946 Harry Baldwin dies and is buried at Makawao Cemetery;
- 1950s → Maizie takes classes from Emory at UH; goes on several Bishop Museum digs/surveys;
- 1969 the Cameron family, descendants of H. P. Baldwin and his son Harry A. Baldwin, in an agreement with the parent company Alexander & Baldwin, acquired Maui Pineapple Company, Ltd., and changed the company name to Maui Land & Pineapple Company, Inc. (ML&P), becoming the parent company of Maui Pineapple Company, Ltd. and ML&P went public;
- 1976 J. Walter Cameron dies and son Colin Campbell Cameron is elected Chairman of the Board of ML&P and its subsidiaries;
- 1992 Colin Cameron dies and his sister Mary C. Sanford was elected Chairman of the Board and Gary L. Gifford was named President and CEO of ML&P;
- 1996 Frances Hobron Baldwin Cameron dies and is buried at Makawao Cemetery; her daughter Mary Cameron Sanford takes over as member of Makawao Cemetery Board;
- 1999 Steve Case of AOL becomes investor buying Weinberg stake in ML&P;
- 2010 a group of former MPC executives and investors resume pineapple operations in January forming a new company *Hāli imaile Pineapple Company*, *Ltd.* under *Maui Gold Brand* and Steve Case increases his company holding to 60%.
- 2013 Paul Turner current owner of project lands.

5.2.2 Significant Practices Pre-Contact and Post-Contact. Prior to and after the first people came to Maui, the lands of the project area was considered 'lowland dry and mesic forest, woodland.' The annual rainfall in this zone is between 20-80 inches; it was warm to hot with seasonal drought. The plains or lower slopes, dry ridge tops and cliffs would have supported *pili (Heteropogon contortus)* grasslands or $k\bar{a}welu$ (*Eragrostis variabilis*). The dry or mesic shrubland vegetation may have included shrublands of 'a 'ali'i (Dodonaea viscosa), ' $\bar{a}kia$ (*Wikstroemia* species), *ko'oko'olau* (*Bidens* species) and ' $\bar{u}lei$ (*Osteomeles anthyllidifolia*). Dry forest areas would have included ' $\bar{o}hi'a$ (*Metrosideros polymorpha*), *koa* (*Acacia koa*), *lama* (*Diopyros sandwicensis*), *wiliwili* (*Erythrina sandwicensis*) and rarer trees on ridges. Mesic forests of ' $\bar{o}hi'a$, *koa* or *lama* and rarely *olopua* (*Nestegis sandwicensis*) or *halapepe* (*Pleomele* species) could be found in gulches, on lower slopes and less-disturbed areas. In forested area ferns

Prior to human settlement native birds populated the forests of Maui; they would have included 'elepaio (Chasiempis sandwicensis), 'apapane (Himatione sanguine), 'amakihi (Hemignathus virens) and the pueo or Hawaiian Owl (Asio flammeus sandwichensis) - a subspecies of Short-eared owl that is endemic to Hawai'i. The pueo continues today to be an 'aumakua or family guardian for several Hawaiian families. The Hawaiian hoary bat or 'ope'ape'a (Lasiurus cinereus semotas) was the only endemic terrestrial mammal in Hawai'i prior to the first human settlement that has survived.

After ancient settlement in this area the project lands would have been part of the ancient Hawaiian life patterns which included gathering practices of woods, medicine plants and bird feathers. They were most likely also used for Hawaiian cultivation practices such as sweet potatoes, yams, dryland taro, '*awa*, arrowroot, sugarcane, breadfruit and *kukui* or candlenut; in the gulches banana. According to the *mo*'*olelo* of Kiha-a-Pi'ilani's time [ca 1500-1600s] when he was living in the Kula-Makawao area, there was a famine and people subsisted on ferns and weeds such as *laulele* (butterfly weed/milkweed), *pualele* (sow thistle) and *popolo* (black nightshade) until he helped to plant sweet potato.

During the early historic period these lands may have been part of the sandalwood trade practices - cutting trees down for the China trade. Then by the early 1800s the lands were used for sugarcane crops, then ranching or pasturing cattle, agriculture (e.g., corn, wheat, pumpkin) followed by pineapple crops. Today the lands are fallow with primarily alien brush vegetation [see Figure 1].

5.3.0 Environmental Council Guidelines Criteria in Relation to Project Lands – Cultural Impact Assessment.

According to the Environmental Council Guidelines, the types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, religious and spiritual customs. The following actions were taken to meet the EC Guidelines Criteria for conducting this cultural impact assessment based on the SOW:

1) conduct historical and other culturally related documentary research;

Documentary research, particularly on identifying traditional and cultural uses of the area, was completed. Much of what is known about the traditional and cultural uses of the area comes from written records that tell of its prehistory (e.g., *mo 'olelo;* 19th century ethnographic works); and the stories associated with early coastal and upland area uses by early Hawaiians.

2) identify individuals with knowledge of the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua'a*; or with knowledge of the area potentially affected by the proposed action [e.g., past/current oral histories]; Attempts were made to identify individuals who have expertise concerning the types of cultural resources, practices and beliefs found within the vicinity of the Project Site. The efforts were specifically directed towards identifying $k\bar{u}puna$, elders who have long histories to share about the project site, and long-term non-Hawaiian residents who may know of the area's history. The project lands have been in non-Hawaiians hands since at least 1847. However, one of the most knowledgeable people connected to people and events of these lands was identified and interviewed.

3) identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and

Archival research in Chapter 3 (Cultural and Historical Background Review) and ethnographic research in Chapter 4 (Ethnographic Data Review and Analysis) identified potential cultural resources, practices and beliefs within the project lands. [See section 5.2.2 above]

According to the Kiha-'-Pi'ilani *mo'olelo* there were little villages or *kauhale* in the Hāli'imaile-Makawao-Kula area. When Ms. Sanford's parents were building their home *Ke Anuenue* (now the Hui No'eau Visual Arts Center) they found a couple of Hawaiian artifacts (poi pounder and *ulu maika* – See section 4.5.0 above); that area may have been close to the ancient `*ulu maika* course.

According to Ms. Maizie Cameron Sanford (granddaughter of Harry Alexander Baldwin and Ethel Smith Baldwin, daughter of J. Walter Cameron and Frances Hobron Baldwin Cameron), who grew up in the immediate area of the project lands the former McLane lands (Grant 157):

- the lands may have been part of sugarcane lands a generation before her youth
- in my youth it was pasture with Black Angus cows likely those of Grove Ranch they were connected with *Maui Ag Company* they had Black Angus and not Haleakala Ranch pastures because theirs were above Makawao
- there was lots of *haole koa* growing there in my youth
- in my teens it was pineapple crops connected to *Maui Pineapple Company* before *A&B* took over, but I was away at school most of the time
- the lands are fallow now

4) assess the impact of the proposed action on the cultural resources, practices and beliefs identified.

In regard to the undertaking 'Expansion of Maui Veterans Cemetery' there is No Significant Impact on any cultural resources, practices or beliefs. However, keep in mind:

- Future excavating may expose Hawaiian artifacts lost or forgotten by their previous owners on their way to gathering practices or even an occasional battle;
- The likelihood of ancient burials are almost nil, however the ancient practice of *make pau* (buried where you die) should be kept in mind as people out gathering or fighting wars were buried where they fell unless they were *ali'i nui*.

This report has met the goals and objectives set forth for this CIA study. The project site is a parcel that has been heavily modified by historic agricultural and pasturing activities spanning over 150 years and currently lies idle.

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APPENDIX A

Act 50 – 2000 A BILL FOR AN ACT RELATING TO ENVIRONMENTAL IMPACT STATEMENTS [UNOFFICIAL VERSION]

HOUSE OF REPRESENTATIVES H.B. NO, 2895 H.D.1 TWENTIETH LEGISLATURE, 2000 STATE OF HAWAI`I

A BILL FOR AN ACT RELATING TO ENVIRONMENTAL IMPACT STATEMENTS.

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF HAWAI'I:

SECTION 1. The legislature finds that there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai'i's culture, and traditional and customary rights.

The legislature also finds that native Hawaiian culture plays a vital role in preserving and advancing the unique quality of life and the "aloha spirit" in Hawai`i. Articles IX and XII of the state constitution, other state laws, and the courts of the State impose on government agencies a duty to promote and protect cultural beliefs, practices, and resources of native Hawaiians as well as other ethnic groups.

Moreover, the past failure to require native Hawaiian cultural impact assessments has resulted in the loss and destruction of many important cultural resources and has interfered with the exercise of native Hawaiian culture. The legislature further finds that due consideration of the effects of human activities on native Hawaiian culture and the exercise thereof is necessary to ensure the continued existence, development, and exercise of native Hawaiian culture.

The purpose of this Act is to: (1) Require that environmental impact statements include the disclosure of the effects of a proposed action on the cultural practices of the community and State; and (2) Amend the definition of "significant effect" to include adverse effects on cultural practices.

SECTION 2. Section 343-2, Hawai'i Revised Statutes, is amended by

amending the definitions of "environmental impact statement" or "statement" and "significant effect", to read as follows:

"Environmental impact statement" or "statement" means an informational document prepared in compliance with the rules adopted under section 343-6 and which discloses the environmental effects of a proposed action, effects of a proposed action on the economic [and] welfare, social welfare, and cultural practices of the community and State, effects of the economic activities arising out of the proposed action, measures proposed to minimize adverse effects, and alternatives to the action and their environmental effects.

The initial statement filed for public review shall be referred to as the draft statement and shall be distinguished from the final statement which is the document that has incorporated the public's comments and the responses to those comments. The final statement is the document that shall be evaluated for acceptability by the respective accepting authority.

"Significant effect" means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State's environmental policies or long-term environmental goals as established by law, or adversely affect the economic [or] welfare, social welfare [.], or cultural practices of the community and State."

SECTION 3. Statutory material to be repealed is bracketed. New statutory material is underscored.

SECTION 4. This Act shall take effect upon its approval.

Approved by the Governor as Act 50 on April 26, 2000

APPENDIX B Guidelines for Assessing Cultural Impacts donted by the Environmental Council State of Heav

Adopted by the Environmental Council, State of Hawai'i

November 19, 1997

INTRODUCTION

It is the policy of the State of Hawai'i 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 [consultants], 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 types of cultural resources 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 manmade and natural, including submerged cultural resources, which support such cultural practices and beliefs.

The Environmental Council recommends that preparers of assessments analyzing cultural impacts adopt the following protocol:

- 1. 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;
- 2. identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- 3. receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- 4. conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
- 5. identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- 6. 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 [consultant] 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:

- 1. 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.
- 2. 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.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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.
- 7. 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.
- 8. An explanation of confidential information that has been withheld from public disclosure in the assessment.
- 9. A discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
- 10. 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.
- 11. 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.

APPENDIX C

Scope of Work (SOW)

Cultural Impact Assessment [in accordance with OEQC Guidelines]

- 1. 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;
- 2. identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- 3. receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- 4. conduct ethnographic, historical, and other culturally related documentary research;
- 5. identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- 6. assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

Methods

The specific tasks listed below expand on the above scope of work:

- Conduct historical and cultural background research (i.e., business records, land records; archival documents, literature, reports, letters, photographs, journals, or newspaper files) to locate material that will provide broad patterns of the history of the project area such as subsistence, religious, recreational, and commercial uses of the land; as well as settlement and residential patterns of the area and region; major family groups that inhabited, used or controlled lands within the project area and region; documented legends, myths, or traditional histories associated with the area; and descriptions of traditional practices, customs and beliefs associated with identified traditional cultural practices;
- Prepare a semi-structured ethnographic research instrument that will include questions that will generate general biographical information, association with and knowledge of the project area, its history and use;
- Prepare a consent form to be used as written agreement with any individual interviewed concerning the review of content and use of information recorded during the interview
- Identify individuals knowledgeable with the project area.
- Conduct and record ethnographic interviews with knowledgeable individuals. If feasible individuals shall participate in field inspections (Makana to be given)
- Transcribe recorded interviews (Approximate time, 6-8 hrs/per hr of recording)
- Prepare a report that will include an overview of the archival material, and an analysis of the ethnographic data.

APPENDIX D

Agreement to Participate in this Cultural Impact Assessment

Project Title:	Maui Veterans Cemetery Expansion (Makawao Cemetery) Makawao, Maui, Hawai`i
Interviewer:	Maria "Kaimi" Orr, M.A. [(808) 375-3317] Kaimipono Consulting Services LLC kaimi@lava.net

You are being asked to participate in a cultural impact assessment [CIA] conducted by an independent interviewer contracted by *International Archaeological Institute, Inc.* who are conducting an Archaeological Inventory Survey (AIS) as part of a Environmental Assessment (EA) conducted by Belt Collins Hawaii LLC. The interviewer will explain the purpose of this CIA process, the procedures to be used, the potential benefits and possible risks of participating. You may ask the interviewer any question(s) in order to help you to understand the procedures. If you then decide to participate, please sign on the second page of this form. You will be given a copy of this form to keep.

I. Nature and Purpose of the Study

The purpose of this cultural impact assessment is to gather information about the project lands of Makawao Union Cemetery (adjacent to Maui Veterans Cemetery), through interviews with individuals who are knowledgeable about this area, and/or about traditional and historic information such as cultural practices, legends, songs, chants or other information. The objective of this study is to facilitate in the identification and location of any cultural resources and cultural practices in the area mentioned above, in accordance with applicable historic preservation laws, regulations, and guidelines, including: *Act 50 HB2895* (A.D.2000), *HRS Chapter 343* and *State of Hawaii Environmental Council Guidelines*.

10. Explanation of Procedures

After you have voluntarily agreed to participate and have signed the consent page, the interviewer will tape record your interview and have it transcribed later. The interviewer may also need to take notes and/or ask you to spell or clarify terms or names that are unclear. Data from the interview [ethnographic research] will be used in the CIA report.

10. Discomforts and Risks

Foreseeable discomforts and/or risks may include, but are not limited to the following: having to talk loudly for the recorder; being recorded and/or interviewed; providing information that may be used in reports which may be used in the future as a public reference; knowing that the information you give may conflict with information from others; your uncompensated dedication of time; possible miscommunication or misunderstanding in the transcribing of information; loss of privacy; and worry that your comment(s) may not be understood in the same way you understand them. It is not possible to identify all potential risks.

IV. Benefits

This study will give you the opportunity to express your thoughts (*mana'o*), and your opinions will be listened to and shared; your knowledge may be instrumental in the preservation of significant cultural resources, practices and information.

V. Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected **if you so desire**. You may request, for example, that your name and/or sex not be mentioned in write-ups, such as field notes, on tape, on files (disk or folders), drafts, reports, and future works; or you may request that some of the information you provide remain "off-the-record." In order to ensure protection of your privacy, confidentiality and/or anonymity, you should immediately advise the interviewer of your desires. The interviewer will ask you to specify the method of protection, and note it on this form below.

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

I, ______, understand that Maria "Kaimi" Orr of *Kaimipono Consulting Services LLC* (KCS), an independent interviewer contracted by *International Archaeological Institute, Inc.* (IARII) will be conducting oral history interviews with individuals knowledgeable about the project lands and vicinity of Makawao and Hāli`imaile. The oral history interviews are being conducted in order to collect information on possible pre-historic and/or historic cultural resources, as well as traditional cultural practices associated with these lands and access to these resources and practices.

I understand I will be provided the opportunity to review my interview to ensure that it accurately depicts what I meant to say. I also understand that if I don't return the revised transcripts after two weeks from date of receipt, my signature below will indicate my release of information for the draft report. I also understand that I will still have the opportunity to make revisions during the draft review process.

_ I am willing to participate.

Signature

Print Name

Address

Date

Phone

Zip Code

Email Address

Part II: Personal Release of Interview Records

I, ______, have been interviewed by *Maria "Kaimi" Orr* of *Kaimipono Consulting Services LLC* (KCS), an independent interviewer contracted by *International Archaeological Institute, Inc.* (IARII). I have reviewed the transcripts of tape recordings of the interview and agree that said documentation is complete and accurate except for those matters specifically set forth below the heading "CLARIFICATION OR CORRECTIONS."

CLARIFICATION OR CORRECTIONS:

I further agree that KCS, International Archaeological Institute, Inc. (IARII) and/or Belt Collins Hawaii LLC may use and release my identity and other interview information, both oral and written, for the purpose of using such information in a report to be made public, subject to my specific objections, to release as set forth below:

SPECIFIC CONDITIONS TO RELEASE OF INTERVIEW TRANSCRIPT:

Signature	Date
Print Name	Phone
Address	
	Zip code
Email	

APPENDIX E ETHNOGRAPHIC SURVEY

Basic Research Instrument for Oral History Interviews

This research instrument includes basic information as well as research categories which will be asked in the form of open primary questions which allow the individual interviewed (Ethnographic Consultant) to answer in the manner he/she is most comfortable. Secondary or follow-up questions are asked based on what the Consultant has said and/or to clarify what was said. The idea is to have an interview based on a "talk-story" form of sharing information. Questions will NOT be asked in an interrogation style/method, NOR will they necessarily be asked in the order presented below. This research instrument is merely a *guide* for the interviewer and simply reflects general categories of information sought in a semi-structured format. Questions will be asked more directly when necessary.

The Consultants were selected because they met one or more of the following criteria:

- Had/has Ties to Project Area/Vicinity
- * Known Hawaiian Cultural Resource Person
- Referred By Other Cultural Resource People
- Referred By Other People

[NOTE: Introduction of Maui Veterans Cemetery Expansion CIA Project is done before the Ethnographic Consultant signs the Consent Form, usually during the initial phone call to make interview appointments.]

[NOTE: This part of the interview, #1-4 is mutual sharing and rapport building. Most of the information for research categories "Consultant Background" and "Consultant Demographics" come from this section, but not exclusively.]

10. To start please tell me about yourself...Name? Where/When you were born?

[This information can be addressed in a couple of ways. After the interviewer first turns on the tape recorder, the following information will be recorded: Day/Date/Time/Place of Interview; Name of Consultant (if authorized by Consultant); Name of Interviewer; Initial Questions: Have you read the Agreement to Participate? Do you have any questions before we begin? Will you please sign the Consent Form? The interviewer will explain again the purpose of the interview.

The interviewer will then ask the Consultant to "Please tell me about yourself—when/where were you born? Where did you grow up? Where did you go to school?" This general compound question allows the Consultant to share as much or as little as he/she wants without any pressure. Some of the information for #1 may already be known to the interviewer.]

2. *History: Your `ohana/family background; Hawaiian connection (if any)?*

[Much of the information for questions #2, 3, and 4 usually comes from the "monologue" answer to Question #1. If it does not, then these questions will be asked. The answers in this section usually establish how the Consultant meets the criteria; how the Consultant developed his/her information base, etc.]

3. *Youth: Where lived? Grew up?* [This may have been answered in #1]

4. *Schooling? Where? When?* [This may have been answered in #1]

[NOTE: The next part of the interview, #5-7 reflects information sought for the following research categories: Land, Water, Marine, Cultural Resources and Use as well as Significant People and Events. The questions are open-ended so as NOT to "put words in the mouths" of the Consultants. The answers will help in assessing if any cultural properties or practices (or access to them) will be impacted by the proposed project.]

5. Please tell me what you know about the lands of the Project Area?

[NOTE: Generally when people share information about a specific topic/place, they usually state where their information came from. If it isn't volunteered, it is asked as a follow-up question(s). A map of the project area should be available to confirm that interviewer and consultant are talking about the same place. Photos would also help if a field trip is not possible. The best scenario would be to be "on-site" at some part of the interview...although this is not always practical.]

6. What are your recollections and/or personal experiences of this area?

7. Do you know any stories/legends/songs/chants associated with these areas?

[NOTE: Possible follow-up questions if information not in their answers:

- How are you or your family connected to the Project lands?
- What year(s) were you and/or your family associated with these lands?
- What was this place called when you were growing up or working here?
- Can you describe what the area looked like—natural and/or man made things?
- To your knowledge what kind of activities took place in this location?
- Do you know of any traditional gathering of plants, etc in the area?
- Please describe any other land/water use? Resources?
- What was the historic land use? Sugar? Pineapple? Ranching? Agriculture?
- [Have map ready for marking.]
- Do you know about any burials in the project area? [last resort question]
- Do you know of any cultural sites in the project area or vicinity? [last resort question]
- 8 Is there anyone you know who can also tell me about the project area? [NOTE: Usually in the course of the interview, Consultants suggest other people to interview.]
- 9. As soon as the tape of this interview is transcribed I will send you two sets. Please review your transcript and make any corrections and/or additions, then sign both copies of the Release Forms thereby allowing the information to be used by the interviewer, and other Project Partners. Then mail one set back in the enclosed stamped-addressed envelope (or email corrected version).
- 10. If your revised transcript is not returned within **two weeks** of date of receipt, it will be assumed that you are in concurrence with the transcript material and your information will then be incorporated into any draft reports. However, you can still make changes during the draft review process.

APPENDIX F

SIGNED CONSENT FORMS

V. Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected **if you so desire**. You may request, for example, that your name and/or sex not be mentioned in write-ups, such as field notes, on tape, on files (disk or folders), drafts, reports, and future works; or you may request that some of the information you provide remain "off-the-record." In order to ensure protection of your privacy, confidentiality and/or anonymity, you should immediately advise the interviewer of your desires. The interviewer will ask you to specify the method of protection, and note it on this form below.

VI. Refusal/Withdrawal

You may, at any time during the interview process, chose to not participate any further and ask the interviewer for the tape and/or notes. Please note that you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

VII. Waiver

Part I: Agreement to Participate

I, ______, understand that Maria "Kaimi" Orr of Kaimipono Consulting Services LLC (KCS), an independent interviewer contracted by International Archaeological Institute, Inc. (IARII) will be conducting oral history interviews with individuals knowledgeable about the project lands and vicinity of Makawao and Hāli'imaile. The oral history interviews are being conducted in order to collect information on possible pre-historic and/or historic cultural resources, as well as traditional cultural practices associated with these lands and access to these resources and practices.

I understand I will be provided the opportunity to review my interview to ensure that it accurately depicts what I meant to say. I also understand that if I don't return the revised transcripts after two weeks from date of receipt, my signature below will indicate my release of information for the draft report. I also understand that I will still have the opportunity to make revisions during the draft review process.

I am willing to participate.

Jah. 21 Date 808 988-6813 Phone Mary C Horolutu 96822 Zip Code realow ler maizie@hawaii.rr. com Email Address

APPENDIX G

SIGNED RELEASE FORMS

Part II: Personal Release of Interview Records

I, ______, have been interviewed by *Maria "Kaimi" Orr* of *Kaimipono Consulting Services LLC* (KCS), an independent interviewer contracted by *International Archaeological Institute, Inc.* (IARII). I have reviewed the transcripts of tape recordings of the interview and agree that said documentation is complete and accurate except for those matters specifically set forth below the heading "CLARIFICATION OR CORRECTIONS."

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I further agree that KCS, International Archaeological Institute, Inc. (IARII) and/or Belt Collins Hawaii LLC may use and release my identity and other interview information, both oral and written, for the purpose of using such information in a report to be made public, subject to my specific objections, to release as set forth below:

SPECIFIC CONDITIONS TO RELEASE OF INTERVIEW TRANSCRIPT:

Maizia (a) hawaii - VT- Com	Zip code
7	96822
3694 Kloodlewsn Tevr. P Address	1. Honolulu
Print Name	Phone
Mary C. Sanford	808 988-6813
Signature)	Date
Theny C. Soutoro	Jan. 21, 2013

APPENDIX E TRAFFIC IMPACT ASSESSMENT

TRAFFIC IMPACT ASSESSMENT MEMORANDUM MAUI VETERANS CEMETERY

Makawao, Maui, Hawai'i Tax Map Keys: (2) 2-4-02: 09 & Portion of 07

February 2013

Prepared for: Department of Accounting & General Services State of Hawaii for U.S. Department of Veteran Affairs

Prepared by: BELT COLLINS HAWAII LLC 2153 North King Street, Suite 200 Honolulu, Hawai'i 96819

©2013 BELT COLLINS HAWAII LLC 2012-70-1100



This work was prepared by me or under my supervision. Expiration date of the License: **April 30, 2014**

1 PURPOSE

The purpose of this assessment was to review the traffic engineering implications on Baldwin Avenue with a proposed 10 acre expansion of the Maui Veterans Cemetery. The driveway entrance to the Maui Veterans Cemetery is located off of Baldwin Avenue, approximately 600 feet north of Aala Place. The existing cemetery occupies 7.0 acres of land on tax map key (TMK): (2) 2-4-02: 9. The proposed 10 acre expansion is located north of the existing cemetery on a portion of TMK: (2) 2-4-02: 7. See Figure 1 following the text of this report.

2 EXISTING MAUI VETERANS CEMETERY

The existing Maui Veterans Cemetery has in-ground burials and above ground columbarium niches. Some of the columbarium niches are located adjacent to the committal shelter near the driveway entrance. A restroom facility and maintenance equipment storage are also located at the committal shelter. The vehicular access gate to the cemetery is open Monday to Friday, from 7 AM until 3:00 PM. The vehicular access gate is locked at nights and on weekends. Burial services are held at the cemetery when the vehicular access gates are open during the week. The public can visit the cemetery after the gates are locked, by parking their vehicles in the parking lot outside the gate and walking into the cemetery.

One County worker maintains the cemetery during the week. The worker is dispatched from the Maui County Public Works baseyard.

3 EXISTING ROAD CONDITIONS

Baldwin Avenue is a two-lane road under the jurisdiction of the County of Maui. The posted speed along Baldwin Avenue is 30 miles per hour (mph). An advisory speed limit of 20 mph is posted approximately 1,700 feet north of the Cemetery driveway. A 20 mph speed limit between the hours of 7 AM and 6 PM is posted along Baldwin Avenue adjacent to Makawao School approximately 1,400 feet south of the Cemetery driveway. Adjacent to the cemetery driveway, the travel lanes are 10-feet in width with 2-feet wide asphalt paved shoulders.

The existing cemetery driveway is located at a 90-degree bend in Baldwin Avenue. The asphalt paved driveway connection with Baldwin Avenue is approximately 110-feet wide, with separate stop lines and stop signs for right-turn and left-turn vehicles exiting the driveway. Vehicles turning left into the driveway can access the driveway from either the north side adjacent to the right turn out of the driveway, or the south side adjacent to the left turn out of the driveway is also used by visitors to the Makawao Cemetery on TMK: (2) 2-4-02: 1. Along the south end of the property, Kee Road intersects with Baldwin Avenue. Approximately half of the Kee Road lane, which access onto Baldwin Avenue, is located on the Maui Veterans Cemetery property. A raised concrete island, with the "Stop" sign for traffic from Kee Road entering Baldwin Avenue, is located approximately 10-feet north from the Kee Road centerline stripe. About half of the vehicles turning right,

from Kee Road onto Baldwin Avenue, were observed traveling into the Cemetery property, using the existing asphalt pavement behind the concrete island.

Numerous accidents have been reported at the driveway location on the bend by the Maui County Department of Public Works. However, the accidents are attributed to vehicles missing the bend in the road and not due to vehicles entering or exiting the driveway. At night, visibility of the bend in the road is poor for vehicles traveling north toward Paia. See Photo 1. The driveway to the cemetery extends on a straight line north from Baldwin Avenue, visually extending the road straight beyond the bend. Warning signs are located on the right and left side of the driveway, which can be confusing for a motorist unfamiliar with the roadway.

Photo 1

Baldwin Avenue at Night, North Bound Approach to Driveway Driveway Straight Ahead, Between Yellow Warning Signs



On January 29 and 30, 2013, traffic counts were conducted at the intersection to determine visitor traffic to the cemetery. The traffic counts were conducted from 1:30 to 3:15 PM on January 29 and from 6:45 to 8:30 AM on January 30. The traffic counts were conducted to coincide with the cemetery visiting hours and the peak hours of traffic on Baldwin Avenue. The existing peak hour traffic volumes are shown on Figure 2. The traffic count data is included in Appendix A.

During the morning peak Baldwin Avenue traffic hour of 7:15 to 8:15 AM, 251 vehicles traveled in the north direction toward Paia, and 131 vehicles traveled in the south direction to Makawao town. A total of 9 vehicles entered the driveway and 8 vehicles exited the driveway. However, only 2 vehicles entered the driveway to visit the Maui Veterans Cemetery. Other vehicles which utilized the driveway were either County maintenance vehicles or vehicles using the driveway to U-turn, or temporarily pull-off the road.

During the afternoon peak Baldwin Avenue traffic hour of 2:15 to 3:15 PM, 149 vehicles traveled in the north direction toward Paia, and 195 vehicles traveled in the south direction to Makawao town. A total of 7 vehicles entered the driveway and 6 vehicles exited the driveway. Only 2 vehicles entered the driveway to visit the Maui Veterans Cemetery. The occupants of one of the vehicles that visited the Maui Veterans Cemetery also visited the Makawao Cemetery. Other vehicles which utilized the driveway were either County maintenance vehicles or vehicles using the driveway to U-turn, or temporarily pull-off the road.

During the traffic counts, the weather was overcast but there was no rain. Interviews with the cemetery caretaker and a local resident who frequents the cemetery parking lot indicated between 4 to 12 vehicles will visit the cemetery during a peak hour period. The cemetery caretaker indicated that there are more visitors on days of clear weather, and the overcast conditions could have contributed to the low visitor counts.

A sight distance field assessment was conducted at the existing cemetery driveway. For left turning vehicles from the existing driveway, available sight distances are greater than 500 feet to the left and greater than 400 feet to the right, see Photos 2 and 3. For right turning vehicles from the existing driveway, the available sight distance to the left is greater than 500 feet when the vehicles are approximately 5 to 10 feet from the stop line, see Photo 4. For left turning vehicles accessing the south side of the driveway, the available sight distance is greater than 500 feet, see Photo 5. If left turning vehicles attempt to access the north side of the driveway, the available sight distance is approximately 160 feet, see Photo 6. All sight distances are adequate for a design speed limit of 35 miles per hour, except for left turning vehicles attempting to access the north side of the driveway. See Table 1 – Driveway Sight Distance and Figure 3 following the text of this report.



Photo 2 Sight Line Left (> 500') for Left Turning Vehicles from Existing Driveway

Photo 3

Sight Line Right (> 400') for Left Turning Vehicles from Existing Driveway



Photo 4

Sight Line Left (> 500') for Right Turning Vehicles from Existing Driveway (Vehicle 5' to 10' from Stop Line)



Photo 5 Sight Line Ahead (>500') for Left Turning Vehicles into South Side of Existing Driveway



Photo 6 Sight Line Ahead (~160') for Left Turning Vehicles into North Side of Existing Driveway



Sight Distance	Direction	Available	Required
Left Turning Vehicle from Driveway	Left	> 500'	390'
	Right	> 400'	350'
Right Turning Vehicles from Driveway	Left	> 500'	335'
Left Turning Vehicles into Driveway (South Entrance)	Ahead	> 500'	285'
Left Turning Vehicles into Driveway (North Entrance)	Ahead	160'	285'

Table 1 - Driveway Sight Distance

Design Speed of 35 miles per hour

During the traffic counts, a total of three vehicles turned left into the driveway from Baldwin Avenue. One vehicle turned left during the peak hours of traffic. Based on Table 9-23: Guide for Left-Turn Lanes on Two-Lane Highways from *A Policy on Geometric Design of Highways and Streets*, by the American Association of State Highway and Transportation Officials, a left-left turn lane is not warranted due to the low volumes of left-turn traffic and the low volumes of traffic in both directions on Baldwin Avenue. Table 9-23 is included in Appendix C.

4 PROPOSED CEMETERY EXPANSION TRAFFIC

Trip Generation, 8th Edition by the Institute of Transportation Engineers (ITE) was used to estimate the additional traffic generated with the proposed 10 acre cemetery expansion, shown in Table 2 – ITE Estimated Project Traffic. The estimated increase in weekday traffic during the morning peak hour of traffic along Baldwin Avenue is two (2) vehicle trips, with one (1) entering and one (1) exiting. The estimated increase in weekday traffic during the afternoon peak hour of traffic along Baldwin Avenue is nine (9) vehicle trips, with three (3) entering and six (6) exiting. The ITE estimated trip rates are cautioned for cemeteries, due to the projections based on a single study. The low estimated traffic volumes correlate fairly well with the observed field conditions on the days of the traffic counts.

Time	Total	Directional Distribution	
	Trips	Entering	Exiting
Weekday AM Peak Hour	2	1	1
of adjacent Street Traffic			
Weekday PM Peak Hour	9	3	6
of adjacent Street Traffic			

Based on Trip Generation, 8th Edition, Institute of Transportation Engineers

The low ITE projected traffic volumes from the cemetery expansion should not impact traffic operations at the driveway. The existing low volumes of traffic utilizing the driveway and the low volumes of traffic along Baldwin Avenue would not be significantly impacted. Based on ITE, projects which generally generate less than 100 vehicle trips during the peak

hour will not significantly impact the operation of an intersection. The projected trips, less than 10, should not impact the operation of the driveway.

Due to the limited number of studies for the ITE trip generation rates, traffic counts were conducted to verify the rates. The 10 acre expansion of the cemetery will increase the existing burial area of approximately 6 acres by a factor of approximately 1.7. The 1.7 factor was applied to the field counted visitor traffic, and the project traffic is shown in Table 3 – Field Count Estimated Project Traffic.

Time	Total	Directional Distribution		
	Trips	Entering	Exiting	
Weekday AM Peak Hour	8	4	4	
Weekday PM Peak Hour	8	4	4	
of adjacent Street Traffic	-	-	-	

Table 3 –	Field	Count	Estimated	Pro	ject	Traffic
Table 3 –	Field	Count	Estimated	Pro	ject	Traffi

Based on January 29 and 30, 2013 field counts projected for 10 acre expansion.

The project traffic was also estimated based on an average of the traffic observed by the cemetery caretaker and frequent visitor. Using an average of 8 visitors to the existing cemetery, or 16 total trips, and applying the 1.7 cemetery expansion factor, the total project vehicle trips is 28. The estimated vehicle trips are shown in Table 4 – Interview Estimated Project Traffic.

Time	Total	Directional Distribution		
	Trips	Entering	Exiting	
Weekday AM Peak Hour of adjacent Street Traffic	28	14	14	
Weekday PM Peak Hour of adjacent Street Traffic	28	14	14	

Table 4 – Interview Estimated Project Traffic

Based on an average of 8 visitors to the existing cemetery, per interviews of the cemetery caretaker and a frequent visitor.

Based on ITE projections, field counts of existing visitors and information obtained from interviewing people at the cemetery, the 10 acre cemetery expansion will not generate any significant volumes of traffic that will impact the driveway with Baldwin Avenue.

5 PROPOSED IMPROVEMENTS

The 90-degree bend in Baldwin Avenue at the existing cemetery driveway could be improved by consolidating and realigning the driveway radial off the existing south entrance. See Figure 4 following the text of this report. The existing south entrance has sight distance for all turning traffic into and out of the driveway. The existing north entrance does not have adequate sight distance for vehicles turning left into the driveway from Baldwin Avenue.

Realigning the driveway radial off the bend in the road provides for landscaping opportunities immediately north of the existing driveway. Visually Baldwin Avenue would not continue north, and the chevron warning signs could be relocated east directly in front of the north bound lane.

6 CONCLUSIONS AND RECOMMENDATIONS

The proposed 10 acre expansion of the Maui Veterans Cemetery will not increase traffic volumes at the driveway intersection with Baldwin Avenue to affect operations of the driveway intersection. Existing cemetery visitor traffic volumes and traffic volumes along Baldwin Avenue are low. The estimated project traffic volumes will not impact the level of service operations of the driveway intersection.

The driveway intersection with Baldwin Avenue should be consolidated and realigned to improve safety for vehicles turning into the driveway and for vehicles traveling along Baldwin Avenue.

FIGURES





Figure 1 PROJECT LOCATION MAP

Traffic Impact Assessment Memorandum Maui Veterans Cemetery



Figure 2 EXISTING PEAK HOUR TRAFFIC

Traffic Impact Assessment Memorandum Maui Veterans Cemetery



NOT TO SCALE




Figure 3 SIGHT DISTANCE ANALYSIS

Traffic Impact Assessment Memorandum Maui Veterans Cemetery



Figure 4 PROPOSED DRIVEWAY IMPROVEMENTS

Traffic Impact Assessment Memorandum Maui Veterans Cemetery



APPENDIX A – TRAFFIC DATA

PROIECT:	Maui V	/eterans	Cemetery	,
	i laur	CCCI and	centecery	

JOB NO:

BY:

A. Kato

CLIENT: DAGS US Dept of Veterans Affai DATE: 30-Jan-13

SUBJECT: Historical Traffic Data

BELT COLLINS'

FILE: P:\Projects\Maui_Veterans_Cemetery_Expansion_Project_2012701100\Reports\Traffic\[Histor

Year	Date	24 Hr Total	Dir 1	Dir 2 AM Peak	Dir 1	Dir 2 PM Peak	Dir 1	Dir 2
2008	Th 1/24	4415	2381	2034 7:15 - 8:1	5 209	232 3:00 - 4:00	267	179
	Fr 1/25	4746	2540	2206 7:15 - 8:1	5 213	247 3:45 - 4:45	243	160
	Sat 1/26	3754	1956	1798 8:00 - 9:0	0 81	112 3:00 - 4:00	160	130
	Sun 1/27	2718	1432	1286 8:00 - 9:0	0 51	65 3:45 - 4:45	128	108
	Mon 1/28	3899	2073	1826 7:15 - 8:1	5 175	247 3:00 - 4:00	205	172
	Tue 1/29	3969	2033	1936 7:00 - 8:0	0 194	217 3:00 - 4:00	200	168
	Wed 1/30	3747	1895	1852 7:15 - 8:1	5 186	222 3:45 - 4:45	205	146
Avg Weekda	у	4155.2	2184.4	1970.8	195.4	233	224	165
2007	Wed 2/7	4618	2165	2453 7:15 - 8:1	5 275	223 3:00 - 4:00	176	250
	Th 2/8	4499	2132	2367 7:00 - 8:0	0 275	201 3:00 - 4:00	196	229
	Fr 2/9	4742	2262	2480 7:15 - 8:1	5 277	194 4:45 - 5:45	138	226
	Sat 2/10	3696	1797	1899 8:00 - 9:0	0 112	73 4:00 - 5:00	114	172
	Sun 2/11	3339	1611	1728 8:00 - 9:0	0 91	52 3:15 - 4:15	131	143
	Mon 2/12	4161	1930	2231 7:00 - 8:0	0 227	198 3:00 - 4:00	136	243
	Tue 2/13	4612	2186	2426 7:15 - 8:1	5 262	181 3:00 - 4:00	186	260
Avg Weekda	у	4526.4	2135	2391.4	263.2	199.4	166.4	241.6
2006	Th 4/6	4078	2270	1808 8:00 - 9:0	0 298	124 5:30 - 6:30	134	273
	Fri 4/7	4964	2504	2460 7:45 - 8:4	5 300	141 5:45 - 6:45	153	346
	Sat 4/8	4564	2212	2352 8:00 - 9:0	0 101	38 3:45 - 4:45	166	230
	Sun 4/9	4118	2008	2110 8:00 - 9:0	0 77	40 5:15 - 6:15	145	214
	Mon 4/10	5516	2626	2890 8:00 - 9:0	0 361	177 4:45 - 5:45	183	384
	Tue 4/11	5639	2670	2969 8:00 - 9:0	0 363	207 5:45 - 6:45	126	394
	Wed 4/12	5913	2663	3250 8:00 - 9:0	0 350	192 5:30 - 6:30	149	441
Avg Weekda	У	5222	2546.6	2675.4	334.4	168.2	149	367.6
2005	Wed 11/2	4027	1891	2136 7:15 - 8:1	5 125	214 4:00 - 5:00	208	151
	Th 11/3	4108	1900	2208 7:00 - 8:0	0 137	220 3:30 - 4:30	197	176
	Fri 11/4	3879	1802	2077 7:30 - 8:3	0 82	131 4:15 - 5:15	149	152
	Sat 11/5	4703	2604	2099 8:00 - 9:0	0 88	103 4:30 - 5:30	144	141
	Sun 11/6	3091	1491	1600 7:45 - 8:4	5 66	71 3:00 - 4:00	131	130
	Mon 11/7	3864	1806	2058 7:00 - 8:0	0 138	186 3:45 - 4:45	196	169
	Tue 11/8	4024	1906	2118 7:15 - 8:1	5 131	214 3:30 - 4:30	189	192
Avg Weekda	у	3980.4	1861	2119.4	122.6	193	187.8	168

Year	24 Hr Total	Dir 1	Dir 2	AM Peak	Dir 1	Dir 2	PM Peak	Dir 1	Dir 2
2013				382	131	251	344	195	149
2008	4,155	2,184	1,971	428	195	233	389	224	165
2007	4,526	2,135	2,391	463	263	199	408	166	242
2006	5,222	2,547	2,675	503	334	168	517	149	368
2005	3,980	1,861	2,119	316	123	193	356	188	168

Historical data indicates an increase in traffic, but the growth is probably affected by the Haleakala Highway Improvements which occurred from 2004 to 2008, which improved Halekala Highway between Hana Highway to Pukalani bypass road. Traffic bypassing the construction could have detoured onto Baldwin Avenue. Historical data is inconclusive for the growth of traffic on Baldwin Avenue.



PROJECT: Maui Veterans Cemetery CLIENT: DAGS U.S. Dept of Veteran Affairs SUBJECT: Traffic Study – Field Information

Field Data:

Baldwin Aven	ue d Spaced Limite	
Poste	North Bound (Makai B	ound) = 20 mph (7 am to 6 pm) at the school. No other posted speed limits between Makawao Avenue to the site.
	South Bound (Mauka B	ound) = 30 mph 20 mph advisory speed limit approximately 1,700 feet From the site driveway.
Lane	Width	
	North Bound (Makai B	ound) = 10 feet
	South Bound (Mauka B	ound) = 10 feet
Pavec	l Shoulder Width	
	North Bound (Makai B South Bound (Mauka B	ound) = 2 feet ound) = 2 feet
Sight Distance	e (Eye Height = 3.5', 14.5 South approach appro>	' from travel lane, Vehicle Height = 4.35', Use Design Speed = 35 mph) timately 4% uphill, North approach approximately 3% downhill
Left 7	urning Vehicles from Exis	ting Driveway:
	Left = > 500'	Required = 390'
	Right = > 400'	Required = 390' x 0.9 for 4% approach grade = 350'
Right	Turning Vehicles from Ex	isting Driveway:
	Left = > 500'	Required = 335'
Left T	urning Vehicles into Exist Ahead = > 500'	ing Driveway (south entrance) Required = 285'
Left T	Turning Vehicles into Exist Ahead = 160'	ing Driveway (north entrance) Required = 285' Inadequate due to



PROJECT: Maui Veterans Cemetery

CLIENT: DAGS U.S. Dept of Veteran Affairs

SUBJECT: Traffic Study – Field Information

JOB NO: 2012.70.1100

DATE: 18-Feb-13

BY: A. Kato

		TRAFF ANUARY 29, 201	IC COUNT 3 - AFTERNOON -	PM	
Time	 Right In	Left In	Left Out	Right Out	Notes
1:30 – 1:45	I – Grey SUV White Car	I – Grey Truck		White Car	Visit – Grey SUV and Truck White car pulled off Baldwin and continued on Baldwin.
1:45 – 2:00	Gold Camry		I – Grey Truck	I – Grey SUV	Gold Camry did not visit.
2:00 – 2:15	Hyundai Riding Mower	Black Volt	Tour Bus Hyundai	Black Volt	Hyundai U-turned Black Volt visited Makawao Cemetery Tour bus was in site upon arrival.
2:15 – 2:30	White Car		White Car		White Car U-turned
2:30 – 2:45	White COM SUV		White COM SUV		White COM SUV U- turned
2:45 – 3:00	I – Honda Civic I – White Nissan Red SUV		Gold Camry		Visit – Honda Civic and White Nissan. Honda Civic visited both cemeteries.
3:00 - 3:15	Red Truck Lexus SUV		I – Honda Civic	I – White Nissan Lexus SUV	Lexus SUV pulled off the road to stop. Did not visit.

Notes:

Upon arrival at the site at approximately 12:45, weather was overcast and a light rain.

Rain stopped at 1:00 PM, and the afternoon was overcast, cool and dry.

Approximately half of the vehicles exiting Ke'e Road and turning right onto Baldwin Avenue, use the pavement on the right side of the raised concrete island.

Approximate length of stay for visitors to the Maui Veterans Cemetery was 10 minutes.

A Tour bus was parked between the driveway and parking lot before the count started. No visitors on bus.

TRAFFIC COUNT – HEAVY VEHICLE DATA JANUARY 29, 2013 - AFTERNOON - PM							
Time	Baldwin Avenue from North	Baldwin Avenue from South	Notes				
1:30 – 1:45							
1:45 – 2:00	School Bus: I	SU Bus: 2 Truck: 1					
2:00 – 2:15		School Bus: I					
2:15 – 2:30	SU Truck: I	SU Truck: I Bus (County): I					
2:30 – 2:45		School Bus: I					
2:45 – 3:00	School Bus: I	School Bus: I					
3:00 - 3:15	SU Truck: I						



PROJECT: Maui Veterans Cemetery CLIENT: DAGS U.S. Dept of Veteran Affairs SUBJECT: Traffic Study – Field Information JOB NO: 2012.70.1100 DATE: 18-Feb-13 BY: A. Kato

TRAFFIC COUNT JANUARY 30, 2013 - MORNING - AM **Right Out** Left Out Notes Time **Right** In Left In Red truck only pulled Red Truck 6:45 - 7:00 Red Truck off Baldwin to let vehicles pass. 7:00 - 7:15 White SUV White SUV and trucks White Truck were County vehicles. White COM Truck White COM Truck Visit – Red SUV 7:15 - 7:30 I – Red SUV White Truck White SUV I – Red SUV 7:30 - 7:45 White COM Truck I - Grey SUV Visit – Grey SUV 7:45 - 8:00 Black Ford Frontier Truck White COM Truck I - Grey SUV Black Ford U-turned Frontier Truck Frontier Truck pulled Black Ford in and exited. Grey SUV parked in Grey SUV Red Car 8:00 - 8:15 Red Car lot but did not visit. Red Car U-turned White Truck 8:15 - 8:30 White COM Truck White Truck visited Makawao Cemetery.

Notes:

Upon arrival at the site at approximately 6:15, skies was overcast but no rain. It was dark and cool. Ground was wet. No rain during count. Skies mostly cloudy.

No vehicles in the cemetery or parking lot at the start of the count.

Vehicles visiting Maui Veterans Cemetery are noted as "Visit".

TRAFFIC COUNT – HEAVY VEHICLE DATA IANUARY 30, 2013 - MORNING - AM							
Time	Baldwin Avenue from North	Baldwin Avenue from South	Notes				
6:45 – 7:00	SU Truck / Bus: 5	Bus (County): I					
7:00 – 7:15	SU School Bus: I						
7:15 – 7:30	SU School Bus: I Truck: I	SU Truck: I School Bus: 2					
7:30 – 7:45	SU Truck: I Truck: 3	SU School Bus: I Truck: I School Bus: I	I Jogger/walker went north along the west then east side.				
7:45 – 8:00	SU Truck: I	SU Truck/Bus: 2 School Bus: 1					
8:00 - 8:15	SU School Bus: 1	SU Truck: I Truck: I					
8:15 – 8:30	Truck: I School Bus: 2	Bus (County): I					

	PROJECT:	Maui Veterans Cemetery	JOB NO:	2012.70.1100
	CLIENT:	DAGS US Dept of Veterans Affairs	DATE:	29-Jan-13
	SUBJECT:	Traffic Counts	BY:	K. Okazaki / A. Kato
COLLINS®	FILE:	P:\Projects\Maui_Veterans_Cemetery_Expa	nsion_Proj	ect_2012701100\Reports\Traffic\[201301 Traffic Counts.xk

TIME	Baldwin Ave from North			Maui C	Maui Cemetery From East			Baldwin Ave from South		
(PM)	Thru	Left	Bicyclist	Right	Left	Peds	Right	Thru	Bicyclist	
1:30 - 1:45	38	1	0	1	0	0	2	27	3	
1:45 - 2:00	45	0	0	1	1	0	1	38	0	
2:00 - 2:15	45	1	0	1	2	0	1	42	0	
2:15 - 2:30	34	0	0	0	0	0	1	37	0	
2:30 - 2:45	42	0	0	0	3	0	2	33	4	
2:45 - 3:00	48	0	0	0	1	0	3	46	0	
3:00 - 3:15	71	0	0	2	1	0	2	33	0	
Total	323	2	0	5	8	0	12	256	7	

Peak Hour:	2:15 to 3:15
Total Vehicles	359
Baldwin Avenue	
Thru from North	195
Thru from South	149

Advancing VolumeTurn Volume0Opposing Volume - for left turn traffic0

MAUI VETERANS CEMETERY VISITORS ONLY

TIME	Baldv	vin Ave from N	orth	Maui C	emetery Fro	om East	Baldw	in Ave from	n South
(PM)	Thru	Left	Bicyclist	Right	Left	Peds	Right	Thru	Bicyclist
1:30 - 1:45		1		0	0		1		
1:45 - 2:00		0		1	1		0		
2:00 - 2:15		0		0	0		0		
2:15 - 2:30		0		0	0		0		
2:30 - 2:45		0		0	0		0		
2:45 - 3:00		0		0	0		2		
3:00 - 3:15		0		1	1		0		
Total		1		2	2		3		

Peak Hour:	2:15 to 3:15
Total Vehicles	4
In	2
Out	2

	PROJECT:	Maui Veterans Cemetery	JOB NO:	
	CLIENT:	DAGS US Dept of Veterans Affairs	DATE:	30-Jan-13
	SUBJECT:	Traffic Counts	BY:	K. Okazaki / A. Kato
BELT COLLINS°	FILE:	P:\Projects\Maui_Veterans_Cemetery_Exp	ansion_Pro	ject_2012701100\Reports\Traffic\[201301 Traffic Counts.xls

TIME	Baldy	Baldwin Ave from North M			Jorth Maui Cemetery From East Baldwin Ave f			in Ave from	South
(AM)	Thru	Left	Bicyclist	Right	Left	Peds	Right	Thru	Bicyclist
6:45 - 7:00	27	0	0	1	0	0	1	36	0
7:00 - 7:15	26	0	0	0	0	0	3	48	0
7:15 - 7:30	38	1	0	0	4	0	0	59	1
7:30 - 7:45	50	0	1	0	0	0	1	68	0
7:45 - 8:00	23	0	3	2	1	0	4	61	2
8:00 - 8:15	20	0	4	0	1	0	2	63	0
8:15 - 8:30	34	0	2	0	1	0	1	46	1
Total	218	1	10	3	7	0	12	381	4

Peak Hour:	7:15 - 8:15
Total Vehicles	398
Baldwin Avenue	
Thru from North	131
Thru from South	251

Advancing Volume Turn Volume Opposing Volume - for left turn traffic

1

MAUI VETERANS CEMETERY VISITORS ONLY

TIME	Baldv	Baldwin Ave from North			Maui Cemetery From East Baldwin Ave from South		n South		
(AM)	Thru	Left	Bicyclist	Right	Left	Peds	Right	Thru	Bicyclist
6:45 - 7:00		0		0	0		0		
7:00 - 7:15		0		0	0		0		
7:15 - 7:30		1		0	1		0		
7:30 - 7:45		0		0	0		0		
7:45 - 8:00		0		1	0		1		
8:00 - 8:15		0		0	0		0		
8:15 - 8:30		0		0	0		0		
Total		1		1	1		1		

Peak Hour:	7:15 - 8:15
Total Vehicles	4
In	2
Out	2

APPENDIX B - MEMORANDUMS



TELEPHONE CONVERSATION MEMO

PROJECT: Maui Veterans Cemetery	BY: A. Kato / J. Hanohano	
SUBJECT:	DATE & TIME:	
Cemetery Operations / Traffic	January 18, 2013 2:00 PM	
JOB NUMBER::		
2012.70.1100		

PARTICIPANTS:

John Prito – Maui County Public Works Highways Division, Makawao District Supervisor (phone: 357-8043) Jerilyn Hanohano – Belt Collins Hawaii LLC (BCH) Alan Kato – BCH

ITEMS DISCUSSED:

Access to the cemetery is always open, however, there is an interior gate which secures direct access to the burials. The gate is open Monday to Friday from 7 am until 3:00 pm. The gate is closed on Saturday and Sunday.

No additional vehicular traffic is expected for the maintenance crew when the cemetery is expanded. If there is additional staff, they will be brought up in the vehicles from the baseyard down the street.

BCH is scheduling to conduct the traffic count on the afternoon of January 29 and the morning of January 30. No burials will be scheduled for those times.

The cemetery sees a fair amount of visitors during the week. Exact numbers are not known. Typically, the "regular" senior visitors will visit the cemetery during the weekday hours. There are visitors who visit the graves on the weekends, but they have to park outside and walk into the cemetery.

The restroom facility is automatically locked at night. The restroom is open from about 6:30 am until 6 pm. Tour companies have been notified not to use the restroom facilities, due to conflicts with the tourists and people attending funeral services.

The existing intersection onto Baldwin Avenue provides "good" sight distance for vehicles entering and exiting the cemetery.

There have been numerous accidents at the driveway entrance to the cemetery, but the accidents are related to the curve in the road. A number of accidents are due to drivers missing the curve in the road, probably due to drunk driving.

There have been no accidents related to vehicles accessing or exiting the cemetery.



CONVERSATION MEMO

PROJECT: Maui Veterans Cemetery	BY: A. Kato	
SUBJECT:	DATE & TIME:	
Cemetery Operations / Traffic	January 30, 2013	
	9:00 AM	
JOB NUMBER::		
2012.70.1100		

PARTICIPANTS:

Brad Aquinde – Maui County Public Works Highways Division, Maui Veterans Cemetery Caretaker Alan Kato – Belt Collins Hawaii LLC (BCH)

ITEMS DISCUSSED:

Observations are general in nature and not exact.

Visitors to the cemetery are affected by the weather.

When there are clear skies, there are more visitors to the cemetery. Many of the visitors drive up from town.

During the morning hours, an estimated 4 to 10 cars visit the cemetery during an hour period on an average day. Approximately 20 to 30 cars visit the cemetery between 8 AM to 11 AM.

During the afternoon hours, an estimated 10 to 12 cars visit the cemetery during an hour period on an average day.

The peak afternoon visit period is between 1:30 PM to 2:30 PM. Although, there could be visits after the cemetery gates are closed at 3 PM, and on weekends.

During a busy day at the cemetery, an estimated 80 to 100 cars can visit the cemetery. During a busy period, up to 20 cars can be parked in the lot.

Peak visit times of the year are around the holidays, Veterans Day and Memorial Day.

There are a number of people who visit the gravesites and numerous flowers were observed around the cemetery.

People also use the cemetery parking lot to meet people and to pass time.

Homeless people have been a problem at the cemetery. There is one homeless person that has been causing problems, and the person had left muddy hand prints on the walls over night.



CONVERSATION MEMO

PROJECT: Maui Veterans Cemetery	ву: А. Kato	
SUBJECT:	DATE & TIME:	
Cemetery Operations / Traffic	January 30, 2013	
	8:50 AM	
JOB NUMBER::		
2012.70.1100		

PARTICIPANTS:

Elderly Female Visitor – parked in the parking lot about 8 AM and left about 9 AM Alan Kato – Belt Collins Hawaii LLC (BCH)

ITEMS DISCUSSED:

The female visitor frequents the parking lot to "kill time" as she waits for her granddaughter.

She visits the parking lot a couple of times a week and observes on a typical day about 4 to 5 vehicles using the lot while she is there. Most of the people are visiting the cemetery, but there are one or two that she observes that also use the lot to "kill time".

APPENDIX C – REFERENCE INFORMATION

9-132 A Policy on Geometric Design of Highways and Streets

	Metric						U.S.	Customa	ry		
	Ad		ancing Volume (veh/h)				Adv	Advancing Volume (veh/h)			
	Opposing Volume (veh/h)	5% Left Turns	10% Left Turns	20% Left Turps	30% Left Turns	Opposing Volume (veh/h)	5% Left	10% Left Turns	20% Left Turns	30% Left Turns	
	(venyny	50-km/h ()nerating (Sneed	Turns	(ven/n)	40-mph (Inerating	Speed	Turns	
	800	220	240	190	160	×00	220	240	190	160	
	600	410	240	225	200	600	410	240	225	200	
Opposing	Advan	cing	% Left	225	200	600	410	305	225	200	
Volume	Volum	e	Turns	275	245	400	510	380	275	245	
252	132	<u> </u>	<1%	350	305	200	640	470	350	305	
252	102		-10/	390	340	100	720	515	390	340	
151	195	<1%	eed		50-mph Operating Speed						
	800	280	210	165	135	800	280	210	165	135	
	600	350	260	195	170	600	350	260	195	170	
	400	430	320	240	210	400	430	320	240	210	
	200	550	400	300	270	200	550	400	300	270	
	100	615	445	335	295	100	615	445	335	295	
	100-km/h Operating Speed				60-mph Operating Speed						
	800	230	170	125	115	800	230	170	125	115	
	600	290	210	160	140	600	290	210	160	140	
	400	365	270	200	175	400	365	270	200	175	
	200	450	330	250	215	200	450	330	250	215	
	100	505	370	275	240	100	505	370	275	240	

Table 9-23. Guide for Left-Turn Lanes on Two-Lane Highways (10)

Additional information on left-turn lanes, including their suggested lengths, can be found in *Highway Research Record 211*, NCHRP Report 225, and NCHRP Report 279 (*10, 19, 17*). In the case of double left-turn lanes, a capacity analysis of the intersection should be performed to determine what traffic controls are needed in order for it to function properly.

Local conditions and the cost of right-of-way often influence the type of intersection selected as well as many of the design details. Limited sight distance, for example, may make it desirable to control traffic by yield signs, stop signs, or traffic signals when the traffic densities are less than those ordinarily considered appropriate for such control. The alignment and grade of the intersecting roads and the angle of intersection may make it advisable to channelize or use auxiliary pavement areas, regardless of the traffic densities. In general, traffic service, highway design designation, physical conditions, and cost of right-of-way are considered jointly in choosing the type of intersection.

For the general benefit of through-traffic movements, the number of crossroads, intersecting roads, or intersecting streets should be minimized. Where intersections are closely spaced on a two-way facility, it is seldom practical to provide signals for completely coordinated traffic movements at reasonable speeds in opposing directions on that facility. At the same time, the resultant road or street patterns should permit travel on roadways other than the predominant highway without too much inconvenience. Traffic analysis

APPENDIX F Comment letters and responses

NEIL ABERCROMBIE GOVERNOR OF HAWAII



WH, LIAM J. AH, A, JR. CHARFERSON BOARD OF EAND AND NATERAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT



STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

> POST OFFICE BOX 621 HONOLULU, HAWAII 96809

> > May 22, 2013

State of Hawaii Department of Accounting and General Services Attention: Mr. Joseph Earing 1151 Punchbowl Street, Room 430 Honolulu, Hawaii 96813

Belt Collins Hawaii LLC Attention: Ms. Jerilyn M. Honohano 2153 North King Street, Suite 200 Honolulu, Hawaii 96819 via email: joseph.m.earing@hawaii.gov

via email: jhonohono@beltcollins.com

Dear Mr. Earing and Ms. Hanohano

SUBJECT: Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely, Russell Y. Tsuji Land Administrator

Enclosure(s) cc: Central Files NEIL ABERCROMBIE GOVERNOR OF HAWAII





*13 MAY 06 PM 31:08 ENGINEER INC WILLIAM 3, AILA, JR. CHARDENSON BOARD OF LAND AND NATURAL RESOURCES COMMESSION ON WATER RESOURCE MANAGEMENT

2013

MAD

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES LAND DIVISION

POST OFFICE BOX 621 HONOLULU, HAWAII 96809

May 2, 2013

MEMORANDUM

TO	DLNR Agencies:	RE
	Div. of Aquatic Resources	F
	Div. of Boating & Ocean Recreation	\leq
	X Engineering Division	0
	Div. of Forestry & Wildlife	
	Div. of State Parks	
	X Commission on Water Resource Management	
	Office of Conservation & Coastal Lands	
	X Land Division – Maui District	
	X Historic Preservation	
FROM	Presell V Terrin Land Administrate	
SUBJECT:	Droft Environmental Accordment and Anticipated Finding of No. Significant	
SUBJECT.	Ling the second	
	Impact (DEA-AFONSI) for the Maul Veterans Cemetery	
LOCATION:	Makawao, Island of Maui; TMK: (2) 2-4-002:007 and 009	
APPLICANT:	State of Hawaii, Department of Accounting and General Services	

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by May 21, 2013.

The DEA can be found on-line at: <u>http://oeqc.doh.hawaii.gov</u> (Please select the 'OEQC Home' link, scroll down until you see <u>current issue</u> and click – April 23, 2013 issue will appear.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

) We have no objections.

) We have no comments.

 (\checkmark) Comments are attached.

Signed:	anni
Print Name:	Carty S. Chang. Chief Engineer
Date:	6A13

cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES ENGINEERING DIVISION

LD/LydiaMorikawa RE:DEAFONSIMauiVeteransCemetery Maui.601

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone X. The National Flood Insurance Program does not have any regulations for developments within Zone X.
- () Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is _____.
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Mario Siu Li at (808) 768-8098 or Ms. Ardis Shaw-Kim at (808) 768-8296 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Frank DeMarco at (808) 961-8042 of the County of Hawaii, Department of Public Works.
- () Ms. Carolyn Cortez at (808) 270-7813 of the County of Maui, Department of Planning.
- () Mr. Wynne Ushigome at (808) 241-4890 of the County of Kauai, Department of Public Works.
- () The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu 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 should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

()	Additional Comments:	
()	Other:	
0	Oulei	

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed:	CARTY S. CHANG, CHIEF ENGINEER
Date:	5/9/13



June 20, 2013 2012.70.1100/13P-044

Mr. Russell Y. Tsuji Land Administrator Department of Land and Natural Resources State of Hawaii P.O. Box 621 Honolulu, HI 96809

Dear Mr. Tsuji:

Draft Environmental Assessment Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Makawao, Maui, Hawaii

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We received your letter dated May 22, 2013 with comments from the Engineering Division of the Department of Land and Natural Resources (DLNR).

1. Confirmed by the Engineering Division, the project site is located in Flood Insurance Rate Map (FIRM), Flood Zone X and the National Flood Insurance program does not have any regulations for developments within Zone X. This information will be included in section 4.2.4, Flood Hazard Areas in the Final Environmental Assessment.

Thank you again for your participation.

Sincerely,

BELT COLLINS HAWAII LLC

ankand

Jerilyn M. Hanohano Planner

JMH:ajk

cc: Mr. Joseph Earing, Department of Accounting and General Services

Belt Collins Hawaii LLC | 2153 North King Street, Suite 200 | Honolulu, HI 96819-4554 USA Tel: 808.521.5361 | Fax: 808.538.7819 | www.beltcollins.com | honolulu@beltcollins.com NEIL ABERCROMBIE GOVERNOR OF HAWAII



WILLIAM J. AILA, JR. CHARPIESSON BOARD OF LAND 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

> > June 7, 2013

State of Hawaii Department of Accounting and General Services Planning Branch Attention: Mr. Joseph Earing 1151 Punchbowl Street, Room 430 Honolulu, Hawaii 96813

via email: joseph.m.earing@hawaii.gov

Belt Collins Hawaii LLC Attention: Ms. Jerilyn M. Hanohano 2153 North King Street, Suite 200 Honolulu, Hawaii 96819

via email: jhanohano@beltcollins.com

Dear Mr. Earing and Ms. Hanohano,

SUBJECT: Draft Environment Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery

Thank you for the opportunity to review and comment on the subject mat er. In addition to the comments previously sent you on May 22, 2013, enclosed are late comments from the Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely

Russell Y. Tsuji Land Administrator

Enclosure(s)



WILLIAM J. AILA, JR

WILLIAM D. BALFOUR, JR. SUMNER ERDMAN LORETTA J. FUDDY, A.C.S.W., M.P.H. NEAL S. FUJIWARA JONATHAN STARR TED YAMAMURA

WILLIAM M. TAM

STATE OF HAWAII DEPARTMENT OF LAND AND NATURAL RESOURCES COMMISSION ON WATER RESOURCE MANAGEMENT P.O. BOX 621 HONOLULU, HAWAII 96809

June 4, 2013

TO:	Russell Tsuji, Administrator Land Division	NATUR STAT	1013 JUN
FROM:	William M. Tam, Deputy Director from h. Ong & Commission on Water Resource Management	AL REE	-6
SUBJECT:	Maui Veterans Cemetery Expansion DEA	AND & SOURC	PM 2:
FILE NO.: TMK NO.:	N/A (2) 2-4-002:007 & 009		84

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://www.hawaii.gov/dlnr/cwrm.

Our comments related to water resources are checked off below.

 We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.

2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.

- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <u>http://www.usgbc.org/leed</u>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <u>http://www.epa.gov/watersense/</u>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <u>http://hawaii.gov/dbedt/czm/initiative/lid.php</u>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/programs/achieving-efficiency/green-business-program

Russell Tsuji, Administrator Page 2 June 4, 2013

🛛 8.	We recommend adopting landscape irrigation conservation best management practices endorsed by the
	Landscape Industry Council of Hawaii. These practices can be found online at
	http://landscapehawaii.org/_library/documents/lich_irrigation_conservation_bmps.pdf

9.	There may be the potential for ground or surface water degradation/contamination and recommend that
	approvals for this project be conditioned upon a review by the State Department of Health and the developer's
	acceptance of any resulting requirements related to water quality.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrm/info_permits.htm.

10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

- 11. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:

The document appears to mistake ground water aquifer system area boundaries for water supply service system areas. It presumes that water service will be delivered by the Maui County Department of Water Supply, either through its Central Maui Service Area (CMSA) or its Upcountry Maui System. Both are currently estimated to be below current capacity. The document does not estimate prospective average demand, but only system capacity requirements. It proposes to use conservation measures, especially during dry seasons.

While the available systems may be operating below capacity, currently available supply is subject to regulation. The CMSA ground and surface water sources are limited, and the Upcountry System is subject to surface water limitation. The current sources for both systems are subject to a slow long-term decline in rainfall, meaning that augmentation from new sources is a continual priority.

If there are any questions, please contact Charley Ice at 587-0218.



June 20, 2013 2012.70.1100/13P-045

Mr. Russell Y. Tsuji Land Administrator Department of Land and Natural Resources State of Hawaii P.O. Box 621 Honolulu, HI 96809

Dear Mr. Tsuji:

Draft Environmental Assessment Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Makawao, Maui, Hawaii

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on June 7, 2013 for the above document from the Commission on Water Resource Management of the Department of Land and Natural Resources (DLNR). The numbered items below correspond to the comments in your letter.

- 1. The County of Maui, Department of Water Supply (DWS) was a consulted party of the DEA. The proposed water use plan for the project, as outline in section 2.4.1 of the DEA, agrees with recommendations from DWS. DWS may include the proposed project and information provided in the EA into their development plans as they see fit.
- 4. Not including the irrigation system, the proposed maintenance building would increase water demand for fire protection. At this time, no water fixtures, such as toilets and sinks, are planned for the maintenance building. If such fixtures are installed, water efficient fixtures would be considered as practical.
- 5. Best management practices (BMP) for stormwater management were adopted November 9, 2012 by Maui County Code Chapter 15-111, Rules for the Design of Storm Water Treatment Best Management Practices. Proposed onsite detention basins would ensure compliance with this ordinance.
- 6. With regards to alternate water sources, section 3.3 of the DEA, Alternative B, proposes a non-potable irrigation well instead of relying on the existing water supplied by DWS. While this is not the preferred water use plan, it is included as an alternate water source.

Belt Collins Hawaii LLC | 2153 North King Street, Suite 200 | Honolulu, HI 96819-4554 USA Tel: 808.521.5361 | Fax: 808.538.7819 | www.beltcollins.com | honolulu@beltcollins.com

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Mr. Russell Y. Tsuji June 20, 2013 – 13P-045 Page 2

- 8. Landscape irrigation conservation BMPs would be implemented. Irrigation system for turf areas would be designed to ensure head to head sprinkler coverage. As described in section 2.4.1, weather sensors would be installed with the automatic irrigation system. Other conservation BMPs as endorsed by the Landscape Industry Council of Hawaii would be considered especially in planting areas.
- OTHER. The Final EA will expand Section 4.7.2, Infrastructure, Water, of the DEA to describe the existing Makawao-Pukalani-Kula regional water system and projected regional demands.

Thank you again for your participation.

Sincerely,

BELT COLLINS HAWAII LLC

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ferilyn M. Hanohano Planner

IMH:ajk

cc: Mr. Joseph Earing, Department of Accounting and General Services

RECEIVED

Makawao Cemetery Association PO Box 175 Makawao, HI 96768

May 20, 2013

Belt Collins Hawaii LLC Attn: Ms. Jerilyn M. Hanohano 2153 North King Street, Suite 200 Honolulu, HI 96819

Department of Accounting and General Services Attn: Mr. Joseph Earing Kalanimoku Building 1151 Punchbowl Street Honolulu, HI 96831

Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA_AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Tax Map Key: portion of (2) 2-4-002:007 and (2) 2-4-002:009 Makawao, Maui, Hawaii

Ladies and Gentlemen:

Thank you for sending us a copy of the subject DEA. We appreciate being informed of the proposed project adjacent to our Cemetery and also the time given to meetings with us to discuss our concerns.

The Makawao Cemetery Association (MCA) is a non-profit 501(c) 13 Hawaii Corporation, which was founded in 1949. It consists of a Board of Trustees and an Executive Advisory Board. Its mission is to ensure quality, perpetual care of the Makawao Cemetery, to preserve its history and to provide a tranquil final resting place for anyone wishing to be buried there.

MCA is descended from the "Foreign Church" that occupied the property from 1861 to 1889 and where its founding minister, the Reverend Jonathan Green, and his wife are buried. There is a rich history of people resting at the Makawao Cemetery, many of whom played a big part of what Maui has become.

There is no other operating, public cemetery on Maui that has the unique country atmosphere, rich history, family orientation and openness that we offer. We embrace our Veteran neighbors and strive to work with them in keeping our Cemeteries beautiful and open.

2013 MAY 22 PM 12: 36

BELT COLLINS HAWAII

Belt Collins Hawaii LLC Attn: Ms. Jerilyn M. Hanohano and Department of Accounting and General Services Attn: Mr. Joseph Earing Page 2 May 20, 2013

The MCA's main concerns include providing adequate access and parking for MCA visitors, as well as having input regarding the landscaping between the properties, and providing signage for MCA, to allow for the continued operations and visibility for the Makawao Veteran's Cemetery (MVC) and MCA, as has been enjoyed over these many years. The MCA and the MVC development teams have had several meetings regarding these issues, and the MVC has agreed to incorporate our concerns within the development plans for the MVC. With the representations from the MVC that access to the MCA property will be incorporated into the development together with accommodations for parking, landscaping and signage for the MCA, the MCA supports the MVC's current plans to expand and improve the MVC facility and property.

Sincerely,

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Camille Difyrm

Camille D. Lyons President & Secretary

cc: via e-mail: Mr. Reggie Yamada, Civil Engineer via e-mail: MCA Board of Directors



June 20, 2013 2012.70.1100/13P-046

Ms. Camille D. Lyons Makawao Cemetery Association P.O. Box 175 Makawao, HI 96768

Dear Ms. Lyons:

Draft Environmental Assessment Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Makawao, Maui, Hawaii

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We are writing in response to the comments you provided on May 20, 2013 for the above document.

The applicant acknowledges your concerns for adequate access to Makawao Cemetery, parking accommodations, and landscaping and signage. As stated in section 4.1.3 of the DEA, MVC would maintain the 20-ft easement and right-of-way for ingress and egress to Makawao Cemetery. In order to pave the proposed driveway, the existing grass area would be eliminated and a proper access way to Makawao Cemetery will be paved.

Thank you for acknowledging the working relationship between the MVC development team and Maui Cemetery Association (MCA). As the design develops, MVC would continue to include MCA in the discussions to address their concerns.

Thank you again for your participation.

Sincerely,

BELT COLLINS HAWAII LLC

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Gerilyn M. Hanohano Planner

JMH:ajk

cc: Mr. Joseph Earing, Department of Accounting and General Services

ALAN M. ARAKAWA Mayor

DAVID C. GOODE Director

ROWENA M. DAGDAG-ANDAYA Deputy Director



RALPH M. NAGAMINE, L.S., P.E. Development Services Administration

> CARY YAMASHITA, P.E. Engineering Division

BRIAN HASHIRO, P.E. Highways Division

COUNTY OF MAUI DEPARTMENT OF PUBLIC WORKS **DEVELOPMENT SERVICES ADMINISTRATION** 250 SOUTH HIGH STREET WAILUKU, MAUI, HAWAII 96793

May 14, 2013

Ms. Jerilyn M. Hanohano BELT COLLINS HAWAII, LLC 2153 North King Street, Suite 200 Honolulu, Hawaii 96819

Subject: DRAFT ENVIRONMENTAL ASSESSMENT AND ANTICIPATED FINDING OF NO SIGNIFICANT IMPACT FOR THE MAUI VETERANS CEMETERY EXPANSION AND IMPROVEMENTS TMK: (2) 2-4-002:007; 009

Dear Ms. Hanohano:

We reviewed the subject application and have no comments at this time.

Please call Rowena M. Dagdag-Andaya at 270-7845 if you have any questions regarding this letter.

Sincerely. d C. Goode **Director of Public Works**

IS S:\LUCA\CZM\makawao_vet_cemetery_expansion_improv_dea_24002007_009_ls.wpd xc: Highways Division Engineering Division Mr. Joseph Earing - DAGS 2013 MAY 17 PM 1: 10 BELT COLLINS HAWAI

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CEIVED



June 20, 2013 2012.70.1100/13P-047

Mr. David C. Goode Director of Public Works Department of Public Works County of Maui 250 South High Street Wailuku, HI 96793

Dear Mr. Goode:

Draft Environmental Assessment Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Makawao, Maui, Hawaii

Thank you for participating in the Chapter 343 (HRS) public and agency review process. We acknowledge receipt of your letter dated May 14, 2013 in which you had no comments.

Sincerely,

BELT COLLINS HAWAII LLC

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Jerilyn M. Hanohano Planner

JMH:ajk

cc: Mr. Joseph Earing, Department of Accounting and General Services

ALAN M. ARAKAWA Mayor



RECEIVED

DAVID TAYLOR, P.E. Director

> PAUL J. MEYER Deputy Director

2013 MAY 20 PM 2: 45

DEPARTMENT OF WATER SUPPLY

COUNTY OF MAUL BELT COLLINS MAMAN

200 SOUTH HIGH STREET WAILUKU, MAUI, HAWAII 96793-2155 www.mauiwater.org

May 20, 2013

Belt Collins Hawaii LLC 2153 North King Street, Ste. 200 Honolulu, HI 96819 Attn: Ms. Jerilyn M. Hanohano, Planner

Dear Ms. Hanohano:

RE: Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA –AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Tax Map Key: (2) 2-4-002:007 and 009

Thank you for the opportunity to provide the following comments on the referenced project.

Background

The project site is served by an 8-inch waterline, fire hydrant #361, and a 1 ½inch water meter. Storage is provided by the 2-million gallon Pookela tank. During calendar year 2012, the average water use was 69 gallons per day.

Maui County Code 14.13.040 – Water service requests states that on March 16, 1993, the upcountry water system was found to have insufficient water supply developed for fire protection, domestic, and irrigation purposes to take on new or additional water services without detriment to those already served in the regulated area. Since November 2, 1994, the department has maintained a priority list of premises, organized by the date of applications for new or additional water service were received for such premises.

The code was amended by Maui County Council and signed by the Mayor to add the following: "*Effective as of January 1, 2013, the department will not accept any new applications to be placed on the priority list.*" Both subject parcels are not on the water meter priority list.

"By Water All Things Find Life"

Ms. Jerilyn M. Hanohano Page 2 May 20, 2013

Conclusion and Recommendation

During the first phase of the project development, water usage should be within the capacity of the current water meter. The ultimate/final development phase of this project will require a larger or additional water meter. The applicant may apply for such a meter when new water source becomes available and all applicants on the priority list are offered water meters.

Should you have any questions, please contact Arnold Y. Imaye, Staff Planner, at Arnold.Imaye@co.maui.hi.us or (808) 463-3110.

Sincerely, au

Dave Taylor, P.E., Director ayi

C: Department of Accounting and General Services DWS Engineering Division WRPD files



June 20, 2013 2012.70.1100/13P-048

Mr. Dave Taylor, P.E., Director Department of Water Supply County of Maui 200 South High Street Wailuku, HI 96793-2155

Dear Mr. Taylor:

Draft Environmental Assessment Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Maui Veterans Cemetery Expansion and Improvements Makawao, Maui, Hawaii

Thank you for participating in the Chapter 343 (HRS) public and agency review process. Thank you for the background information and recommendations for the proposed project.

As stated in section 2.4.1, Water and Irrigation, of the DEA, the proposed water use plan would be phased. The first phase of development would remain within the capacity of the exiting water meter. Future development would require the applicant to enlarge or add additional water meters when available. This plan agrees with the conclusion and recommendations in your letter.

Thank you again for your participation.

Sincerely,

BELT COLLINS HAWAII LLC

Hanhard

Jérilyn M. Hanohano Planner

JMH:ajk

cc: Mr. Joseph Earing, Department of Accounting and General Services