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July 12, 2013

FILE COPY

TO: THE HONORABLE LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

ATTN: GENEVIEVE SALMONSON
INTERIM DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

AUG 08 2013

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION

OFFICE OF ENVIRONMENTAL
QUALITY CONTROL

13 JUL 18 P 4:29

RECEIVED

SUBJECT: FINAL ENVIRONMENTAL ASSESSMENT AND FINDING
OF NO SIGNIFICANT IMPACT
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

The Hawaii Department of Transportation (HDOT) hereby issues the Final Environmental Assessment and Finding of No Significant Impact (FEA-FONSI) for the Lanai Airport Runway Safety Area Improvement Project situated at tax map key: (2) 4-9-002: Parcel 041, District of Maui, island of Lanai for publication in the next available edition of the Environmental Notice.

The HDOT has included copies of comments and responses received during the 30-day public comment period for the Draft EA and Anticipated Finding of No Significant Impact (DEA-AFONSI) which began on April 8, 2012, and believes the mitigation measures proposed in the FEA-FONSI sufficiently addresses the issues raised. Potential for adverse effects to historic/archaeological properties, natural and cultural resources and public infrastructure regulations are addressed in the Final EA. All significant concerns raised during the public review period have also been addressed.

Best Management Practices and mitigation measures described in the FEA-FONSI will ensure that no significant negative impacts to urban lands, water and air quality, flora and fauna, cultural and scenic resources, land use or community well-being will result from the proposed project. Section 106, National Historic Preservation Act Consultation, was undertaken for this project and included the participation of the State Historic Preservation Division. All conditions for the proposed action that result from the Section 106 process will be complied with.

Ms. Genevieve Salmonson
July 12, 2013
Page 2

AIR-EM
13.0389

The proposed action will provide the Lanai Airport with a runway safety area that meets current Federal Aviation Administration safety standards.

We have enclosed a completed OEQC Environmental Notice Publication Form, one hard copy of the Final EA and one PDF copy on CD.

Thank you for your review of the subject project. Please contact Mr. Evan Kimoto, State Project Manager, at (808) 838-8803, should you have any further comments.

Attachments

**AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (JULY 2012 REVISION)**

Project Name Lānaʻi Airport Runway Safety Area Improvement Project

Island: Lānaʻi

District: District of Maui

TMK: 2-4-9-002: Parcel 041

Permits: NHPA-Section 106 Consultation; ESA-Section 7 Consultation; Coastal Zone Management Federal Consistency Review; National Pollutant Discharge Elimination System, Notice of Intent (NOI) Form C – Construction Storm Water Permit

Proposing/Determination Agency:

State of Hawaiʻi

Department of Transportation - Airports Division

400 Rodgers Boulevard, 7th Floor

Honolulu, HI 96819-1880

Evan Kimoto, Project Manager

(808) 838-8803

Consultant:

R.M. Towill Corporation

2024 N. King Street, Suite 200

Honolulu, HI 96819

Brian Takeda, Project Coordinator

(808) 842-1133

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 oeqc@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.

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 oeqc@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 oeqc@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 oeqc@doh.hawaii.gov). 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 oeqc@doh.hawaii.gov); 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 oeqc@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

___ Section 11-200-23
Determination

The accepting authority simultaneously transmits its determination of acceptance or 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):

The State Department of Transportation, Airports Division (HDOT), proposes to construct runway improvements at the Lānaʻi Airport. The purpose of the proposed project is to place fill material in the runway safety area (RSA) at the south end of the existing runway to comply with Federal Aviation Administration (FAA) airport safety design requirements.

The proposed action will involve grading activities and the placement of fill material at the south end of the Lānaʻi Airport runway to correct non-compliant grades in the runway safety area. The fill material will be acquired through grading and excavation of the approximately 250 acres of airport property surrounding the airfield. Approximately 1 million cubic yards of soil will be needed to fill a roughly 31-acre area that includes the runway safety area and adjacent areas to the acceptable slope.

Related improvements will include the installation of a new aircraft blast pad at the south end of Runway 3-21, the installation of perimeter fencing to encompass the improved RSA, the relocation of existing navigational aids (NAVAIDS), and the removal of fencing and relocation of an irrigation water line out of the existing RSA area to accommodate the planned improved area.

Final Environmental Assessment, Hawai'i Revised Statutes (HRS), Chapter 343

Lāna'i Airport Runway Safety Area Improvement Project

State Project No. AM-4022-15

Island of Lāna'i, Hawai'i

July 2013

State of Hawai'i
Department of Transportation, Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawai'i 96819-1880

R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawai'i 96819

21806-08P

Final Environmental Assessment
Per Hawai'i Revised Statutes, Chapter 343

Lāna'i Airport Runway Safety Area Improvement Project

State Project No. AM-4022-15

Island of Lāna'i, Hawai'i

July 2013

July 2013

Proposing Agency:

State of Hawai'i

Department of Transportation, Airports Division

400 Rodgers Boulevard, 7th Floor

Honolulu, Hawai'i 96819-1880

Prepared By:

R. M. Towill Corporation

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21806-08P

Table of Contents

	Page
Table of Contents	i
Acronyms and Abbreviations	iii
1.0 Project Summary	1
2.0 Project Overview and Proposed Action	2
2.1 Project Overview and Location	2
2.2 Purpose and Need for Proposed Project.....	2
2.3 Purpose of the Environmental Assessment	5
2.4 Proposed Action.....	5
3.0 Alternatives.....	8
3.1 Introduction	8
3.2 No Action Alternative.....	8
3.3 Extension of Runway 3-21 Northward	8
3.4 Runway Safety Area Improvements (Preferred Alternative)	9
4.0 Description of Existing Environment, Potential Impacts and Proposed Mitigation Measures.....	10
4.1 Surrounding Land Uses	10
4.2 Topography and Soils.....	11
4.3 Agriculture	13
4.4 Natural Hazards.....	15
4.5 Flora and Fauna.....	18
4.6 Hydrology.....	19
4.7 Archaeological Resources	20
4.8 Cultural Impact Assessment.....	26
4.9 Air Quality and Noise	26
4.10 Scenic Resources.....	27
4.11 Recreational Resources.....	28
4.12 Airport Operations	28
4.13 Police, Fire Protection, and Medical Services	29
4.14 Solid Waste Disposal.....	29
4.15 Roadways.....	30
4.16 Water System.....	30
4.17 Wastewater System	31
4.18 Drainage.....	31
4.19 Electrical and Communication Systems	32
4.20 Housing and Economic Considerations.....	32
5.0 Relationship to Land Use Plans Policies and Controls	33
5.1 State Land Use Districts	33
5.2 Maui Island Plan.....	33
5.3 Countywide Policy Plan.....	35
5.4 Lānaʻi Community Plan	36
5.5 Maui County Zoning.....	37
5.6 Coastal Zone Management Program Objectives and Policies.....	37
6.0 Significance Criteria	43
7.0 Permits and Approvals That May Be Required	46

7.1	State of Hawaiʻi	46
7.2	Federal	46
8.0	Agencies, Organizations and Individuals Consulted for the Environmental Assessment	47
8.1	State of Hawaii	47
8.2	County of Maui	48
8.3	Federal Government	49
8.4	Organizations and Individuals	49
9.0	References	50

List of Figures

Figure 2-1	Project Location	3
Figure 2-2	RSA Grade Limitations Beyond 200 Feet (61 m) From Runway End	4
Figure 2-3	Site Plan	6
Figure 4-1	Agricultural Lands of Importance to the State of Hawaiʻi (ALISH)	14
Figure 4-2	Location of Area of Potential Effect	22
Figure 4-3	Area of Potential Effect on Project Site Map	23
Figure 4-4	Archaeological Testing Locations	24
Figure 5-1	State Land Use District	34
Figure 5-2	County of Maui Zoning.....	38

List of Photos

Photo 1	View of the Existing End of the Runway Safety Area Looking West	10
Photo 2	View Facing North Toward the Terminal	15
Photo 3	View Facing Northeast Along the Eastern Boundary	16

List of Tables

Table 2-1	Runway Safety Area Dimensional Requirements.....	3
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Appendices

- Appendix A – Draft EA Public Written Comments and Responses
- Appendix B – Biological surveys for Lānaʻi Airport safety zone improvements, Island of Lānaʻi
- Appendix C – An Archaeological Assessment for the Proposed Lana'i Airport Runway Improvements
- Appendix D – Documentation of Section 106 National Historic Preservation Act (NHPA) Consultation with State Historic Preservation Officer (SHPO) and Native Hawaiian Organizations

Acronyms and Abbreviations

Notes: (1) Abbreviations cited in this document are listed in alphabetical order.
(2) Spelling of Hawaiian place names follows Pukui et al. Place Names of Hawaii [1974].

AC	Advisory Circular
ACOE	Army Corps of Engineers
ADT	Average Daily Traffic
ALP	Airport Layout Plan
APE	Area of Potential Effect
ARC	Airport Reference Code
ARFF	Aircraft Rescue and Fire Fighting
BMPs	Best Management Practices
BT	Backhoe Trench
CAA	Clean Air Act
CFR	Code of Federal Regulations
CO	Carbon Monoxide
CO ₂	Carbon Dioxide
CSH	Cultural Surveys Hawaiʻi, Inc.
CWA	Clean Water Act
CWB	Clean Water Branch
CY	Cubic Yards
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Area
DA	Department of the Army
DAGS	Department of Accounting and General Services
dB	Decibel
DBEDT	Department of Business, Economic Development and Tourism
DEA	Draft Environmental Assessment
DEM	Department of Environmental Management, County of Maui
DLIR	Department of Labor and Industrial Relations
DLNR	Department of Land and Natural Resources
DOA	Department of Agriculture
DOE	Department of Education
EA	Environmental Assessment
ECP	Erosion Control Plan
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ESA	Endangered Species Act or Environmental Site Assessment
FAA	Federal Aviation Administration
FAA AC	Federal Aviation Administration Advisory Circular
FAR	Federal Aviation Regulations
FEA	Final Environmental Assessment

FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
GIS	Geographic Information Systems
GPD	Gallons Per Day
GPS	Global Positioning System
HAR	Hawaiʻi Administrative Rules
HDOT-A	State of Hawaiʻi, Department of Transportation, Airports Division
HEER	State of Hawaiʻi, Department of Health, Hazard Evaluation and Emergency Response
HNL	Honolulu International Airport
HRS	Hawaiʻi Revised Statutes
LCA	Land Claim Awards
LCP	Lānaʻi Community Plan
LNy	Lānaʻi Airport
LUC	State of Hawaiʻi, Land Use Commission
MECO	Maui Electric Company
MSL	Mean Sea Level
NAAQS	National Ambient Air Quality Standards
NAVAIDS	Navigational Aids
NEM	Noise Exposure Map
NEPA	National Environmental Policy Act of 1969
NHO	Native Hawaiian organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service, United States Department of the Interior
NRHP	National Register of Historic Places
OEQC	Office of Environmental Quality Control
PCBs	Polychlorinated Biphenyls
PL	Public Law
PM	Particulate Matter
POLs	Petroleum, Oils, and Lubricants
RSA	Runway Safety Area
SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
SMA	Special Management Area
TPY	Tons Per Year

USC United States Code
USDA United States Department of Agriculture

USDOT United States Department of Transportation
USEPA United States Department of Environmental Protection
USFWS United States Fish and Wildlife Service

1.0 Project Summary

Project:	Lānaʻi Airport Runway Safety Area Improvement Project State Project No. AM-4022-15
Applicant or Proposing Agency:	State of Hawaiʻi, Department of Transportation – Airports Division 869 Punchbowl Street, Honolulu, Hawaii 96813 Glenn Okimoto, Ph.D., Director of Transportation
Accepting Authority:	State of Hawaiʻi, Department of Transportation – Airports Division 869 Punchbowl Street, Honolulu, Hawaii 96813 Glenn M. Okimoto, Ph.D., Director of Transportation
Agent:	R. M. Towill Corporation 2024 North King Street, Suite 200 Honolulu, Hawaiʻi 96819 Brian Takeda, Planning Project Coordinator
Tax Map Key(s):	(2) 4-9-002: Parcel 041
Proposed Action:	Grading activities to correct non-compliant grades in the runway safety area at the south end of the Lānaʻi Airport facility. Related improvements will include the installation of a new aircraft blast pad at the south end of Runway 3-21, the installation of perimeter fencing to encompass the improved RSA, the relocation of existing navigational aids (NAVAIDS), and the removal of fencing and relocation of an irrigation water line out of the existing RSA area to accommodate the planned improved area.
Land Area:	Approximately 250 Acres - Lānaʻi Airport
State Land Use District:	Urban
Existing Land Use:	Airport
Present Zoning:	Airport, County of Maui Zoning Ordinance
Special Management Area:	N/A
Permits That May be Required:	FEDERAL: National Historic Preservation Act - Section 106 Consultation, Endangered Species Act - Section 7 Consultation STATE: Coastal Zone Management Federal Consistency Review; National Pollutant Discharge Elimination System (NPDES), Notice of Intent (NOI) Form C -Construction Storm Water Permit

2.0 Project Overview and Proposed Action

2.1 Project Overview and Location

The proposed project is located on the island of Lānaʻi (**Figure 2-1, Project Location**). The airport property is located approximately 3 miles southwest of Lānaʻi City. The proposed project site includes the majority of open area surrounding the Lānaʻi Airport (LNY), within the airport property identified as tax map key (TMK): 2-4-9-002: Parcel 041. The airport property is on land formerly in agricultural use. Prior to the airport facility being constructed in 1940, the project site and the surrounding area were used for pineapple cultivation. The airport is located on the southwest portion of the island and approximately 2 miles east of the nearest coastline. The airport lies on a relatively flat ridge where the surrounding terrain slopes away from the site in both the easterly and westerly directions.

The island of Lānaʻi, the third smallest island of the eight main Hawaiian Islands, is under the jurisdiction of the County of Maui. The airport's hours of operation are from 6:00 AM to 7:30 PM, seven days a week. Access to the airport is off of Kaunalapau Highway. Kaunalapau Highway (State Highway 440) is a two-lane roadway that runs from Lānaʻi City to Kaunalapau Harbor on the western coast of the island. A two-lane airport access road leads from Kaunalapau to the airport.

LNY is the only aviation transportation facility on the island. The airport primarily serves scheduled interisland and commuter/air taxi traffic, with some unscheduled charter and general aviation activity.

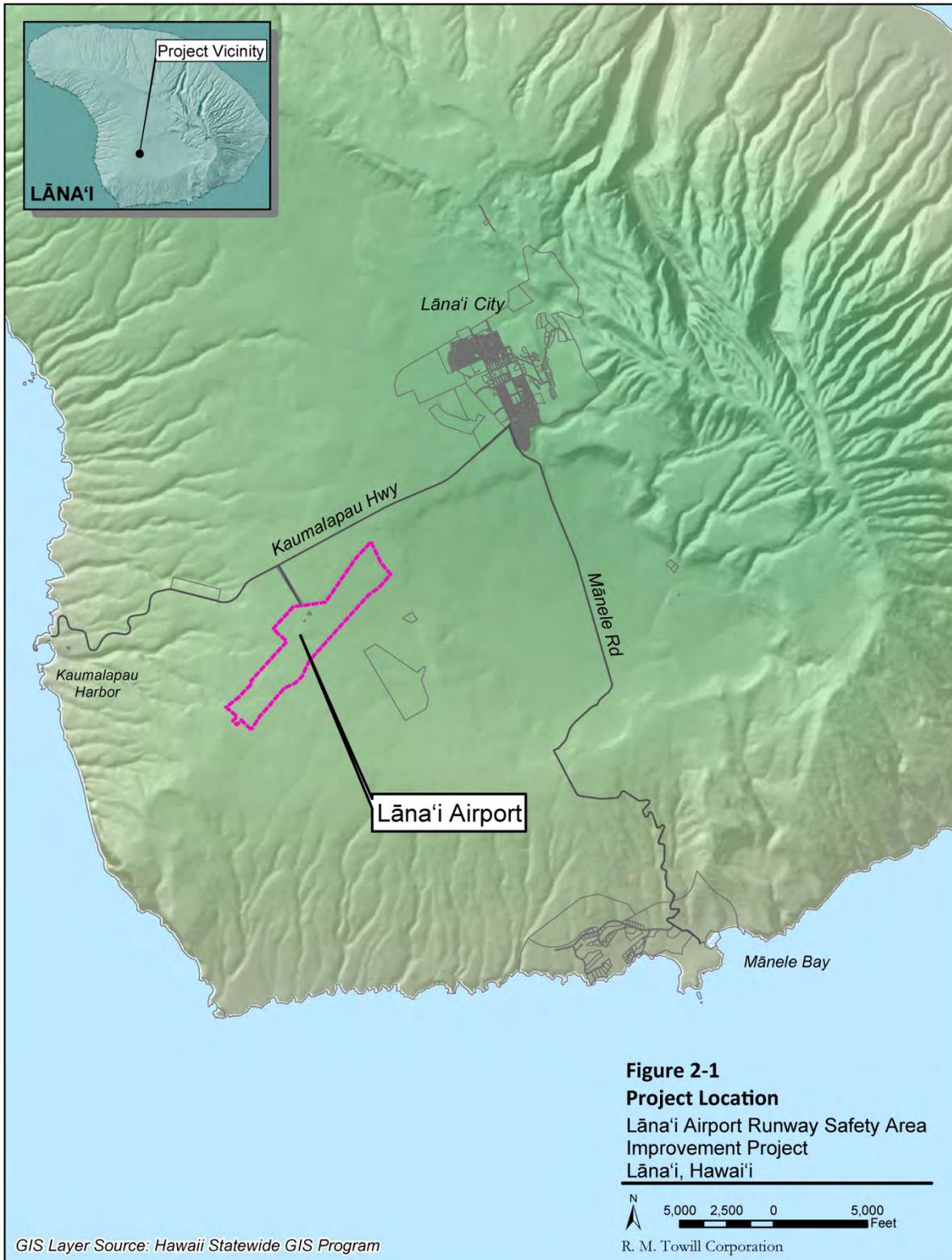
2.2 Purpose and Need for Proposed Project

The Hawaiʻi Department of Transportation, Airports Division (HDOT-A), proposes to construct runway improvements at the Lānaʻi Airport. The present Runway Safety Area (RSA) extends about 100-feet southwest of the approach end of Runway 3 while the north end extends 1,000-feet beyond the approach end of Runway 21.

Table 3-3 of the FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*, includes the required RSA dimensions for an airport serving large commercial aircraft in Approach Categories C and D, which are shown below in Table 2-1). Chapter 1 of the FAA AC defines aircraft approach categories A to E, which represent groupings of aircraft based on 1.3 times their stall speed in their landing configuration at the certificated maximum flap setting and maximum landing weight under standard atmospheric conditions. Because the runway at LNY can be used in either direction depending on wind conditions, the RSA dimensional requirements outlined below apply to both ends of the runway.

Table 2-1: Runway Safety Area Dimensional Requirements

RSA Dimensions	Approach Category C and D (feet)
RSA Width	500
RSA Length Beyond the Runway	1,000



LNy’s Airport Reference Code (ARC) designation is C-III. This requires an RSA that is a 500-foot, centered on the runway centerline that extends along the runway to 1,000-feet beyond both ends of the runway. At present, there is an approximately 40-60-foot drop in elevation located roughly 100 feet from the southern end of the airport runway.

The purpose and need for the Proposed Action is to enhance the safety of the airport RSA area at the south end of Runway 3-21 to comply with the standards of FAA Advisory Circular (AC) 150/5300-13A, *Airport Design*, which calls for the following (AC 150/5300-13A, Section 313, d.(1)):

- “For the first 200 feet (61 m) of the RSA beyond the runway ends, the longitudinal grade is between 0 and 3.0 percent, with any slope being downward from the ends.”
- “For the remainder of the safety area [see **Figure 2-2, RSA Grade Limitations Beyond 200 Feet (61 m) From Runway End**], the maximum allowable positive longitudinal grade is such that no part of the RSA penetrates any applicable approach surface or clearway plane. The maximum allowable negative grade is 5.0 percent.”

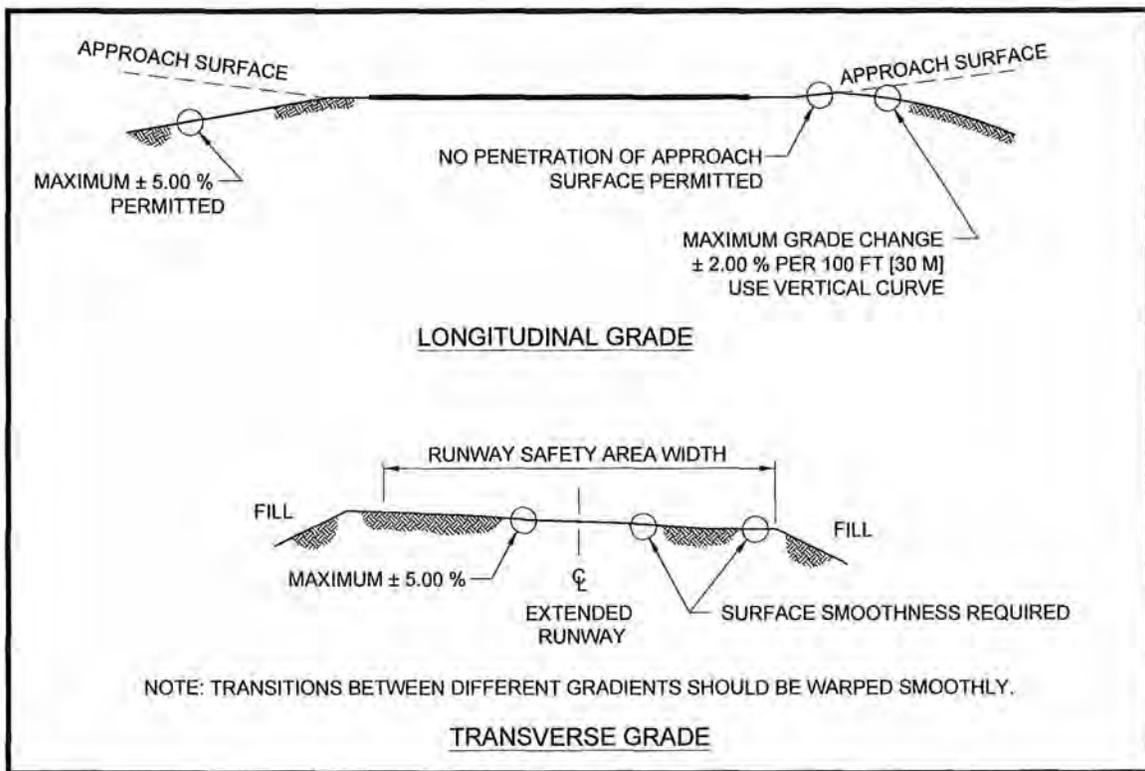


Figure 2-2: RSA Grade Limitations Beyond 200 Feet (61 m) From Runway End

Compliance with the requirements of AC 150/5300-13A will also fulfill the requirements of Public Law 109-115 which calls for FAA Airport Design Standards to be met by December 31, 2015.

In order to comply with the runway safety area surface gradient standard, HDOT-A proposes to place approximately 1 million cubic yards of fill material in the RSA at the south end of the existing runway to

achieve the proper grade. The fill material will be acquired through grading and excavation of approximately 50 acres within the airport property. **(Figure 2-3, Site Plan).**

Related improvements will include the installation of a new aircraft blast pad at the south end of Runway 3-21, the installation of approximately 3,200 feet of new perimeter fencing to encompass the improved RSA, the relocation of existing navigational aids (NAVAIDS), and the removal of fencing and relocation of an irrigation water line out of the existing RSA area to accommodate the planned improved area.

2.3 Purpose of the Environmental Assessment

This Final Environmental Assessment (EA) is prepared pursuant to the requirements of Hawaiʻi Revised Statutes (HRS), Chapter 343, *Environmental Impact Statements*, and Hawaiʻi Administrative Rules (HAR), Title 11, Chapter 200, *Environmental Impact Statement Rules*. The trigger for the preparation of this document involves the proposed use of state land and the use of federal and state funds for construction of the project. The Accepting Authority for the Proposed Action is the HDOT-A.

The environmental documentation requirements for the National Environmental Policy Act of 1969 (NEPA) will be handled through the filing of a separate NEPA EA. The content of the NEPA EA will be prepared in accordance with the requirements of NEPA, Section 102(2)(c), and Section 509(b)(5) of the *Airport and Airway Improvement Act of 1982, as amended*. The NEPA EA will also be prepared in accordance with FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*; and FAA Order 5050.4B, *National Environmental Policy Act Implementing Instructions for Airport Actions*.

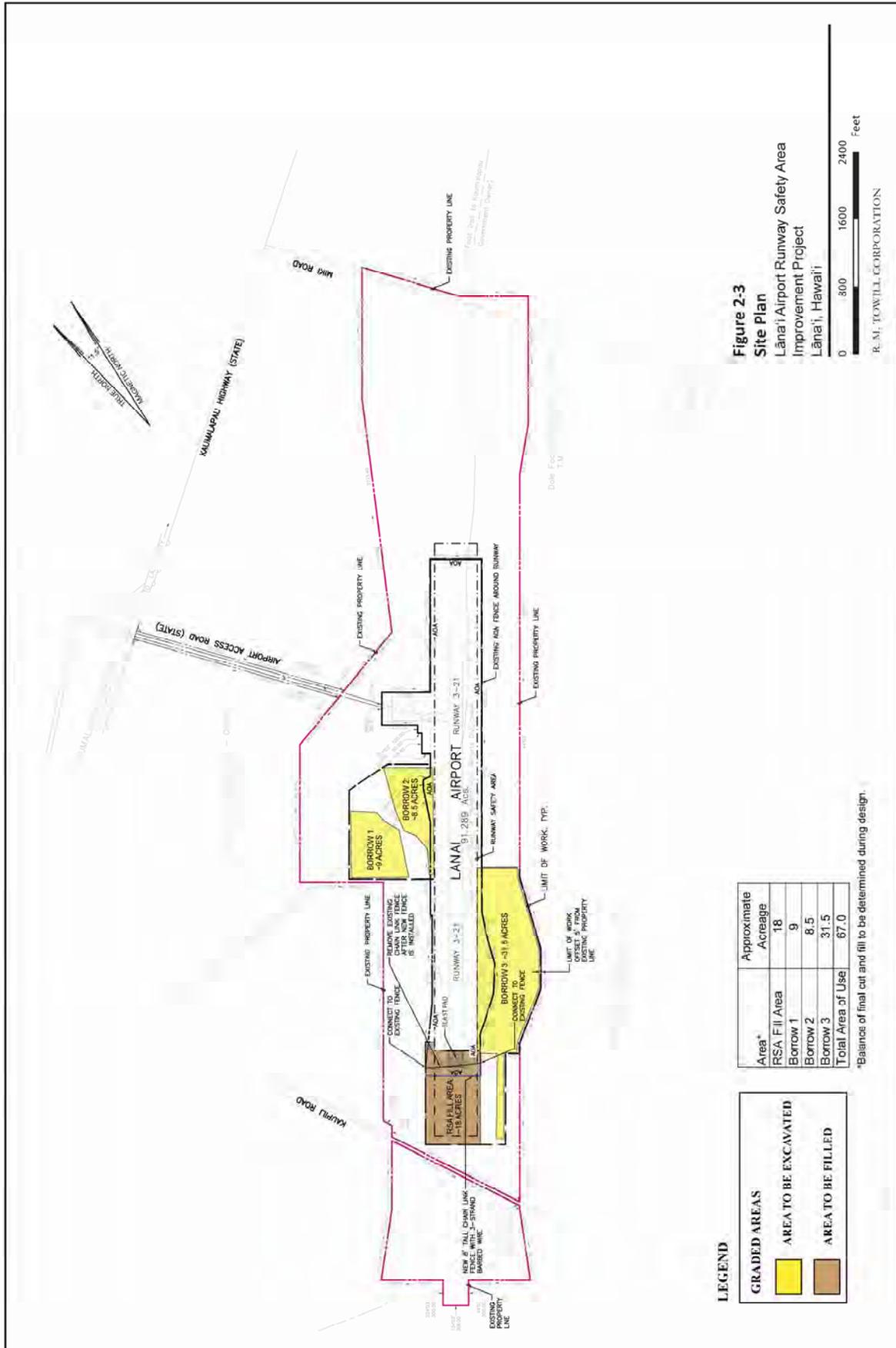
The HRS, Chapter 343, Draft EA for the Proposed Action was published for public review in the April 8, 2012 issue of the State Department of Health (DOH), Office of Environmental Quality Control (OEQC), Environmental Notice. Written comments received during the public comment period are documented in **Appendix A – Draft EA Public Comments**.

This Final EA provides additional project information and further description of the environmental conditions of the site, the potential for significant adverse impacts, and the application of mitigation measures as appropriate, to reduce, minimize or eliminate the potential for significant environmental impacts.

Based on its analysis the HDOT-A has determined in this Final EA that the project is not expected to have a significant adverse effect on the environment and a Finding of No Significant Impact (FONSI) will be issued and filed with the OEQC for this project.

2.4 Proposed Action

The HDOT-A proposes to place approximately 1 million cubic yards of fill material (soil) at the south end of the Runway 3-21, in the RSA area to rework the existing grade to meet FAA airport design requirements. The fill material will be acquired through grading and excavation of the land within the airport property. The fill material will be acquired through grading and excavation of approximately 50 acres to fill a roughly 31.2-acre area that includes the RSA and adjacent areas to the acceptable slope **(Figure 2-3, Site Plan).**



Related improvements will include the installation of a new aircraft blast pad at the south end of Runway 3-21, the installation of approximately 3,200 feet of new perimeter fencing to encompass the improved RSA, the relocation of existing navigational aids (NAVAIDS), and the removal of fencing and relocation of an irrigation water line out of the existing RSA area to accommodate the planned improved area.

Construction is anticipated to begin in the spring of 2014 and will last approximately 6 to 8 months. The total project cost estimate is approximately \$21 million. Funding sources will be from State Airport Funds and the FAA. The FAA will contribute approximately 95 percent and the State of Hawaiʻi will contribute 5 percent of the funding needed for this project.

3.0 Alternatives

3.1 Introduction

The HDOT-A considered three alternatives to the proposed project: (1) the No Action Alternative; (2) the Extension of Runway 3-21 Northward; and (3) Runway Safety Area Improvements (the Preferred Action).

3.2 No Action Alternative

The No Action Alternative involves taking no further action to improve the runway safety area. Taking no further action would involve no planning and engineering costs or effort to correct the existing non-compliance of the RSA at the south end of the runway, and result in the continued use of an airport runway that does not meet current FAA design standards. The airport would therefore continue to operate in non-conformance with the surface gradient standard for the RSA.

The No Action Alternative is not considered a viable nor feasible alternative because it would fail to address the need for the airport to meet FAA safety design requirements. For this reason the No Action Alternative is rejected from further consideration.

3.3 Extension of Runway 3-21 Northward

This alternative would extend Runway 3-21 approximately 1,000 feet to the north to allow for the RSA at the south end of the runway to be compliant with FAA safety design requirements. This action would involve grading and construction of the new extended runway surface. Because the runway will be shifted to the north, airfield navigational aids will also have to be realigned or relocated. Realignment or relocation of the navigational aids will require the temporary closure of the airport. Long-term impacts would involve aircraft operations taking off and landing closer to Lānaʻi City, resulting in a possible increase in aircraft noise.

The extension of the runway to the north will bring the newly configured runway closer to Lānaʻi City. The 1998 Lānaʻi Community Plan included the prohibition of extending the Lānaʻi Airport's runway in the direction of Lānaʻi City, as one of its implementing actions for Physical Infrastructure. While this alternative meets the need to improve to the Lānaʻi Airport RSA in keeping with the FAA airport safety design requirements, it was rejected from further consideration for the following reasons:

- There is an existing Lānaʻi Community Plan policy to “prohibit the extension of Lanaʻi Airport's runway in the direction of Lanaʻi City.”
- The Lānaʻi Airport would require closure due to the need for major relocation of airfield navigational aids.
- There would be a likely increase in aircraft noise impacts from a reconfigured runway being located closer to Lānaʻi City.

3.4 Runway Safety Area Improvements (Preferred Alternative)

The subject proposed action is the preferred alternative and involves re-grading the RSA located at the south end of the runway to meet FAA airport safety design requirements. Fill material will be placed in the runway safety area and adjacent areas to correct the existing grade. The fill material to be used at the site will be obtained by grading the adjacent open area surrounding the runway. The proposed action will enable the runway safety area to meet the FAA airport safety design requirements.

4.0 Description of Existing Environment, Potential Impacts and Proposed Mitigation Measures

4.1 Surrounding Land Uses

4.1.1 Existing Conditions

Lānaʻi Airport is located on the Island of Lānaʻi and is located approximately 3 miles southwest of Lānaʻi City. The airport has a single runway configuration, designated Runway 3-21, that is 5,001 feet long and 150 feet wide, and aligned in a northeast-southwest direction. A single 75 feet wide by 287.5 feet long taxiway serves as the entry and exit taxiway from Runway 3-21.

The airport property covers approximately 504 acres and is surrounded by land in open space and agricultural uses. Prior to the airport facility being constructed in 1940, the project site and the surrounding area were used for pineapple cultivation.

4.1.2 Potential Impacts and Mitigation Measures

The proposed project is compatible with current uses within the Lānaʻi Airport. The proposed facility improvements will take place entirely within the boundary of the airport property, and therefore, is not anticipated to adversely affect adjacent lands. See **Photo 1, View of the Existing End of the RSA Area Looking West.**



Photo 1 - View of the Existing End of the Runway Safety Area Looking West

4.2 Topography and Soils

4.2.1 Existing Conditions

Lānaʻi Airport is located on the southwest portion of the island and approximately 2 miles east of the nearest coastline. The Airport lies on a relatively flat ridge where the surrounding terrain slopes away from the site in both the easterly and westerly directions. The terrain beyond the ends of the runways falls to the southwest and rises at 2 percent to the northeast. The elevation at the project site ranges from 1,200 feet above mean sea level (MSL) to 1,400 feet MSL.

According to Soil Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lānaʻi, State of Hawaiʻi, as prepared by the U.S. Department of Agriculture, 1972, the project site and surrounding area are comprised of soils from the Molokaʻi-Lahaina association. Soils from the Molokaʻi-Lahaina association are found upland, and consist of deep, nearly level to moderately steep, well-drained soils that have moderately fine textured or fine textured subsoil. The two soil types in this area are Molokaʻi silty clay loam. MuA has 0 to 3 percent slopes and is characterized by moderate permeability, slow runoff, and slight erosion hazard. MuB, has 3 to 7 percent slopes and is defined by slow to medium runoff and slight to moderate erosion hazard.

4.2.2 Potential Impacts and Mitigation Measures

The potential for significant adverse effects to topography are not anticipated based on the planned scope and scale of the proposed project. The proposed grading activities will not result in major changes to the affected topography, aside from the fill at the runway safety area that is required to meet FAA design requirements. Excavation activities in the adjacent areas will mainly consist of surface grading and will result in a more consistent grade across the property.

Protection from construction storm water runoff will be addressed through the implementation of a Site-Specific Construction Best Management Practices (BMPs) plan in accordance with the National Pollutant Discharge Elimination System (NPDES) permit program, administered by the Department of Health, Clean Water Branch (DOH-CWB)¹. The NPDES permit program governs all ground-disturbing activities that exceed one-acre in area that have the potential to discharge soils, sediments and other construction related runoff in storm water to waters of the State. BMP measures will include the use of vegetative, structural and management practices to prevent discharges of untreated construction storm water from entering waters of the state.

There are no anticipated long-term adverse impacts to soils at the project area. Ground disturbance will only be undertaken during construction, and any waste material that cannot be reused will be removed from the project site and properly disposed of. Excess soil recovered from the site will be reused to establish vegetation or for landscaping.

Adherence to Federal and State guidelines governing construction of the project shall also be employed including the review and approval of the construction plans and related environmental entitlements

¹ Hawaiʻi Administrative Rules, Chapter 11-55, *Water Pollution Control*.

that will be filed with the appropriate agencies for this project. This will include the preparation of an Erosion Control Plan (ECP) including the implementation of erosion and sediment controls.

Examples of construction related BMPs what will be employed include the use of silt fences, sandbags, berms, and other applicable means of preventing storm water from carrying soils in storm water runoff away from the active work area. Other measures will include the use of sprayed water on disturbed areas to control dust. In order to conserve water resources, only enough water will be sprayed to wet the soils without causing runoff. Vegetative controls will be used as permanent BMPs to stabilize open areas with soils that have been disturbed. The use of grassing and/or hydromulch will be applied following the establishment of final grades.

The following are typical BMP measures that would be applied to the subject project to address NPDES construction storm water erosion control requirements:

Before Construction

- Existing ground cover will not be destroyed, removed or disturbed more than 20 calendar days prior to start of construction.
- Erosion and sediment control measures will be in place and functional before ground disturbance may begin, and will be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.

During construction

- Clearing shall be held to the minimum necessary for grading, equipment operation, and site work.
- Erosion and sediment control measures will be installed prior to ground disturbance and continually maintained throughout the entire construction period.
- Construction shall be sequenced to minimize the exposure of cleared surface areas. Areas of one phase shall be stabilized before another phase can be initiated. Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as silt fences or vegetative controls such as grass seedling or hydromulching.
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that remain unfinished. Permanent soil stabilization using vegetative controls and/or soil binders shall be applied as soon as practicable after final construction.
- Any soil or debris that fall into existing drainage system will be immediately removed.
- All erosion and sediment control measures will be checked as necessary.
- Maintenance and fueling of construction equipment and vehicles shall be performed only in designated areas. Clean up materials shall be placed in a conspicuous location to facilitate

cleanup in the event of inadvertent leaks or spills. Refueling and maintenance of vehicles and equipment shall not be permitted outside of designated refueling areas.

- All liquid materials including petroleum, oils, and lubricants (POLs), solvents and cleaners shall be stored in sealable containers. No open containers for the storage of such materials will be permitted. POLs will not be allowed to be discharged into State waters or leach into the ground.

After construction

- All equipment no longer necessary to the site will be removed. Construction debris and refuse will be disposed of at an approved facility that accepts construction and demolition debris waste by the contractor.

4.3 Agriculture

4.3.1 Existing Conditions

The State of Hawaiʻi, Land Study Bureau (LSB) classification system inventories and evaluates the overall productivity rating of the State's non-urban lands. Soils are grouped into land types based on soil and productive capabilities such as soil properties, topography, climate, and other factors such as technology and crop type. There are 2 sets of productivity ratings: (1) Overall Productivity Rating - "A", very good to "E", not suitable; and (2) Crop Productivity Rating for crops that include pineapple, sugar, vegetables, forage, grazing, orchard, and timber.² The Land Study Bureau has classified the land in the project area with the soil productivity rating of "D".

According to the Maui County General Plan 2030, the State Department of Agriculture has developed a classification system that analyzes soil productivity, water retention, erosion, chemical makeup, and factors favorable for root growth. Under the Agricultural Lands of Importance to the State of Hawaiʻi (ALISH) system, there are three classifications:

1. Prime – land that has the best physical, chemical, and climatic properties for crop production.
2. Unique – land that is best suited for special or high-value crops such as watercress, coffee, or taro.
3. Other – land that may not be the most productive, but is convenient for agricultural purposes because of its location, access to water, or other factors.

Together, these types of agricultural lands form the important agricultural lands of the County. The ALISH map of the area indicates that the project site falls within the "unique" agricultural land category. See **Figure 4-1** and **Photo 2** and **Photo 3**.

² Land Classification Systems and Agricultural Land Use Planning in Hawaiʻi (from <http://www.hawaii.stateassessment.info/library/chillingworthhigiclandclassificationsystems-091030225434-phpapp01.pdf>)

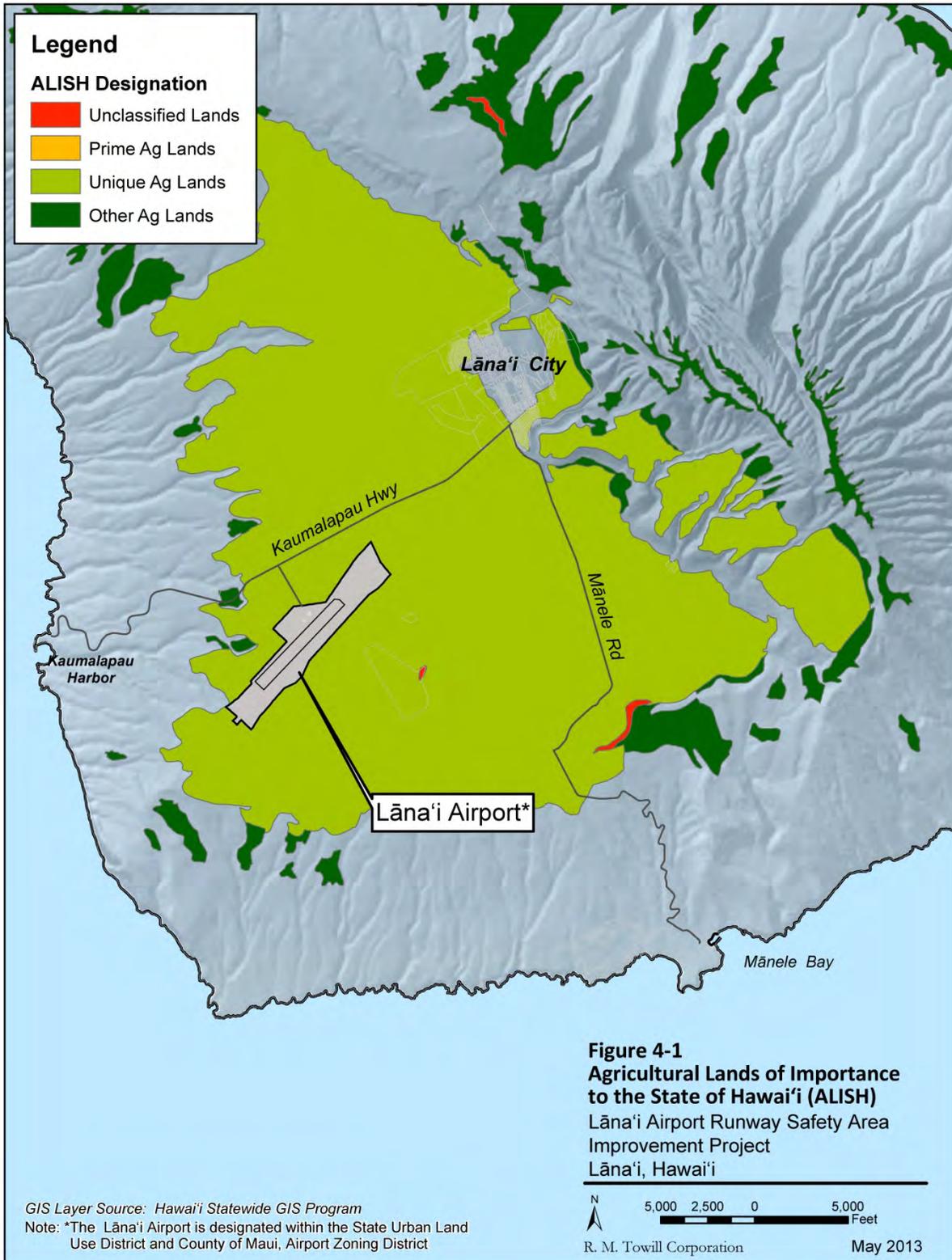




Photo 2 – View Facing North Toward the Terminal

4.3.2 Potential Impacts and Mitigation Measures

The proposed project will be limited to work within the existing Lānaʻi Airport property, an area designed by the State of Hawaiʻi as within the Urban state land use district, and the County of Maui, as within the Airport zoning district. Because the proposed project will not require the use of land designated by the State or County of Maui for active agricultural uses, and is within an area specifically designated for an airport facility, the proposed project is not anticipated to have a negative impact on existing agricultural uses or activities.

4.4 Natural Hazards

4.4.1 Existing Conditions

The Hawaiian Islands are susceptible to the following natural hazards: (1) earthquakes and volcanic activity; (2) tsunamis; (3) hurricanes; and (4) floods.

4.4.1.2 Earthquakes and Volcanic Activity

Natural hazards in Hawaiʻi are generally infrequent and are rarely destructive. Earthquakes occurring in Hawaiʻi are closely linked to volcanic activity. Volcanic activity will not affect the proposed project directly through volcanic eruption, as there are no active volcanoes on the island of Lānaʻi.



Photo 3 – View Facing Northeast Along East Boundary

According to the U.S. Geological Survey (USGS), Lānaʻi is located in the Zone 2 category for seismic activity as established by the Uniform Building Code (UBC). The UBC provides minimum design criteria to address the potential for damage due to seismic disturbances. The range of seismic risk varies from Zone 0, indicating no damage, to Zone 4, indicating major damage.³

Although the possibility of an earthquake on Lānaʻi is lower than on other Hawaiian Islands, the potential for damage to the Lānaʻi Airport and the proposed project site may occur from an earthquake of sufficient magnitude. The potential for damage will be minimized, although not completely eliminated, by the design of the project in compliance with the applicable Federal, State, and County of Maui design standards to address earthquake and seismic disturbances.

³ <http://hvo.wr.usgs.gov/earthquakes/hazards/>

4.4.1.3 Tsunami

A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. These waves can occur at any time with limited or no warning. The tsunami evacuation maps for the island of Lānaʻi indicate that the project site is located well beyond the limits of coastal flooding resulting from a tsunami event.

4.4.1.4 Hurricanes

Heavy rains and strong winds associated with tropical storms occasionally impact the Hawaiian Islands and can cause flooding and major erosion. Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane force wind speeds. Hawaiʻi's annual "hurricane season" is from June through November.

4.4.1.5 Floods

Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the Island of Lānaʻi, the project area is located in Zone X; indicative of areas determined to be outside of the 0.2 percent annual chance floodplain.

4.4.2 Potential Impacts and Mitigation Measures

4.4.2.1 Earthquake and Volcanic Activity Hazard

Materials used for the construction of the RSA improvements will be fill comprised of soils excavated from surrounding areas of the Lānaʻi Airport property. The fill will be used to create the RSA area and will be properly compacted to support the design jet aircraft in the event of an overshoot, undershoot, or other event involving the departure of the aircraft from the runway onto the RSA. The slope of the area of fill will be graded appropriately to maintain stability.

The area of construction to establish the RSA will be designed in accordance with the appropriate Federal and State standards for airfield associated construction. No mitigation beyond compliance with the appropriate standards are proposed.

4.4.2.2 Hurricane and Tsunami Hazard

The proposed project principally involves construction activities that include grading, filling, and soils compaction and is not anticipated to be affected by hurricanes. Areas that are disturbed by earthwork will be stabilized with vegetative cover to minimize erosion from storm-generated runoff.

The project site is located outside of the tsunami inundation zone and therefore no mitigation measures are planned or proposed.

4.4.2.3 Flood Hazard

The project site is not within a flood-prone area and is therefore not expected to be significantly impacted by flooding events. No further mitigation measures related to flooding are planned or proposed.

4.5 Flora and Fauna

4.5.1 Existing Conditions

A biological survey was undertaken in February 2011 to describe the botanical and faunal resources within the project limits (**Appendix B**). Vegetation in the vicinity of the project site is comprised mostly grasses and scattered low-lying scrub vegetation. A total of 56 species were observed. Four botanical species are considered native to the Hawaiian Islands and include 'ilima (*Sida fallax*), 'uhaloa (*Waltheria indica*), koali'ai and 'a'ali'i (*Dodonaea viscosa*). There were no plant species found that were considered threatened or endangered, or which otherwise are considered to be rare or of special significance by the State of Hawai'i or federal government within the project limits.

Faunal species found at the site included two mammals. Seven Axis deer (*Axis axis*) were sighted and tracks, scat and signs of both deer and dog (*Canis f. familiaris*) were encountered at numerous locations. One dog was heard barking outside the project site. No rodents were detected during the course of the survey, however, it is likely that three of the four established alien muridae found on Lānaʻi may use the feed and forage resources present within the general project site. These species include the roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), and European house mouse (*Mus musculus domesticus*). There were no mammal species detected during the survey that are protected or proposed for protection under either the federal or state endangered species programs.

A total of 138 individual birds from 16 different species were recorded during station counts for the survey. Two species detected, the Pacific Golden-Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*) are native migratory shorebirds. The remaining 14 species recorded are all considered to be alien to the Hawaiian Islands. These included the Sky Lark (*Alauda arvensis*), Northern Cardinal (*Cardinalis cardinalis*), and house Sparrow (*Passer domesticus*). These three bird species accounted for almost half of the total number of individual birds recorded.

Although not detected during the survey, Hawaiian Petrel (*Pterodroma sandwichensis*) likely over-fly the airport between April and the end of November each year as there is a colony of this endangered species on Lānaʻi. There are neither nesting colonies, nor appropriate nesting habitat for Hawaiian Petrels within, or close to the Lānaʻi airport. The petrel is listed as endangered under both federal and State of Hawai'i endangered species statutes.

The U. S. Fish and Wildlife Service commented that the Newell's shearwater and the Hawaiian petrel may traverse the project area when flying between the ocean and mountain nesting sites during their breeding season (March through December).

4.5.2 Potential Impacts and Mitigation Measures

No adverse effects to rare, threatened or endangered flora are anticipated, as all work will remain within previously-disturbed areas of the airport property. Upon the completion of work, all areas of exposed soils will be revegetated with appropriate plant cover and/or soil binders to stabilize the disturbed areas.

The proposed action poses an increased threat to the Hawaiian Petrel and Newell's shearwater from outdoor lighting associated with the night-time construction activities. Collision with man-made structures is considered to be the second most significant cause of mortality of these seabirds in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets for feral mammals.

To mitigate against the potential for adverse impacts to juvenile seabirds, nighttime construction activities will be scheduled to occur outside of the seabird fledging season (August through December). Additionally, the contractor will be required to shield night-time lighting throughout the duration of the project to minimize potential impacts to seabirds overflying the project site at night. Upon the completion of the project, all temporary impacts (noise, night-time lighting, dust, etc.) will cease and the area will return to its preconstruction condition. In the long-term, the project is not anticipated to adversely impact rare or threatened biological resources in the area.

4.6 Hydrology

4.6.1 Existing Conditions

4.6.1.1 Surface Water

There are no standing bodies of water within the project limits. The existing drainage pattern at the project site is mainly surface flow following the existing topography. Storm water runoff generally flows in an easterly direction and eventually discharges in a tributary of the Kaumalapau Gulch which runs across the southwestern portion of the property.

The only major surface water in the vicinity of the project site is the Pacific Ocean, which is approximately 2 miles to the west of the project site. There are no perennial or intermittent streams, or wetlands in close vicinity of the project site.

4.6.1.2 Ground Water

Lānaʻi has basal and high-level dike confined aquifers. Ground water on Lānaʻi comes from dike basal ground water derived from rainfall. The rainfall is absorbed into the ground and is impeded by a series of volcanic dikes. These dikes supply the basal lens of fresh water that sits under the island.⁴

4.6.2 Potential Impacts and Mitigation Measures

There is potential for temporary impacts to coastal waters from construction associated storm water runoff during excavation and grading of the project site. Discharges of construction associated storm water runoff will be addressed through the application of appropriate mitigation measures including the use of an Erosion Control Plan and Site Specific Construction BMPs Plan (as required by the DOH-CWB NPDES Permit Program). See Section 4.2.2 for further discussion of the proposed mitigation measures.

There is also the potential for the generation of standing water during project construction activities when the earthwork has altered the existing site topography. The contractor will be notified that configuring the surface of the site causing water to pond following storm events must be avoided to prevent serving as an attractant to avifauna. This will require that site grading be designed to prevent the creation of low lying areas where ponding can occur.

The proposed project is not anticipated to itself constitute an adverse potential impact on the groundwater resources of the area. The potential for construction related impacts to groundwater are principally anticipated to involve discharges percolating into the ground from petroleum products and other chemicals associated with construction vehicles and machinery. Mitigation measures associated with the filing of the required NPDES Construction Stormwater Permit will address these sources of non-storm water pollutants. Both the project's Erosion Control Plan and implementation of the Site Specific Construction BMPs Plan are expected to prevent the potential for adverse impacts to ground water and coastal waters.

Impacts to ground water are not anticipated with the proposed mitigation measures. No further mitigation is expected to be required.

4.7 Archaeological Resources

4.7.1 Existing Conditions

In March 2013, an Archaeological Assessment for the Proposed Lānaʻi Airport Runway Improvements project was prepared by Cultural Surveys Hawaiʻi, Inc., archaeologists. The purpose of the assessment was to ascertain the presence of archaeological resources within or adjacent to the Airport property and to identify whether there would be any potential for adverse effects to archaeological and/or cultural resources (**Appendix C**). The following is a summary of the survey and survey results.

⁴ Numerical Ground Water Model for the Island of Lānaʻi, Hawaiʻi <http://hawaii.gov/dlnr/cwrm/publishedreports/CWRM-1.pdf>.

4.7.1.1 Literature Review and Records Search

The research included a review of ethnographic and historic literature and maps, federal, state, and local inventories of historic properties, archaeological base maps and site records, and survey reports on file at the Hawaiʻi Historic Preservation Division (SHPD), DLNR; the Survey Office of the Department of Accounting and General Services (DAGS); and other private collections. All relevant Land Claim Awards (LCA) and Royal Patents were researched using documentary resources available online at the Lānaʻi Culture & Heritage website⁵. The record search identified no recorded archaeological sites within or immediately adjacent to the Lānaʻi Airport.

4.7.1.2 Pedestrian Survey

An area of evaluation identified as the Area of Potential Effect (APE) was ground surveyed for the purpose of historic property identification and documentation through systematic sweeps guided by the georeferenced project site map (**Figure 4-2, Location of Area of Potential Effect** and **Figure 4-3, Area of Potential Effect on Project Site Map**) uploaded to a Trimble GPS ProXH unit and known landmarks. Field crew members were generally spaced at 5-10 meter intervals in areas of fair to poor ground visibility (knee high to overhead grasses) and 10-20 meter intervals in areas of good to excellent ground visibility (exposed soils to knee high grasses).

4.7.1.3 Mechanized Subsurface Testing

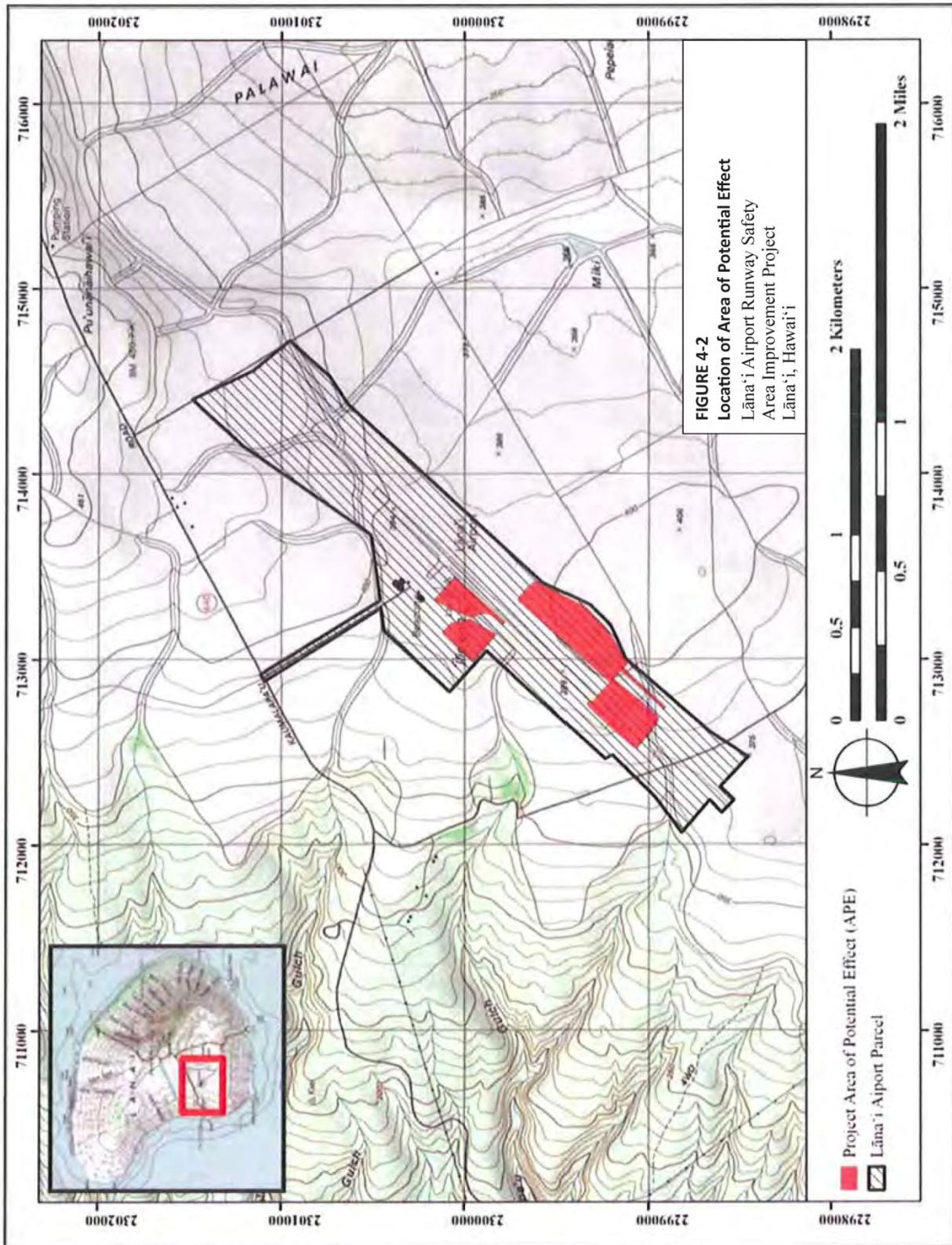
A total of 25 backhoe trenches (BTs) were mechanically excavated for exploratory sub-surface testing (**Figure 4-4, Archaeological Testing Locations**). Each backhoe trench was generally oriented in either a north-south or east-west direction in order to obtain a representative overview of the soil stratigraphy. All backhoe trenches averaged 5 meters long by 1 meter wide, and were excavated to either C Horizon soils or as safety standards dictated. This excavated depth ranged from approximately 1.2 to 2 meters. The soil and backhoe trench sidewalls were inspected for cultural material during and after the excavation process.

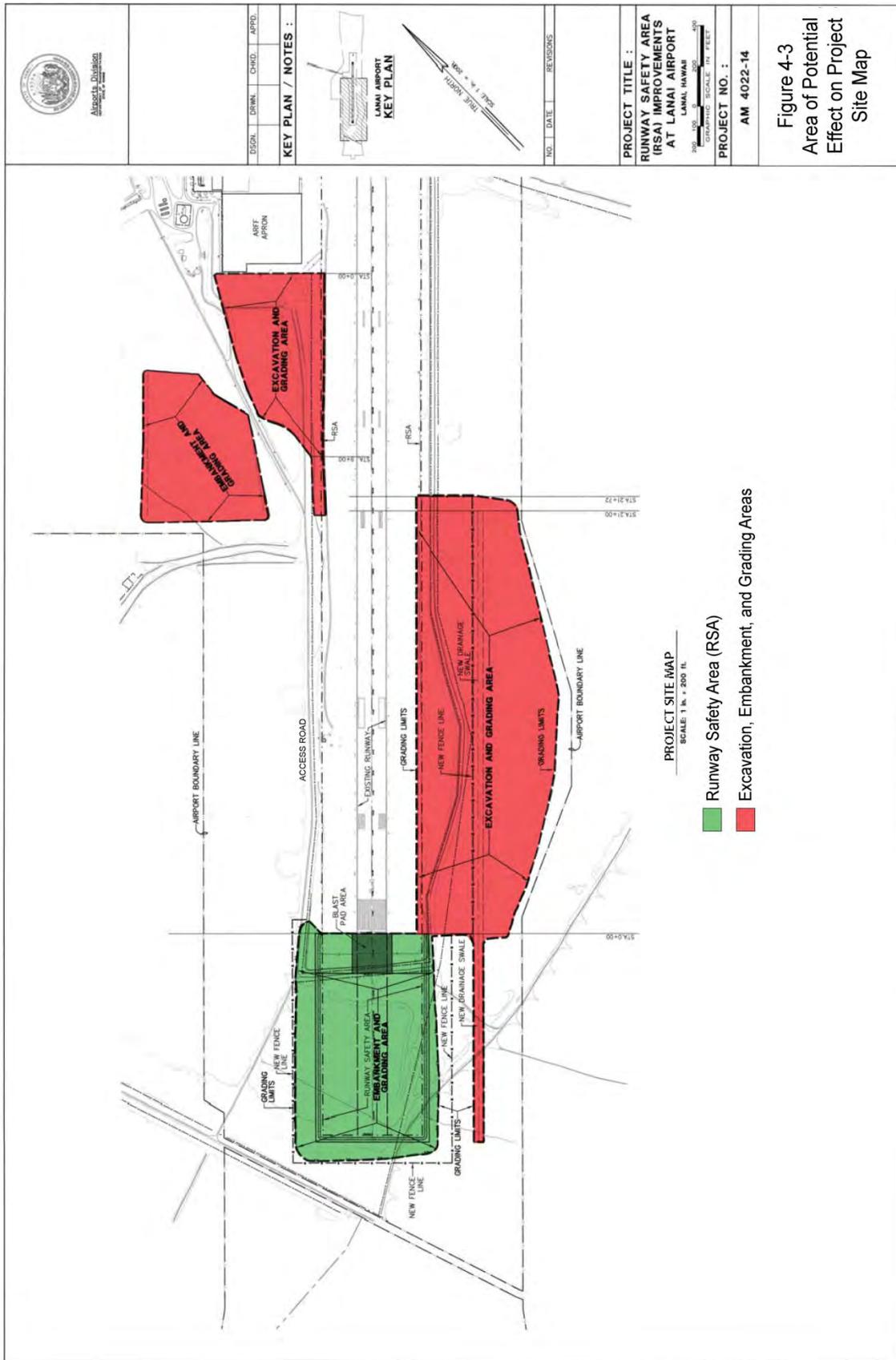
Overall, the soil stratigraphy of the project area consists of a 30-70 centimeters thick A or Ap (plow zone) soil horizon that contained fragments of remnant irrigation line and black plastic associated with pineapple cultivation debris followed by B and compacted BC transitional soils.

4.7.1.4 Historic Architectural Resources

Research relating to prior historic architectural resources was not undertaken based on the prior history of land use involving the historical open space and agricultural use of the site which would have precluded the presence of architectural resources. This is based on the land use within and surrounding the project area which has been plowed over and intensively cultivated in pineapple for the past approximately 70 years, from 1922 until 1992 (Cultural Surveys Hawaiʻi, 2013).

⁵ http://www.lanaichc.org/lanai-history/lanai_history.htm.





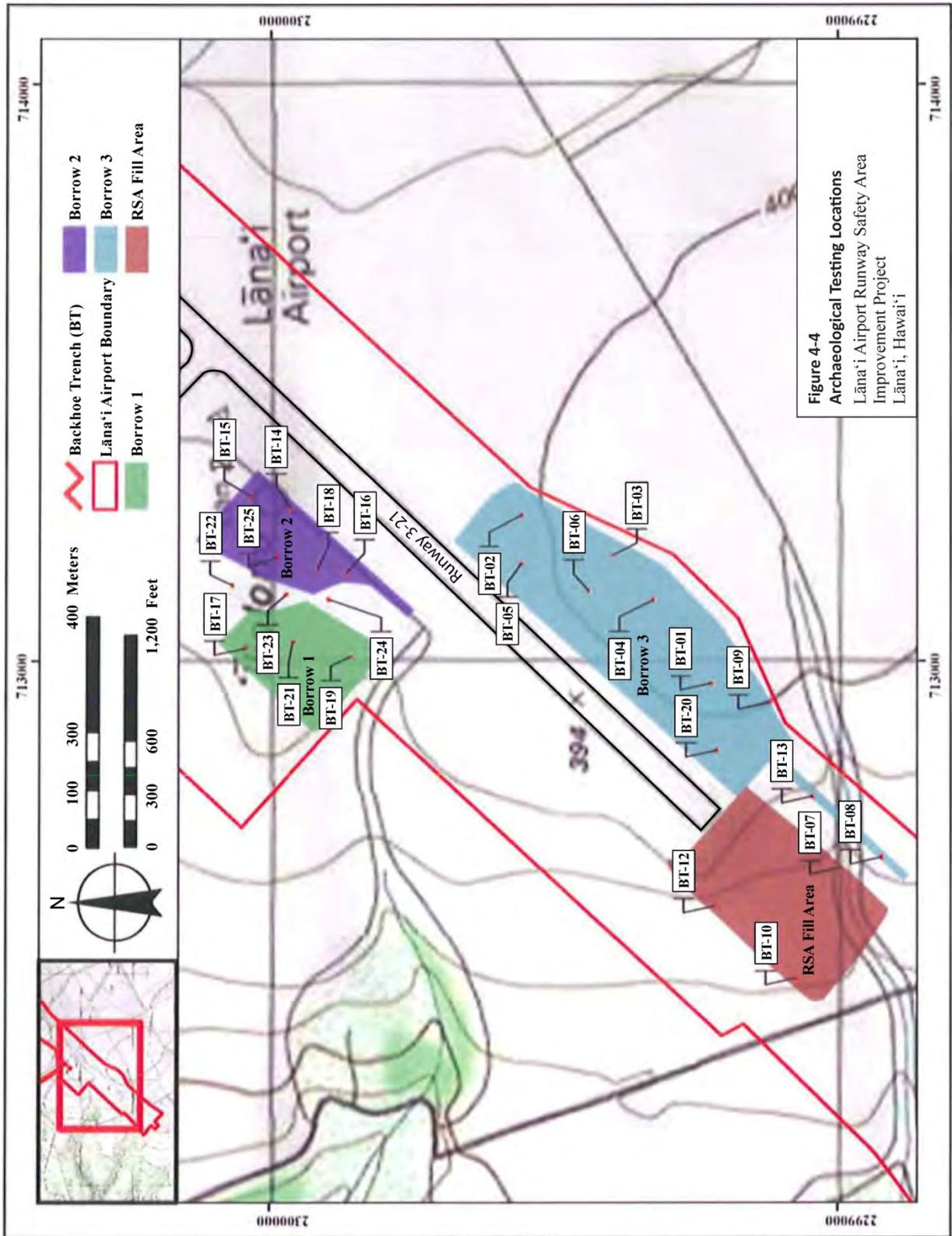


Figure 4-4
Archaeological Testing Locations
 Lānaʻi Airport Runway Safety Area
 Improvement Project
 Lānaʻi, Hawaiʻi

4.7.1.5 Summary of Archaeological Survey Results

Previous archaeological studies in and around the proposed project site has revealed that the area was used for traditional Hawaiian cultivation of sweet potato, gourd and sugar cane during pre-contact times. Other investigations show that agriculture and habitation settlements once took place along the rim of Miki and Palawai basins until the time of the Great Mahele and sporadically into the 1920s. The previous extensive commercial pineapple cultivation resulted in destruction of most of the surface features associated with traditional agriculture and settlement. The ongoing improvements to the Lānaʻi Airport Operations Area have also significantly altered the ground surface of the site.

Previous studies also indicate the former presence of the Ili o Lono Heiau within the overall airport property and the presence of previous pre-contact habitation along the basin rim. However, during the course of the survey no significant subsurface cultural materials were discovered.

4.7.2 Section 106, National Historic Preservation Act (NHPA) Consultation

Section 106, NHPA Consultation was undertaken to address federal requirements in NEPA (42 U.S.C. Sections 4321 through 4327) and the FAA in 36 CFR 800. The SHPD and the project archaeologist, Cultural Surveys Hawaiʻi, Inc., were consulted to identify Native Hawaiian organizations (NHOs) that may have input on concerns that uniquely or significantly affect them related to planned and proposed airport improvements, or may have information about, or be interested in, the proposed undertaking. The list of names identified by SHPD and Cultural Surveys Hawaiʻi, Inc., included the following (see **Appendix D** for further detail concerning Section 106):

- Ms. Phyllis “Coochie” Cayan, SHPD
- Ms. Pua Aiu, Ph.D., SHPD Administrator
- Ms. Jenny Pickett, Maui Assistant Archaeologist, SHPD
- Mr. Hinano Rodrigues, Maui Cultural Historian, SHPD
- Ms. Winifred Manō Burges, Aha Moku Advisory Council
- Mr. Kepa Maly, Lānaʻi Culture & Heritage Center
- Ms. Sandra Ropa, Hui Malama Pono O Lānaʻi
- Ms. Mona Kapaku, Department of Hawaiian Homelands
- Mr. John Summers, Administrator, Maui County Cultural Resources Commission
- Mr. Kamanaʻo pono Crabbe, Ka Pouhana Chief Executive Officer, Office of Haw. Affairs
- Mr. Edward Halealoha Ayau, Esq., Hui Malama I Na Kupuna 'O Hawaiʻi Nei
- Mr. Kunani Nihipali, Hui Malama I Na Kupuna 'O Hawaiʻi Nei
- Mr. Ron McOmber, President, Lanaians for Sensible Growth

Each of the individuals were notified by letters sent by the FAA on March 13, 2013, requesting consultation. As a result of the consultation effort one response letter was received on March 21, 2013 from the Department of Hawaiian Home Lands indicating that it had “...no comment to offer at this time.”

4.7.3 Potential Impacts and Proposed Mitigation Measures

The identification of potential impacts to historic, architectural, archaeological, and cultural resources included conducting a literature review and record search of historic maps, written records, Land Commission Award documents, and reports from prior archaeological investigations that included the area of the APE. The results of subsurface testing indicated there are no previously recorded historic properties within the APE.

The potential for adverse effects to historic or archaeological resources are not anticipated due to the extensive alteration of the ground from previous agricultural activities and the existing activities related to the operations of the Lānaʻi Airport.

Based on no historic properties affected, it is recommended that no further historic preservation work should be necessary for the area that comprises the present project APE. In the event that an artifact is discovered during earthmoving activities, work will be temporarily suspended in the immediate vicinity of the artifact and the SHPD will be contacted at (808) 692-8015. SHPD will furnish further instructions regarding the treatment of the find and the conditions when work may be resumed.

4.8 Cultural Impact Assessment

4.8.1 Existing Conditions

The upland area of the Miki and Palawai Basins were well known dry land agricultural lands where crops such as sweet potato, gourd and sugar cane were cultivated. Through cultural interviews undertaken by Cultural Surveys Hawaiʻi, Inc., in 2009, it was revealed that the site of the former Ili o Lono heiau was located in an area approximately where the center of the existing Runway 3-21 is located. The heiau was a dry land agricultural heiau of the area chief. The destruction of the heiau coincides with the commencement of pineapple cultivation in the area in the early 1920's (CSH, 2009).

Cultural interviews also made reference to a traditional mauka-makai trail which provided between the coastal and upland settlements and resources. This trail followed the Kamoku-Kalulu ahupuaʻa boundary through what is now the northeastern portion of the airport property (near the existing parking lot). This trail does not exist today. (CSH, 2009).

4.8.2 Potential Impacts and Mitigation Measures

The potential for adverse effects to cultural resources is not anticipated as the project site consists of a previously disturbed area and includes plant species not normally associated with cultural gathering or use activities.

4.9 Air Quality and Noise

4.9.1 Existing Conditions

No sampling data was collected on air quality. However, air quality at the project site is generally good due to the regular presence of prevailing winds, and its location on the island. Existing major sources of

air pollution are not present with the exception of airplane exhaust from landing and departing aircraft, however, particulates generated by these sources of emissions are intermittent and quickly dispersed.

Ambient noise emissions in the area generally result from traffic along roadways and aircraft traffic.

Construction-associated noise is anticipated to result from clearing and grading activities. Construction equipment is expected to include, but not be limited to bulldozers, excavators, graders, dump trucks, and other related heavy equipment.

4.9.2 Potential Impacts and Mitigation Measures

Construction activities are expected to have little to no impact on air quality based on the limited duration of project activities, and where engine exhausts may be a source of potential air pollution, all internal combustion powered equipment will be operated and governed in accordance with the applicable state regulations in HAR, Chapters 11-59 and 11-60, relating to Air Pollution Control.

During construction, fugitive dust is expected to be generated. Fugitive dust will be controlled with the regular wetting of the soil by the contractor and/or by the use of dust screens, as required. The use of water for dust control will only be in amounts sufficient to dampen the soils to inhibit the generation of dust without causing runoff that could be discharged to state waters. Once grading activities are completed, all disturbed areas will be stabilized with appropriate vegetation or through the use of soil binding products. It is anticipated that there will be no long-term effects to air quality as conditions will return to pre-construction levels upon the completion of the project.

Construction related noise will be temporary and limited to the duration of construction of the project. Upon completion of work, no further construction sources of noise will be generated and the area is expected to return to pre-existing background levels. No further measures or practices to address construction associated noise are anticipated to be required.

4.10 Scenic Resources

4.10.1 Existing Conditions

The project area is located in an existing airport facility. The airport is located in a relatively flat area, surrounded by agricultural fields and undeveloped areas.

4.10.2 Potential Impacts and Mitigation Measures

No adverse impacts to scenic and visual resources are anticipated. The proposed project is limited to grading activities within the existing airport property and is not expected to significantly affect existing viewplanes.

Construction activities will temporarily alter the visual resources of the area with the presence of equipment and personnel in the vicinity of the project site. Upon the completion of construction, all equipment and personnel will be removed. No mitigation measures are anticipated to be required.

4.11 Recreational Resources

4.11.1 Existing Conditions

The project site is part of the existing airport facility and does not support recreational activities.

A traditional beach/mountain access trail was referenced in the cultural impact assessment following the Kalulu-Kamoku *ahupuaʻa* boundary near the project site. However, this trail is no longer in existence.

4.11.2 Potential Impacts and Mitigation Measures

For safety and security reasons, access into the project site is restricted. Any recreational resources in the areas surrounding the airport property will not be affected by the proposed improvements; therefore no mitigation measures are anticipated to be required.

4.12 Airport Operations

4.12.1 Existing Conditions

Existing regularly scheduled air service to Lānaʻi is provided by Island Air and go!/Mokulele Air⁶. Air Taxi and charter services are provided by Marjet, Paragon Air and Trans Air. The hours of operation are generally from 6 a.m. to 8 p.m., daily.

The proposed project will have the potential to disrupt airport operations. The presence of heavy equipment and personnel within the RSA is prohibited during aircraft operations. Relocation of the navigational aids has the potential for disrupting flight schedules. Runway closure will be required when construction activities are ongoing.

The proposed grading activity within the airport property has the potential to increase wind-driven dust onto the runway and affect flight operations.

4.12.2 Potential Impacts and Mitigation Measures

The proposed project will be scheduled to minimize disruption of aircraft operations. Construction activities will occur mostly at night, after the last scheduled flight has departed and end prior to the first scheduled arriving flight in the morning. To provide an additional safety margin, construction activities will begin 30 minutes after the last flight and end at least 30 minutes prior to the scheduled arrival of the morning flight. All equipment will be relocated to a designated staging area and personnel will vacate the work site prior to the morning deadline. The relocation of the navigational aids will be scheduled outside of the regular airport operating hours to prevent disruption to airport operations.

In addition, the contractor, in coordination with HDOT-Airports, will prepare a contingency plan to re-open the runway should emergency landings or emergency air evacuations be necessary.

⁶ go! Airlines flights to Lānaʻi are operated by Mokulele Air.

Coordination with FAA will be done to ensure that the operation of navigational aids will not be disrupted during construction.

During grading activities, water trucks will be used to keep disturbed areas dampened to suppress the generation of dust. Throughout the construction period, dampening of the soil will be practices as needed to prevent excessive dust from hindering airport operations. Refer also to Section 4-2, Topography and Soils, for additional measures to address dust pollution and soil erosion.

4.13 Police, Fire Protection, and Medical Services

4.13.1 Existing Conditions

The Public Facilities Assessment Update for the County of Maui (2007) states that police and security services for island residents are provided by the Maui County Police Department (MPD). The Lānaʻi Police Station is situated in Lānaʻi City. Fire prevention, protection, and suppression services for the island of Lānaʻi are provided by the Maui County Department of Fire and Public Safety. Located in Lānaʻi City, the Lānaʻi Fire Station is staffed by fire fighters on alternating work shifts and is equipped with two vehicles with a water storage capacity of 700 gallons per vehicle.

Fire protection services for the Lānaʻi Airport airfield are also provided by the Air Rescue and Fire Fighting (ARFF) facility located at the edge of the runway to handle any aircraft emergency services that may be required.

The Lānaʻi Community Hospital is the major medical facility on the island. The 14-bed facility provides acute and long-term medical care, as well as 24- hour emergency medical service.

4.13.2 Potential Impacts and Mitigation Measures

Police, fire protection and medical services are not expected to be adversely impacted by the proposed action as there will be no change to the overall level of use of the Lānaʻi Airport. The proposed project will not result in an increase of airport personnel or extend existing service area limits.

The contractor will utilize a contingency plan in coordination with HDOT-A to ensure the ability to re-open the runway should emergency landings or emergency air evacuations be necessary during construction. See Section 4.12.2.

4.14 Solid Waste Disposal

4.14.1 Existing Conditions

According to the Public Facilities Assessment Update for the County of Maui (2007), residential solid waste disposal on Lanai is provided by the Maui County Department of Environmental Management (DEM), while commercial disposal service is provided by a private disposal service. Opened in 1974, the existing landfill is anticipated to reach approximately 10 to 20 year's capacity in 2056 (R. M. Towill, 2007).

4.14.2 Potential Impacts and Mitigation Measures

The construction of the proposed project is not expected to have any long-term impacts to solid waste facilities based on the limited scope and scale of work. Short-term impacts are anticipated in the form of construction debris that will be generated requiring disposal. The construction contractor shall be responsible for the disposal of construction debris at a county-approved landfill or disposal site in conformance with County regulations. Material excavated from the site will be used as fill material for the runway safety area improvements project.

4.15 Roadways

4.15.1 Existing Conditions

Access to the Lānaʻi Airport is off of Kaunalapau Highway. Kaunalapau Highway is a two-lane State Highway (Highway 440), running from Lānaʻi City to Kaunalapau Harbor on the western coast of Lānaʻi. The airport access road off of Kaunalapau Highway is also a two-lane roadway. The intersection of Kaunalapau Highway and the airport access road is an unsignalized intersection. Traffic levels are fairly low and there are no traffic problems in the area.

4.15.2 Potential Impacts and Mitigation Measures

Short-term construction activities associated with the project will involve the use of heavy equipment (i.e., bulldozers, graders, dump trucks, compaction rollers, etc.). Traffic may be temporarily impacted during mobilization and demobilization activities.

The proposed project is not anticipated to generate additional vehicular traffic that will affect traffic or levels of service at or near the airport and Kaunalapau Highway. Miki Road and Kaupili Road may be used as access routes for construction vehicles. The project contractor will be required to keep the affected roadways unobstructed and maintained as required. The contractor will also be required to control dust pollution on surrounding roads being used through the use of water trucks.

The fill activity to extend the RSA will not impact the existing alignment of Kaupili Road. After the project is completed, the existing roadway will be restored to existing conditions.

The large heavy equipment to be used for the project could obstruct airplane landings and take-offs if they are in the runway safety area. To prevent any chance of obstruction from occurring, the construction schedule will be coordinated with flight schedules to ensure equipment does not interfere with flight operations.

4.16 Water System

4.16.1 Existing Conditions

The water system for Lanai is owned and operated by the Lānaʻi Water Company. The Lānaʻi Airport water system is part of the domestic water supply system for Lānaʻi City. Potable water service to the airport is supplied by Windward Well 6 and Leeward Well 8. Water is transmitted to the airport through

an existing 6-inch waterline along Kaunalapau Highway. A 2.5-inch waterline connects with the 6-inch waterline and runs along the airport access road to a central meter and is distributed to serve the various airport facilities. Water storage for fire protection is supplied by fresh water (non-treated) from the Palawai irrigation grid fed by Well Nos. 2 and 4, and the Hiʻi Tank via a 10-inch main which connects to a 120,000 gallon steel water tank located to the northeast of the terminal building.

4.16.2 Potential Impacts and Mitigation Measures

Short-term use of potable water from the water system will be required for dust control, irrigation, and soils compaction. Water usage will be coordinated with the Lānaʻi Water Company to ensure adequacy of supply. As required, soil amendment may be used on portions of the project to inhibit the generation of windblown dust. Water use will be temporary and will cease after the completion of the project. No adverse effects are anticipated.

4.17 Wastewater System

4.17.1 Existing Conditions

The proposed project will not create additional long-term demands on the existing wastewater infrastructure. It is anticipated that the construction work crew will be approximately 12 to 24 personnel hired to construct the proposed improvements.

4.17.2 Potential Impacts and Mitigation Measures

No long-term impacts to wastewater facilities are anticipated. Wastewater generated during construction by work crews is expected to be handled through the use of portable sanitary toilets or by the restroom facilities located at the airport. The use, operation and maintenance of portable sanitary toilets will be in accordance with applicable regulations of the State and County of Maui.

4.18 Drainage

4.18.1 Existing Conditions

The Lānaʻi Airport is situated on a relatively flat ridge where the surrounding terrain slopes away from the airport in a westerly direction towards the Kaunalapau Gulch.

4.18.2 Potential Impacts and Mitigation Measures

The proposed excavation and grading of the project site will not significantly alter the existing drainage pattern of the Lānaʻi Airport. The proposed project also does not include major new impervious areas and there will be no significant increase in storm water runoff. The proposed improvements are not anticipated to adversely impact adjacent and downstream properties.

4.19 Electrical and Communication Systems

4.19.1 Existing Conditions

Electrical, telephone, and cable television (CATV) services to the Lanai Airport are provided by Maui Electric Company (MECO), Hawaiian Telcom, and Time Warner Cable TV.

The existing electrical distribution system at the Lānaʻi Airport is owned by the State of Hawaiʻi. The telephone and CATV services are routed in the same underground duct line system in use by MECO.

4.19.2 Potential Impacts and Mitigation Measures

No utilities are expected to be adversely affected during the proposed project. No mitigation measures are anticipated and none are proposed.

4.20 Housing and Economic Considerations

4.20.1 Existing Conditions

The proposed project is anticipated to have a beneficial impact on the economy. On a short-term basis, the project will support construction and construction-related employment. Assuming that the workers will come from other islands, the project will have an impact on the local economy during the period of construction in the form of housing and expenditures for goods and services by the construction work force.

4.20.2 Potential Impacts and Mitigation Measures

The proposed project will not result in a long-term increase in the Island's population. As such, the project is not anticipated to have an adverse impact upon the demographic resources of the island.

5.0 Relationship to Land Use Plans Policies and Controls

5.1 State Land Use Districts

The State Land Use Commission classifies all lands in the State of Hawaiʻi into one of four land use designations: Urban, Rural, Agricultural and Conservation. According to HRS, Chapter 205, State Land Use Law:

Chapter 205, HRS, Districting and classification of lands:

(a) There shall be four major land use districts in which all lands in the State shall be placed: urban, rural, agricultural and conservation. The land use commission shall group contiguous land areas suitable for inclusion in one of these four major districts. The commission shall set standards for determining the boundaries of each district provided that:

(1) In the establishment of boundaries of urban districts those lands that are now in urban use and a sufficient reserve area for foreseeable urban growth shall be included;

In establishing the boundaries of the districts in each count, the commission shall give consideration to the master plan or general plan of the county.

(b) Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated.

The proposed action involves the use of land within the State Urban District (**Figure 5-1, State Land Use District**). The project involving the runway safety area improvement project in support of the operations of the Lānaʻi Airport is consistent with this designation.

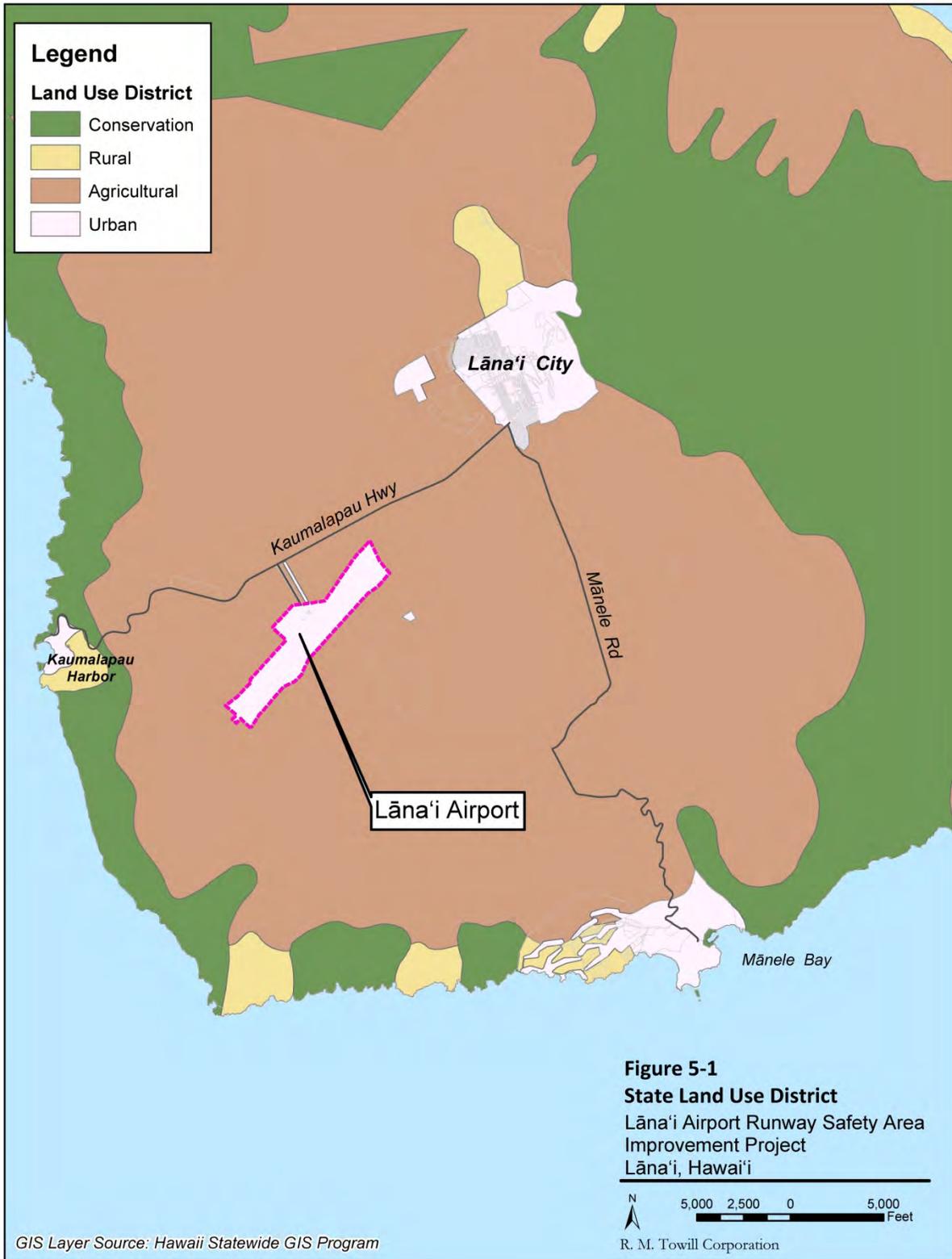
5.2 Maui Island Plan

The Maui Island Plan states as its vision: “Maui Island will be environmentally, economically and culturally sustainable with clean, safe, and livable communities and small towns that will protect and perpetuate a *pono* lifestyle for the future.”

5.2.1 Core Values

According to the Maui Island Plan, the following values will be implemented to achieve the island’s vision:

- A. Responsible stewardship applying sound natural resource management practices;
- B. Respect and protect our heritage, traditions, and multi-cultural resources;
- C. Plan and build communities that include a diversity of housing;
- D. Retain and enhance the unique identity and sense of place;
- E. Preserve rural and agricultural lands and encourage sustainable agriculture;
- F. Secure necessary infrastructure concurrently with future development;
- G. Support efforts that contribute to a sustainable and diverse economy for Maui;
- H. Create a political climate that seeks and responds to citizen input;



- I. Respect and dignity for every person living on Maui;
- J. Establish a sustainable transportation system that includes multiple modes, including walking, biking and mass transit, as well as automobile-based modes; and
- K. Recognize and be sensitive to land ownership issues and work towards resolution.

The following identifies the goals, objectives and policies in the Maui Island Plan that are relevant to the proposed project.

Harbors and Airports

Goal:

6.11 Maui will have harbors and airports that will efficiently, dependably and safely facilitate the movement of passengers and cargo.

Objective:

6.11.2 Upgraded airport facilities and navigation aids to serve the needs of passengers, freight movements, and general aviation.

Policies:

6.11.2. d. Work with the State and Kahului Airport users to:

b. increase infrastructure investments and improve operating procedures;

The proposed airport improvements will provide for a safer air transportation facility that meets the safety design standards of the HDOT-A and FAA.

5.3 Countywide Policy Plan

The Countywide Policy Plan⁷ provides broad goals, objectives, policies, and implementing actions that represent the preferred direction of the County's future. This includes: (1) a vision statement and core values for the County to the year 2030; (2) an explanation of the plan-making process; (3) a description and background information regarding Maui County today; (4) identification of guiding principles; and (5) a list of countywide goals, objectives, policies, and implementing actions related to the following core themes⁸:

- Protect the Natural Environment
- Preserve Local Cultures and Traditions
- Improve Education
- Strengthen Social and Healthcare Services
- Expand Housing Opportunities for Residents
- Strengthen the Local Economy
- Improve Parks and Public Facilities
- Diversify Transportation Options

⁷ County of Maui. County Wide Policy Plan. <http://www.co.maui.hi.us/index.aspx?NID=420>

⁸ Chapter 2.80B, Maui County Code, requires at a minimum that the Countywide Policy Plan address "population, land use, the environment, the economy, and housing."

- Improve Physical Infrastructure
- Promote Sustainable Land Use and Growth Management
- Strive for Good Governance

The Countywide Policy Plan is intended to provide the policy framework for the development of the Maui Island Plan and the nine Community Plans⁹. The Community Plans are intended to reflect the unique characteristics of each Community Plan Area and enable residents and stakeholders to address challenges that are specific to their regions.

The following Countywide Policy Plan provision is applicable to the subject project:

H. Diversify Transportation Options

Goal:

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

Objective:

3. Improve opportunities for affordable, efficient, safe, and reliable air transportation.

Policies:

c. Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.

The proposed project will improve opportunities for efficient, safe, and reliable air transportation. The airport improvements will ensure that the airport meets existing FAA airport safety design requirements.

5.4 Lānaʻi Community Plan

The project site is located in the Lānaʻi Community Plan region, which is one of the nine Community Plan regions established in the County of Maui. Planning for each region is guided by the respective Community Plans, which are designed to implement the Maui County General Plan. Each Community Plan contains recommendations and standards which guide the sequencing, patterns, and characteristics of future development in the region. Land use guidelines are established by the Lanai Community Plan land use map, and as indicated, the subject property is situated within an area designated for "Airport" use. The proposed action is in keeping with the Community Plan's "Airport" use designation for the property.

The Lānaʻi Community Plan was last updated in 1998. It is currently under review and scheduled for amendment. The Lānaʻi Community Plan sets forth the goals, objectives, policies, implementing actions, and standards which identify preferred future conditions, steps to be taken to achieve stated goals, and

⁹ The nine Community Plan Areas are Hana, Kahoʻolawe, Lanaʻi, Molokaʻi, Kihei-Makena, Makawao-Pukalani-Kula, Paʻia-Haʻiku, Wailuku-Kahului, and West Maui.

specific measures which are necessary to attain the desired goals. The proposed action is in consonance with the following provisions of the Community Plan:

Physical Infrastructure

Provide adequate, reliable and well-designed public infrastructure systems in a timely fashion to meet the social, economic and public safety and welfare needs of the Lānaʻi community.

Transportation

Objectives and Policies:

8. Ensure that planning, design, operation of, and access to airports and harbor facilities address the needs of the island's residents.

The proposed project supports the community plan's objective to ensure the safe operation of the Lānaʻi Airport facility.

5.5 Maui County Zoning

As designated by Maui County zoning code, the subject property is located in the "Airport District" (**Figure 5-2, County of Maui Zoning**). The proposed improvement is consistent with this zoning designation.

5.6 Coastal Zone Management Program Objectives and Policies

All land and water use activities in the state must comply with HRS, Chapter 205A, *Hawaiʻi Coastal Zone Law*. The State of Hawaiʻi designates the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of HRS, Chapter 205(A)-2, as amended, for the areas from the shoreline to the seaward limit of the State's jurisdiction, and any other area which a lead agency may designate for the purpose of administering the CZMP.

The Lānaʻi Airport property is not located within the Special Management Area (SMA), as set forth in HRS, Chapter 205A, this section addresses the project's relationship to applicable coastal zone management considerations.

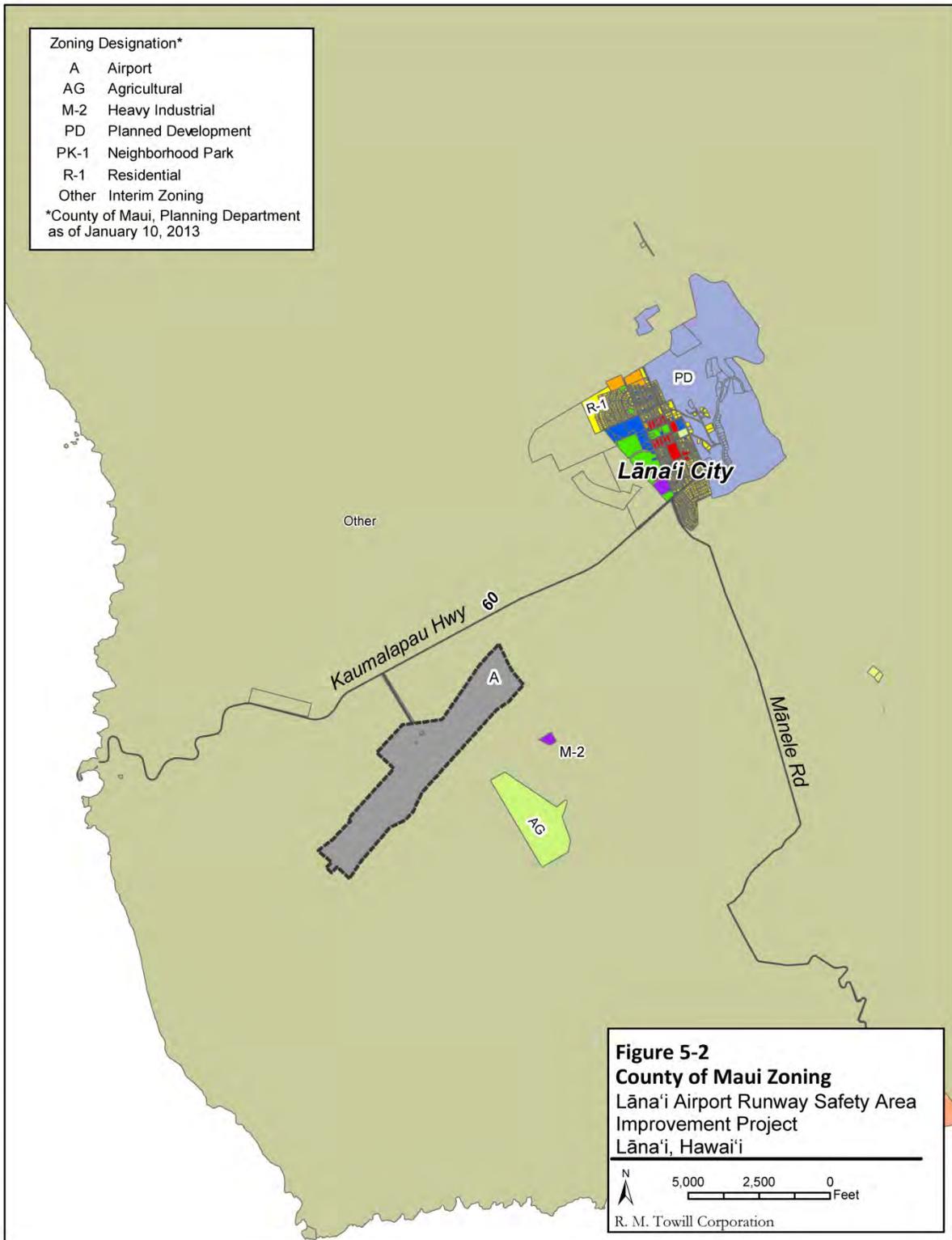
The following is an assessment of the project with respect to the CZMP objectives and policies set forth in Section 205(A)-2.

1. Recreational resources

Objective: Provide coastal recreational opportunities accessible to the public.

Policies: A) Improve coordination and funding of coastal recreational planning and management; and B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;



(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.

Recreational and shoreline facilities and public access to the shoreline will not be adversely affected by the project, as the project is approximately 2 miles from the nearest shoreline. The project will take place entirely within the boundaries of the airport facility, which does not provide formal recreational opportunities. The proposed improvement is not a direct generator of, nor does it create a demand for, regional recreational resources.

2. Historic resources

Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies: (A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

There are no archaeological or cultural resources known to be present within the project site, as much of the project vicinity had been previously disturbed during intensive agricultural activities in the area as well as during the construction of the airport facility in the 1940s.

However, in accordance with HRS, Chapter 6E, and the requirements of the SHPD, should any historic resources, including human skeletal and significant cultural remains, be identified during the construction of the proposed project: (1) work will cease in the immediate vicinity of the find; (2) the find will be protected from any additional disturbance by the contractor; and (3) the SHPD, will be contacted immediately at (808) 692-8015 for further instructions including the conditions under which work activities may resume. All conditions required by the SHPD will be strictly adhered to.

3. Scenic and open space resources

Objective: Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies: (A) Identify valued scenic resources in the coastal zone management area;

(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural land forms and existing public views to and along the shoreline;

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

(D) Encourage those developments that are not coastal dependent to locate in inland areas.

The potential for adverse visual impacts is anticipated to be minimal. The proposed project will involve work on the existing runway safety area within a surrounding area used for airport purposes. The proposed project is limited to excavation and grading activities within the existing airport property and is not expected to significantly affect existing viewplanes.

4. Coastal ecosystems

Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies: (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

(B) Improve the technical basis for natural resource management;

(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Impacts to coastal ecosystems are not anticipated or expected as a result of this project. During construction involving excavation and grading, BMPs will be employed to prevent potential pollutant (sediment) discharges into storm water runoff. These measures will be in place and functional before project activities begin and will be maintained throughout the construction period.

5. Economic uses

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies: (A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

- (i) Use of presently designated locations is not feasible;*
- (ii) Adverse environmental effects are minimized; and*
- (iii) The development is important to the State's economy.*

The proposed project is intended to support and improve safety requirements at the Lānaʻi Airport which provides the sole public air transportation facility on the island of Lānaʻi. The proposed project is not dependent on the coastline and is not contrary to the objective and policies for economic use.

6. Coastal hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies: (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

(D) Prevent coastal flooding from inland projects.

The Lānaʻi Airport is located at elevation 1,300 feet relative to mean sea level (MSL) and is located in an area of minimal flooding. The proposed project will not result in an increase of storm water runoff. Any drainage improvements constructed as a part of this project will be designed in accordance with the drainage standards of the HDOT, to ensure that the project will not adversely affect downstream and adjoining properties from the effects of flooding and erosion. To mitigate for other natural hazards, the proposed improvements will be designed to meet current grading design standards.

7. Managing development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies: (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

The proposed project conforms to all State and County of Hawaiʻi land use regulations. A comprehensive list of permits is provided in **Section 7, Permits and Approvals That May Be Required**. While the proposed project site is under jurisdiction of the CZMA, no coastal resources will be adversely affected.

8. Public participation;

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies: (A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

(C) Organize workshops, policy dialogues, and site-specific mitigation to respond to coastal issues and conflicts.

Although the proposed project does not involve development within the coastal area, the provision for public participation has been provided through the environmental review process as required in HRS, Chapter 343. Public comments were received during the public comment period associated with the filing of the Draft Environmental Assessment. In addition, environmental permit applications filed for the subject project will be subject to governmental agency and public review as required under law.

9. Beach protection;

Objective: Protect beaches for public use and recreation.

Policies: (A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;

(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and

(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

The proposed project neither involves nor requires the direct use of beaches or shoreline resources.

10. Marine resources

Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies: (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;

(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and

(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Coastal ecosystems will not be affected by the proposed project. During construction, BMPs will be employed to prevent sediment from entering State waters. These erosion and sediment control measures will be in place and functional before project activities begin and will be maintained throughout the construction period.

6.0 Significance Criteria

In accordance with the provisions set forth in HRS, Chapter 343, and the significance criteria in HAR, Chapter 11-200-12, this EA has determined that the project will have no significant adverse impact to air and water quality, existing utilities, noise, archaeological or cultural sites, or wildlife habitat. All anticipated impacts will be temporary and will not adversely impact the environmental quality of the area. All anticipated impacts will be addressed through the use of mitigation measures and practices set forth in this EA.

1. *Involves an irrevocable commitment to loss or destruction of any natural or cultural resource*

The proposed project is not anticipated to adversely impact any natural or cultural resources. The project site is located on an existing airport facility that has been previously disturbed by intensive agricultural activities prior to the construction of the airport. Any potential archaeological or cultural remains that may have once existed at the site are believed to have been destroyed during prior development activities. No significant archaeological or cultural sites are therefore anticipated to be discovered. However, in the unlikely event that any remains or artifacts are encountered, practices as previously identified in this document will be applied:

Any inadvertent finds will immediately result in the cessation of work and the immediate reporting of the find to the SHPD at (808) 243-1285 (Maui Island) or (808) 692-8015 (Main Office, Oʻahu). SHPD will furnish further instructions regarding the treatment of the find and the conditions when work may be resumed.

2. *Curtails the range of beneficial uses of the environment*

The proposed project and the commitment of land resources would not curtail the range of beneficial uses of the environment. The proposed action will be implemented on lands dedicated for airport use.

3. *Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders*

The proposed project is consistent with the environmental policies, goals and guidelines as delineated in HRS, Chapter 344, and as documented in this document.

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

The proposed project has been assessed for potential social, visual, and environmental impacts in accordance with the requirements of HRS, Chapter 343, and HAR, Chapter 11-200. With implementation of the mitigation measures as identified in this document, no substantial impacts to the economic welfare, social welfare, and cultural practices are expected to result.

5. *Substantially affects public health*

The proposed project will be developed in accordance with Federal, State, and County of Maui, rules and regulations governing public safety and health. Potential sources of adverse impacts have been identified and appropriate mitigative measures developed. The primary public health concerns are anticipated to involve air, water, noise, and traffic impacts. However, it is expected that these impacts will be either minimized or brought to negligible levels by the appropriate use of the mitigation measures described in this document.

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

The proposed project will not, by itself, stimulate unexpected changes in population. No adverse impacts to the domestic water and wastewater capacities and facilities are anticipated. Onsite runoff will be accommodated by existing drainage patterns. The project is not expected to significantly impact other public services such as fire, health care, and emergency medical services. No adverse impacts upon educational or recreational services are anticipated. The proposed improvement is limited to grading activities within an existing airport facility; once construction activities are complete, all conditions will return to pre-construction conditions.

7. *Involves a substantial degradation of environmental quality*

The proposed project will be developed in accordance with the environmental policies of HRS, Chapter 343. The analysis provided in this document has determined that that the environmental quality of the area will not be substantially degraded.

8. *Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions*

The proposed project is designed to specifically address the need for safety improvements to the existing runway safety areas and does not involve a commitment for other, larger actions. The potential for cumulative impacts associate with the proposed project are not anticipated or expected.

9. *Substantially affects a rare, threatened, or endangered species, or its habitat*

There are no rare, threatened or endangered species of flora, fauna or avifauna that will be adversely affected by the proposed project. The U.S. Fish and Wildlife Service has determined that with the proposed mitigation measures, the proposed activities related to this project is not likely to affect the Hawaiian petrel or Newell's shearwater.

10. *Detrimentially affects air or water quality or ambient noise levels*

Construction activities will result in short-term air quality and noise impacts. Dust control measures, such as regular watering and sprinkling of exposed areas, will be implemented to minimize wind-blown emissions. Noise impacts will occur primarily from construction-related

activities, however the project site is located away from residential or noise-sensitive areas. Water quality is not expected to be affected. In the long term, the proposed project is not anticipated to have a significant impact on air and water quality.

11. *Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters*

The proposed project is not located within and would not affect environmentally sensitive areas. The project area is not subject to flooding or tsunami inundation. Soils of the project area are not erosion-prone. There are no geologically hazardous lands, estuaries, or coastal waters within or adjacent to the project area.

12. *Substantially affects scenic vistas and viewplanes identified in county or state plans or studies*

The project area is not identified as a scenic vista or viewplane. The proposed project is limited to grading activities within the existing airport property and is not expected to significantly affect existing scenic corridors and coastal, scenic and open space resources.

13. *Requires substantial energy consumption*

The proposed project will require use of energy primarily in the form of petroleum-based fuels for construction vehicles and equipment. Electricity will also be required and may be provided by a generator or by direct connection to outlets provided on-site. Other uses of energy will be in the form of labor to complete the project. Upon completion of the project, there will be no further requirement for the use of construction related energy. Maintenance of the project site as part of the airport facility is not expected to result in substantial use of energy resources, beyond existing use.

Based on the review and analysis of the above factors, it has been determined that a HRS, Chapter 343, Environmental Impact Statement (EIS) will not be required, and a Finding of No Significant Impact (FONSI) will be issued for this project.

7.0 Permits and Approvals That May Be Required

7.1 State of Hawaiʻi

- Department of Health, Clean Water Branch
 - National Pollutant Discharge Elimination System (NPDES) Permit:
Notice of Intent (NOI) Form C: Storm Water Associated with Construction Activities
- Department of Transportation, Airports Division
 - Plan review and approval
- Office of Planning-CZM Office
 - CZM Federal Consistency Review

7.2 Federal

- National Historic Preservation Act, Section 106 Consultation
- Endangered Species Act, Section 7 Consultation

8.0 Agencies, Organizations and Individuals Consulted for the Environmental Assessment

The following agencies, organizations, and individuals were contacted during the Chapter 343, HRS, environmental review process to disclose the environmental conditions of the site, the proposed undertaking, and the potential impacts and mitigation measures that will be applied to ensure against adverse impacts.

8.1 State of Hawaii

State Comptroller
State of Hawaiʻi, Department of
Accounting and General Services
1151 Punchbowl Street, #426
Honolulu, Hawaiʻi 96813

Chairperson
State of Hawaiʻi
Department of Agriculture
1428 South King Street
Honolulu, Hawaiʻi 96814-2512

Director
State of Hawaiʻi
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, Hawaiʻi 96804

Superintendent
State of Hawaiʻi
Department of Education
P.O. Box 2360
Honolulu, Hawaiʻi 96804

Chairperson
State of Hawaiʻi
Department of Hawaiian Home Lands
P. O. Box 1879
Honolulu, Hawaiʻi 96805

Director
State of Hawaiʻi
Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaiʻi 96814

Chief
Clean Water Branch
State of Hawaiʻi - Department of Health
919 Ala Moana Blvd., Room 300
Honolulu, Hawaiʻi 96814

Program Chief
District Environmental Health
State of Hawaiʻi
Department of Health
54 High Street
Wailuku, Hawaiʻi 96793

William Aila, Jr., Chairperson
State of Hawaiʻi
Department of Land and Natural
Resources
P. O. Box 621
Honolulu, Hawaiʻi 96809

Dr. Puaalaokalani Aiu, Administrator
State of Hawaiʻi
Dept. of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Blvd., Room 555
Kapolei, Hawaiʻi 96707

Glenn M. Okimoto, Ph.D.
Director of Transportation
State of Hawaiʻi
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaiʻi 96813
cc: Ferdinand Cajigal, Maui District
Engineer

Director
State of Hawaiʻi
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, Hawaiʻi 96813

Director
State of Hawaiʻi
Office of Planning
P. O. Box 2359
Honolulu, Hawaiʻi 96804

Chief Executive Officer
State of Hawaiʻi
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, Hawaiʻi 96813

8.2 County of Maui

Director
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Planning
250 South High Street
Wailuku, Hawaiʻi 96793

Administrator
Maui Civil Defense Agency
200 South High Street
Wailuku, Hawaiʻi 96793

Chief
County of Maui
Police Department
55 Mahalani Street
Wailuku, Hawaiʻi 96793

Fire Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawaiʻi 96732

Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Housing and
Human Concerns
One Main Plaza
2200 Main Street, Suite 546
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Environmental
Management
One Main Plaza
2200 Main Street, Suite 175
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Parks and Recreation
700 Halia Nako Street, Unit 2
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawaiʻi 96793

Director
County of Maui
Department of Water Supply
200 South High Street
Wailuku, Hawaiʻi 96793

Council Chair
Maui County Council
200 South High Street
Wailuku, Hawaiʻi 96793

8.3 Federal Government

Chief
U.S. Army Corps of Engineers
Pacific Ocean Division, Building 230
Fort Shafter, Hawaii 96858-54490

Airports District Office
U.S. Department of Transportation
Federal Aviation Administration
P. O. Box 50244
300 Ala Moana Blvd., Room 7-126
Honolulu, Hawaiʻi 96813

District Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
70 Hookele Street, Suite 202
Kahului, Hawaiʻi 96732

Pacific Islands Manager
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122,
Box 50088
Honolulu, Hawaiʻi 96813

8.4 Organizations and Individuals

Hawaiian Telcom
60 South Church Street
Wailuku, Hawaiʻi 96793

Manager
Customer Operations
Maui Electric Company, Ltd.
P. O. Box 398
Kahului, Hawaiʻi 96733

See also Section 4.7.2, Section 106, National Historic Preservation Act (NHPA) Consultation, for other parties consulted for the Section 106 NHPA process.

9.0 References

Federal Emergency Management Agency. 2010. "Tsunami."

<http://www.fema.gov/hazard/tsunami/index.shtm>

Land Classification Systems and Agricultural Land Use Planning in Hawaiʻi.

<http://www.hawaii.stateassessment.info/library/chillingworthhigiclandclassificationsystems-091030225434-phapp01.pdf>

U.S. Soil Conservation Service, December 1973. Soil Survey of Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lānaʻi. State of Hawaiʻi.

State of Hawaii, Department of Transportation – Airports Division. 2009. Final Environmental Assessment. Proposed Aircraft Rescue Fire Fighting Station, Fueling Facility and Hangar at Lanai Airport.

Appendix A

Draft EA Public Written Comments and Responses

GLENN M. OKIMOTO
DIRECTOR

Deputy Director
JADE T. BUTAY
FORD M. HUGHES
RANDY GRUENE
JADINE URAKAWA

IN REPLY REFER TO:
AIR-EM
12.0717



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

October 29, 2012

TO: THE HONORABLE LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

ATTN: LAURA LEIALOHA PHILLIPS MCINTYRE, AICP
ENVIRONMENTAL PLANNING OFFICE MANAGER

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION *Glenn M. Okimoto*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

Thank you for your letter dated April 30, 2012 concerning the Draft Environmental Assessment (EA) for the subject project. The Department of Transportation (DOT) offers the following in response to your comments (the comments have been *italicized* for reference):

1. DOH Comment: *We have no comments at this time, but reserve the right to future comments.*
Response: DOT acknowledges that you have no comments to offer at this time.
2. DOH Comment: *We strongly recommend that you review all of the Standard Comments on our website at: www.hawaii.gov/health/environmental/ea-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.*
Response: DOT has reviewed the standard comments on the CWB website. The project contractor will be required to follow any comments that are applicable to this undertaking.

Thank you for your review of the subject project. Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

NEIL ABERCROMBIE
GOVERNOR

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

In reply please refer to:
12-085 Lanai Airport



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

April 30, 2012

Mr. Evan Kimoto, Project Manager
Department of Transportation – Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

Dear Mr. Kimoto:

**SUBJECT: Lanai Airport Runway Safety Area Improvements
State Project No. AM-4022-15, Lanai, Maui, TMK: 2-4-9-002; Parcel 041**

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your letter. Thank you for allowing us to review and comment on the subject document. The document was routed to the various branches of the Environmental Health Administration. We have no comments at this time, but reserve the right to future comments. We strongly recommend that you review all of the Standard Comments on our website: www.hawaii.gov/health/environmental/ea-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

The United States Environmental Protection Agency (EPA) provides a wealth of information on their website including strategies to help protect our natural environment and build sustainable communities at: <http://water.epa.gov/infraststructure/sustainable/>. The DOH encourages State and county planning departments, developers, planners, engineers and other interested parties to apply these strategies and environment principles whenever they plan or review new developments or redevelopments projects. We also ask you to share this information with others to increase community awareness on healthy, sustainable community design. If there are any questions about these comments please contact me.

Sincerely,

Laura Phillips McIntyre
Laura Leialoha Phillips McIntyre, AICP
Environmental Planning Office Manager
Environmental Health Administration
Department of Health
919 Ala Moana Blvd., Ste. 312
Honolulu, Hawaii 96814
Phone: 586-4337
Fax: 586-4370
laura.mcintyre@doh.hawaii.gov

c: Brian Takeda, Project Coordinator, R.M. Towill Corporation



DEPARTMENT OF
HOUSING AND HUMAN CONCERNS
HOUSING DIVISION
COUNTY OF MAUI

35 LUNALILO STREET, SUITE 102 • WAILUKU, HAWAII 96793 • PHONE (808) 270-7351 • FAX (808) 270-6284

ALAN M. ARAKAWA
Mayor
JO-ANN T. RIDAO
Director
JAN SHISHIDO
Deputy Director

HEIL ABERCROMBIE
Director



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

GLENN M. OKIMOTO
Director
TOSHIKO OSHIRO
SUE F. BUTAY
GORDON FUCHIGAMI
SANDY GRUBBE
JACQUE URASAMI
REPLY REFER TO:
AIR-EM
12.0667

May 1, 2012

Mr. Evan Kimoto
Project Manager
Department of Transportation -
Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

Dear Mr. Kimoto:

Subject: Draft Environmental Assessment (EA) for Lanai Airport Safety Area Improvements State Project No. AM-4022-15.

The Department has reviewed the Draft Environmental Assessment (EA) for the above subject project. Based on our review, we have determined that the subject project is not subject to Chapter 2.96, Maui County Code. At the present time, the Department has no additional comments to offer.

Please call Mr. Verantio Tongson Jr. of our Housing Division at (808) 270-1741 if you have any questions.

Sincerely,

WAYDE T. OSHIRO
Housing Administrator

cc: Director of Housing and Human Concerns
R.M. Towill Corporation

October 11, 2012

Mr. Wayne T. Oshiro
Housing Administrator
Department of Housing and Human Concerns
County of Maui
35 Lunaliilo Street, Suite 102
Wailuku, Hawaii 96793

Dear Mr. Oshiro:

Subject: Draft Environmental Assessment (EA) Runway Safety Area Improvements Lanai Airport State Project No. AM4022-15

We acknowledge your letter of May 1, 2012, stating that you have no comments to offer at this time regarding the subject project.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Towill Corporation

ALAN M. ARAKAWA
Mayor



JO ANNE JOHNSON-WINER
Director
MARC T. TAKAMORI
Deputy Director
Telephone (808) 270-7511

DEPARTMENT OF TRANSPORTATION

COUNTY OF MAUI
200 South High Street
Wailuku, Hawaii, USA 96793-2155

DEL ABERCROMBIE
Clerk



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

GLENN M. OKIMOTO
Director
WHEELY BEER TO
AIR-EM
12-0656

May 4, 2012

Mr. Brian Takeda
R.M. Towill Corporation
2024 N. King Street, Suite 200
Honolulu, HI 96819

Subject: DEA Lanai Airport Runway Safety Area Improvements

Dear Mr. Takeda,

Thank you for the opportunity to comment on this project. We have no comments to make at this time.

Please feel free to contact me if you have any questions.

Sincerely,

Jo Anne Johnson Winer
Jo Anne Johnson Winer
Director

Ms. Jo Anne Johnson Winer
Director of Transportation
County of Maui
200 South High Street
Wailuku, Hawaii 96793-2155

Dear Ms. Winer:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

We acknowledge your letter of May 4, 2012, stating that you have no comments to offer at this time regarding the subject project.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

Glenn M. Okimoto

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

Cc: Brian Takeda - R.M. Towill Corporation

October 11, 2012

GLENN M. OKIMOTO
DIRECTOR
State Director
SUE F. ITOYAMA
SARAH M. HANCOCK
JANINE OKASAKI
AIR-EM
12-0669



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

October 8, 2012

HELI ABERCROMBIE
GOVERNOR

DEAN H. SEKI
COMPTROLLER

(P) 1092.2



STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 116, HONOLULU, HAWAII 96810-0116

MAY - 8 2012

HELI ABERCROMBIE
GOVERNOR

MEMORANDUM

TO: Mr. Evan Kimoto, Project Manager
Department of Transportation - Airports Division

FROM: Dean H. Seki *DHS*
State Comptroller

SUBJECT: Lanai Airport Runway Safety Area Improvements
State Project No. AM-4022-15
TMK: 2-4-9-002: Parcel 041

Thank you for the opportunity to provide comments for the subject project. This project does not impact any of the Department of Accounting and General Services' projects or existing facilities in the general area, and we have no comments to offer at this time.

If you have any questions, please call me at 586-0400 or have your staff call Mr. Alva Nakamura of the Public Works Division at 586-0488.

c: Mr. Brian Takeda, R M Towill Corp.
Mr. Gary Hooser, Office of Environmental Quality Control

TO: THE HONORABLE DEAN H. SEKI
STATE COMPTROLLER
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION *mmokim*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

Thank you for your letter dated May 8, 2012, concerning the subject Draft Environmental Assessment.

We acknowledge your comment stating that the "project does not impact any of the Department of Accounting and General Services' projects or existing facilities in the general area, and we have no comments to offer at this time."

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

cc: Brian Takeda - R.M. Towill Corporation

ALAN M. ARAKAWA
Mayor



GLENN T. CORREA
Director
(808) 270-7230
PATRICK T. MATSUI
Deputy Director
FAX (808) 270-7934

DEPARTMENT OF PARKS & RECREATION
700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

May 16, 2012

Evan Kimoto, Project Manager
Department of Transportation - Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

Dear Mr. Evan Kimoto:

SUBJECT: Draft Environmental Assessment (DEA) for the Lana'i Airport Runway Safety Area Improvements, State Project No. AM-4022-15, Island: Lana'i, District: Maui, Hawai'i, TMK (2)4-9-002:041

Thank you for the opportunity to review and comment on the subject project. The Department of Parks & Recreation has reviewed the above and has no comments at this time.

Please feel free to contact me or Robert Halvorson, Chief of Planning and Development, at 270-7931, should you have any questions.

Sincerely,

GLENN T. CORREA
Director of Parks & Recreation

c: Robert Halvorson, Chief of Planning and Development
Brian Takeda, Project Coordinator R.M. Towill Corporation

GTC:RH:as

WILL ABERGROMBER
Governor



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

GLENN M. OKIMOTO
Director
SADA OKAMURA
SUE T. BUTAY
JOHN F. FICHEGAMI
HARVEY URINE
ADRIE IIRASAKI
MERRY REEFER
AIR-EM
12.0658

October 11, 2012

Mr. Glenn T. Correa
Director of Parks & Recreation
County of Maui
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

Dear Mr. Correa:

Subject: Draft Environmental Assessment (EA) Runway Safety Area Improvements Lanai Airport State Project No. AM4022-15

We acknowledge your letter of May 16, 2012, stating that you have no comments to offer at this time regarding the subject project.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Towill Corporation



ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

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

May 21, 2012



GARY A. YABUTA
CHIEF OF POLICE
CLAYTON N.Y.W. TOM
DEPUTY CHIEF OF POLICE

Mr. Evan Kimoto, Project Manager
State Department of Transportation
Highways Division, Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

Dear Mr. Kimoto:

SUBJECT: Lanai Airport Runway Safety Area Improvements
State Project No. AM-4022-15

This is in response to your letter requesting comments on the above subject.

We have reviewed the Draft Environmental Assessment for this project and have no comments or concerns to offer at this time.

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

Sincerely,

Assistant Chief Victor K. Ramos
for: Gary A. Yabuta
Chief of Police

c: William Spence, Maui County Planning Dept.
Brian Takeda, R.M. Towill Corporation

DELL ABERCROMBIE
GOVERNOR



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

October 11, 2012

Mr. Gary A. Yabuta
Chief of Police
Police Department
County of Maui
55 Mahalani Street
Wailuku, Hawaii 96793

Attention: Mr. Victor K. Ramos

Dear Mr. Yabuta:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

We acknowledge your letter of May 21, 2012 stating that you have no comments to offer at this time regarding the subject project.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Towill Corporation

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors:
LUE T. BUTAY
TRUDY N. FUCHIGAMI
SANDY CRUICK
ADRIE URASANI

IF YOU WOULD PREFER TO
REPLY BY FAX
CALL (808) 535-6868

HELEN M. DANIMOTO
DIRECTOR
Liquor Director
JANE T. BULFAY
CDD & FIDUCIARY
JAMES H. HARRIS
JUDICIAL OFFICER
JUDIE IYASAKI
WHERE REFER TO
AIR-EM
12.0660



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

October 11, 2012

HEIL ABERCHROMBIE
GOVERNOR

RALPH NAGAMINE, U.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
200 SOUTH HIGH STREET, ROOM NO. 434
WAILUKU, MAUI, HAWAII 96793

May 21, 2012

ALAN M. ARAKAWA
Mayor
DAVID C. GOODE
Director
ROWENA M. DAGDAG-ANDAYA
Deputy Director
Telephone: (808) 270-7845
Fax: (808) 270-7955

Mr. Evan Kimoto, Project Manager
Department of Transportation - Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

Dear Mr. Kimoto:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE
LANAI AIRPORT RUNWAY SAFETY AREA
IMPROVEMENTS, STATE PROJECT NO. AM-4022-15

We reviewed the subject application and have the following comments:

1. Report indicates that there is a possibility of the use of the County's Kaupili Road. Kaupili Road is a dirt road. Please explain how construction activity will impact this road and how will these impacts may be mitigated.
2. Kaupili Road crosses airport property and the proposed project area as shown in Figure 2. Kaupili Road appears to be filled over. Explain how road is to be re-routed.

Please call Rowena M. Dagdag-Andaya at (808) 270-7845 if you have any questions regarding this letter.

Sincerely,

DAVID C. GOODE
Director of Public Works

DCG:ls
xc: Highways Division
Engineering Division
S:\LUCACZ\lanai_airport_runway_safety_improv_das_45002041_ls.wpd

Mr. David C. Goode
Director of Public Works
Department of Public Works
County of Maui
200 South High Street, Room No. 434
Wailuku, Hawaii 96793

Dear Mr. Goode:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

Thank you for your letter dated May 21, 2012 concerning the Draft Environmental Assessment (EA) for the subject project. We offer the following in response to your comments (your comments have been italicized for reference):

1. *Report indicates that there is a possibility of the use of the County's Kaupili Road. Kaupili Road is a dirt road. Please explain how construction activity will impact this road and how these impacts may be mitigated.*
Response: Kaupili Road may be used by the project contractor to access the project site. The contractor will need to mobilize his equipment in and out of the work area as necessary. The contractor will be required to maintain the affected County roads and ensure that at the end of the project, the subject roads are left in good condition. In addition, during construction, the roadways will remain open to any traffic and the contractor will be required to implement appropriate Best Management Practices to control dust pollution into adjacent areas.
2. *Kaupili Road crosses airport property and the proposed project area as shown in Figure 2. Kaupili Road appears to be filled over. Explain how road is to be re-routed.*
The project contractor will be required to get all necessary approvals from the County for the use of the subject roadways.

Mr. David C. Goode
October 11, 2012
Page 2

AIR-EM
12.0660

Response: The area indicated to be filled in Figure 2 includes additional areas for staging and other activities. The actual area that will be filled to construct the extended Runway Safety Area is much smaller than the area indicated in the figure. There will be no impact to the existing alignment of Kaupili Road. After the project is completed, the existing roadway will be restored to existing conditions.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,



GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Towill Corporation



STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, HAWAII 96793

LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH

LORRIN W. PANG, M.D., M.P.H.
DISTRICT HEALTH OFFICER

May 22, 2012

Mr. Evan Kimoto
Project Manager
Department of Transportation
Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

Dear Mr. Kimoto:

**Subject: Lanai Airport Runway Safety Area Improvements
State Project No. AM-4022-15**

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

1. National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.
2. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. The Indoor & Radiological Health Branch should be contacted at 808 586-4700.

It is strongly recommended that the Standard Comments found at the Department's website: <http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html> be reviewed, and any comments specifically applicable to this project should be adhered to.

Mr. Evan Kimoto
May 22, 2012
Page 2

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

Sincerely,

Patti Kitkowski
District Environmental Health Program Chief

cc: OEQC
EPO
R.M. Towill Corp.



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

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JADE T. BUTAY
FORD W. HUCHOAM
BANDY GRUINE
JADINE URAKAWA

IN REPLY REFER TO:
AIR-EM
12.0718

October 24, 2012

Ms. Patti Kitkowski
District Environmental Health Program Chief
Department of Health
Maui District Health Office
54 High Street
Wailuku, Hawaii 96793

Dear Ms. Kitkowski:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

Thank you for your letter dated May 22, 2012 concerning the Draft Environmental Assessment (EA) for the subject project. The Department of Transportation (DOT) offers the following in response to your comments (the comments have been *italicized* for reference):

1. DOH Comment #1: *National Pollutant Discharge Elimination System (NPDES) permit coverage may be required for this project. The Clean Water Branch should be contacted at 808 586-4309.*
Response: For this project, DOT anticipates filing applications for National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit with the Department of Health, Clean Water Branch.
2. DOH Comment #2: *The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control." A noise permit may be required and should be obtained before the commencement of work. The Indoor & Radiological Health Branch should be contacted at 808 586-4700.*
Response: The project contractor will be required to obtain all necessary permits for this project. The contractor will contact the Indoor & Radiological Health Branch and obtain a noise permit if required.

Ms. Patti Kitkowski
October 24, 2012
Page 2

AIR-EM
12.0718

3. DOH Comment #3: *It is strongly recommended that the Standard Comments found at the Department's website: <http://hawaii.gov/health/environmental/env-planning/landuse/landuse.html> be reviewed, and any comments specifically applicable to this project should be adhered to.*

Response: DOT has reviewed the standard comments on the CWB website. The project contractor will be required to follow any comments that are applicable to this undertaking.

Thank you for your review of the subject project. Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Towill Corporation



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 23, 2012

Department of Transportation – Airports Division
Attention: Mr. Evan Kimoto, Project Manager
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

R.M. Towill Corporation
Attention: Mr. Brian Takeda, Project Coordinator
2024 N. King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kimoto and Mr. Takeda:

SUBJECT: Lana'i Airport Runway Safety Area Improvements

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, the DLNR has no comments to offer on the subject matter. If you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

cc: Central Files



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

June 26, 2012

Department of Transportation – Airports Division
Attention: Mr. Evan Kimoto, Project Manager
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

R.M. Towill Corporation
Attention: Mr. Brian Takeda, Project Coordinator
2024 N. King Street, Suite 200
Honolulu, Hawaii 96819

Dear Mr. Kimoto and Mr. Takeda:

SUBJECT: Lana'i Airport Runway Safety Area Improvements

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments previously sent you on May 23, 2012, enclosed are comments from the Land Division – Maui District 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



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
MAUI DISTRICT
LAND DIVISION
2012 MAY -2 PM 12:51

May 1, 2012

MEMORANDUM

TO: DLNR Agencies:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands
- Land Division - Maui District
- Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Lana'i Airport Runway Safety Area Improvements
LOCATION: Island of Lana'i; TMK: (2) 4-9-002:041
APPLICANT: Department of Transportation - Airports Division

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 23, 2012**.

Only one (1) copy of the document is available for your review in Land Division office, Room 220.

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.
- Comments are attached.

Signed: R. Tsuji
Date: 6/22/12

adj. to airport

cc: Central Files
15 acres to be acquired by State (DANL) pursuant to LUC consultation related to Rhapsody Bay Hotel. Not clear if this is a

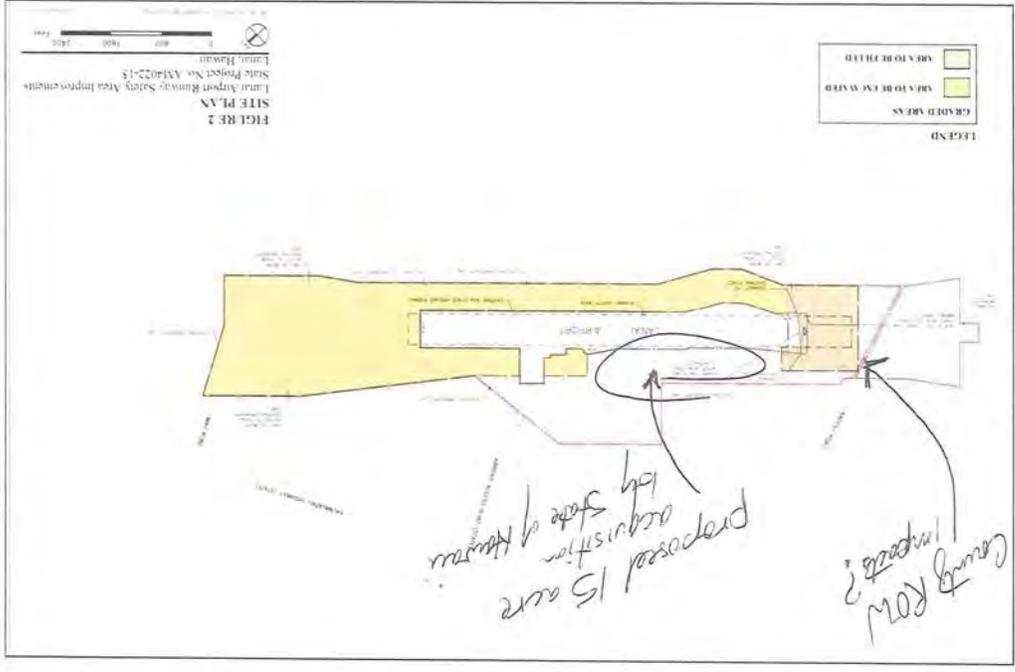


Figure 2. Site Plan

NEIL ABERCROMBIE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

GLENN M. OKIMOTO
DIRECTOR

Deputy Directors
JAKE T. BUTAY
FORD W. FUCHISAWA
JANAY GRUENE
JADINE URAKAKI

IN REPLY REFER TO
AIR-EM
12.0719

October 29, 2012

TO: THE HONORABLE WILLIAM J. AILA, JR.
CHAIRPERSON
DEPARTMENT OF LAND AND NATURAL RESOURCES

ATTN: RUSSELL Y. TSUJI
LAND ADMINISTRATOR

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION *Glenn M. Okimoto*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

Thank you for your letters dated May 23 and June 26, 2012, concerning the subject Draft Environmental Assessment.

The proposed project occurs within a property already owned by the State of Hawaii. The project will not impact the existing alignment of Kaupili Road. The proposed construction of the extended runway safety area will not require re-alignment of Kaupili Road. After the project is completed, the existing roadway will be restored to existing conditions.

Thank you for your review of the subject project. Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

GLENN M. OKIMOTO
DIRECTOR

State Director
GLENN M. OKIMOTO
PHOTOGRAPHY
JANICE URAKAWA
JANICE URAKAWA

PHOTOGRAPHY
AIR-EM
12.0666



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

October 11, 2012

JILL ABERCROMBIE
SIGNATURE

Mr. David Taylor, P.E.
Director of Water Supply
County of Maui
200 South High Street
Wailuku, Hawaii 96793-2155

Dear Mr. Taylor:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

We acknowledge your letter of May 25, 2012, noting that Lanai relies only on a single aquifer sector with four aquifer systems and that Lanai's potable groundwater occurs only in the Central System. You also provided recommendations on additional mitigation measures to be included in the EA and implemented during construction of the subject project.

Your recommendations have been added to the final EA and we also will be filing for a National Pollutant Discharge Elimination System (NPDES) permit from the State Department of Health (DOH) to cover discharges associated with the proposed construction activities. As part of the permit requirements, the project contractor will be required to abide by a DOH approved site specific Best Management Practices' plan to ensure that construction activities will not result in discharge of untreated effluent into state waters, including the groundwater.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takeda - R.M. Tawfili Corporation

DAVID TAYLOR, P.E.
Director

PAUL J. MEYER
Deputy Director



DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

May 25, 2012

Mr. Evan Kimoto, Project Manager
Department of Transportation-Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, HI 96819-1880

Re: TMK: (2) 4-9-002:041 (por.)
Project Name: Lanai Airport Runway Safety Area Improvements State Project No. AM-4022-15

Dear Mr. Kimoto:

Thank you for the opportunity to comment on this Draft Environmental Assessment (DEA).

The entire island of Lanai is served by the Lanai Water Company, a privately owned water utility company regulated by the Public Utilities Commission. The Department of Water Supply has no jurisdiction over projects served by private water systems.

Lanai relies on a single aquifer sector with four aquifer systems. Potable groundwater occurs in only the Central system. In order to protect groundwater sources, we recommend that, in addition to the Best Management Practices (BMPs) listed in the DEA, the following mitigation measures be included in the EA and implemented during construction:

- Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
- Retain ground cover until the last possible date.
- Stabilize denuded areas by sodding as soon as possible.
- Keep run-off on site.

Should you have any questions, please contact Water Resources Staff Planner Marti Buckner at marti.buckner@mauicounty.gov or 808-463-3104.

Sincerely,

Dave Taylor, P.E., Director
mlb

cc: engineering division, applicant
By Water - All Things Food Life

NEIL ABERCROMBIE
GOVERNOR



GLENN M. OKIMOTO
DIRECTOR
Deputy Directors
JADE T. BUIYAY
FORD N. FUCHIGAMI
RANDY URUANE
JACQUE URASAKI

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

October 16, 2012

TO: THE HONORABLE JOBBIE M.K. MASAGATANI
CHAIRPERSON DESIGNATE
DEPARTMENT OF HAWAIIAN HOME LANDS

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION *Glenn Okimoto*

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

Thank you for your letter dated June 5, 2012, concerning the subject Draft Environmental Assessment.

We acknowledge your comment stating that "DHHL anticipates the project will not impact DHHL's statewide development program and therefore, has no comments to add to the Draft Environmental Assessment."

Please contact Mr. Evin Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

bc: Brian Takeda - R.M. Towill Corporation

NEIL ABERCROMBIE
GOVERNOR



JOBBIE M.K. MASAGATANI
CHAIRPERSON DESIGNATE
DEPARTMENT OF HAWAIIAN HOME LANDS
MICHELLE K. KAIBANI
CHAIRPERSON

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS
400 RODGER BOULEVARD
HONOLULU, HAWAII 96813

June 5, 2012

Mr. Evin Kimoto
Department of Transportation - Airports Division
400 Rodger Boulevard, 7th Floor
Honolulu, Hawaii
96819-1880

Aloha Mr. Kimoto:

Thank you for your notice regarding the Lanai Airport Runway Safety Area Improvements on the island of Lanai.

The Department of Hawaiian Home Lands is the State of Hawaii's largest affordable housing developer serving the needs of native Hawaiians pursuant to the Hawaiian Homes Commission Act, 1920, as amended.

DHHL anticipates the project will not impact DHHL's statewide development program and therefore has no comments to add to the Draft Environmental Assessment.

Thank you for the opportunity to provide these comments. If you have any questions, please do not hesitate to contact me at (808) 620-9501 or the DHHL Planning Office staff, Bob Freitas at (808) 620-9484.

Aloha,

Jobbie M.K. Masagatani

Jobbie M.K. Masagatani
Chairman Designate
Hawaiian Homes Commission



STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3376
HONOLULU, HI 96801-3376

HAWAIIAN STATE
EMERGENCY
FUNDING

06006PKP.12

June 5, 2012

Mr. Evan Kimoto
Project Manager
Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

Dear Mr. Kimoto:

SUBJECT: Comments on the Draft Environmental Assessments for the Lanai Airport Runway Safety Area Improvements Island of Lanai, Hawaii

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, received on April 30, 2012, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at: <http://www.hawaii.gov/health/environmental/envy-planning/lanaiuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Anti-degradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For storm water associated with construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area into Class A or Class 2 State waters, you may apply for an NPDES general permit coverage by submitting a Notice of Intent (NOI) form.

Mr. Evan Kimoto
June 5, 2012
Page 2

06006PKP.12

The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

You must submit the NOI form at least 30 calendar days prior to the start of the construction activities. The NOI forms may be picked up at our office or downloaded from our website at:

<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

3. For other types of wastewater not listed in Item No. 2 above or wastewater discharging into Class 1 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at: <http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/indiv-index.html>

4. If your project involves work in, over, or under waters of the United States, it is highly recommend that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 438-9258) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Non-compliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

NEIL ABERCROMBIE
GOVERNOR



GLENN M. OKIMOTO
DIRECTOR
Deputy Directors
JADE T. BUTAY
KORDN. FUCHIGAMI
RANDY GRUNE
JADINE UKAIKAI
IN REPLY REFER TO
AIR-EM
12.0716

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

October 29, 2012

TO: THE HONORABLE LORETTA J. FUDDY, A.C.S.W., M.P.H.
DIRECTOR OF HEALTH
ATTN: ALEC WONG, P.E.
CLEAN WATER BRANCH
FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION
SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA)
RUNWAY SAFETY AREA IMPROVEMENTS
LANAI AIRPORT
STATE PROJECT NO. AM4022-15

06006PKP.12

Mr. Evan Kimoto
June 5, 2012
Page 3

If you have any questions, please visit our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the
Engineering Section, CWB, at 586-4309.

Sincerely,


ALEC WONG, P.E., CHIEF
Clean Water Branch

KP:mp

c: Mr. Brian Takada, R.M. Towill Corporation
DOH-EPO #12-083 [via e-mail only]
DEQC

Thank you for your letter dated June 5, 2012 concerning the Draft Environmental Assessment (EA) for the subject project. The Department of Transportation (DOT) offers the following in response to your comments (the comments have been *italicized* for reference):

1. CWB General Comment #1: *Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program.*

Response: DOT acknowledges its responsibility for complying with all applicable provisions of HAR, Chapters 11-54 and 11-55.

2. CWB General Comment #2: *We recommend that you also read our standard comments on our website at: <http://hawaii.gov/health/environmental/erp-planning/wgm/landuse/landuse.html/CWBStandardComment.pdf>*

Response: DOT has reviewed the standard comments on the CWB website.

3. CWB Comment #1: *Any project and its potential impacts to State waters must meet the following criteria:*

- a. *Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.*

b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.

c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

Response: Any discharge to State waters resulting from this project will comply with all HAR sections cited in CWB Comment #1 above.

4. CWB Comment #2: You may be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit for the discharge of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55). For the following types of discharges into Class A or Class 2 State waters, you may apply for NPDES general permit coverage by submitting a Notice of Intent (NOI) form.

The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or site. This includes areas used for a construction base yard and the storage of any construction related equipment, material, and waste products. An NPDES permit is required before the start of the construction activities.

You must submit the NOI form at least 30 calendar days prior to the start of the construction activities. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.

Response: For this project, DOT anticipates filing applications for National Pollutant Discharge Elimination System (NPDES) Construction Stormwater Permit with the Department of Health, Clean Water Branch.

5. CWB Comment #3: For other types of wastewater not listed in Item No.2 above or wastewater discharging into Class 1 or Class AA waters, an NPDES individual permit will need to be obtained. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. The NPDES application forms may be picked up at our office or downloaded from our website at: <http://hawaii.gov/health/environmental/water/cleanwater/forms/environmental/water/cleanwater/forms/indy-index.html>.

Response: DOT does not anticipate other types of wastewater discharges into Class 1 or Class AA waters, therefore an NPDES individual permit will not be required.

6. CWB Comment #4: If your project involves work in, over, or under waters of the United States, it is highly recommend that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 438-9258) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA)), Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6). Title 40 of the Code of Federal Regulations, Section 122.2, and HAR, Chapter 11-54.

Response: DOT has contacted the Army Corps of Engineers, Regulatory Branch and they have determined that a Corps permit will not be required.

7. CWB Comment #5: Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Non-compliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

Response: DOT acknowledges its responsibility to comply with the State's Water Quality Standards and is aware of the consequences of non-compliance as stated in HAR, Chapters 11-54 and 11-55.

Thank you for your review of the subject project. Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

ALAN M. ARAKAWA
Mayor

WILLIAM R. SPENCE
Director

MICHELE CHOUTEAU McLEAN
Deputy Director



COUNTY OF MAUI

DEPARTMENT OF PLANNING

June 21, 2012

Mr. Evan Kimoto
Department of Transportation - Airports Division
400 Rodgers Boulevard, 7th Floor
Honolulu, Hawaii 96819-1880

Dear Mr. Kimoto:

SUBJECT: COMMENTS ON A DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE LANAI AIRPORT RUNWAY SAFETY AREA IMPROVEMENTS STATE PROJECT NO. AM-4022-15, LOCATED AT LANAI AIRPORT, ISLAND OF LANAI, HAWAII; TMK: (2) 4-9-002:041 (EAC 2012/0006)

The Department of Planning (Department) is in receipt of the above-referenced document for the proposed Lanai Airport Runway Safety Area Improvements project on Lanai. We apologize for the delay in sending our comments. The Department understands the proposed action includes the following:

- Grading activities to correct non-compliant grades in the runway safety area at the south end of the Lanai Airport facility and construction of a new perimeter fence surrounding the improved runway safety area.

Based on the foregoing, the Department provides the following comments on the Draft EA:

1. The land use designations for the project area are as follows:
 - a. State Land Use: Urban
 - b. Lanai Community Plan: Airport
 - c. County Zoning: Airport
 - d. Other: Not within the Special Management Area (SMA)

These designations have not been verified by the Department's Zoning Administration & Enforcement Division (ZAED). Please submit a Zoning and Flood Confirmation Form to ZAED for land use designation clarification.

2. The Department concurs that the State Department of Transportation will be the Accepting Authority for the Draft EA; and

250 SOUTH HIGH STREET, WAILUKU, MAUI, HAWAII 96793
MAIN LINE (808) 270-7335, FACSIMILE (808) 270-7634
CURRENT DIVISION (808) 270-8205, LONG RANGE DIVISION (808) 270-7214, ZONING DIVISION (808) 270-7255

Mr. Evan Kimoto
June 21, 2012
Page 2

3. Consideration should be given to the Lanai Planning Commission to provide comments on the Draft EA or to otherwise have the ability to review and comment on the proposed project prior to its construction.

Thank you for the opportunity to comment. Should you require further clarification, please contact Staff Planner Joseph Prutch at joseph.prutch@mauicounty.gov or by phone at (808) 270-7512.

Sincerely,

CLAYTON I. YOSHIDA, AICP
Planning Program Administrator

for WILLIAM SPENCE
Planning Director

Joseph M. Prutch, Staff Planner (PDF)
Office of Environmental Quality Control

Brian Takeda, Project Coordinator, R.M. Towill Corporation
2012 EAC File
General File

W:\RSC\I\PLANNING\EAC\2012\0006_LanaiAirportRunwayCommentLr.doc
K:\WP_DOCUMENTS\PLANNING\EAC\2012\0006_LanaiAirportRunwayCommentLr.doc



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

October 11, 2012

Mr. William R. Spence
Planning Director
Department of Planning
County of Maui
250 South High Street
Wailuku, Hawaii 96793

Attention: Mr. Clayton I. Yoshida, AICP

Dear Mr. Spence:

Subject: Draft Environmental Assessment (EA)
Runway Safety Area Improvements
Lanai Airport
State Project No. AM4022-15

Thank you for your letter dated June 21, 2012 concerning the Draft Environmental Assessment (EA) for the subject project. We offer the following in response to your comments (your comments have been *italicized* for reference):

1. *The land use designations for the project area are as follows:*
 - a. *State Land Use: Urban*
 - b. *Lanai Community Plan: Airport*
 - c. *County Zoning: Airport*
 - d. *Other: Not within the Special Management Area (SMA)*

These designations have not been verified by the Department's Zoning Administration & Enforcement Division (ZAED). Please submit a Zoning and Flood Confirmation Form to ZAED for land use designation clarification.

Response: We will coordinate with the Zoning Administration & Enforcement Division to verify the land use designations for the project. A Zoning and Flood Confirmation Form will be submitted to ZAED for verification.

2. *The Department concurs that the State Department of Transportation will be the Accepting Authority for the Draft EA; and*

Response: Your concurrence is noted.

LENN M. OKIMOTO
DIRECTOR
Subj: Planning
State of Hawaii
388 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
*REPLY REFER TO
AIR-EM
12.0654

Mr. William Spence
October 11, 2012
Page 2

AIR-EM
12.0654

3. *Consideration should be given to the Lanai Planning Commission to provide comments on the Draft EA or to otherwise have the ability to review and comment on the proposed project prior to its construction.*

Response: Copies of the Draft Environmental Assessment for the subject project were submitted to the Hawaii State Public Library System, including the Lanai Public Library during the public comment period. Additionally, an electronic copy of the document was published on the Office of Environmental Quality Control's website. A copy of the Final Environmental Assessment will be made available to the Lanai Planning Commission for their use.

Please contact Mr. Evan Kimoto, Project Manager, at (808) 838-8803, should you have any further comments.

Very truly yours,

GLENN M. OKIMOTO, Ph.D.
Director of Transportation

cc: Brian Takada - R.M. Towill Corporation

Appendix B

**Biological surveys for Lānaʻi Airport safety zone
improvements, Island of Lānaʻi
AECOS, Inc.**

Biological surveys for Lānaʻi Airport safety zone improvements, Island of Lānaʻi (updated)

May 10, 2013

AECOS No. 1257B

Eric B. Guinther and Reginald David¹
AECOS Inc.
45-309 Akimala Place
Kaneʻohe, Hawaiʻi 96744
Phone: (808) 236-1782 Email: guinther@aecos.com

Introduction

This report describes results of vertebrate and botanical field surveys for an Environmental Assessment (EA) of proposed runway safety area improvements at the Lānaʻi Airport on the Island of Lanaʻi (Fig. 1). Planned improvements will involve grading of areas surrounding the existing runway outside of the security fence (Fig. 2). Improvements to the Airport Access Road at the intersection with Kaumālapaʻu Highway are also anticipated. At some point after the initial report (AECOS, 2011) was prepared, a modification of the land required in the vicinity of Puʻu Kauila (southwest of the terminal complex) was incorporated into the safety zone improvements plan. This report reflects additional survey work undertaken as needed to ensure coverage of the modified area of use.

Methods

The project site surrounding the existing Lānaʻi Airport was visited on January 25-26, 2011 and surveyed for botanical and vertebrate resources. A second visit was made on February 21, 2013 to add areas to the scope of the survey (see Fig. 3). Significant areas of overlap with the 2011 survey were visited in 2013 to establish compatibility of survey results. The botanical survey involved walking over all accessible areas of the property outside the airport security fence and noting the names and relative abundances of all ferns, fern allies, and flowering plants growing there. Field notes were translated into a flora listing. For the most part, plant names follow *Manual of the Flowering Plants of Hawaiʻi* (Wagner et al., 1990, 1999) for native and naturalized flowering plants, and A

¹ Rana Biological Consulting, Inc., Kailua-Kona, Hawaiʻi.

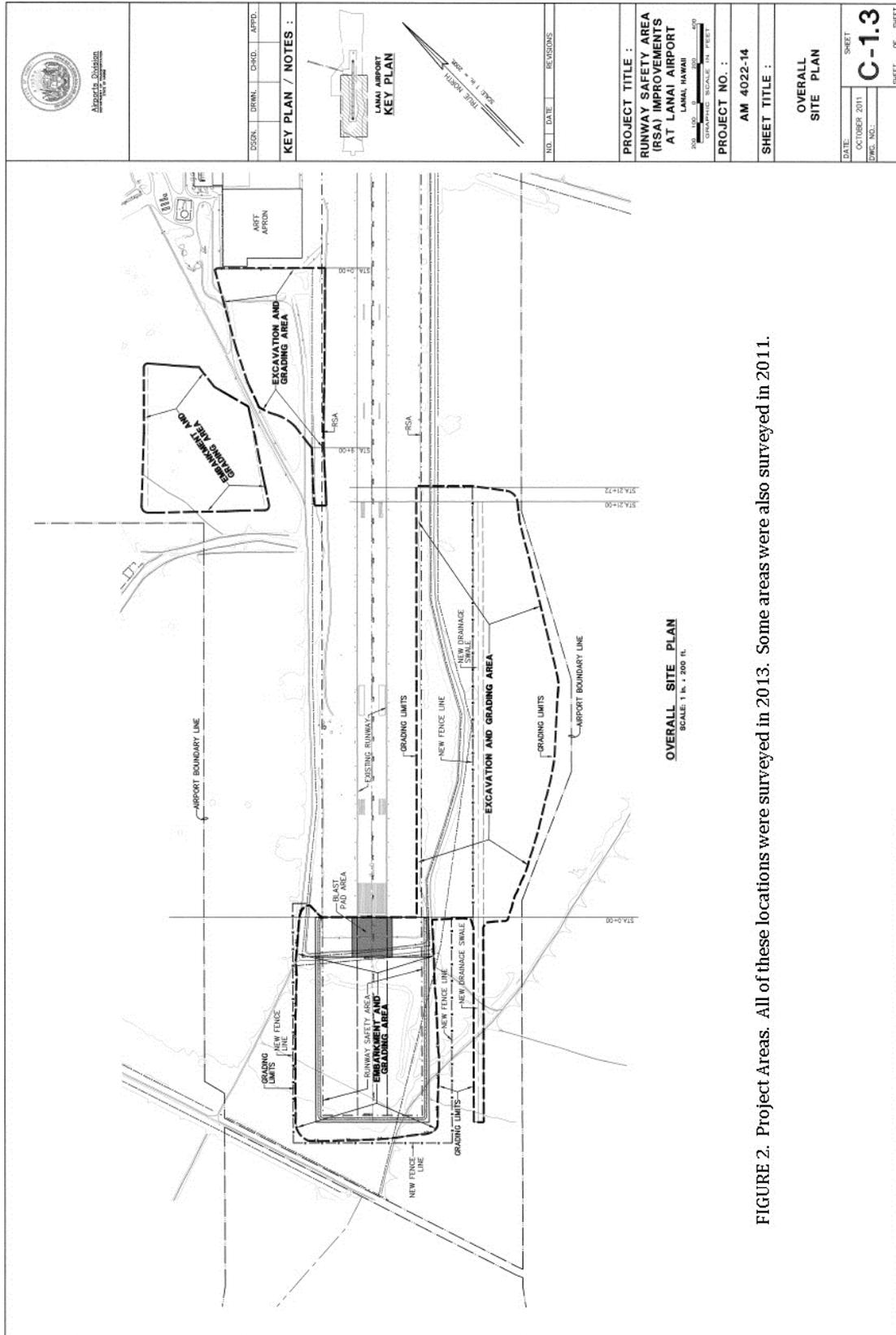


FIGURE 2. Project Areas. All of these locations were surveyed in 2013. Some areas were also surveyed in 2011.

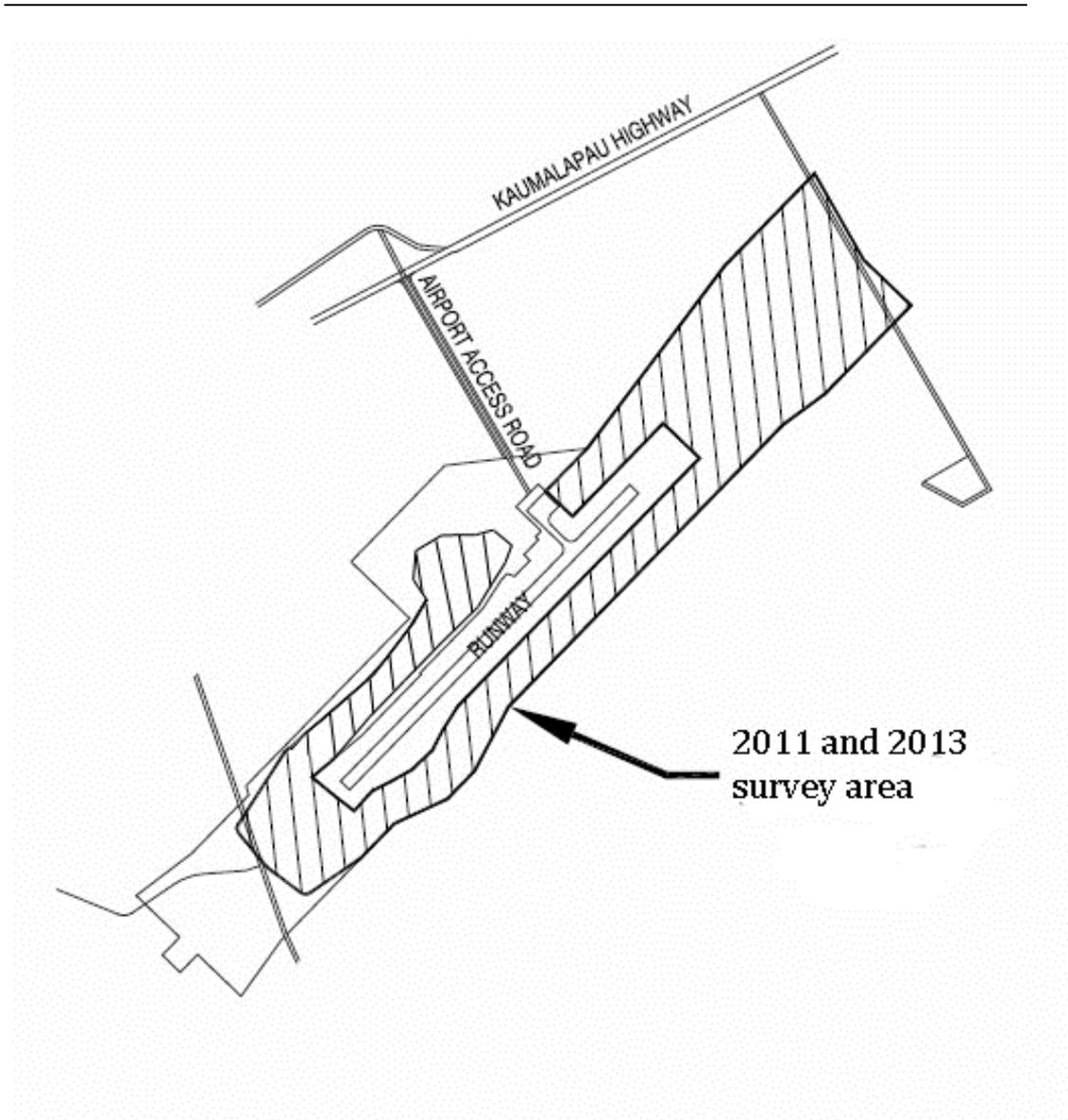


Figure 3. Survey areas (2011 and 2013)
in relation to existing runway at Lāna'i Airport.

Tropical Garden Flora (Staples and Herbst, 2005) for crop and ornamental plants. Names have been updated as appropriate to reflect more recent taxonomic or nomenclatural name changes.

Birds utilizing the project area were surveyed at 15 count stations spaced approximately equidistant from each other within the study site. Six-minute

point counts were made at each station. Stations were each counted once. Field observations were made with the aid of Leica 10 X 42 binoculars and by listening for vocalizations. Counts were concentrated during the early morning hours, the peak of daily bird activity. Time not spent counting stations was used to search the rest of the site for species and habitats not detected during count sessions.

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of Lāna'i are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate mammalian species observed and heard within the project area.

Avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 51st supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012). Mammal scientific names follow Tomich (1986). Place names follow *The Story of Lāna'i* (Munro, 2007), *Place Names of Hawaii* (Pukui et al., 1974), and USGS topographic maps.

Results

The project site surrounds the existing airfield runway (Fig. 2), extending away from the ends of the runway to field access roads to the northeast and southwest. A security access road lies outside the security fence in most of this area. The land slopes gently from northeast to west and southwest, being elevated above the runway as a hill on the southeast ('Iliolono) and north (Pu'u Kauila). The runway is supported on fill at its southwest end, where the steepest slopes occur. The land is rather featureless except for field roads indicating past use of the surrounding land for commercial pineapple (*Ananas comosus* cultivars) culture and, more recently, pasture.

Vegetation

The project site is mostly covered with grasses and very scattered shrubs (Fig. 4); trees appear on the landscape mostly southwest from the end of the runway. Although everywhere dominated by grasses—particularly Guinea grass (*Panicum maximum*)—recent rains in 2011 and 2013 had encouraged a profusion of seedlings of a wide variety of forbs, only a few of which had adult plants in evidence (in

2011). This situation suggests the forbs had mostly dried up and disappeared some time previous, and the seeds left behind were now responding to the natural watering. Since both the survey visits were undertaken midway through the wet season, the abundance of these species is likely to increase considerably through the remainder of the season.



Figure 4. General aspect of vegetation and gently rolling terrain in project area north of the airport (runway just visible on horizon under arrow). Trees on horizon at far right are located in the airport terminal area.

Much of the landscape surrounding the airport is a grassland assemblage dominated by Guinea grass, with an abundance of balloon plant (*Asclepius physocarpus*) and scattered occurrences of lantana (*Lantana camara*) and 'a'ali'i (*Dodonaea viscosa*). The latter shrubs vary in density (from abundant to common to occasional) from place to place. *Chenopodium carinatum* is an abundant herb in this grassland vegetation. Several areas where the dominant grass is not Guinea grass, but sourgrass (*Digitaria insularis*) were noted. Although 'a'ali'i is a conspicuous native shrub here as well as over much of the drier parts of Lāna'i, the plants here tend to be large individuals; no juveniles or

seedlings were observed in 2013, suggesting this species may not be reproducing in this area.

The area surveyed at the intersection of the Airport Access Road and Kaumālapa'u Highway is a regularly mowed verge. Plants here are grasses and ruderal forbs. Because mowing will influence the species that survive and propagate, the plants here are slightly different than those dominating the safety area. A similar situation was found in 2013 on the higher ground near the tarmac just west of the ARFF apron (airport fire/rescue station). Disturbed ground in this area accounted for a number of the non-native (weedy) forbs observed, species found rarely if at all elsewhere in the project area.

Flora

Table 1 lists all of the plant species identified by the survey. A total of 65 flowering plant species were observed in the project area. No ferns or fern allies were recorded. Of these 65 species, four (4) are considered native to the Hawaiian Islands (6.1%). These species are *'ilima* (*Sida fallax*), *'uhaloa* (*Waltheria indica*) and *koali'ai* (*Ipomoea cairica*), all generally common lowland species throughout the islands, especially in leeward areas; and *'a'ali'i* (*Dodonaea viscosa*), a shrub that is widespread in the Islands, more so on Lana'i, perhaps, than any other Island. *'Ihi'ai* (*Oxalis corniculata*) is thought to likely be an early Polynesian introduction, as may be *kūkaepua'a* and *'uhaloa*. The low number of native plants is typical for most lowland, disturbed sites in the Hawaiian Islands and reflects on past highly disturbed nature of this area where grazing by various ungulates has been a constant for over a century.

Table 1. Listing of plant species observed in the Lāna'i Airport safety area site on Lāna'i, January 2011 and February 2013.

Species	Common name	Status	Abundance	Notes
<i>FLOWERING PLANTS</i>				
<i>DICOTYLEDONES</i>				
<i>AMARANTHACEAE</i>				
<i>Amaranthus</i> sp.		nat	R	<2,4>
<i>ANACARDIACEAE</i>				
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	nat	R	
<i>APIACEAE</i>				
<i>Ciclospermum leptophyllum</i> (Pers.) Sprague	fir-leaved celery	nat	R1	<4>

Table 1 (continued).

Species	Common name	Status	Abundance	Notes
ASCLEPIADACEAE				
<i>Asclepias physocarpa</i> (E. Mey.) Schlechter	balloon plant	nat	A	<2>
<i>Calotropus</i> cf. <i>procera</i> (W. Aiton) W.T. Aiton	crown flower	nat	R	<3>
ASTERACEAE				
<i>Acanthospermum australe</i> (Loefl.) Kuntze	Paraguay burr	nat	R3	<1>
<i>Ageratum conyzoides</i> L.	<i>maile hohono</i>	nat	R	<2>
<i>Bidens alba</i> (L.) DC	Spanish needle	nat	U2	
<i>Bidens pilosa</i> L.	<i>kī</i>	nat	R	
<i>Calyptocarpus vialis</i> Less.	---	nat	U2	<1>
<i>Conyza bonariensis</i> (L.) Cronquist	hairy horseweed	nat	U	
<i>Crassocephalum crepidioides</i> (Benth.) S. Moore	---	nat	R	<4>
<i>Emilia fosbergii</i> Nicolson	Flora's paintbrush	nat	A	
<i>Heterotheca grandiflora</i> Nutt.	telegraph weed	nat	O3	<2>
<i>Lactuca serriola</i> L.	prickly lettuce	nat	R	<4>
<i>Pluchea carolinensis</i> (Jacq.) G. Don.		nat		<3>
Indet. Asteraceae	---	--	R	<4>
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown-beard	nat	R	<3>
BRASSICACEAE				
<i>Lepidium virginicum</i> L.	---	nat	R	<4>
CASUARINACEAE				
<i>Casuarina equisetifolia</i> L.	ironwood	nat	R	<1>
CHENOPODIACEAE				
<i>Chenopodium carinatum</i> R. Br.	---	nat	A	
CONVOLVULACEAE				
<i>Ipomoea cairica</i> (L.) Sweet	<i>koali 'ai</i>	ind	R	
<i>Ipomoea obscura</i> (L.) Ker-Gawl.	---	nat	R	<3>
CUCURBITACEAE				
<i>Momordica charantia</i> (Jacq.) Sw.	wild bitter melon	nat	U	<2>
EUPHORBIACEAE				
<i>Euphorbia hypericifolia</i> L.	graceful spurge	nat	R	
<i>Euphorbia hirta</i> L.	garden spurge	nat	R	
FABACEAE				
<i>Acacia farnesiana</i> (L.) Willd.	<i>klu</i>	nat	R	<3>
<i>Acacia mearnsii</i> De Wild.	black wattle	nat	R	
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	nat	R	
<i>Crotalaria incana</i> L.	fuzzy rattlepod	nat	U	
<i>Desmodium incanum</i> DC	Spanish clover	nat	R	
<i>Desmodium triflorum</i> (L.) DC	---	nat	R	
<i>Indigofera hendecaphylla</i> Jacq.	creeping indigo	nat	U	
<i>Indigofera suffruticosa</i> Mill.	indigo	nat	U	
<i>Leucaena leucocephala</i> (Lam.) de Wit	<i>koa haole</i>	nat	O2	
<i>Medicago</i> cf. <i>polymorpha</i> L.	burr clover	nat	R	<1,4>
<i>Mimosa pudica</i> L.	sensitive plant	nat	U	U
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine vine	nat	R	

Table 1 (continued).

Species	Common name	Status	Abundance	Notes
MALVACEAE				
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	nat	R	<1>
<i>Malva parviflora</i> L.	cheeseweed	nat	R	<3>
<i>Sida ciliaris</i> L.	---	nat	U3	
<i>Sida fallax</i> Walp.	'ilima	ind	C	<2>
<i>Sida rhombifolia</i> L.	Cuba jute	nat	R	
NYCTAGINACEAE				
<i>Boerhavia coccinea</i> Mill.	false <i>alena</i>	nat	R	<1>
OXALIDACEAE				
<i>Oxalis corniculata</i> L.	yellow wood sorrel; 'ihi'ai	pol	R	
PLANTAGINACEAE				
<i>Plantago lanceolata</i> L.	narrow-leaved plantain	nat	AA	
<i>Plantago major</i> L.	common plantain	nat	R3	<3>
PORTULACACEAE				
<i>Portulaca oleracea</i> L.	pigweed	nat	R	
PROTEACEAE				
<i>Grevillea robusta</i> A. Cunn. ex R. Br.	silk oak	nat	R	
SAPINDACEAE				
<i>Dodonaea viscosa</i> Jacq.	'a'ali'i	ind	O1	
SOLANACEAE				
<i>Solanum linnaeanum</i> Hepper & P. Jaeger	apple of Sodom	nat	C	
STERCULIACEAE				
<i>Waltheria indica</i> L.	'uhaloa	ind	O3	
VERBENACEAE				
<i>Lantana camara</i> L.	lantana	nat	A	
<i>Verbena litoralis</i> Kunth	ōwī	nat	R	
FLOWERING PLANTS				
MONOCOTYLEDONES				
POACEAE				
<i>Bothriochloa pertusa</i> (L.) A.Camus	pitted beardgrass	nat	C	<1>
<i>Cenchrus ciliaris</i> L.	bufflegrass	nat	C2	<3>
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	nat	R	
<i>Chloris sp.</i>	indet	nat	R	<3>
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	nat	U	
<i>Digitaria insularis</i> (L.) Mez ex Ekman	sourgrass	nat	C3	
<i>Digitaria ciliaris</i> (Retz.) Koeler	Henry's crabgrass	nat	U	
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	nat	R	
<i>Melinis repens</i> (Willd.) Zizka	Natal redtop	nat	O	
<i>Saccharum officinarum</i> L.	sugar cane	nat	R	
<i>Urochloa maxima</i> (Jacq.) R. Webster	Guinea grass	nat	AA	

KEY TO TABLE 1:

Status = distributional status

End = endemic; native to Hawai'i and found naturally nowhere else.

Table 1 (continued).

Ind = indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.
Orn = Ornamental, always or a planting in this situation; or escaped ornamental.
Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
Pol = Early Polynesian introduction.

Abundance = occurrence ratings for plants:
 R - Rare - only one or two plants seen.
 U - Uncommon - several to a dozen plants observed.
 O - Occasional - More than a dozen plants seen, but encountered infrequently.
 C - Common - considered an important part of the vegetation and encountered regularly.
 A - Abundant - found in large numbers; may be locally dominant.
 AA - Abundant and dominant - a defining species for the survey area.

Numbers (1-3) after an abundance rating for a species indicate modifications for localized abundance increases as per the following examples:
 R1 - species encountered perhaps once, but several plants seen together.
 O2 - a species encountered only occasionally, but seen in clusters of many.
 U3 - plant uncommon in its distribution, but very numerous where encountered.
 C1 - plant generally common, although only in widely scattered locations.

Notes:
 <1> Found also or exclusively in verge at intersection or near ARFF tarmac (ruderal weed).
 <2> Plant potentially abundant; present as seedlings in 2011.
 <3> Plant observed only in February 2012.
 <4> Plant lacking fruit or flowers; identification may be uncertain.

A total of nine species were added to the 2011 flora for the airport area (AECOS, 2011). Otherwise, the two surveys produced very similar results in terms of species and relative abundances of the species recorded.

Avian Survey Results

A total of 208 individual birds of 18 species, representing 15 separate families, were recorded during station counts (Table 2) in 2011 and 2013. Two of the species detected, Pacific Golden-Plover (*Pluvialis fulva*) and Ruddy Turnstone (*Arenaria interpres*) are native to the Hawaiian Islands. Both of these species are indigenous migratory shorebird species. The remaining 16 species recorded are all considered to be alien to the Hawaiian Islands.

Avian diversity and densities were in keeping with the habitat present on the site, and it's location. Three species—Sky Lark (*Alauda arvensis*), Northern Cardinal (*Cardinalis cardinalis*), and Grey Francolin (*Francolinus pondicerinaus*)—accounted for 49% of the total number of individual birds recorded during station counts. The most commonly recorded species was Sky Lark, which accounted for slightly more than 25% of the total number of individual birds recorded. An average of 14 birds was detected per station count.

Mammalian Survey Results

Two mammalian species were detected during the course of this survey. Seven Axis deer (*Axis axis*) were seen within the project site. Additionally, we

encountered the skeletal remains of two other deer. Tracks, scat and sign of both deer and dog (*Canis f. familiaris*) were encountered at numerous locations within the site. One dog was heard barking outside the project site.

Table 2. Avian species detected around Lāna'i Airport, January 2011 and February 2013.

Common Name	Scientific Name	ST	RA
GALLIFORMES			
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Grey Francolin	<i>Francolinus pondicerinaus</i>	A	1.67
Black Francolin	<i>Francolinus francolinus</i>	A	0.07
Ring-necked Pheasant	<i>Phasianus colchicus</i>	A	0.27
Meleagridinae - Turkeys			
Wild Turkey	<i>Meleagris gallopavo</i>	A	0.27
CICONIIFORMES			
ARDEIDAE - Herons, Bitterns & Allies			
Cattle Egret	<i>Bubulcus ibis</i>	A	0.20
CHARADRIIFORMES			
CHARADRIIDAE - Lapwings & Plovers			
Charadriinae - Plovers			
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM	0.53
SCOLOPACIDAE - Sandpipers, Phalaropes & Allies			
Scolopacinae - Sandpipers & Allies			
Ruddy Turnstone	<i>Arenaria interpres</i>	IM	0.07
COLUMBIFORMES			
COLUMBIDAE – Pigeons & Doves			
Spotted Dove	<i>Streptopelia chinensis</i>	A	0.13
Zebra Dove	<i>Geopelia striata</i>	A	0.47
PASSERIFORMES			
ALAUDIDAE - Larks			
Sky Lark	<i>Alauda arvensis</i>	A	3.47
CETTIIDAE - Cettia Warblers & Allies			
Japanese Bush-Warbler	<i>Cettia diphone</i>	A	0.80
ZOSTEROPIDAE - White-eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	0.40

Table 2 (continued).

Common Name	Scientific Name	<i>ST</i>	<i>RA</i>
	MIMIDAE - Mockingbirds & Thrashers		
Northern Mockingbird	<i>Mimus polyglottos</i>	A	0.33
	STURNIDAE – Starlings		
Common Myna	<i>Acridotheres tristis</i>	A	0.33
	CARDINALIDAE – Cardinals Saltators & Allies		
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	1.67
	FRINGILLIDAE – Fringilline And Cardueline Finches & Allies		
	Carduelinae – Carduline Finches		
House Finch	<i>Haemorhous mexicanus</i>	A	1.60
	PASSERIDAE - Old World Sparrows		
House Sparrow	<i>Passer domesticus</i>	A	1.60
	ESTRILDIDAE - Estrildid Finches		
African Silverbill	<i>Lonchura cantans</i>	A	0.47

KEY TO TABLE 2:

<i>ST</i>	Status
A	Alien species – Introduced to Hawai‘i by humans and now established in the wild.
IM	Indigenous Migratory species – Native migratory species; does not breed in Hawai‘i.
<i>RA</i>	Relative Abundance – Number of birds detected divided by the number of count stations (15).

Discussion

Botanical Resources

No plant species currently listed as endangered, threatened, or proposed for listing under either the federal or the State of Hawai‘i endangered species programs (DLNR 1998, USFWS 2005a, b, 2013) were recorded in the survey area. Although a few native plant species are present, these are common species that can be expected to re-establish following site grading. Trees are generally absent from the site; the few present are non-native and widely scattered to the southwest (Fig. 5). In conclusion, it is not expected that grading of the proposed project site will result in long-term deleterious impacts to any plant species currently listed as endangered, threatened, proposed for listing under ESA, or considered to be an important botanical resource.



Figure 5. Shrubby growth just south of the runway. “Hill” in background on right is the berm supporting the south end of the runway. Shrubs here are mostly ‘a’ali’i and lantana (in flower).

Avian Resources

The findings of the avian surveys are consistent with the location of the property, and the habitats present on the site. Two of the 18 avian species detected during the course of the surveys—Pacific Golden- Plover and Ruddy Turnstone—are native to the Hawaiian Islands. Both of these species are indigenous migratory shorebird species that nest in the high Arctic during the late spring and summer months, returning to Hawai‘i and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawai‘i for the trip back to the Arctic in late April or the very early part of May each year. The remaining 16 avian species detected during the surveys are all considered to be alien to the Hawaiian Islands (Table 2). No avian species protected or proposed for protection under either the federal or State of Hawai‘i endangered species programs were detected in the project area during the course of our surveys (DLNR 1998, USFWS 2005a, b, 2013).

Hawaiian Petrel - Although not detected during this survey, Hawaiian Petrel (*Pterodroma sandwichensis*) likely over-fly the airport between April and the end of November each year as there is a colony of this endangered species on Lāna'i (Simons et al., 1998). The petrel is listed as endangered under both federal and State of Hawai'i endangered species statutes. The primary cause of mortality in Hawaiian Petrels is thought to be predation by alien mammals at the nesting colonies (USFWS, 1983; Simons and Hodges, 1998; Ainley et al., 2001). Collision with man-made structures is considered to be the second most significant cause of mortality of these seabirds in Hawai'i. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets for feral mammals (Hadley, 1961; Telfer, 1979; Sincok, 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1994, 1998; Podolsky et al., 1998; Ainley et al., 2001). There are no nesting colonies, nor appropriate nesting habitat for Hawaiian Petrels within, or close to Lāna'i Airport.

The principal potential impact that the proposed action poses to Hawaiian Petrels is the increased threat that birds will be downed after becoming disoriented by outdoor lighting associated with possible night-time construction activity, and following build-out with exterior lighting which may be installed as part of this action.

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitat currently present on the site. Both mammalian species detected during the course of this survey are alien to the Hawaiian Islands. Although no rodents were detected during the course of this survey, it is likely that three of the four established alien *muridae* fund on Lāna'i, roof rat (*Rattus r. rattus*), Norway rat (*Rattus norvegicus*), European house mouse (*Mus musculus domesticus*) use various resources found within the general project area. No mammalian species protected or proposed for protection under either the federal or state endangered species programs were detected during the course of this survey (DLNR, 1998; USFWS, 2005a, 2005b, 2013).

Jurisdictional Waters

Jurisdictional waters or "waters of the U.S." are landscape features that are aquatic or semi-terrestrial environments and, by definitions in federal statutes (in particular as defined by Section 404 of the Clean Water Act [P.L. 92-500]), are under regulatory authority of the federal government. There are no

streams, waterways, or tidal waters in the project area or vicinity. Wetlands, as defined by the US Army Corps of Engineers (USACE, 1987, 2010), are not present in the project area. No conditions that would support regular stream flow or extended ponding of surface water occur at Lana'i Airport.

Critical Habitat

There is no federally delineated Critical Habitat on or incorporating the site or adjacent to the property; nor is critical habitat proposed for this part of Lāna'i (USFWS, 2012). Thus the proposed safety improvements will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under state law.

Recommendations

- If night-time work will be required in conjunction with the construction of the project, it is recommended that lights be shielded to reduce the potential for interactions of nocturnally flying Hawaiian Petrels with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).
- It is also recommended that if there is to be exterior lighting associated with the operation of the improved safety area or roadway improvements at the Lāna'i airport that these be shielded (except as needed for lights directed at incoming flights) to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).

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Appendix C

**An Archaeological Assessment for the
Proposed Lana'i Airport Runway Improvements
Cultural Surveys Hawai'i, Inc.**

**An Archaeological Assessment for the
Proposed Lāna‘i Airport Runway Improvements
Kamoku, Kalulu, and Kaunolū Ahupua‘a, Lāhainā District, Lāna‘i Island**

TMK: (2) 4-9-002:041

**Prepared for
RM Towill Corporation**

**Prepared by
Tanya L. Lee-Greig
and
Hallett H. Hammatt, Ph.D.**

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

Reference	An Archaeological Assessment for the Proposed Lāna'i Airport Runway Improvements Kamoku, Kalulu, and Kaunolū Ahupua'a, Lāhainā District, Lāna'i Island TMK: (2) 4-9-002:041 (Lee-Greig and Hammatt 2013)
Date	March 2013
Project Number (s)	Cultural Surveys Hawai'i (CSH) Job Code: KAMOKU 14
Investigation Permit Number	CSH completed the inventory survey fieldwork under state archaeological permit No. 13-06 issued by State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR), per Hawai'i Administrative Rules (HAR) Chapter 13-13-282
Project Location	Lāna'i Island, Lāhainā District, Kamoku, Kalulu, and Kaunolū Ahupua'a, Lāhainā District, Lāna'i Island, TMK: (2) 4-9-002:04, as depicted on the South Lāna'i USGS 7.5-minute topographic quadrangle (1998). More specifically, the proposed project area is located approximately three miles southwest of Lāna'i City, the airport property is surrounded entirely by fallow commercial pineapple fields with access via an easement off of Kaumalapa'u Road.
Land Jurisdiction	Land Owner: Government – State of Hawai'i Department of Transportation – Airports Division (HDOT-Airports Division)
Agencies	State: HDOT-Airports Division Department of Land and Natural Resources' State Historic Preservation Division (SHPD) Federal: Federal Aviation Administration (FAA)
Project Description	The proposed action will involve the placement of fill or embankment material at the south end of the existing Lāna'i Airport runway to comply with FAA design requirements calling for a 5% grade for a distance of 1,000 ft. The fill and embankment material needed to achieve proper grade in this area will be graded and borrowed from three areas within the airport boundary. The existing drainage pattern of the airfield area is sufficient to support the airport and runway and will be maintained. Related work may include the replacement of exiting chain-link fencing at the south and east side of the runway that may have to be temporarily removed during the course of work.
Project Acreage	Borrow 1: Approximately 9 acres Borrow 2: Approximately 8.5 acres Borrow 3: Approximately 31.5 acres RSA Fill Area: Approximately 18 acres Total Project Acreage: Approximately 67 acres

Area of Potential Effect (APE) and Survey Acreage	Based on available information, the proposed action will not impose adverse visual, auditory, or other environmental impacts to any historic properties in the vicinity of this undertaking. Accordingly, the APE for the proposed action is defined as the three areas of borrow and the fill area located at the southern end of the existing runway. The survey fieldwork covers the APE as defined above.
Historic Preservation Regulatory Context	Due to FAA funding, this project is considered a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and Section 4(f) of the federal Department of Transportation Act (DTA). As an HDOT project within state lands, the project is additionally subject to State of Hawai'i environmental and historic preservation review legislation [Hawai'i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. Due to the negative findings of the inventory survey field work, this report was prepared in accordance with the requirements for an archaeological assessment report as stated in Hawai'i Administrative Rules (HAR) 13-275-5(b)(5)(A) and details the survey methods and results of the archaeological study.
Fieldwork Effort	The archaeological fieldwork was conducted over a period of two days, February 19 th and 20 th , 2013, by archaeologists Jonas Madeus, B.A. and Katie Sprouse, B.A. under the direct supervision of Tanya L. Lee-Greig, M.A. and Hallett H. Hammatt, Ph.D.
Number of Historic Properties Identified	None
Historic Properties Recommended Eligible to the Hawai'i Register of Historic Places (Hawai'i Register)	None
Historic Properties Recommended Ineligible to the Hawai'i Register	None
Effect Recommendation	Under State of Hawai'i historic preservation legislation, the only two possible effect determinations for a given project under historic preservation review are "no historic properties affected" and "effect, with proposed mitigation commitments" (HAR Chapter 13-284-7). In the circumstance of the current project area, no historic properties have been documented, therefore, CSH recommends a project specific effect determination of "no historic properties affected."
Mitigation Recommendation	No further work

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 Project Background	1
1.2 Scope of Work	5
1.3 Environmental Setting	6
1.3.1 Natural Environment.....	6
1.3.2 Built Environment.....	8
Section 2 Methods	10
2.1 Field Methods	10
2.1.1 Pedestrian Survey	10
2.1.2 Mechanized Subsurface Testing (BTs).....	10
2.2 Document Review and GIS Methods	10
Section 3 Background Research	12
3.1 Traditional and Historical Background.....	12
3.1.1 Mo‘olelo and Other Accounts Related to Hawaiian Settlement of Kamoku, Kalulu, and Kaunolū Ahupua‘a prior to Western Contact.....	12
3.1.2 Traditional Hawaiian Habitation and Subsistence of the Pālawai and Miki Basin Area.....	15
3.1.3 Early Historic Period	19
3.1.4 Mid- to late-1800s.....	20
3.1.5 1900s.....	21
3.1.6 Late Historic to Modern Land Use	22
3.2 Previous Archaeological Research	24
3.2.1 Archaeological Studies Specific to the Lāna‘i Airport	27
3.3 Background Summary and Predictive Model	28
Section 4 Results of Fieldwork.....	29
4.1 Borrow 1	31
4.1.1 Backhoe Trench 17 (BT-17)	31
4.1.2 Backhoe Trench 21 (BT-21)	33
4.1.3 Backhoe Trench 22 (BT-22)	35
4.2 Borrow 2	38
4.2.1 Backhoe Trench 14 (BT-14)	38
4.3 Borrow 3	40
4.3.1 Backhoe Trench 1 (BT-01).....	41
4.3.2 Backhoe Trench 8 (BT-08).....	43
4.4 RSA Fill Area	45
4.4.1 Backhoe Trench 7 (BT-07).....	45
4.4.2 Backhoe Trench 10 (BT-10).....	48
Section 5 Summary and Interpretation	50
Section 6 Project Effect and Mitigation Recommendations.....	51
6.1 Project Effect	51

6.2 Mitigation Recommendations.....	51
6.3 Disposition of Materials	51
Section 7 References Cited	52
Appendix A SHPD Section 106 Review for the Lāna‘i Airport Master Plan.....	1
Appendix B Soil Descriptions.....	1

List of Figures

Figure 1. A portion of TMK (2) 4-09-002 showing overall location of the Lāna‘i Airport outlined in red.	2
Figure 2. A portion of the 1998 South Lāna‘i 7.5-minute USGS topographic quadrangle with overall project location in black cross-hatch and APE highlighted in red.....	3
Figure 3. Overall proposed project site plan, excavation and borrow areas in red and surface grading and fill area in green.	4
Figure 4. General views of the northwest borrow area, typical vegetation, view to south.....	7
Figure 5. General views of the northeast borrow area, ARFF apron left of frame, overall view to east.	7
Figure 6. A portion of the 1998 South Lāna‘i 7.5-minute USGS topographic quadrangle, showing the project area relative to the local soil series(U.S. Department of Agriculture 2001).....	9
Figure 7. A portion of the J. F. Brown and M. D. Monsarrat map (1878) showing Kamoku, Kalulu, and Kaunolū Ahupua‘a, as a traditional land division of the island of Lāna‘i, current project area in black cross-hatch, area noted as potato patch circled in red.....	13
Figure 8. A portion of the Map of Lāna‘i showing <i>ahupua‘a</i> divisions and place names with numbered locations as gathered by Kenneth Emory (1924a:Plate I), highlighted place name locations near the project area indicate areas of settlement noted along the rim of the “great basin”.....	17
Figure 9. Hawaiian Pineapple Company, Ltd. (1929) survey map showing, place names, areas of Land Commission Awards relative to the current project area.....	19
Figure 10. Original Lāna‘i Airport circa 1947 (photo courtesy of the Lāna‘i Culture & Heritage Center).....	23
Figure 11. 1953 aerial showing runway for the Lāna‘i Airport and surrounding pineapple fields (photo courtesy of the Lāna‘i Culture & Heritage Center).....	24
Figure 12. Map of Lāna‘i showing <i>ahupua‘a</i> and distribution of house sites and <i>heiau</i> known to Kenneth Emory in 1921 in relation to the current project area (numeric reference ranks the <i>heiau</i> [brown rectangles] according to size) (Emory 1924a:49).....	25
Figure 13. A portion of the South Lanai (1998) USGS topographic quadrangle showing previous archaeological studies in the vicinity of the current project area.....	26
Figure 14. Proposed project site plan with areas of potential effect labeled, excavation and borrow areas in red and surface grading and fill area in green.	29
Figure 15. A portion of the 1998 South Lāna‘i 7.5-minute USGS topographic quadrangle showing overall boundary of the Lāna‘i Airport (outlined in red) in relation to the areas of potential effect and subsurface testing locations.	30
Figure 16. General view of BT-17, view to east.....	31
Figure 17. Soil profile for BT-17, south wall.	32
Figure 18. South wall of BT-17.	33
Figure 19. General view of BT-21, view to west.....	34
Figure 20. North wall of BT-21.	34
Figure 21. Soil profile for BT-21, north wall.....	35
Figure 22. General view of BT-22, view to north.....	36
Figure 23. Soil profile for BT-22, east wall.....	37
Figure 24. East wall of BT-22.....	37

Figure 25. General view of BT-14, view to west.....39
Figure 26. North wall of BT-14.39
Figure 27. Soil profile for BT-14, north wall.....40
Figure 28. General view of BT-01, view to east.....41
Figure 29. Soil profile for BT-01, south wall.42
Figure 30. South wall of BT-01.42
Figure 31. General view of BT-08, view to north.....43
Figure 32. Soil profile for BT-08, west wall.....44
Figure 33. West wall of BT-08.45
Figure 34. General view of BT-07, view to west.....46
Figure 35. Soil profile for BT-07, south wall.47
Figure 36. South wall of BT-07.47
Figure 37. General view of BT-10, view to south.48
Figure 38. Soil profile for BT-10, south wall.49
Figure 39. South wall of BT-10.49

List of Tables

Table 1. Place Names Near Study Area.....	14
Table 2 Summary of Land Commission Awards (LCAs) identified within the upland areas of Kamoku, Kalulu, and Kaunolū Ahupua‘a (Maly and Maly 2010a, b, c).....	18

Section 1 Introduction

1.1 Project Background

At the request of RM Towill Corporation, Cultural Surveys Hawai'i, Inc. (CSH) conducted and archaeological inventory survey for the proposed airport improvements located in Kamoku, Kalulu, and Kaunolū Ahupua'a, Lāhainā District, Lāna'i Island TMK (2) 4-9-002:041 (Figure 1 and Figure 2). The proposed project will involve the placement of fill or embankment material at the south end of the existing Lāna'i Airport runway to comply with Federal Aviation Administration (FAA) design requirements calling for a 5% grade for a distance of 1,000 ft, as well as, excavation for the construction of a new drainage swale. The fill and embankment material needed to achieve proper grade in this fill area will be excavated and borrowed from three areas within the airport property totaling approximately 48.75 acres (Figure 3). The new drainage swale along with the existing drainage pattern of the airfield area will be sufficient to support the airport and runway and will be maintained. Related work may include the replacement of exiting chain-link fencing at the south and east sides of the runway that may have to be temporarily removed during the course of work.

Based on available information, the proposed action will not impose adverse visual, auditory, or other environmental impacts to any currently known historic properties in the vicinity of this undertaking. Accordingly, the area of potential effect (APE), hereafter referred to as "project area", for the current study extends no further than three proposed borrow locations and RSA fill area at the end of the aircraft runway as indicated in the grading plans for this undertaking (Figure 3).

Due to FAA funding, this project is considered a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and Section 4(f) of the federal Department of Transportation Act (DOT-Act). As an HDOT project within state lands, the project is additionally subject to State of Hawai'i environmental and historic preservation review legislation [Hawai'i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai'i Administrative Rules (HAR) Chapter 13-13-275, respectively]. Due to the negative findings of the inventory survey fieldwork, this report was prepared in accordance with the requirements for an archaeological assessment report as stated in Hawai'i Administrative Rules (HAR) 13-275-5(b)(5)(A) and details the survey methods and results of the archaeological study.

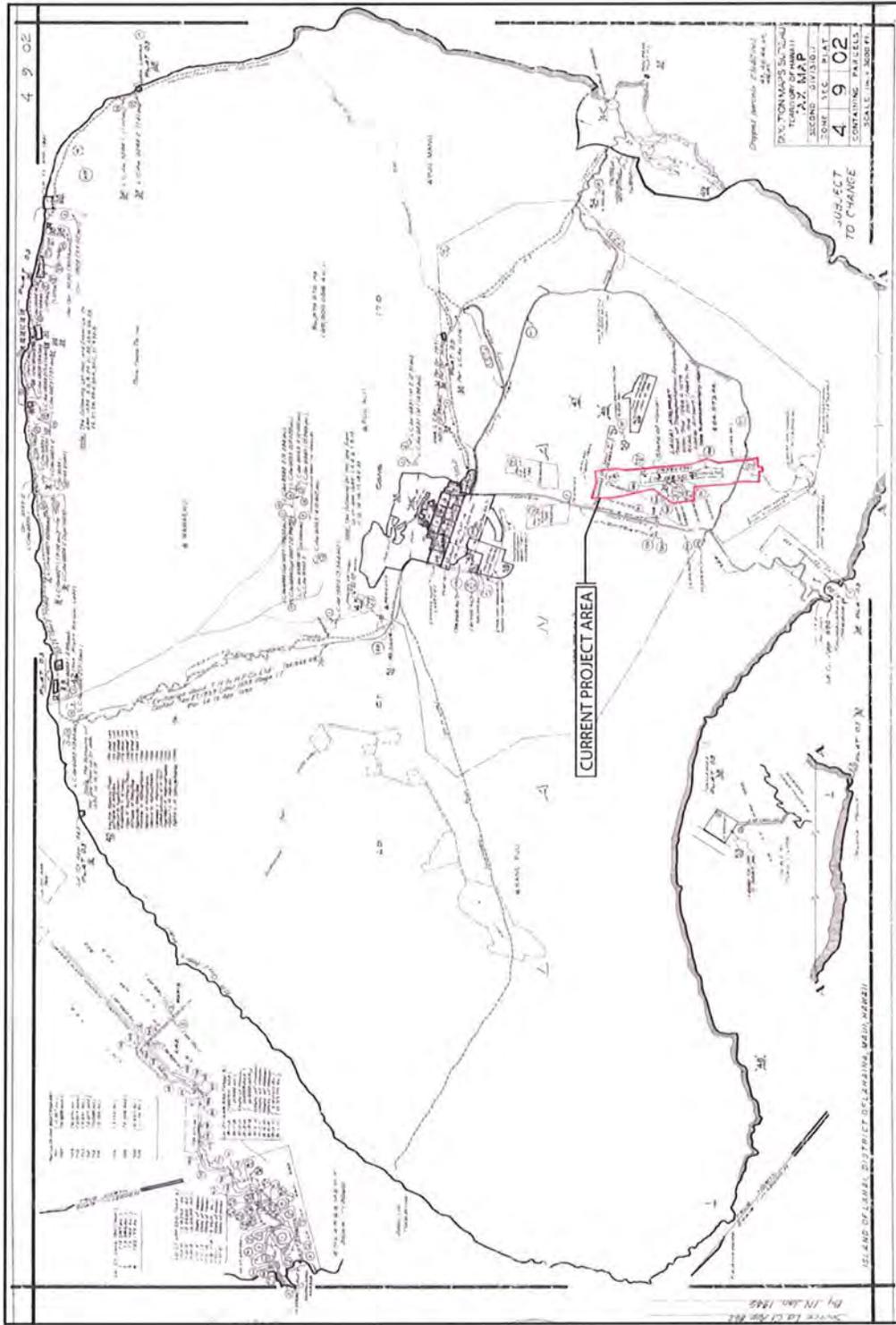


Figure 1. A portion of TMK (2) 4-9-002 showing overall location of the Lānaʻi Airport outlined in red.

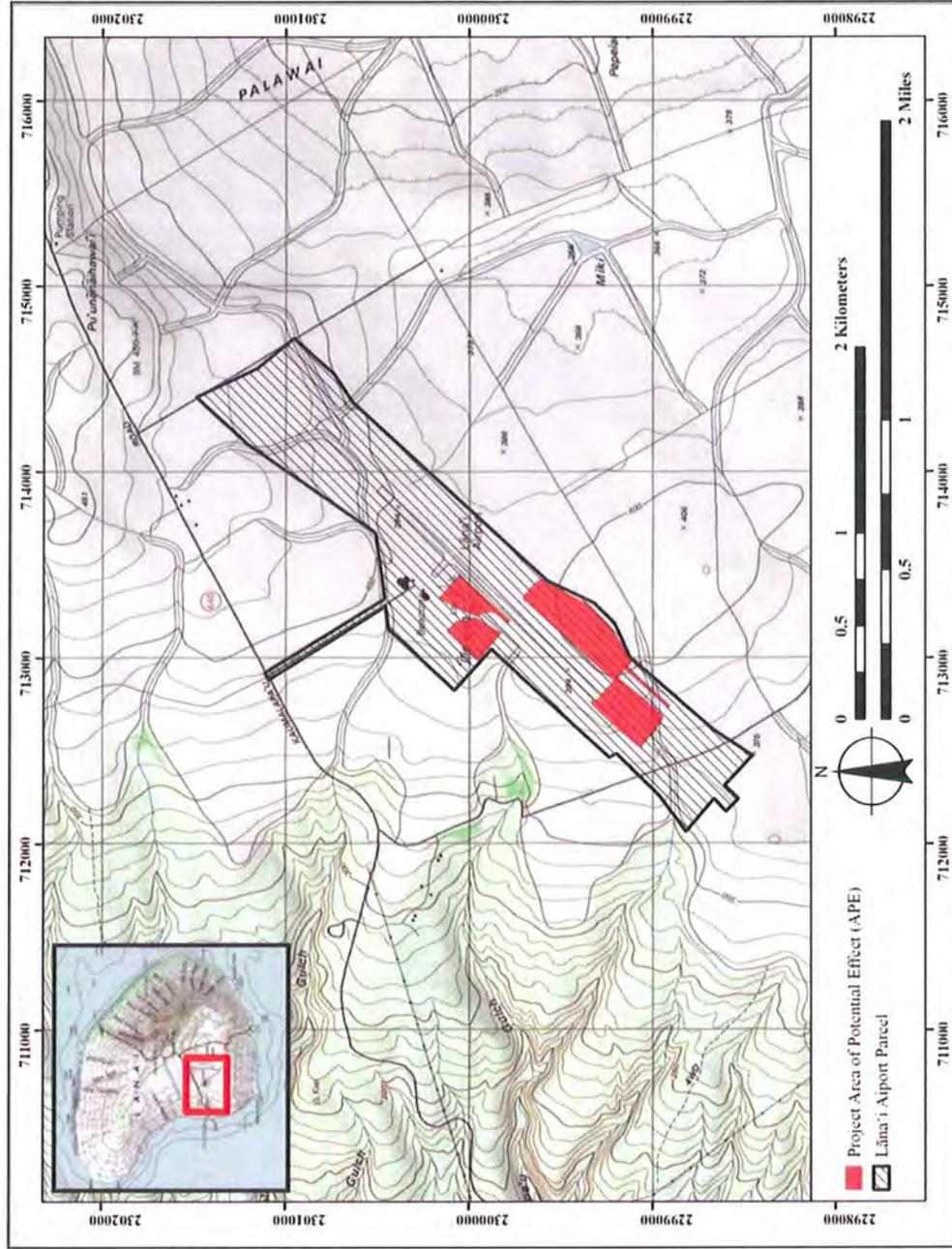


Figure 2. A portion of the 1998 South Lāna'i 7.5-minute USGS topographic quadrangle with overall project location in black cross-hatch and APE highlighted in red.

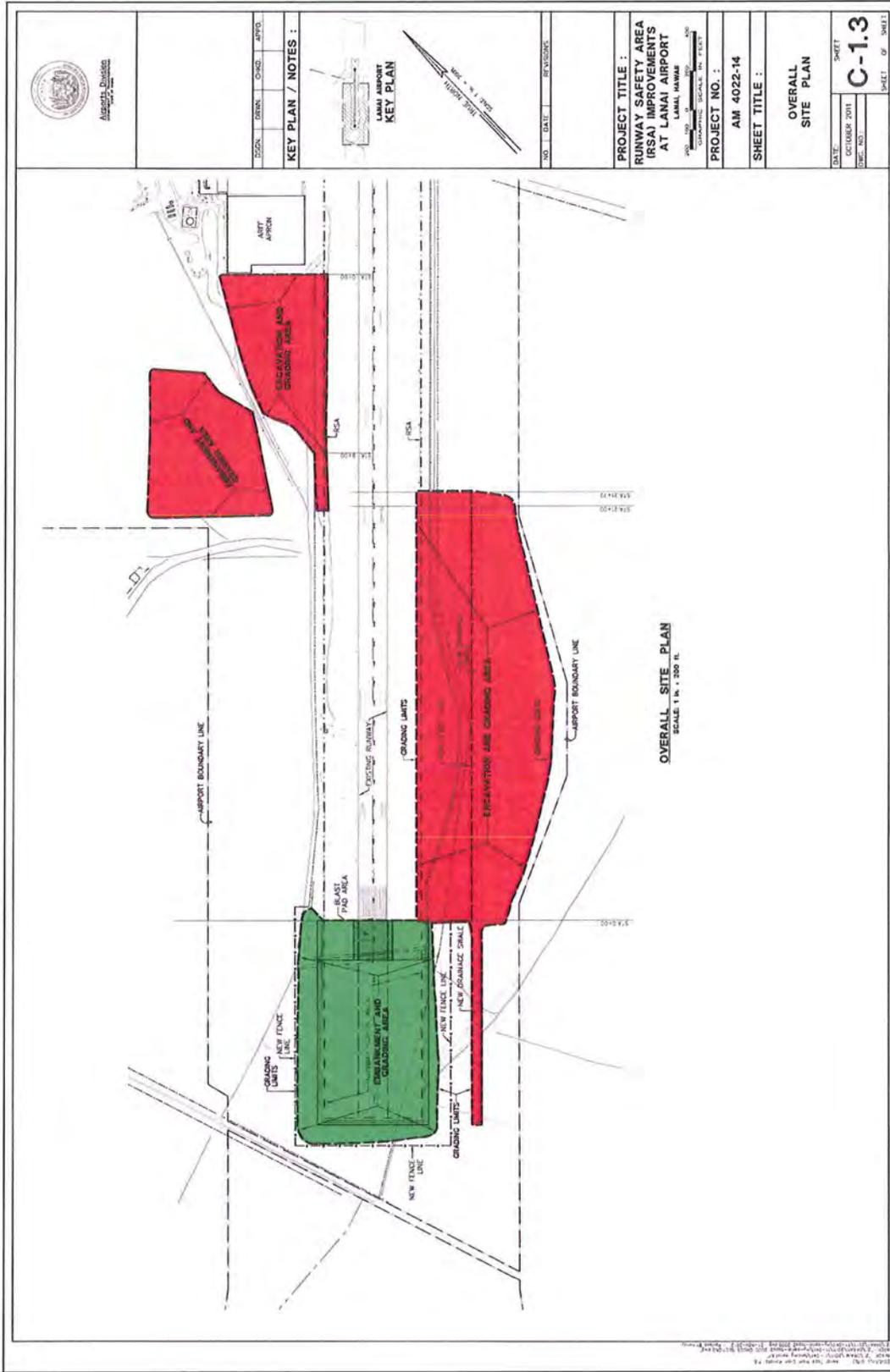


Figure 3. Overall proposed project site plan, excavation and borrow areas in red and surface grading and fill area in green.

1.2 Scope of Work

The following scope of work was followed to satisfy the Hawai'i state requirements for archaeological inventory surveys (Hawai'i Administrative Rules [HAR] Chapter 13-276 and Chapter 13-275/284):

- 1) Historic and archaeological background research, including a search of historic maps, written records, Land Commission Award documents, and the reports from prior archaeological investigations. This research will focus on the specific project area's past land use, with general background on the pre-contact and historic settlement patterns of the *ahupua'a* and district. This background information will be used to compile a predictive model for the types and locations of historic properties that could be expected within the project area.
- 1) A complete (100 %) systematic pedestrian inspection of the project area to identify any potential surface historic properties.
- 2) Based on the project area's environment and the results of the background research, subsurface testing with backhoe excavation to identify and document subsurface historic properties that would not be located by surface pedestrian inspection.
- 3) As appropriate, consultation with knowledgeable individuals regarding the project area's history, past land use, and the function and age of the historic properties documented within the project area.
- 4) As appropriate, laboratory work to process and gather relevant environmental and/or archaeological information from collected samples.
- 5) Preparation of a report, which would include the following:
 - a) A project description;
 - b) A section of a USGS topographic map showing the project area boundaries and the location of all recorded historic properties;
 - c) Historical and archaeological background sections summarizing prehistoric and historic land use of the project area and its vicinity;
 - d) Descriptions of all historic properties, including selected photographs, scale drawings, and discussions of age, function, laboratory results, and significance, per the requirements of HAR 13-276. Each historic property will be assigned a Hawai'i State Inventory of Historic Properties number;
 - e) If appropriate, a section concerning cultural consultations [per the requirements of HAR 13-276-5(g) and HAR 13-275/284-8(a)(2)].
 - f) A summary of historic property categories, integrity, and significance based upon the Hawai'i Register of Historic Places criteria;
 - g) A project effect recommendation;
 - h) Treatment recommendations to mitigate the project's adverse effect on any historic properties identified in the project area that are recommended eligible to the Hawai'i Register of Historic Places.

1.3 Environmental Setting

1.3.1 Natural Environment

At roughly 350m to 400m (1138ft to 1312ft) above mean sea level (AMSL), the lands that comprise the Lāna'i Airport property are located on fairly flat to gently sloping topography within the nearly filled pit crater of Miki Basin (MacDonald et al. 1983:405). The general soils for this locality are of the Molokai-Lahaina association and consist of deep, nearly level to moderately steep, well drained soils on uplands (Foote et al. 1972:General Soil Map). More specifically, the soils within the project area are classified as Molokai Silty Clay Loam 0-3% slopes (MuA), Molokai Silty Clay Loam 3-7% slopes (MuB), and Uwala Silty Clay Loam (UwB) (Figure 6). MuA soils are found on smooth slopes and have a moderate permeability rate with a slow runoff and slight erosion hazard (Foote et al. 1972:96). At the time of the 1972 USDA soil survey, MuA soils were used entirely for pineapple on the island of Lāna'i. MuB are generally similar to that of MuA soils with a slow to medium runoff rate and slight to moderate erosion hazard (Foote et al. 1972:96) being the primary difference. UwB have smooth slopes with moderate permeability and a slow to medium runoff rate that results in a slight to moderate erosion hazard (Foote et al. 1972:123). Found only on the island of Lāna'i, soils that fall under the UwB classification were primarily used for pineapple cultivation (Foote et al. 1972:124).

Rainfall accumulation within the project area averages between 15 and 23 inches per year with the heaviest rainfall occurring during the winter months (Giambelluca et al. 1986). This level of precipitation with the soils described above would have supported a lowland dry and mesic forest, woodland, and shrubland native ecosystem (Pratt and Gon 1998:122). Naturally occurring native vegetation within the project area would have likely consisted of *pili* (*Heteropogon contortus*) grasslands and dry or mesic shrublands of 'a'ali'i (*Dodonaea viscosa*), 'ākia (*Wikistroemia* sp.), ko'oko'olau (*Bidens* species), 'ūlei (*Osteomeles anthyllidifolia*), and other shrubs (Pratt and Gon 1998:127). The lands within and surrounding the project area, however, have been plowed over and intensively cultivated in pineapple for approximately 70 years from 1922 until 1992. Current vegetation consists dense waist high guinea grass (*Panicum maximum*), lantana (*Lantana camara*), and balloon plant (*Asclepias physocarpa*) (Figure 4) with areas of low vegetation and bare ground near the expanded ARFF apron (Figure 5).



Figure 4. General views of the northwest borrow area, typical vegetation, view to south.



Figure 5. General views of the northeast borrow area, ARFF apron left of frame, overall view to east.

1.3.2 Built Environment

The built environment of the current project area is limited to the facilities and roads associated with the daily operations of the Lāna'i Airport (see Figure 5) with the surrounding lands consisting of fallow pineapple fields and abandoned field roads.

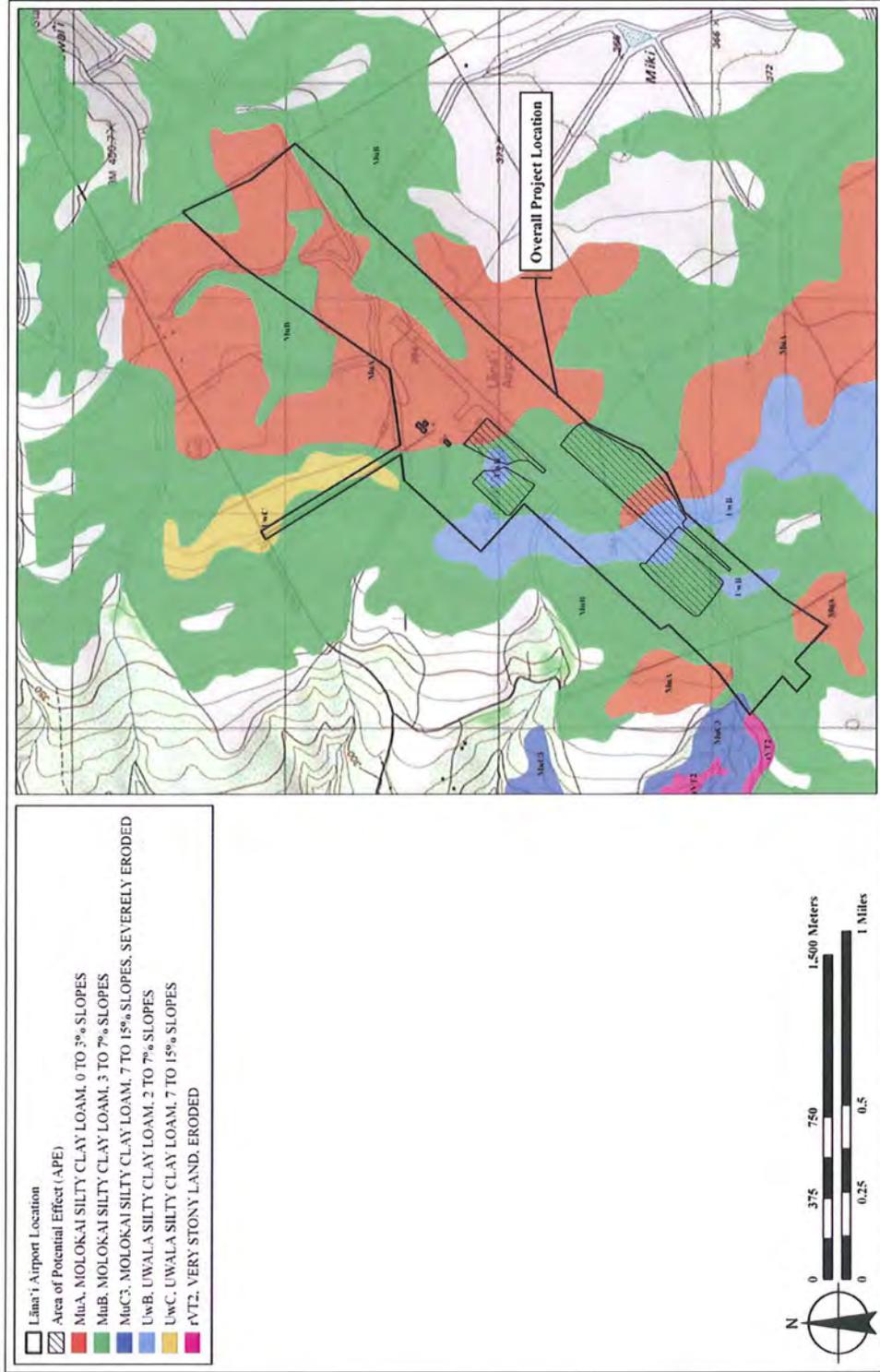


Figure 6. A portion of the 1998 South Lāna'i 15-minute USGS topographic quadrangle, showing the project area relative to the local soil series (U.S. Department of Agriculture 2001).

Section 2 Methods

The archaeological field work was conducted on February 19th and 20th, 2013 by archaeologists Jonas Madeus, B.A. and Katie Sprouse, B.A. under the overall guidance of Tanya L. Lee-Greig, M.A. and Hallett H. Hammatt, PhD.

2.1 Field Methods

2.1.1 Pedestrian Survey

A ground survey of the APE was undertaken for the purpose of historic property identification and documentation through systematic sweeps guided by the georeferenced project site map (see Figure 3) uploaded to a Trimble GPS ProXH unit and known landmarks. Field crew members were generally spaced at 5-10 meter intervals in areas of fair to poor ground visibility (knee high to overhead grasses) and 10-20 meter intervals in areas of good to excellent ground visibility (exposed soils to knee high grasses).

2.1.2 Mechanized Subsurface Testing (BTs)

The subsurface testing program consisted of semi-random mechanical testing with the APE. Mechanical testing and data recordation proceeded in the following manner:

1. A standard backhoe with a three-foot wide bucket was used during mechanical testing;
2. Average dimensions of each trench were one backhoe bucket width wide (approximately 0.8 m) by 5 m long;
3. All BTs were excavated down to either C-Horizon soil, or as safety standards dictated;
4. Recording of sediment stratigraphy was made by scale drawing of a least one profile per BT and soil descriptions using standard USDA Soil terminology;
5. The location of each BT was recorded using Trimble GPS ProXH.

2.2 Document Review and GIS Methods

As part of the literature review and field inspection, a review of all previous archaeological work conducted in the surrounding area was performed. In addition, a variety of resources devoted to historical perspectives of the region and traditional stories and accounts were reviewed. Research venues included the State Historic Preservation Division of the Department of Land and Natural Resources, the Survey Office of the Department of Accounting and General Services, as well as other private collections. All relevant Land Claim Awards (LCA) and Royal Patents were researched using documentary resources available online at Lāna'i Culture & Heritage website (Maly and Maly 2010a, b, c).

Historic maps were georeferenced in relation to Lāna'i Island TMK shapefile and portions of the South Lāna'i (1998) 7.5-minute USGS topographic quadrangles using known points and ArcView 9.3.1. The project area boundary depicted on historic maps included as a part of this report should be considered approximate and used for reference information only.

Coordinate data collected with the Trimble Pathfinder ProXH was downloaded and post-processed using GPS Pathfinder Office V 4.0 and exported to the ESRI Shapefile format referenced to UTM Coordinate System, Zone 4 North, NAD 1983 (Hawaii) Datum. All location maps presented herein were created using ArcView 9.3.1.

Section 3 Background Research

The division of Lāna'i's lands into political districts may have occurred under the direction of the chiefs of Maui, as Lāna'i historically appeared to be "subject or tributary to Maui" during the times of Kamalalawalu (about 1550-1600 AD) (Fornander 1880:207). The island was apportioned into the following thirteen *ahupua'a* land divisions that were established during traditional times: Ka'ā, Kamoku, Kalulu, Kaunolū, Keāliakapu, Keāliaaupuni, Pālāwai, Kāma'o, Ka'ohai, Pawili, Maunalei, Mahana, and Paoma'i. Unlike *ahupua'a* divisions of the other seven major islands of the Hawaiian Chain, some of the *ahupua'a* divisions on Lāna'i Island have the unique characteristic of traversing across the island from one coastline to the other (Figure 7). The current project area is located on the north-northwestern edge of Miki Basin and crosses Kamoku, Kalulu, and Kaunolū Ahupua'a, within the *mokupuni* of Lāna'i (Moffat and Fitzpatrick 1995:23). While Kamoku Ahupua'a retains the common "pie-shaped" *mauka-makai* boundary configuration, both Kalulu and Kaunolū Ahupua'a are of the unique bi-coastal boundary configuration whereby the two *ahupua'a* extend from one end of the island to the other.

3.1 Traditional and Historical Background

The most comprehensive summary of traditional accounts pertaining to the "formation of Lāna'i, first habitation, general traditions, early history and place names" appears in Kenneth P. Emory's *The Island of Lāna'i: A Survey of Native Culture* (1924a). Emory suggests through "genealogies and traditions" that Lāna'i "began to be populated by important numbers about 1400 A.D." (1924a:123). Based on the number of house sites he observed and approximately five persons per household, Emory estimated the pre-1778 population of the island at around 3,000 (1924a:122). The traditional life style focused on subsistence farming and fishing within the context of the *ahupua'a* or traditional land unit.

3.1.1 Mo'olelo and Other Accounts Related to Hawaiian Settlement of Kamoku, Kalulu, and Kaunolū Ahupua'a prior to Western Contact

3.1.1.1 *The Ghosts of Lāna'i*

The northern coastal place name of Laewahie refers to the point on Lāna'i where Kaululā'au built a signal fire to the people of Lāhainā. Fornander (1919a:542) recorded the story of Kaka'alaneo, the chief of all of West Maui. His son, Kaululā'au, grew up as a boy involved in great mischief. Because he uprooted the sacred breadfruit grove of Lahaina, his father had no choice but to banish his son to the uninhabited island of Lāna'i. At that time, Lāna'i was the abode of ghosts, and Kaululā'au was sent there to be killed by them. Tabrah (1976) notes the many tricks the ghosts tried to use to murder Kaululā'au, and her account notes the location of the signal fire to the people of Lāhainā after he had defeated all of the ghosts of the island as Naha, located in the *ahupua'a* of Ka'ohai. (The literal translation of Ka'ohai is "firebrand.") Kalākaua (1888:212, 230) records the legend of Kaululā'au conquering the ghosts of Lāna'i in two separate stories, one of which details his fight with the *Mo'oaleo*, a lizard god of the island as the most difficult of the ghosts to overcome. He does not give the location of the signal fire used by Kaululā'au. The legend ends with Kaululā'au being reunited with his father, mending his mischievous ways, and opening the island of Lāna'i for settlement.

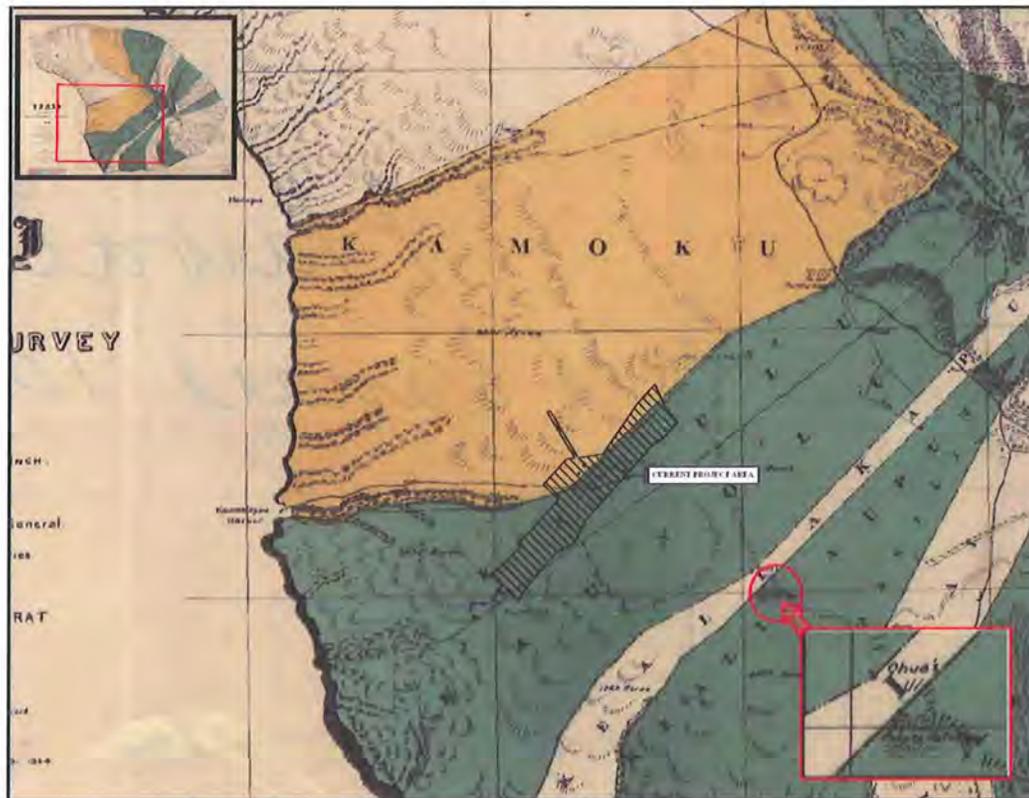


Figure 7. A portion of the J. F. Brown and M. D. Monsarrat map (1878) showing Kamoku, Kalulu, and Kaunolū Ahupua'a, as a traditional land division of the island of Lāna'i, current project area in black cross-hatch, area noted as potato patch circled in red.

3.1.1.2 The Story of the 'Ōhelo

The “Story of the ‘Ōhelo”, as translated from the original Hawaiian by Abraham Fornander (1919b), describes the origin of the sacred offering of ‘*ōhelo* to the goddess Pele, and the importance of Lāna‘i Island in the telling of the story. According to Fornander, the many sisters of Pele followed her east from Tahiti across the Pacific Ocean. As Malulani, Kaohelo, Hi‘iaka, and Pele arrived at the Hawaiian Islands, Malulani choose Lāna‘i to dwell on, while Pele, Kaohelo, and her younger sisters traveled on to the island of Hawai‘i.

Kaohelo had a son named Kiha, who was given instructions by Kaohelo as she neared death where she should be buried. “Take my body to the very navel of your grandmother, right on top of Kīlauea; then bury me there.” This her son did. The flesh of Kaohelo became the creeping vine and her bones became the bush-plant of the ‘*ōhelo*. Her head was treasured by Pele as the smoldering fire of Kīlauea. The remainder of her body brought volcanic fire to Haleakalā on Maui, Keālia on Oahu, and also to Kaua‘i.

When Malulani, living on Lāna‘i, heard of the death of their youngest sister, she went to Hawai‘i to retrieve her body, but found that small pieces of her body were strewn across the landscape sprouting into vines and bushes of the ‘*ōhelo*. She gathered as much of her sister’s

remains as she could, but upon returning to Lāna'i, was surprised to find the pieces of Kaohelo's body had been strung as leis and worn as adornment. Saddened by this, Malulani died.

Hi'iaka then came to Lāna'i to recover the body of Malulani, whereupon small bundles containing her remains were scattered across the island of Hawai'i, causing small hills and islets to remain to this day. In this way, the island of Lāna'i is part of the legend of how the *'ōhelo* came to be spread across the islands of Hawai'i, and why the *'ōhelo* is the special sacred offering to Pele.

While accounts specific to this section of Kamoku, Kalulu, and Kaunolū are relatively scarce, an analysis of the place name meanings and characteristics or features for the region surrounding the project area may yield some insight into the patterns of life in an area (Table 1). Literal translations of several of the place names and /or characteristics and features for land areas and divisions near to the project area are listed below:

Table 1. Place Names Near Study Area

Ili o Lono (Ka 'Ili o Lono)	Land section of Lono (personal); plateau land (Emory 1924a:30); site of an ancient <i>heiau</i> near the former house site of Papalaua, situated on the boundary between Kalulu and Kamoku Ahupua'a (Maly and Maly 2009:Table 1)
Kaapela	Rolling over soft grass; plateau land; site of a school house; old name of place close by is Mauipapahu (Emory 1924a:30)
Kalulu	The calm; a district; an ahupua'a (Emory 1924a:31); the shelter (Pukui et al. 1974:79)
Kamoku	Lit., the district or the cut-off portion (Pukui et al. 1974:82); the piece cut off (Emory 1924a:31); one of three ahupua'a that crosses from the leeward to windward side of the Lāna'i (Maly and Maly 2009:Table 1)
Kanaenaena	An offering to the gods (Emory 1924a:31)
Kaunolū	To give property on a wager secretly, the <i>akua</i> of Molokai; bay and district; spelling Kaūnōlū (Emory 1924a:32); site of deserted Hawaiian village (Pukui et al. 1974:95); noted for the "Heiau Kaulana o Kaunolu" near the boundary of Kealia Kapu and Kaunolū, one of three ahupua'a that crosses from the leeward to windward side of the Lāna'i (Maly and Maly 2009:Table 1)
Keahialoa	The fire at Loa; hill; highest point on the island as seen from Kaena point (Emory 1924a:32); the long fire burning
Kilauea	Place name translation not given, noted simply as plateau land (Emory 1924a:33); spewing, much spreading (referring to volcanic eruptions) (Pukui et al. 1974:79)
Koulii	The little <i>kou</i> tree (Emory 1924a:33)
Miki	Place name translation not given, noted simply as a basin on the plateau (Emory 1924a:34)
Nihokela	Projecting tooth (Emory 1924a:35)

Pakiki	Unyielding (Emory 1924a:35)
Paoole	Digging without a digging stick (Emory 1924a:35)
Pulehuloa (Pu'ulehuloa)	Big roasting (Emory 1924a:36)
Puu Nanaihawaii (Pu'u Nānā i Hawai'i)	Hill to view Hawai'i (Emory 1924a:36)
Puu o Miki	Hill of Miki (Emory 1924a:36)
Puu Ulaula	Red crater (Emory 1924a:36); red hill (Pukui et al. 1974:206)
Puukauila	Kauila (tree) hill (Emory 1924a:36)

The above place names describe an area consistent with what one might expect of a leeward environment that was likely covered in *pili* (Kaapela) with some reference to woodland plant species that may have been stunted due to seasonal water availability (Koulii), and while the lands and water limitations may have seemed unyielding at times (Pakiki) it was also an environment suitable for agricultural endeavors (Ili o Lono and Paoole).

3.1.2 Traditional Hawaiian Habitation and Subsistence of the Pālawai and Miki Basin Area

Traditional or pre-contact habitation along the rim of both Pālawai Basin and Miki Basin was likely sporadic with agricultural activities focused on the cultivation of dry-land crops. The following excerpts from the metes and bounds descriptions for Kamoku, Kalulu, and Kaunolū Ahupua'a contained within Boundary Commission documents that were generated during the Māhele note the presence of scattered house sites, with some making specific reference to the crater or rim of the basin (Maly and Maly 2009:40-41; 38-39; 48):

Kamoku

4. N 72° 43' E true 2080 feet along Kalulu to a cross cut in a stone amongst a lot of stones at the former site of an old *Heiau* called "Ili o Lono."

6. N 65° 44' E true 4939 feet along Kalulu along North edge of crater to a red wood post on the North wall of the crater at a place called Pulehuloa near Keliihananui's house.

11. S 74° 8' W true 6258 feet along Paomai passing to the North of a couple of *Hala* clumps to two Triangular pits at an old house site.

Kalulu

3. N 54° 17' E true 6694.5 feet along Kaunolu passing between Maakuia's house and his sheep pen to a point 14 feet East of a rock with a cross cut on it.

5. N 53° 14' E true 13359 feet along Kaunolu across Crater passing West of school house to a point on terrace marked by a *Mamane* post.

16. Thence along Kamoku down the N.W. edge of the Kapano valley to the Government road, passing near Kawaonahale's housekeeping straight on across a side ravine coming in from the North (called Keaaku) to a red wood post at the top of the North wall of the Palawai Crater at a place called "Pulehuloa," near Kealiihananui's house, which red wood post bears [page 112] S 44° 53' W true 8052 feet from last mentioned point on ridge¹⁸. South 28°32' West true 11633 feet along Palawai (Passing around the east side of the above mention Grant [Grant 2971 to Kapahoa]) and across Palawai crater to a rock marked with a cross on the South edge of crater at an old house site near a large straw house owned by Puupai

18. S 46° 19' W true 10141.4 feet along Kamoku down road to a cross cut in a stone amongst a lot of stones at the former site of an old *Heiau* called "Ili o Lono."

Kaunolu

3. N 54° 17' E true 6694.5 feet along Kalulu passing between Maakuia's house & his sheep pen to a point 14 feet East of a rock with a cross cut in it.

During his island wide survey of the archaeology of Lāna'i, Kenneth Emory (1924b:28) also postulated that the basin area was a scene of early settlement based on the remains of pre-contact settlements identified below Puulehuloa (80¹) and Kanaenae (27) along the west rim at Paoole (137) and Puukauila (74) (Figure 8). Within the basin, however, Emory (1924b:28) noted only an occasional enclosure or platform but no trace of house remains on level ground. Evidence of only scattered settlements around the basin, as opposed to evidence of intensive habitation found along the coastline and within Maunalei Gulch, may be a factor of limited or seasonal water availability along the rim and potentially marshy conditions within the basin during the winter months. The seasonality of water availability and scarcity of resources during certain times of the year was noted by M.D. Monsarrat in a letter dated June 2, 1877 to W.D. Alexander during the Boundary Commission survey of the Kaunolu Ahupua'a boundaries:

It is beginning to get very dry here and water scarce. Potatoes are also very scarce and expensive. *Pai ai* are a dollar apiece in Lahaina now having jumped from seventy five cents since I came over. (M.D. Monsarrat in Maly and Maly 2009:12)

¹ Numbers following placenames correspond to numbered locations illustrated in Plate I of Emory's *The Island of Lana'i, A Survey of Native Culture* (1924a).

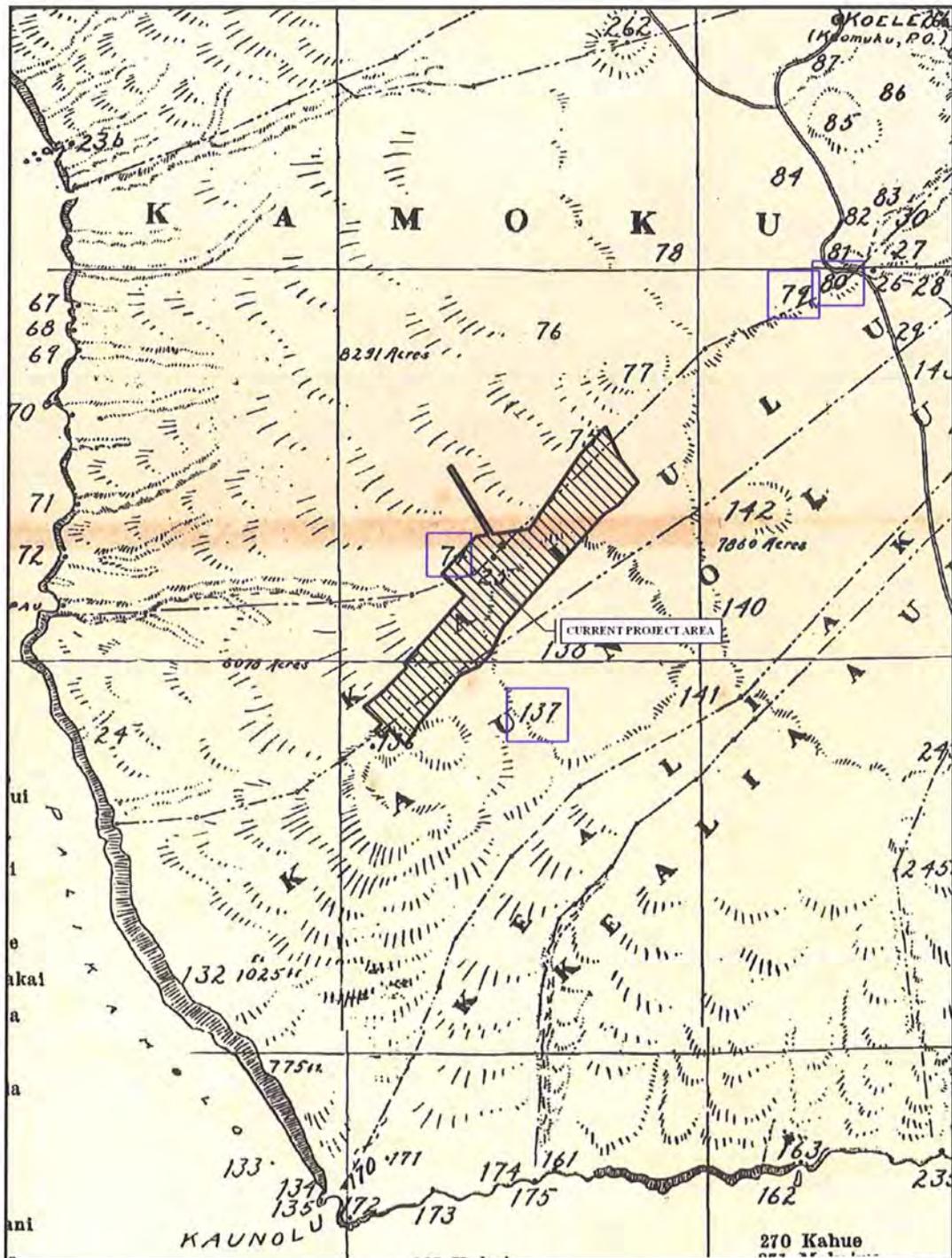


Figure 8. A portion of the Map of Lāna'i showing *ahupua'a* divisions and place names with numbered locations as gathered by Kenneth Emory (1924a:Plate I), highlighted place name locations near the project area indicate areas of settlement noted along the rim of the “great basin”.

Because the island of Lāna'i lies in the rain shadow of the West Maui mountain range, the landscape of the entire island is reflective of a leeward environment where water is a precious commodity. Fresh and brackish water wells dotted the coast, with one or two on the western coast of the island providing an ample water supply for the then permanent residents at Kaunolu (Emory 1924a:46). Mountain springs were numerous with a permanent water supply found at Maunalei Gulch where the only perennial stream could be found (Emory 1924a:47). Water collection on the plateau lands and presumably basin area, however, was different and unique. The following description of gathering water in the uplands is taken from Emory (1924a:46):

(i)n the days before sheep, goats, cattle and horses were grazing on the plateau lands, dew could be collected from the thick shrubbery by whipping the moisture into large bowls or squeezing the dripping bush-tops into the vessels. Oiled tapa was also spread on the ground to collect the dew. Water accumulating in natural depressions in rock or in cup marks was husbanded carefully.

Even with the seasonal nature of water availability common in leeward environments in general, and along the plateau lands of Lāna'i in particular, *'uala* (sweet potato) and possibly other dry-land crops (e.g. dryland *kalo*, gourd crops) were successfully cultivated (Emory 1924a; Handy et al. 1991; Munro 2007). An indication of this is the name of the hill, or rise, west of Miki Road that is identified as 'Uala Hill on the South Lanai USGS Quadrangle (see Figure 7), and known as Pu'u o 'Uala by the Kaupiki family of Lāna'i. In oral testimony gathered by Mr. Kepa Maly (Executive Director, Lāna'i Culture and Heritage Center) and shared with the authors as a part of an earlier study for the Lāna'i Airport (Lee-Greig and Hammatt 2009:16), the Kaupiki family recalled that the sweet potato that grew there were reported to be tasty and reach lengths of one foot or more. Testimony presented before the Board of Land Commissioners for *kuleana* claims in the plateau and basin area show very clearly that dryland agriculture along the rims of Pālāwai and Miki Basins was ongoing during the time of the Māhele. At Kaunolū, Kalulu, and Kamoku there are a total of seven claims, some with multiple *apana* (parcels), that mention sweet potato gardens and pasture lands, with testimony for LCA 6815 Parcel 2 indicating both a sweet potato garden and a gourd garden (Table 2 and Figure 9).

Table 2 Summary of Land Commission Awards (LCAs) identified within the upland areas of Kamoku, Kalulu, and Kaunolū Ahupua'a (Maly and Maly 2010a, b, c)

LCA #	Claimant	Ahupua'a	Land Use
06815:3	Kaiwi	Kaunolū	1 <i>mala uala</i> (sweet potato patch) at Paoole
6818:1 and 2	Haole	Kaunolū	1 <i>mala uala</i> and 1 <i>moku mauu</i> (grass land/pasture section) respectively
6822	Kahuikilani	Kamoku and Kalulu	1 <i>pahale</i> (house lot) and <i>mala uala</i>
8556:2 and 3	Kaauwaeaina	Kamoku and Kalulu, <i>ili</i> of Pueo	1 <i>moku mauu</i> and 1 <i>pauku</i> respectively
6820	Kanohookahi	Kaunolū	1 <i>pahale</i> and <i>moku mauu</i>
6816:1	Naholowaa	Kaunolū	6 <i>mala uala</i>

LCA #	Claimant	Ahupua'a	Land Use
6814:2 and 3	Pakele	Kaumolū	1 moku mauu in each apana

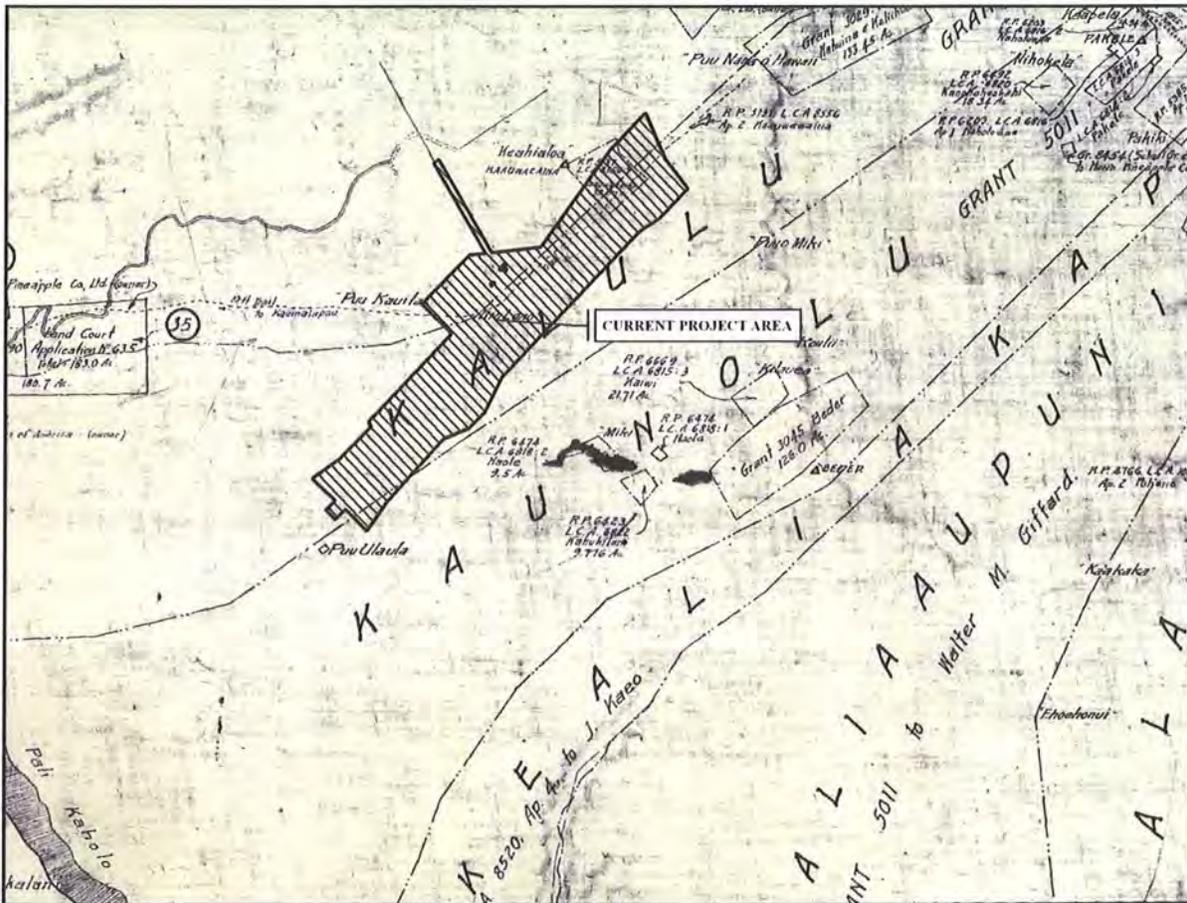


Figure 9. Hawaiian Pineapple Company, Ltd. (1929) survey map showing, place names, areas of Land Commission Awards relative to the current project area.

3.1.3 Early Historic Period

Lāna'i was first seen by Captain James Cook during his voyage to the Sandwich Islands in January and February of 1779. The expedition had returned to the Hawaiian Islands in order to re-supply following many months of mapping the west coast of America. William Ellis, Assistant Surgeon to the expedition, noted the first time that the ships *HMS Resolution* and *Discovery* sighted “Aranni” [Lāna’i], as the ships made their way past “Kaaowr’vee [Kaho’olawe] nearly adjoining to Mow’wheel” in 1779. It was during this voyage that Ellis went on to describe Lāna’i as an island under the dominion of the king of Maui (Ellis 1783:187). An account of a shipwreck on the reef of Lāna’i in the late 1820’s was detailed by an American Navy Lieutenant, Hiram Paulding, when his ship, the U.S.S. *Dolphin*, arrived to aid the survivors of the “Loudon”, a ship out of New York. Paulding’s description of the events stated that the chief of Lāna’i was “encouraging the natives of the island to plunder the Loudon, which carried a large amount of specie and bullion.” The account continued with the Captain of the U.S.S.

Dolphin, John Percival, chartering a vessel and saving the treasure with the intervention and aid of Boki, the governor of O'ahu (Paulding 1831:216).

During the early and middle 1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease; and nucleation around the developing port towns. The traditional Hawaiian population was largely dispersed and, although there were royal centers and areas of more concentrated population, these areas never came close to rivaling the populations of the historic port towns that developed on Hawai'i's shorelines during the 1800s. In this regard, Kuykendall (Kuykendall 1938:313) notes that in the period from 1830 to 1854:

The commercial development during this period, by magnifying the importance of a few ports, gave momentum and direction to a townward drift of population; the population of the kingdom as a whole was steadily going down, but the population of Honolulu, Lahaina and Hilo was growing.

By the 1830's, protestant missionaries sent to the Sandwich Islands from the east coast of America were reporting having established a thriving congregation on Lāna'i. Letters written in 1830 listed 10 schools on Lāna'i Island attended by 506 students. Of these students, the missionaries reported that 206 could read, and 42 could write (Richards and Green 1831).

3.1.4 Mid- to late-1800s

In 1848, the Māhele initiated extreme social, economic, and political changes within traditional Hawaiian culture on all of the islands. The Māhele resulted in the division of lands according to a system of private ownership based on Western legal concepts. In the first phase of this process, Kamehameha III subdivided his lands among the highest *ali'i* (royalty) *konohiki* (chiefs), and some favored *haole* (foreigners). This process of redistribution severed the political and social relationships of the traditional system of land use (Moffat and Fitzpatrick 1995:11). Following this change, *maka'āinana* (commoners) were then permitted to pursue legal title and ownership to land they had cultivated and inhabited through a Land Commission Award, in addition to the outright purchase of other government lands. At the end of the Māhele, naturalized foreign citizens were given the right to purchase land in Hawai'i. The ultimate result of this decision placed more land in the hands of non-Hawaiians than native Hawaiians between the years of 1850 and 1865 (Moffat and Fitzpatrick 1995:51). In many cases, the purchases or leases to non-Hawaiians included entire *'ili* (a subdivision of an *ahupua'a*) or *ahupua'a* (land division usually extending from mountain to sea).

The *ahupua'a* of Kamoku, while depicted as Crown Lands on the available maps, was "omitted" (Interior Department Memos 1860-70s) at the time of the Māhele (1848) and subsequently leased as government lands (ca. 1860) (Hammatt and Borthwick 1988:20). According to the *Buke Kakau Paa* (Kingdom of Hawai'i 1848), the ledger that contained the recorded division of lands between Kamehameha III, the *ali'i*, and the *konohiki*, the *ahupua'a* of Kalulu and Kaunolū were set aside as government lands (see also Figure 7). By the mid-1800s much of the upper plateau lands of Kamoku and adjacent *ahupua'a* had been become open *pili* grasslands. This is indicated in the native and foreign testimonies given during the mid-1800s as part of the Māhele and Kuleana Acts (see also Table 2). At a total of seven, there appear to be relatively few LCA records for lands across the uplands of Kamoku, Kalulu, and Kaunolū

Ahupua'a near the current project area (see discussion in Section 3.1.2 Traditional Hawaiian Habitation and Subsistence).

As previously stated, an additional aspect of the Māhele was the sale of land to naturalized foreigners. These changes in land tenure had a significant impact across the Hawaiian Islands, in particular Lāna'i. As a representative of the Mormon Church in Hawai'i, Walter Murray Gibson leased "Crown Lands" (lands reserved by the Royal Family of Hawaii during the Great Māhele of 1848) from King Kamehameha III, for the raising of sheep and for other agricultural purposes, beginning in 1861. By 1867, the island of Lāna'i, almost in its entirety, was controlled by Walter Murray Gibson through either fee simple title or government lease. The authorities of the Mormon faith, from their Salt Lake, Utah Church, pressed Mr. Gibson to deed his property interests on Lāna'i to the Church, and in 1864, Mr. Gibson was cut off from the Mormon Church for his refusal to comply. His interests in real property involving the *ahupua'a* of Pālāwai, Keālia Aupuni, Keālia Kapu, Pawili, Kama'o, Ka'a, and Kaohai were inherited by his daughter, Talula Lucy Hayselden, in 1888 (Tabrah 1976).

3.1.5 1900s

In 1907, 48,460 acres of *ahupua'a* land held by the government, including Kaunolū and Kalulu Ahupua'a, were ceded to Walter M. Giffard (Land Grant 5011), acting for W.G. Irwin (Munro 2007:21). The lands acquired through W.M. Giffard were exclusive of *kuleana* lands that were within the boundaries of the government lands and the three Royal Patent Grants described above. A portion of the 1929 Wright, Harvey and Wright survey map (Figure 9) of Lāna'i shows that the area in which the current project area lies is a portion of the large grant awarded to Walter M. Giffard (Grant 5011). Soon after, Charles Gay, following the acquisition of the Neuman and Payne land interests on Lāna'i in 1902 and the remaining Hayselden interests in 1903, set his sights on and acquired the Irwin land interests following the transfer of lands in 1907. With the exception of *kuleana* lands, Charles Gay owned nearly all of Lāna'i Island after 1907. From 1907 to 1922, the lands that were consolidated under Gay passed hands and economic ventures several times, finally settling with the Hawaiian Pineapple Company, Limited in 1922 (Munro 2007:24).

A legal battle and a three-year drought forced Charles Gay to sell all of his property on Lāna'i to a consortium of ranchers from Honolulu (Tabrah 1976). Ranching on the island was barely profitable. The Baldwin family, Maui's most famous ranchers, could not find a way to gain a profit from the island. In 1920, the Baldwin-owned Lanai Ranch Company brought 12 Asian chital deer (*Axis axis*) to Lāna'i from Moloka'i, where good hunting ranges had been established for sportsmen (Graf and Nichols Jr. 1966). Despite these efforts, ranching was abandoned.

By 1922, with faltering demand for cattle, sheep and deer, the Baldwins sold their holdings on Lāna'i Island to the Hawaiian Pineapple Company. The construction of office buildings, warehouses, shops and dwellings for 250 workers and their families began immediately. By 1927, three thousand acres of the Pālāwai Basin, including the current project area, had been planted in pineapple, the first construction phase to establish Lāna'i City had been finished, and a roadway linking the new piers at Kaumalapau with Lāna'i City had been paved (Freeman 1927). The cultivation of pineapple on Lāna'i had become integral in Hawai'i supplying more than 90 percent of the world output of canned pineapple.

By 1939, the population of Lānaʻi was reported at four thousand, with virtually all of the residents working to maintain the fifteen thousand acres of pineapple fields (Mackie 1939). The expansion of the market to accommodate Hawaiian pineapples occurred so rapidly, with so much success, that new machinery was quickly developed to take advantage of the gentle topography of Lānaʻi. The long, flat fields (Figure 10 and Figure 11) could accommodate mechanical harvesters, which operated by straddling rows of pineapple plants, and moving slowly behind men who broke the ripe fruit off their stalks. With this technology, pineapples picked in the morning on Lānaʻi, about sixty miles from Honolulu, were canned and ready for shipment by nightfall the same day (McClellan 1939).

3.1.6 Late Historic to Modern Land Use

In 1961, James D. Dole's pineapple lands on the island of Lānaʻi was merged with the assets of Castle & Cooke, a prominent Hawai'i-based corporation. World-wide prices for pineapple continued to drop throughout the 1970's as competing countries, most notably Cuba and the Philippines, supplied the market with cheaper pineapple.

At its formation in 1919 the Lānaʻi airport began as an emergency landing strip. The air field was sod and owned by the Hawaiian Pineapple Company. In 1930 Hawaiian Airlines, then known as Inter-Island Airways, began flight operations using Sikorsky S-38 amphibious planes. When the Sikorsky was replaced by the Douglas DC-3 in 1941, without airport improvements, the new DC-3's were too large and the existing runway could not accommodate them. Flights to Lānaʻi soon ceased with the onset of World War II. In 1946 the Hawaiian Pineapple Company donated land to the Territory for a new airport location and in 1948 due to the unstable condition of the sod landing strip during rain, the runway was paved. Between the years 1952 and 1994 several airport improvements took place. Improvements included the construction of an air freight building, new passenger terminal, extension of the runway, construction of a cargo building and finally, the construction of a new passenger terminal (State of Hawaii, Department of Transportation, Airports Division website 2007-2009).

During the 1980's, Castle & Cooke began a long-term program to phase the island out of pineapple cultivation, and expand tourism on Lānaʻi. In 1988, David Murdock, Chairman of Castle & Cooke, Inc., opened a resort hotel and companion championship golf course at Mānele Bay. A second resort hotel and golf course in the uplands of Kōʻele was opened in 1990. The final pineapple harvest and phasing out of all pineapple operations in 1993 (Boyd 1996) marked the end of an era for Lānaʻi Island leaving much of the lands that were once in pineapple, including the current project area, open and fallow.



Figure 10. Original Lānaʻi Airport circa 1947 (photo courtesy of the Lānaʻi Culture & Heritage Center).

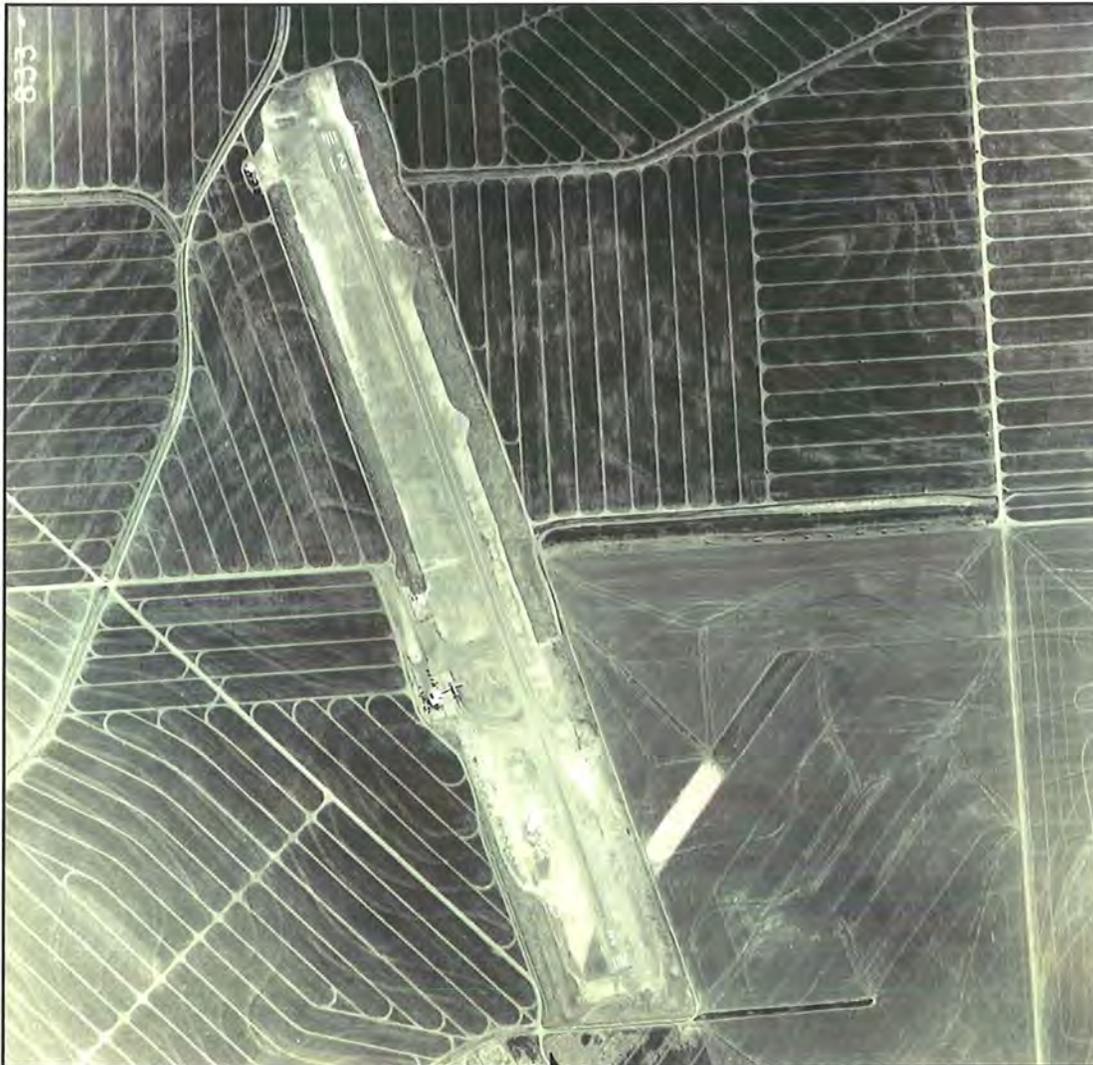


Figure 11. 1953 aerial showing runway for the Lānaʻi Airport and surrounding pineapple fields (photo courtesy of the Lānaʻi Culture & Heritage Center)

3.2 Previous Archaeological Research

The major archaeological studies pertaining to the *ahupuaʻa* of Kamoku, Kalulu, Kaunolu and surrounding central basin area were initiated in early work conducted by Emory (1924a and b) and the general survey of Hawaiʻi State sites by Hommon, (1974). With the exception of the archaeological inventory survey conducted for the Lānaʻi Airport (Borthwick et al. 1990), smaller scale studies also occurred within the basin (Ahlo 1985; Dagan 2006; Lee-Greig and Hammatt 2009; Nagata 1987; Walker and Haun 1987).

The earliest known archaeological work with reference to the project area and central plateau was Kenneth P. Emory's island-wide survey during the 1920's (1924a). Emory identified approximately 74 scattered house sites along the Plateau region, including the rims of both Miki

and Pālawai basins along the same elevation contour as the airport property, as well as describing in detail the sites associated with the abandoned Kaunolu fishing village that was located south on the coast at Kaunolu Bay (Emory 1924a) (Figure 12).

More recent archaeological studies in the vicinity of the Lāna'i Airport were conducted at a proposed landfill site located approximately 1000 feet west of the Lāna'i Airport at the head of Kaumalapau Gulch (Ahlo 1985; Nagata 1987; Walker and Haun 1987) (Figure 13). These studies located eight historic properties that included four agricultural complexes, three temporary habitation shelters, and a trail marker. Artifacts from test excavations were limited to 17 artifacts which included basalt flakes, midden and shell scrapers. Radiocarbon dates from two of the shelters clustered around 300+/-50 years before present (Walker and Haun 1987).

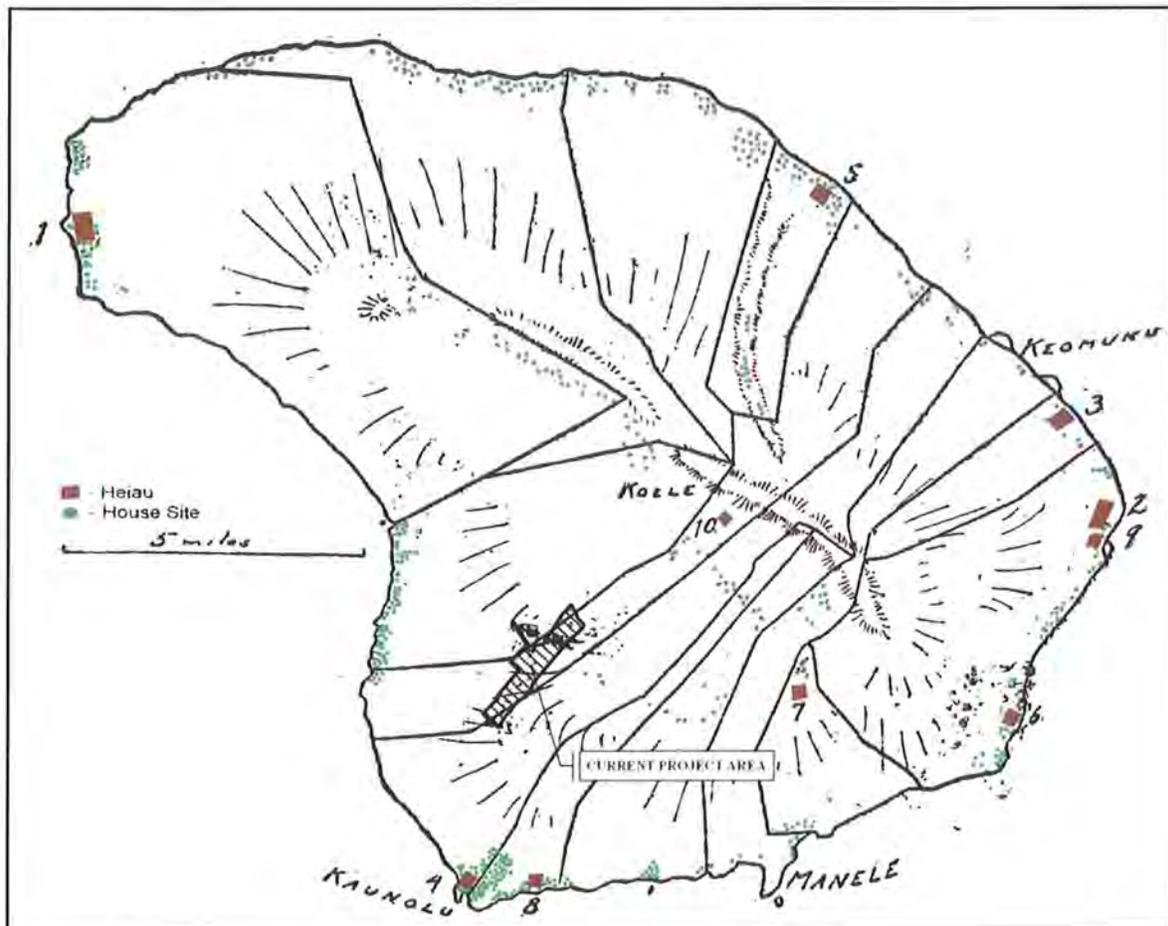


Figure 12. Map of Lāna'i showing *ahupua'a* and distribution of house sites and *heiau* known to Kenneth Emory in 1921 in relation to the current project area (numeric reference ranks the *heiau* [brown rectangles] according to size) (Emory 1924a:49).

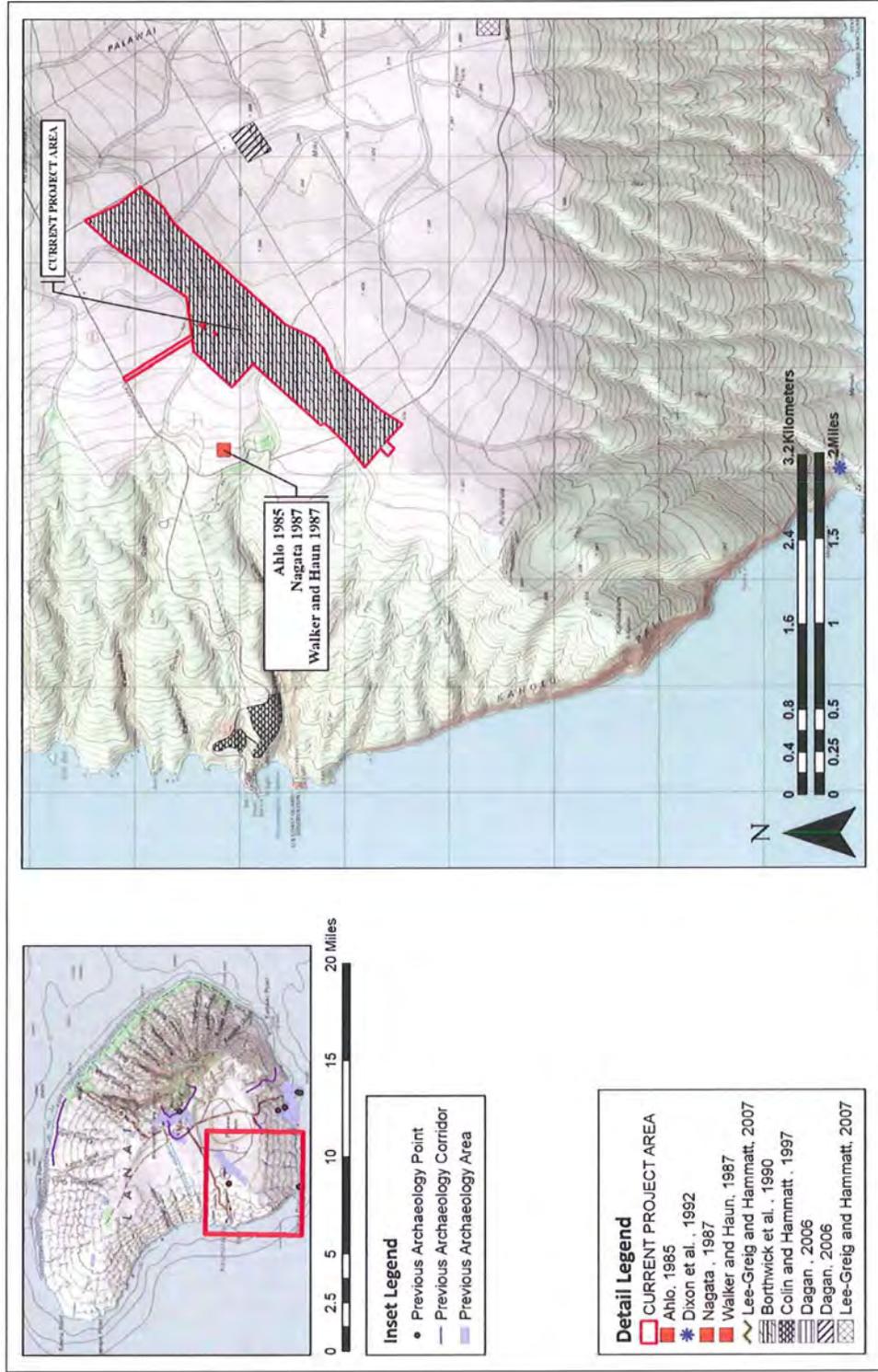


Figure 13. A portion of the South Lanai (1998) USGS topographic quadrangle showing previous archaeological studies in the vicinity of the current project area.

An inventory survey was conducted by Colin and Hammatt (1996) north of Kaunalapau Harbor. This study discovered three new historic properties consisting of five structural features. State Site #50-40-98-1938, a terrace, State Site #-1939, a mound, and State Site #-1940, a complex of cement foundations and an enclosure, all believed to be related to harbor activities. No further archaeological investigations were recommended.

Cultural Surveys Hawai'i, Inc. conducted an archaeological inventory survey along the southern rim of Miki Basin in the *ahupua'a* of Keāliaaupuni (Lee-Greig and Hammatt 2005). The survey findings concluded that the area had been continuously modified by pineapple cultivation from 1927 through the end of the pineapple cultivation in 1993. While a single section of cobble stone road was identified and documented within the road access to the project parcel (SIHP 50-40-98-2000), a pedestrian survey and examination of 1,236 bore holes resulted in no significant pre-contact historic properties identified.

Dr. Boyd Dixon and others (1992) performed an inventory survey and mapping of State Site #50-40-98-25 an archaeological complex initially recorded by Emory in 1924 and located in the *ahupua'a* of Kaunolū and Kealiakapu. A total of 503 archaeological features were discovered and documented. This area was found to be a fishing village common to others on Lanai with the exception that it appears to have possibly “served as an elite residential community of Maui and perhaps Big Island *ali'i* (royalty), a refuge for local residents, and a possible scene of Makahiki (harvest) festivals” (Dixon et al. 1992). The entire complex is in preservation as an interpretive archaeological park.

3.2.1 Archaeological Studies Specific to the Lāna'i Airport

A preliminary on-site assessment was conducted for the Lāna'i Airport Master Plan by the Bishop Museum (Sinoto 1989). This study identified formal artifacts on the surface at two discreet locations (Locality 1 and Locality 2) (Sinoto 1989:4). Surface artifacts included two basalt flakes, a small rectangular adze blank, and basalt fragments; as well as midden and other historic items with recommendations of “further surface collection and test excavations” (Sinoto 1989).

Borthwick and others (1990) performed the follow up archaeological inventory survey and test excavations. Following the recommendation of Sinoto's 1989 study, Borthwick and others located and identified seven locations, including the two that were previously identified by the Bishop Museum, where indigenous Hawaiian artifacts were visible on the surface. Subsequent subsurface testing at these locations encountered a well developed plow zone, a result of mechanical alteration that extended from the surface to a depth of 45cmbs with no significant subsurface archaeological features identified. As a result of the negative findings, the study concluded that any original archaeological context was likely destroyed by decades of commercial agriculture. Lack of findings notwithstanding “on call monitoring,” whereby “(a) qualified archaeological monitor shall be retained on an on-call basis to evaluate any inadvertent archaeological finds, to consult with the State Historic Preservation Office on these finds and any needed mitigation, and to carry-out any approved mitigation scope” was recommended in the event that subsurface features were identified during construction (Borthwick et al. 1990:27)(SHPD LOG NO:25657, DOC NO:0007CD35 [Appendix A]).

3.3 Background Summary and Predictive Model

The above review of the cultural historical background and previous archaeological studies illustrates that the pre- and post-contact Hawaiian settlement pattern of this portion of Lāna'i Island likely followed the traditional *mauka-makai* habitation and subsistence distribution model. It is fairly clear that both the coastal environs and upland environs were a focus of habitation with fishing and marine resource exploitation being the primary economy of the former and dryland agricultural pursuits focused on sweet potato cultivation being the primary economy of the latter (see Section 3.1.2 Traditional Hawaiian Habitation and Subsistence). The intermediate or transitional zone of the areas at mid-elevation was likely used for transit between the two areas.

As the current project area is located along the rim of Miki Basin within the upland habitation area that borders the transitional zone, pre-contact Hawaiian features that may be located within the project area may have included remnant structures (e.g. agricultural terraces, house platforms, or agricultural mounds) as observed by Ahlo (1985), Emory (1924a), Nagata (1987), and Walker and Haun (1987) and/or other cultural materials reflective of habitation and/or sweet potato agriculture as observed by Sinoto (1990) (See Section 3.2 Previous Archaeological Research). Later historic-era activities and intensive pineapple cultivation (see Section 3.1.5), however, may have cleared the ground surface of standing architecture, leaving only scattered cultural materials on the surface and/or sub-surface cultural deposits, rather than surface architectural features, as evidence of the pre-contact occupation of the basin. Other types of historic properties within the project area may include facilities and/or features associated with historic-era ranching (e.g. fence lines, corrals, watering areas) or early pineapple cultivation (e.g. irrigation features).

Section 4 Results of Fieldwork

An archaeological investigation of four areas of potential effect (APE), comprised of a total of 67 acres within the boundaries of the Lāna'i Airport (see also Section 1.1 Project Background for APE description and Figure 3), was conducted over a period of two days, February 19th and 20th, 2013, by archaeologists Jonas Madeus, B.A. and Katie Sprouse, B.A. under the direct supervision of Tanya L. Lee-Greig, M.A. and Hallett H. Hammatt, Ph.D. A total of four person day were required to complete the fieldwork for this study. For ease of discussion, the results of this archaeological investigation are divided into four distinct areas representing each area of potential effect: 1) Borrow 1, 2) Borrow 2, 3) Borrow 3, and 4) RSA Fill Area (Figure 14).

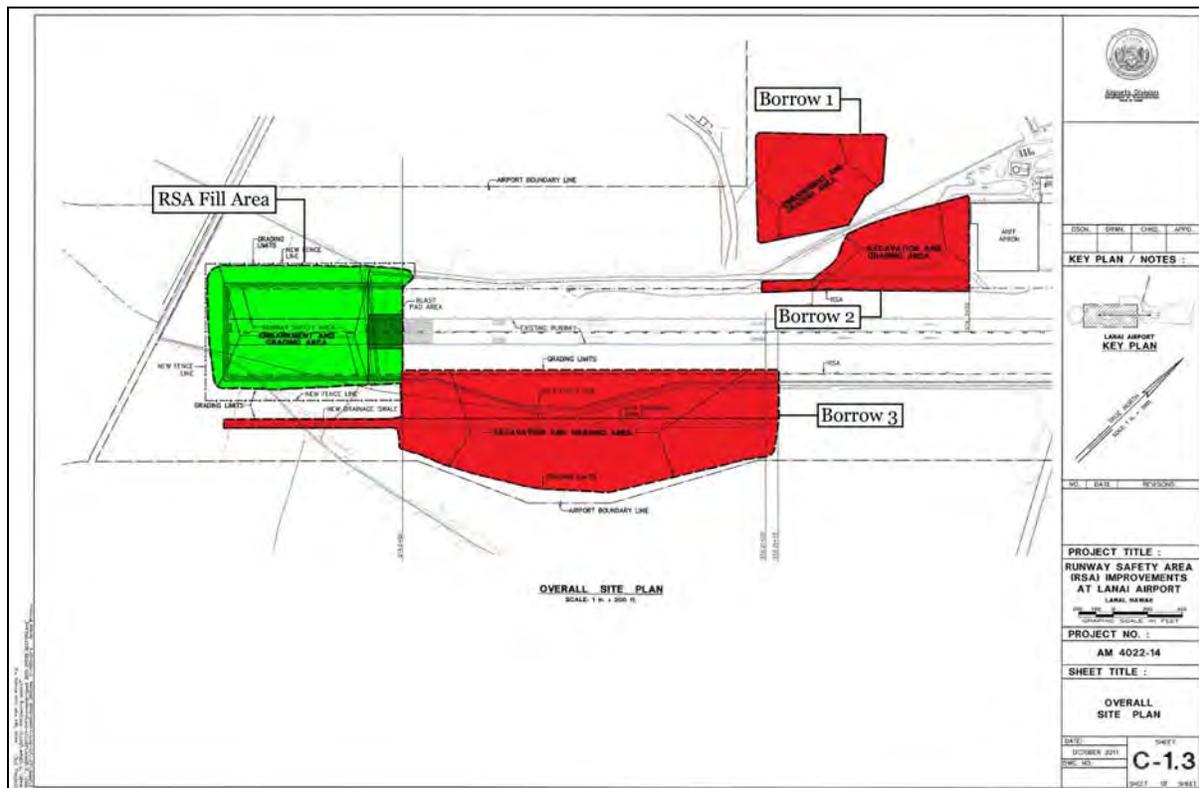


Figure 14. Proposed project site plan with areas of potential effect labeled, excavation and borrow areas in red and surface grading and fill area in green.

Over the course of the fieldwork, a total of 25 trenches (BTs) were mechanically excavated for exploratory sub-surface testing (Figure 15). Each trench was generally oriented in either a north-south or east-west direction in order to obtain a representative overview of the soil stratigraphy. All trenches averaged 5m (15ft) long by 1m wide (3ft) and were excavated to either C Horizon soils or as safety standards dictated. The soil and trench sidewalls were inspected for cultural material during and after the excavation process. Overall, the soil stratigraphy of the project area consists of a 30-70 cm thick A or Ap (plow zone) soil horizon that contained fragments of remnant irrigation line and black plastic associated with pineapple cultivation debris followed by B and compacted BC transitional soils.

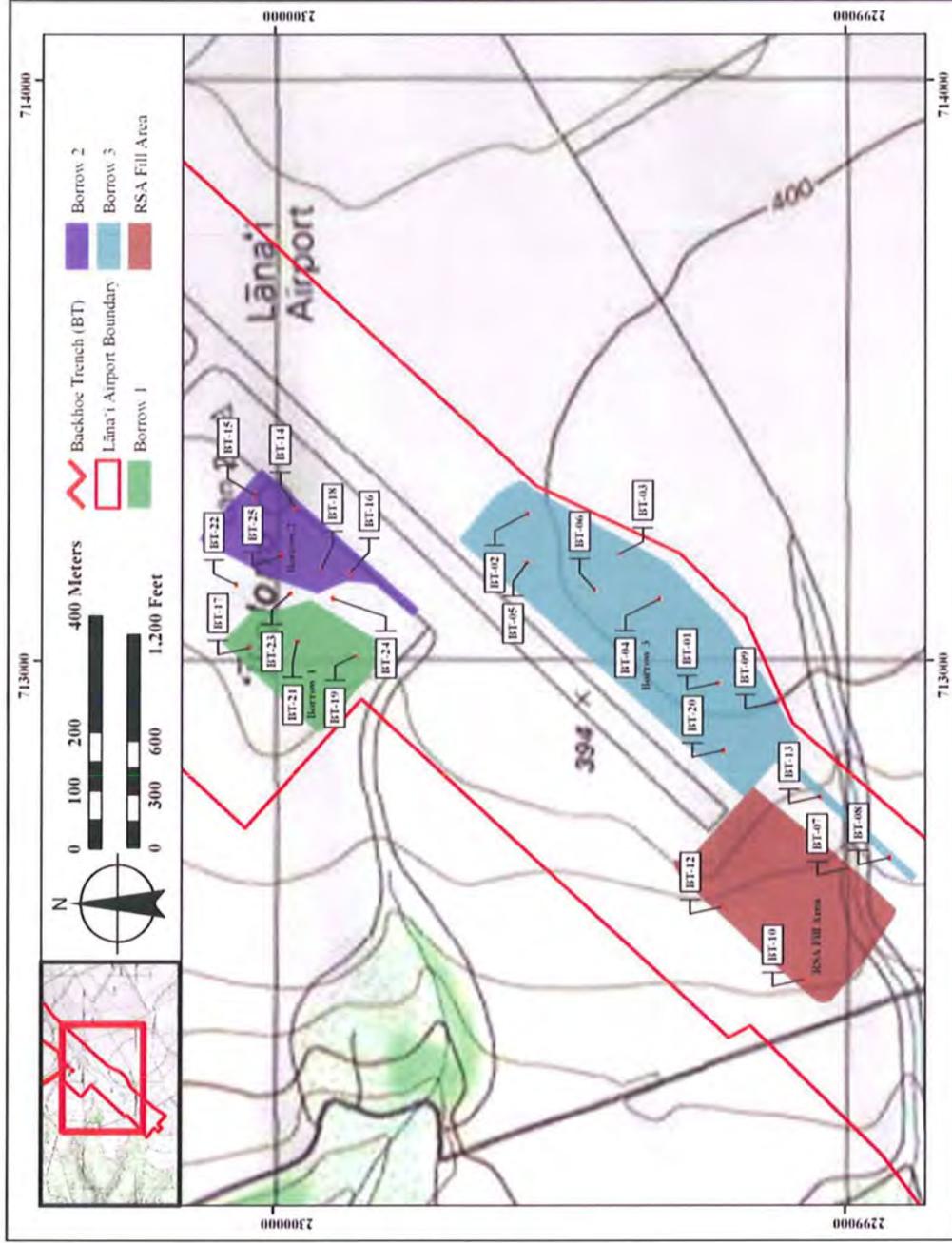


Figure 15. A portion of the 1998 South Lāna'i 7.5-minute USGS topographic quadrangle showing overall boundary of the Lāna'i Airport (outlined in red) in relation to the areas of potential effect and subsurface testing locations.

4.1 Borrow 1

The area covered by Borrow 1 includes approximately nine acres covered by knee to waist high grasses. A total of three exploratory backhoe trenches (BTs-17, -19, and -21) were excavated within Borrow 1 (see Figure 15). In addition to the three that were excavated within this borrow area, three backhoe trenches (BTs -22, -23, and -24) were excavated between Borrow 1 and Borrow 2 due to a geo-referencing error which should have placed them within the boundary of Borrow 1. Following this discovery, the trench locations within the remaining areas of potential effect were adjusted to landmarks that had been ground truthed. While BTs -22, -23, and -24 are not within Borrow 1, these test excavations will be discussed as a part of this section as the stratigraphy is representative of the area. All of the test trenches showed a clear plow zone (Ap Horizon) of reddish brown (5YR4/4) silty loam that ranged from 35 to 60cm thick, atop compacted B and BC horizon soils. The following soil descriptions are representative of the soil stratigraphy within and directly adjacent to Borrow 1 (see Appendix B for the soil descriptions of each test trench).

4.1.1 Backhoe Trench 17 (BT-17)

Backhoe Trench 17 (BT-17) was located within the northern most portion of Borrow 1 (see Figure 15) and measured 5m by 1m oriented in east-west direction (Figure 16). Two distinct stratigraphic layers were observed, a semi-compacted Ap horizon, 35cm thick, overlying a very compacted B horizon of silty clay (see soil description below). While fragments of black plastic associated with commercial pineapple was observed throughout Stratum I, no historically significant cultural materials were identified within the trench sidewalls or during the course of excavation. Excavation of this trench reached a maximum of 160cm below surface (cmbs).



Figure 16. General view of BT-17, view to east.

Soil Description for Backhoe Trench 17 (Figure 17 and Figure 18)

Stratum I (0-35 cmbs) Ap Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; slightly hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, smooth lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.

Stratum II (35-160 cmbs) B Horizon; 5 YR 4/6, yellowish red; silty clay; fine to medum crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: no roots, very compacted soil.

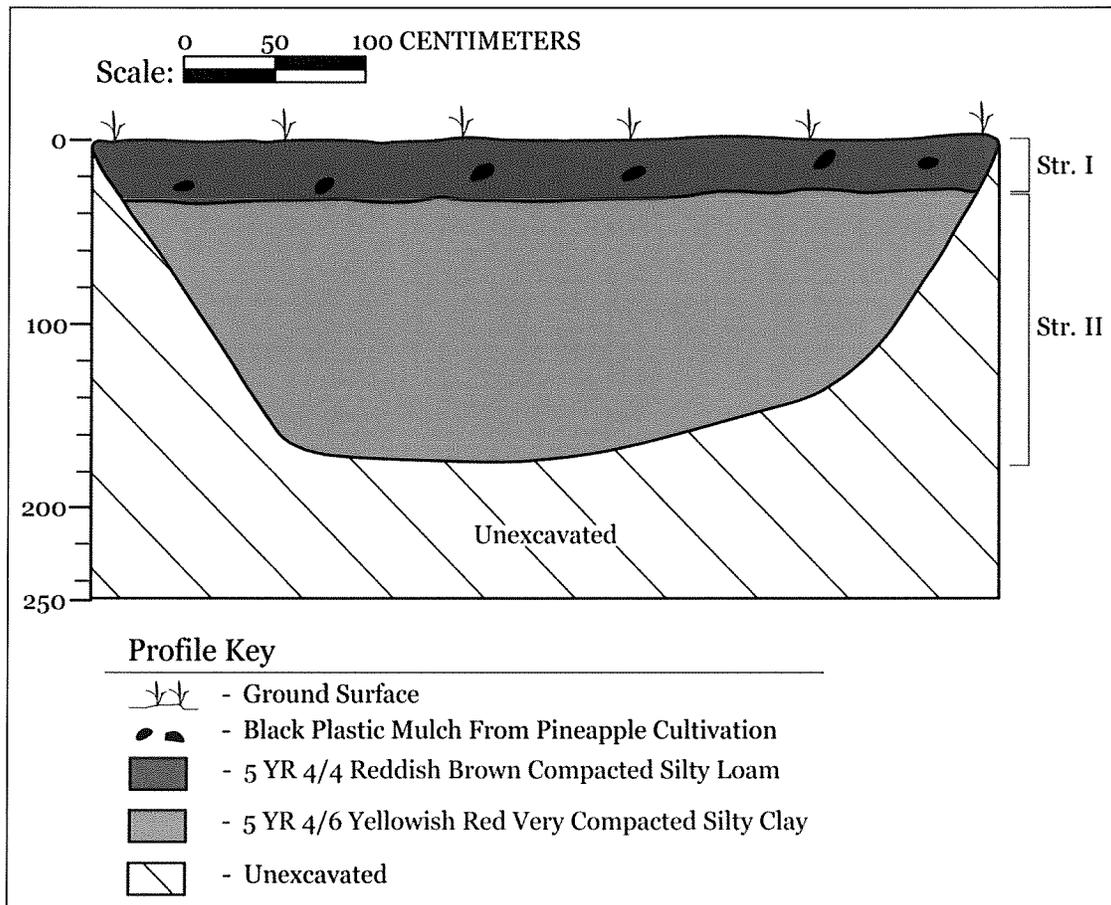


Figure 17. Soil profile for BT-17, south wall.



Figure 18. South wall of BT-17.

4.1.2 Backhoe Trench 21 (BT-21)

Backhoe Trench 21 (BT-21) was located within the toward the center of Borrow 1 (see Figure 15) and measured 5m by 1m oriented in east-west direction (Figure 19). Like BT-17, two distinct stratigraphic layers were observed, a semi-compacted Ap horizon, 25-40cm thick, overlying a very compacted BC transitional horizon of silty clay (see soil description below). While fragments of black plastic associated with commercial pineapple was observed throughout Stratum I, no historically significant cultural materials were identified within the trench sidewalls or during the course of excavation. Excavation of this trench reached a maximum of 200cmbs.

Soil Description for Backhoe Trench 21 (Figure 20 and Figure 21)

Stratum I (0-40 cmbs)	Ap Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; slightly hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, wavy lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.
Stratum II (25-200 cmbs)	BC Horizon; 5 YR 4/6, yellowish red; silty clay; fine to medum crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: very compacted soil, with a few pockets of decomposing bedrock.



Figure 19. General view of BT-21, view to west.



Figure 20. North wall of BT-21.

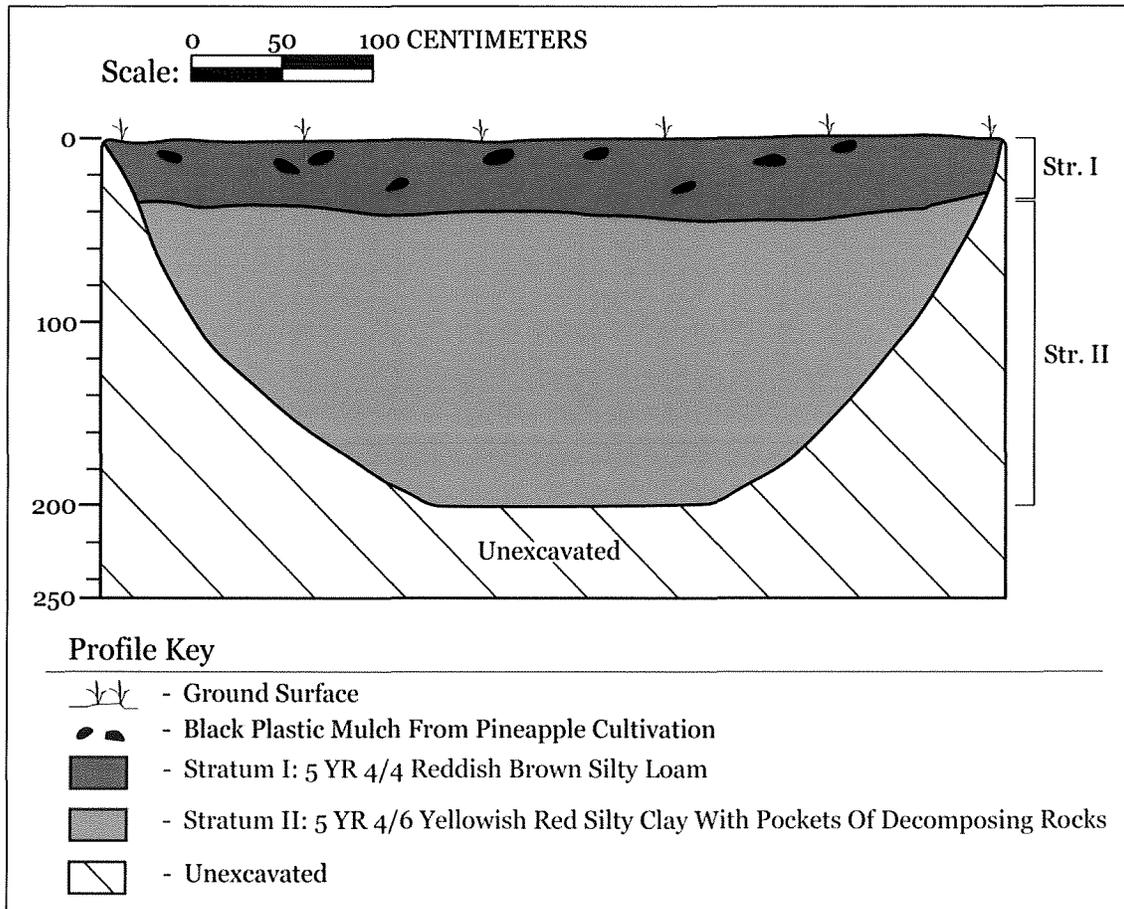


Figure 21. Soil profile for BT-21, north wall.

4.1.3 Backhoe Trench 22 (BT-22)

Backhoe Trench 22 (BT-22) is the northernmost test trench between Borrow 1 and Borrow 2 (see Figure 15) and measured 5m by 1m oriented in north-south direction (Figure 22). Two distinct stratigraphic layers were observed, a semi-compacted Ap horizon, 35-60cm thick, overlying a very compacted BC transitional horizon of silty clay (see soil description below). While fragments of black plastic and irrigation tubing associated with commercial pineapple was observed throughout Stratum I, no historically significant cultural materials were identified within the trench sidewalls or during the course of excavation. Excavation of this trench reached a maximum of 150cmbs.



Figure 22. General view of BT-22, view to north.

Soil Description for Backhoe Trench 22 (Figure 23 and Figure 24)

Stratum I (0-60 cmbs)	Ap Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; slightly hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, wavy lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.
Stratum II (35-150 cmbs)	BC Horizon; 5 YR 4/6, yellowish red; silty clay; fine to medium crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: very compacted soil that was 50-65% decomposing bedrock.

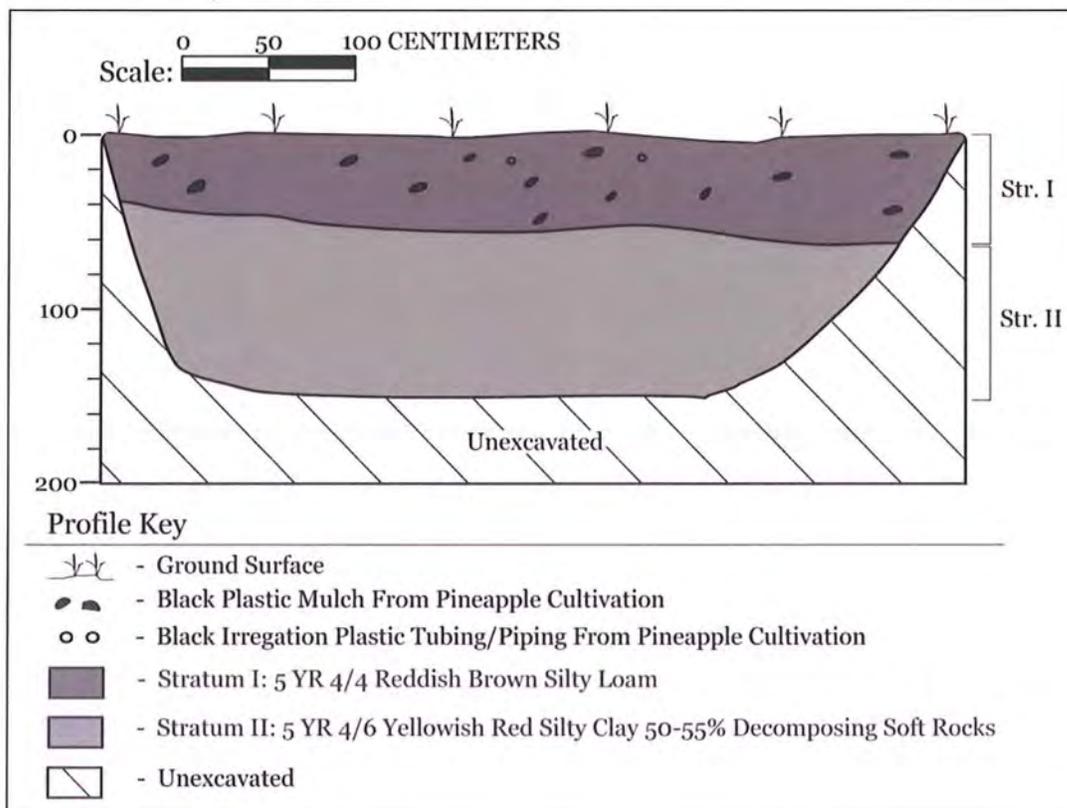


Figure 23. Soil profile for BT-22, east wall.



Figure 24. East wall of BT-22.

4.2 Borrow 2

The area covered by Borrow 2 includes approximately 8.5 acres of land. With the exception of the northeastern section, directly adjacent to the ARFF Apron, the majority of this area is covered by knee to waist high grasses. A total of five exploratory backhoe trenches (BTs-14 through -18 and -25) were excavated within Borrow 2 (see Figure 15). BT-14 and -15 is situated in an area that appears to have undergone recent modification through the placement of backfill, likely associated with the construction of the adjacent ARFF Apron, on the original ground surface. As a result, Stratum I sediments are 20-30cm thicker than that of the other test excavation in Borrow 2. All of the test trenches showed a clear plow zone (Ap Horizon) of reddish brown (5YR4/4) silty loam that ranged from 40 to 50cm thick, atop compacted B, BC, and C horizon soils. The following soil descriptions are representative of the soil stratigraphy within Borrow 2 (see Appendix B for the soil descriptions of each test trench).

4.2.1 Backhoe Trench 14 (BT-14)

Backhoe Trench 14 (BT-14) is centrally located along the southeastern boundary of Borrow 2 near the runway (see Figure 15) and measured 5m by 1m oriented in east-west direction (Figure 25). Two distinct stratigraphic layers were observed, an apparent Fill/Ap horizon, 70-80cm thick, overlying a very compacted C horizon of silty clay (see soil description below). Stratum I fill/Ap horizon is characterized by the presence of modern gravels, as well as black plastic and irrigation tubing associated with commercial pineapple throughout. While Stratum II was similar in color, texture, and consistency as that of the previously discussed test excavations, the soils with BT-14 consisted primarily of decomposing parent material and therefore classified as C Horizon soils. No historically significant cultural materials were identified within the trench sidewalls or during the course of excavation. Excavation of this trench reached a maximum of 125cmbs.

Soil Description for Backhoe Trench 14 (Figure 26 and Figure 27)

Stratum I (0-80 cmbs)	Fill/Ap Horizon; 5 YR 4/4, reddish brown; silty loam; moderate to strong crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, wavy lower boundary; many fine to medium roots. General Observations: very compacted soil with 10% modern gravels.
Stratum II (70-125 cmbs)	C Horizon; 5 YR 4/6, yellowish red; silty clay; medium to coarse crumb structure; very hard dry consistency; firm moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: very compacted, difficult to excavate.

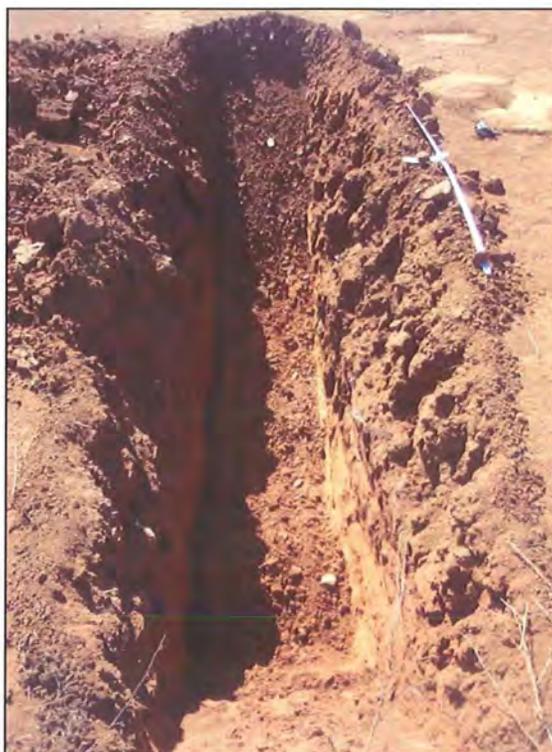


Figure 25. General view of BT-14, view to west



Figure 26. North wall of BT-14.

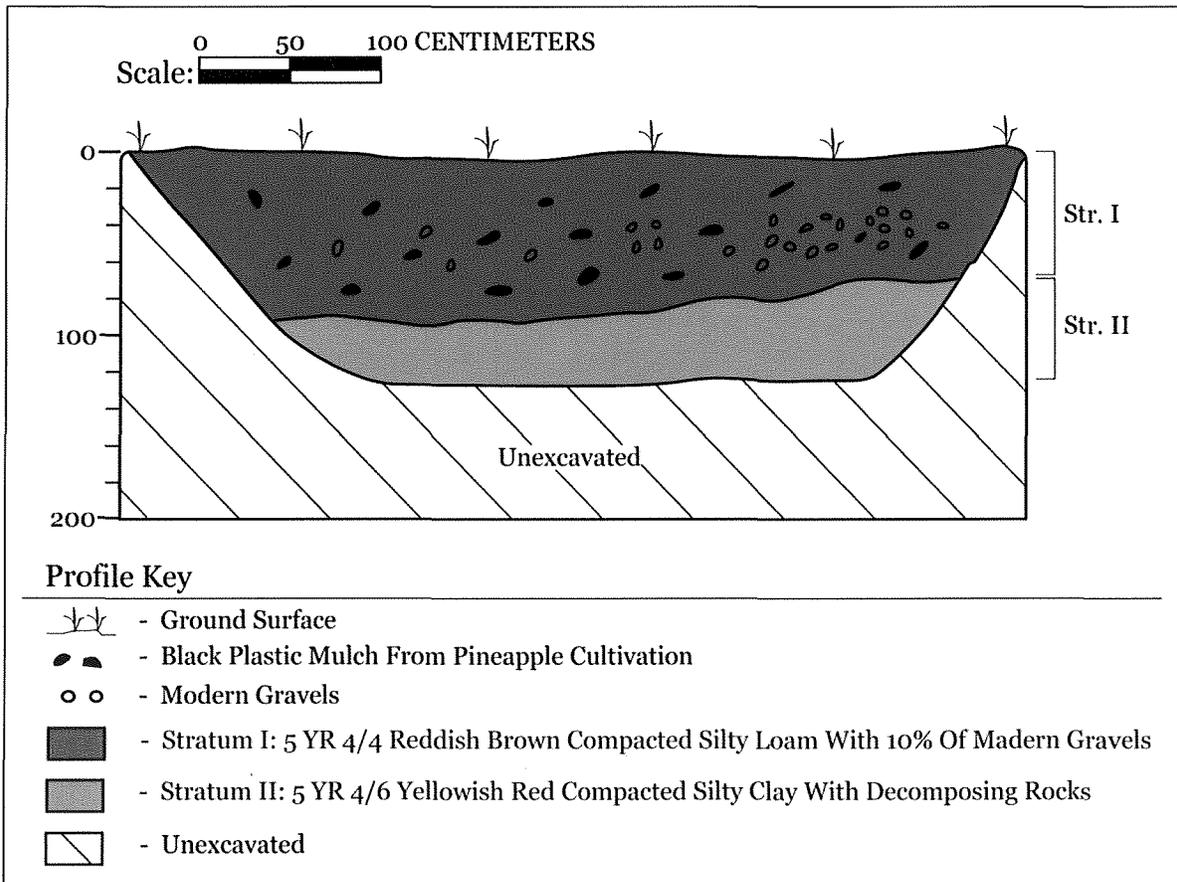


Figure 27. Soil profile for BT-14, north wall.

4.3 Borrow 3

Borrow 3 covers approximately 31.5 acres of land covered by knee to waist high grasses. A total of ten exploratory backhoe trenches (BTs-01 through -09, -13, and -20) were excavated within Borrow 3 (see Figure 15). BT-13 and -08 is situated along a corridor section intended for the construction of a new drainage ditch, while the remaining test trenches are located within an area designated for borrow. With the exception of BT-08, where a third stratum of grayish brown clay was observed in the southern extent of the profile, the test trenches showed a consistent plow zone (Ap Horizon) of reddish brown (5YR4/4) silty loam that ranged from 35 to 70cm thick, generally overlying compacted B and BC horizon soils. The following soil descriptions are representative of the soil stratigraphy within Borrow 3 (see Appendix B for the soil descriptions of each test trench).

4.3.1 Backhoe Trench 1 (BT-01)

Backhoe Trench 1 (BT-01) is located in the southwestern section of Borrow 3 (see Figure 15) and measured 5m by 1m oriented in east-west direction (Figure 28). Two distinct stratigraphic layers were observed, an Ap horizon, 30-50cm thick, overlying a layer of compacted silty clay can be classified as a BC transitional horizon (see soil description below). While fragments of black plastic and irrigation tubing associated with commercial pineapple was observed throughout Stratum I, no historically significant cultural materials were identified within the trench sidewalls or during the course of excavation. Excavation of this trench reached a maximum of 150cmbs.

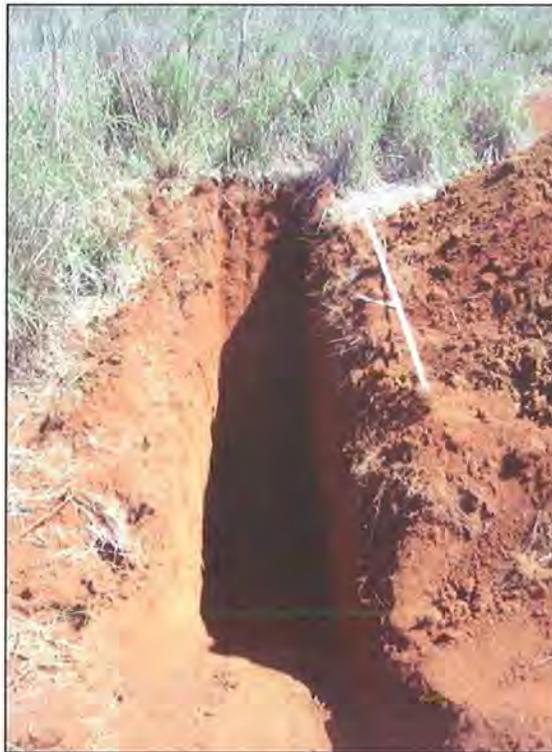


Figure 28. General view of BT-01, view to east.

Soil Description for Backhoe Trench - (Figure 29 and Figure 30)

Stratum I (0-50 cmbs)	Ap Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; slightly hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, wavy lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.
Stratum II (30-150 cmbs)	BC Horizon; 7.5 YR 4/4, brown; silty clay; strong, fine crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown, few fine roots. General Observations: compacted soil with pockets of decomposing bedrock.

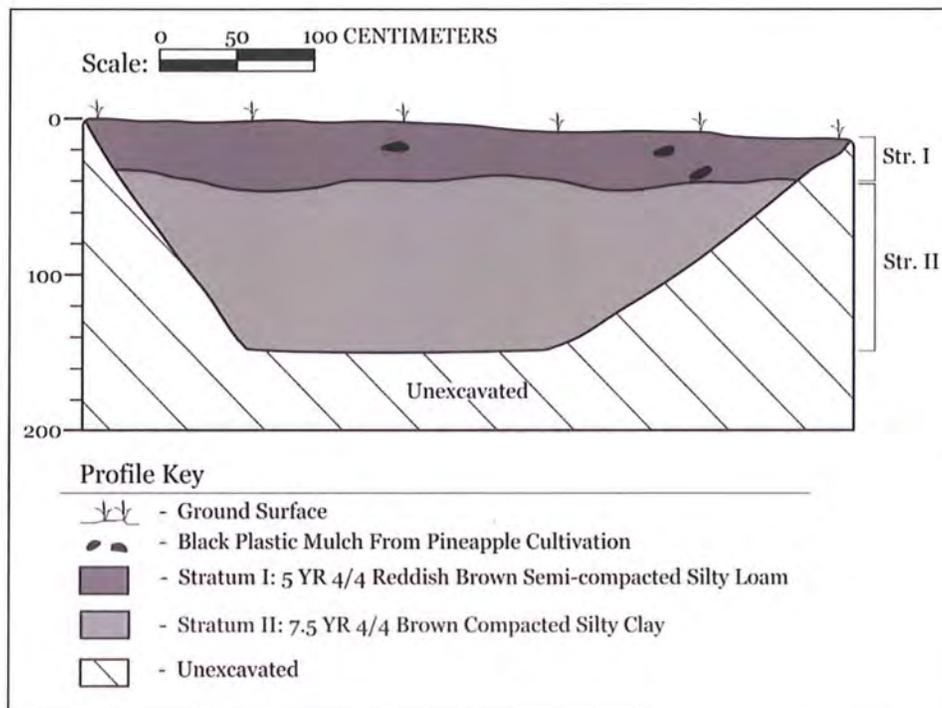


Figure 29. Soil profile for BT-01, south wall.



Figure 30. South wall of BT-01.

4.3.2 Backhoe Trench 8 (BT-08)

Backhoe Trench 8 (BT-08) is located within the corridor slated for the construction of a new drainage ditch (see Figure 15) and measured approximately 5m by 1m oriented in a north-south direction (Figure 31). Unlike the observed stratigraphy across the rest of the APE which has been more consistent with a representative profile of Molokai Silty Clay Loam (MuA and MuB), the profile of BT-08 showed the presence of three distinct stratigraphic layers. As is typical throughout the study area, an Ap horizon (Stratum I), approximately 50cm thick, was identified and contained fragments of black plastic associated with commercial pineapple throughout. Underlying the Ap horizon are two distinct strata of compacted silty clay that differs in color and content of decomposing bedrock and apparent soil development. The profile of this test excavation appears to be consistent with a representative profile of Uwala Silty Clay Loams (UwB) (Foote et al. 1972:123) (see also Figure 6, as well as, soil description below) with the exception that in the southern most section of the profile the yellowish red-reddish brown subsoil is absent. No historically significant cultural materials were observed during excavation of this trench which terminated at 140cmbs.

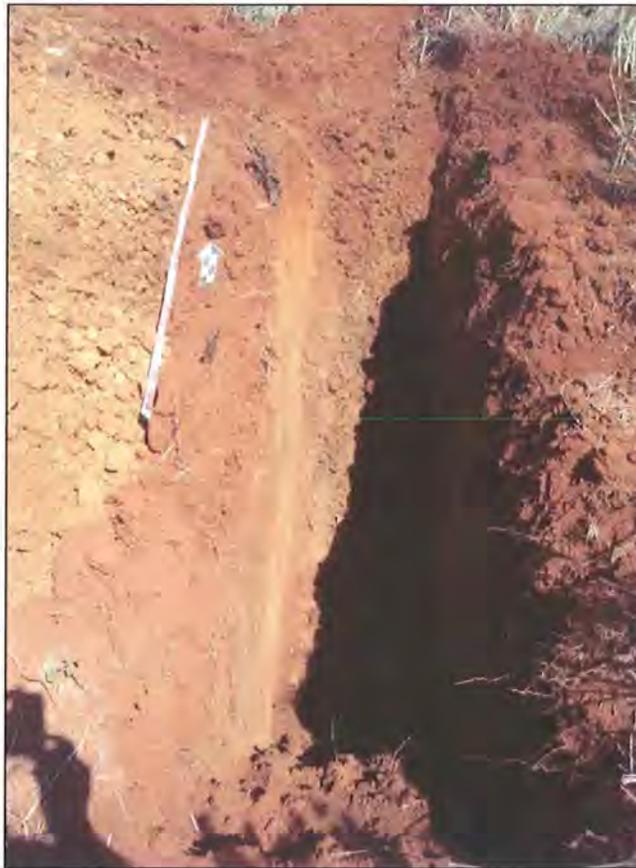


Figure 31. General view of BT-08, view to north.

Soil Description for Backhoe Trench - (Figure 32 and Figure 33)

- Stratum I (0-50 cmbs) Ap Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; slightly hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, smooth lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.
- Stratum II (50-115 cmbs) BC Horizon; 5 YR 4/6, yellowish brown; silty clay; strong, fine to medium crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown, few fine roots. General Observations: compacted soil with some decomposing bedrock.
- Stratum III (30-140 cmbs) BC Horizon; 10 YR 5/2, grayish brown; silty clay; strong, fine to medium crumb structure; very hard to extra hard dry consistency; friable to firm moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: compacted soil that is 30-40% soft decomposing or weathered bedrock.

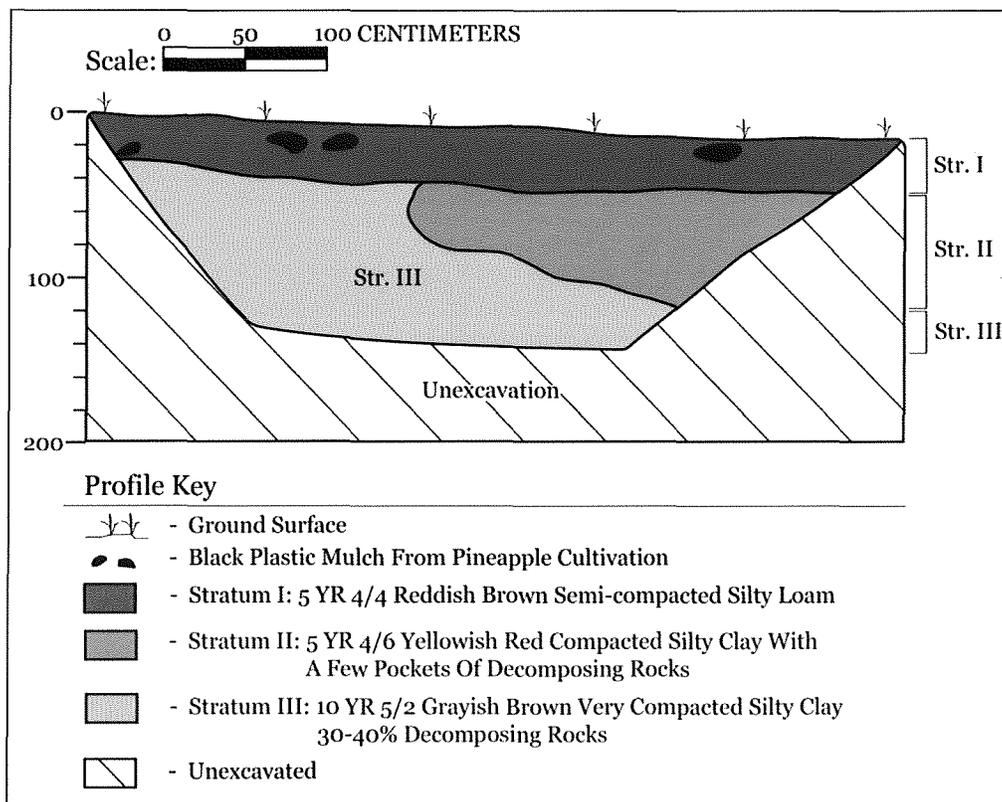


Figure 32. Soil profile for BT-08, west wall.

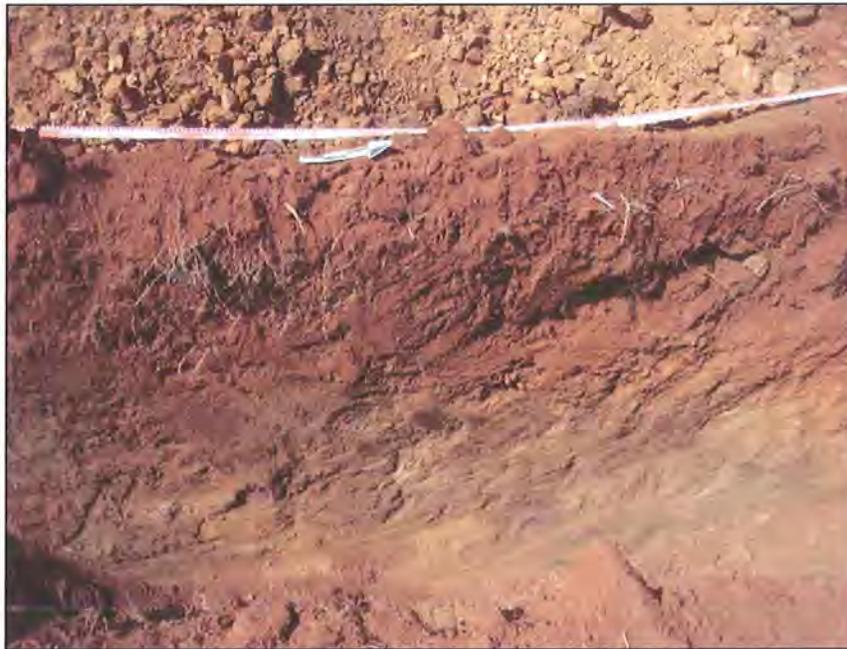


Figure 33. West wall of BT-08.

4.4 RSA Fill Area

The RSA Fill Area covers approximately 18 acres of land covered by ankle high to waist high grasses. The majority of this area at the western end of the runway is restricted due to safety and security concerns. As a result, access for this study was limited to the outer edges of the proposed fill area. Since this area is designated for fill, and any anticipated grading would be related entirely to vegetation removal prior to the placement of fill material and not exceed depths of 6cmbs (approximately 2 inches), three exploratory test excavations (BT-07, -10, and -11) are believed to be a sufficient sample size (see Figure 15). BT-10 and -12 is situated along the northwestern boundary of the RSA Fill Area and BT-07 is located along the southeastern boundary. The following soil descriptions are representative of the soil stratigraphy within the RSA Fill Area (see Appendix B for the soil descriptions of each test trench).

4.4.1 Backhoe Trench 7 (BT-07)

As previously mentioned, Backhoe Trench 7 (BT-07) is located along the southeastern boundary of the RSA Fill Area (see Figure 15), within an old pineapple field road, and measured approximately 5m by 1m oriented in a east-west direction (Figure 34). Based on the profile, it is apparent that this particular road is likely related to the earlier field roads as there is no subsurface evidence that the A horizon (Stratum I) has undergone any alteration related to commercial pineapple agriculture due to the lack of the material characteristics associated with the plow zone in this area. No historically significant cultural materials were observed during excavation of this trench which terminated at 200cmbs.



Figure 34. General view of BT-07, view to west.

Soil Description for Backhoe Trench 7 (Figure 34 and Figure 35)

Stratum I (0-60 cmbs)	A Horizon; 5 YR 4/4, reddish brown; silty loam; fine to medium granular structure; hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, smooth lower boundary. General Observations: semi-compacted soil with no stones.
Stratum II (40-200 cmbs)	B Horizon; 5 YR 4/6, yellowish red; silty clay; strong, fine crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: very compacted soil with no stones.

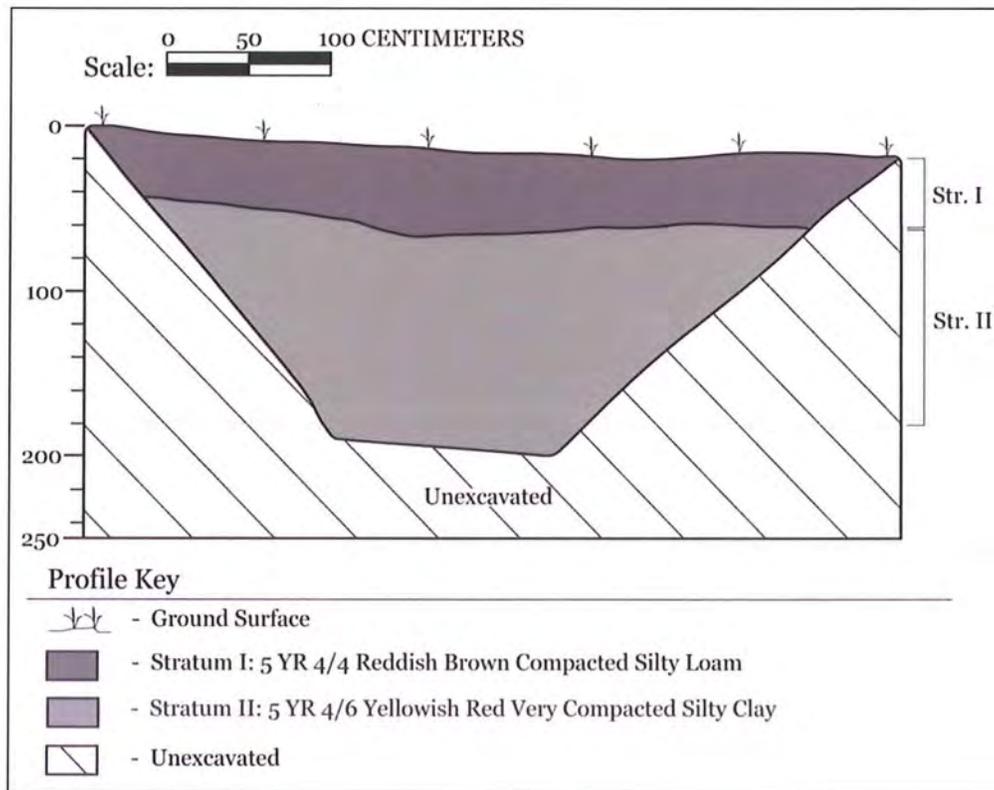


Figure 35. Soil profile for BT-07, south wall.



Figure 36. South wall of BT-07.

4.4.2 Backhoe Trench 10 (BT-10)

Backhoe Trench 10 (BT-10) is located along the northwestern boundary of the RSA Fill Area (see Figure 15) and measured approximately 5m by 1m by 160cm deep oriented in an east-west direction (Figure 37). The profile of this trench is typical of the majority of the study area with regard to the presence of a two distinct layers representing a well defined Ap horizon (Stratum I), approximately 40-50cm thick, overlying a B horizon (Stratum II). While fragments of black plastic associated with commercial pineapple was observed throughout Stratum I, no historically significant cultural materials were identified within the trench sidewalls or during the course of excavation.



Figure 37. General view of BT-10, view to south.

Soil Description for Backhoe Trench 10 (Figure 38 and Figure 39)

Stratum I (0-50 cmbs)	Ap Horizon; 5 YR 4/4, reddish brown; silty loam; moderate fine to medium granular structure; hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; clear, wavy lower boundary; many fine to medium roots. General Observations: semi-compacted soil with no stones.
Stratum II (40-160 cmbs)	B Horizon; 5 YR 4/6, yellowish red; silty clay; strong fine to medium crumb structure; very hard dry consistency; friable moist consistency; slightly sticky wet consistency; slightly plastic; weak cementation; lower boundary unknown. General Observations: no roots, very compacted soil no stones.

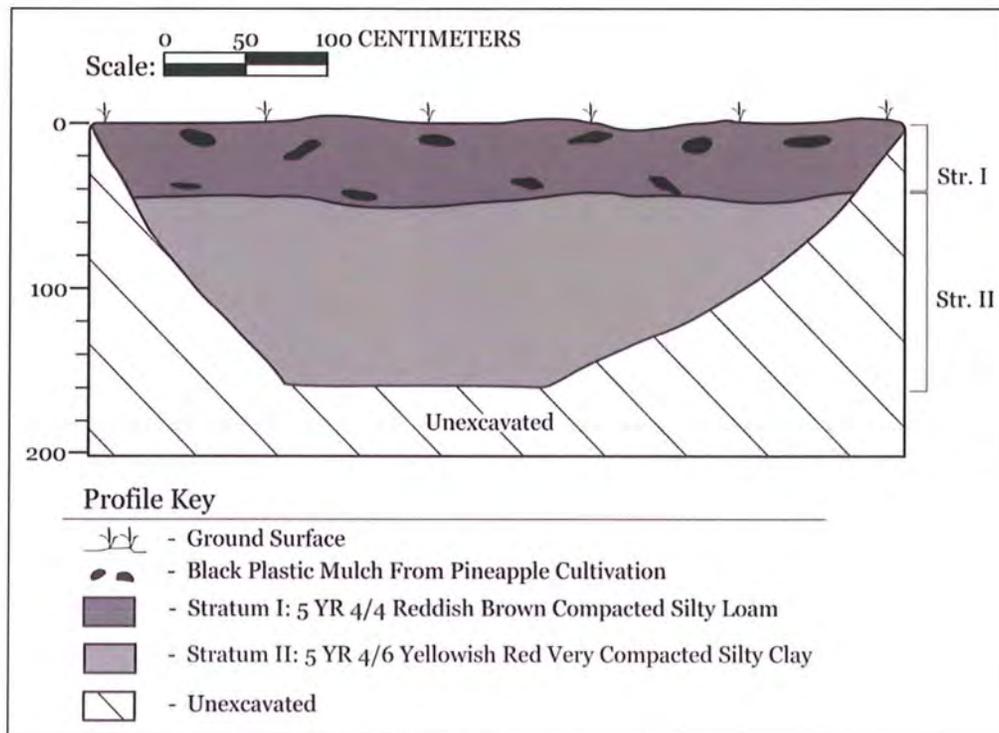


Figure 38. Soil profile for BT-10, south wall.



Figure 39. South wall of BT-10.

Section 5 Summary and Interpretation

Based on the background research, it is clear that the area in which the Lāna'i Airport property is situated was indeed used for traditional Hawaiian cultivation of sweet potato, gourd and sugarcane during pre-contact times (see Section 3.1.2 Traditional Hawaiian Habitation and Subsistence of the Pālāwai and Miki Basin Area). Historical observations by Emory (1924) and LCA information shows that agriculture and habitation settlements occurred on the rim of Miki and Pālāwai basins up until the time of the Great Māhele and somewhat sporadically into the early 1920s. Surveys conducted by the Bishop Museum (Sinoto 1989) and Cultural Surveys Hawai'i (Borthwick et al. 1990:27) within the airport boundaries also identified indigenous cultural material on the ground surface consisting of an adze blank and basalt flakes related to adze manufacture, as well as marine shell midden and other historic items in localized areas.

Following the arrival of the pineapple industry on Lāna'i island and the intensification of cultivation across the central plateau and basin area, it appears that commercial agricultural practices have destroyed any surface features associated with traditional agriculture and settlement. Additionally, it is apparent that continued improvements to the Lāna'i Airport Operations Area have also significantly altered the ground surface within the investigation area of the current archaeological study. Borthwick and others (1990) concluded that, although indigenous artifacts were observed on the surface, the results of exploratory testing demonstrated that any original archaeological context was destroyed by decades of commercial agriculture.

The results of the current study are consistent with the findings of the 1990 conducted by Cultural Surveys Hawai'i. While mechanical exploratory testing did identify the depth of the commercial agricultural plow zone, the investigation did not identify any *in situ* historically significant cultural materials in a sub-surface context and therefore no significant historic properties were identified.

Section 6 Project Effect and Mitigation Recommendations

6.1 Project Effect

Under State of Hawai'i historic preservation legislation, the only two possible effect determinations for a given project under historic preservation review are "no historic properties affected" and "effect, with proposed mitigation commitments" (HAR Chapter 13-284-7). In the circumstance of the current project area, no historic properties have been documented, therefore, CSH recommends a project specific effect determination of "no historic properties affected."

6.2 Mitigation Recommendations

Based on the "no effect" evaluation, CSH recommends that no further historic preservation work should be necessary for the area that comprises the present project APE. In the unlikely event that any significant pre-contact or historic deposits (i.e. subsurface concentrations of indigenous or historic era artifacts and or structural remnants) or human burials are exposed during the Runway Improvement Project, any excavation work and/or surface grading should be halted in the immediate area and the SHPD staff archaeologist for Maui County, as well as Mr. Kepā Maly of the Lāna'i Culture & Heritage Center, should be contacted.

6.3 Disposition of Materials

All digital and paper data generated during the course of this survey are currently being curated and housed at the Maui Office of Cultural Surveys Hawai'i, Inc., 1860 Main Street, Wailuku, HI 96793.

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Appendix A SHPD Section 106 Review for the Lāna‘i Airport Master Plan

LOG NO: 25957; DOC NO: 0007CD35

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kaeuhikwe Building, Room 555
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August 8, 2000

Mr. Jerry M. Matsuda, P.E.
Airports Administrator
Department of Transportation, Airports Division
Honolulu International Airport
400 Rodgers Boulevard, Suite 700
Honolulu, Hawaii 96819-1880

LOG NO: 25957 ✓
DOC NO: 0007CD35

Dear Mr. Matsuda,

**SUBJECT: National Historic Preservation Act Section 106 Review of the
Draft Environmental Assessment for Lana'i Airport Master Plan
(State Project No. AM4011-02)
Kalulu Ahupua`a, Lahaina District, Island of Lana'i
TMK: 4-9-02:001, 041, 055, & 056**

Thank you for the opportunity to review the Draft Environmental Assessment (EA) for the Lana'i Airport Master Plan.

From the submitted Draft EA, we understand the proposed undertaking consists of the following:

- The extension of Runway 21 to the northeast 2000ft (to a total of 7000ft);
- Construction of a 1000 x 500ft Runway Safety Area (RSA) beyond both ends of the extended runway, as well as a 1000 x 800ft Runway Obstacle Free Area (ROFA);
- Construction of a parallel taxiway;
- Construction of two new holding aprons at both ends of the runway;
- Construction of 25ft wide paved stabilized shoulders will be provided for the runway;
- Construction of 20ft wide paved stabilized shoulders will be provided for the parallel and entry/exit taxiways;
- Navigational aids and upgrades to the water and sewage systems
- Expansion of the passenger terminal building and automobile parking facilities.

We have previously commented on a proposed undertaking which involves the subject parcels (SHPD DOC NO: 1320a/1703). At that time we stated an archaeological inventory survey had

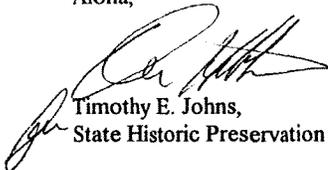
Mr. Matsuda
Page Two

been completed of the subject property by Cultural Surveys Hawaii. The report documenting the findings of the survey (Borthwick et al., 1990) had been reviewed and accepted by this office. No significant historic sites were identified during this survey. Therefore, we believe "no historic properties will be affected" by the proposed undertaking.

However, the consulting archaeologists recommended "on-call" monitoring if historic sites were encountered during construction activities. We concur with this recommendation. Therefore we recommend the following condition be attached to all permits associated with the proposed undertaking, should they be approved:

- 1) A qualified archaeological monitor shall be retained on an on-call basis to evaluate any inadvertent archaeological finds, to consult with the State Historic Preservation Office on these finds and any needed mitigation, and to carry-out any approved mitigation scope.

Aloha,



Timothy E. Johns,
State Historic Preservation Officer

CD:an

Appendix B Soil Descriptions

EU	Stratum	Top Depth (cmbs)	Bottom Depth (cmbs)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Distinctness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
Borrow 1																					
BT-17	I	0	35	SW	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	A	black plastic from pineapple cultivation semi-compacted soil with no stones.
BT-17	II	35	160	SW	5 YR 4/6	Yellowish Red	silty clay	fine/medium	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	none	n/a	B	very compacted soil.
BT-19	I	0	35	EW	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	a	black plastic semi compacted with no rocks.
BT-19	II	0	135	EW	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	comm on	fine/medium	B	very compacted soil.
BT-21	I	0	40	EW	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	wavy	many	fine/medium	A	black plastic from pineapple cultivation semi-compacted sediment with no rocks
BT-21	II	25	200	EW	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B/C	Sediment is compacted roots are right below stratum I. Few pockets of decomposing soft rocks -10-20%
Borrow 2																					
BT-14	I	0	80	EW	5 YR 4/4	Reddish Brown	Silty Loam	moderate/strong		crumb	very hard	friable	slightly sticky	weak	slightly plastic	wavy		many	fine/medium	Fill/Ap	Black plastic modern gravels and irrigation tubings Very compact with 10% modern gravels.
BT-14	II	70	125	EW	5 YR 4/6	Yellowish Red	silty clay	strong	medium/coarse	crumb	very hard	firm	slightly sticky	weak	slightly plastic	not visible	n/a	none	n/a	C	This stratum majority in decomposing rocks. Very hard to dig.

EU	Stratum	Top Depth (cmbs)	Bottom Depth (cmbs)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Disfiniteness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
Borrow 2																					
BT-15	I	0	70	NS	5 YR 4/4	Reddish Brown	Silty loam	moderate	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	smooth	smooth	many	fine/medium	fill	black plastic from pineapple cultivation semi compacted and appears to be pushed to the area.
BT-15	II	50	120	NS	2.5 YR 4/6	Red	Silt	strong	fine/medium	crumb	extra hard	firm	non-sticky	weak	non-plastic	smooth	smooth	none	n/a	Fill	probably a fill from the construction of the airfield- majority of decomposing rocks.
BT-15	III	110	200	NS	5 YR 3/3	Dark Reddish Brown	silty clay	strong	fine/medium	crumb	very hard	firm	slightly sticky	weak	slightly plastic	n/a	n/a	none	n/a	B/C	There are decomposing soft rock in this layer.
BT-16	I	0	50	NS	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	smooth	smooth	many	fine/medium	A	Black plastic and black irrigation tubing from pineapple cultivation compacted no rocks.
BT-16	II	50	130	NS	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	n/a	n/a	few	fine/medium	B/C	Very compacted with pockets of decomposing rocks.
BT-18	I	0	40	NS	5 YR 4/4	Reddish brown	Silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	smooth	smooth	none	n/a	B	very compacted clay.
BT-18	II	40	70	NS	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	n.a	n.a	none	n/a	b	very compacted clay.
BT-25	I	0	40		5 YR 4/4	Reddish brown	silty loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	smooth	smooth	many	fine/medium	a	black plastic and irrigation tubing from pineapple cultivation semi-compact sediment with no rocks.
BT-25	II	30	170		5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	n/a	n/a	few	fine	B/C	very compact sediment with some decomposing soft rock.

EU	Stratum	Top Depth (cmbs)	Bottom Depth (cmbs)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Distinctness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
Borrow 3																					
BT-01	I	0	50	EW	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	wavy	many	fine/medium	AP	Black Plastic Semi-compacted soil with no inclusions.
BT-01	II	30	150	EW	7.5 YR 4/4	Brown	Silty Clay	strong	very fine	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B/C	Compacted soil with few pockets of decomposing rocks.
BT-02	I	0	40	NS	5 YR 4/4		silty loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black plastic Compacted soil with no rock inclusions.
BT-02	II	40	1.4	NS	2.5 YR 3/6	Dark Red	Silty Clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B	Very compacted soil with no rock inclusions.
BT-03	I	0	35	EW	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic compacted soil with no inclusion of rocks.
BT-03	II			EW	2.5 YR 3/6	Dark Red	Silty Clay		fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	N/A	few	fine	B	Very compacted red silty clay
BT-04	I	0	50	NS	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic semi-compacted soil with no rocks.
BT-04	II	40	140	NS	2.5 YR 3/6	Dark Red	Silty Clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B	Very compacted soil with no rocks.
BT-05	I	0	30	EW	5 YR 4/4		Silty Loam	strong		crumb	very hard	firm	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic Compacted Soil
BT-05	II	30	130	EW	2.5 YR 3/6	Dark Red	silty clay	strong	fine/medium	crumb	extra hard	friable/firm	slightly sticky	weak	slightly plastic	not visible	n/a	none	n/a	B	Very compacted soil close to road.
BT-06	I	0	60	NS	5 YR 4/4	Reddish Brown	Silty Clay	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic Compacted and disturbed. No inclusion of rocks.
BT-06	II	30	160	NS	2.5 YR 3/6	Dark Red	Silty Clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B	Very compacted soil with no rock inclusions.

EU	Stratum	Top Depth (cmbs)	Bottom Depth (cmbs)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Distinctness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
Borrow 3																					
BT-08	I	0	50		5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic Semi compacted soil with no rocks.
BT-08	II	50	115		5 YR 4/6	Yellowish Red	Silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B/C	Compacted soil with some decomposing rocks.
BT-08	III	30	140		10 YR 5/2	Grayish Brown	Silty Clay	strong	fine/medium	crumb	very hard/ext ra hard	friable/firm	slightly sticky	weak	slightly plastic	not visible	n/a	none	n/a	C	compacted and 30-40% of decomposing soft rocks.
BT-09	I	0	70	EW	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black Plastic Compacted soil with no rocks.
BT-09	II	45	165	EW	7.5 YR 4/4	brown	Silty Loam	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine/medium	B/C	Very compacted soil with a few pockets of decomposing rocks.
BT-13	I	0	40	NS	5 YR 4/4	Reddish Brown	Silty loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	AP	Black plastic and irrigation hose semi-loam partial soil and very disturbed with no stones.
BT-13	II	30	130	NS	5 YR 4/6	Yellowish Red	Silty Clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine/medium	B	very compacted soil with no rocks.
BT-20	I	0	70	NS	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	slightly hard	slightly hard	slightly sticky	weak	slightly plastic	clear	smooth	many	fine	AP	Compacted soil with no inclusions of rocks.
BT-20	II	50	160	NS	7.5YR 4/4	Brown	Silty Clay	strong	very fine	crumb	hard	hard	slightly sticky	weak	slightly plastic	not visible	n/a	none	n/a	B	very compacted soil with no inclusions of rocks.

EU	Stratum	Top Depth (cmbs)	Bottom Depth (cmbs)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Distinctness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
Intermediate Area																					
BT-22	I	0	60	NS	5 YR 4/4	Reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	wavy	many	medium	A	black plastic and irrigation tubing a lot of roots and semi compacted silty loam - no rocks.
BT-22	II	35	150	NS	5 YR 4/6	Yellowish Red	silty clay	strong	fine	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B/C	Very compacted sediment and decomposing soft rocks-50-65% decomposing rocks.
BT-23	I	0	50	EW	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	abrupt	broken/discontinuous	many	fine/medium	a	black plastic and irrigation tubing semi-compacted soil hardly any rocks.
BT-23	II	35	200	EW	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	n/a	n/a	B/C	very compacted soil with a few decomposing rocks.
BT-24	I	0	60	NS	5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	slightly hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	a	black plastic and black irrigation tubing semi-compacted sediment
BT-24	II	35	170	NS	5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B/C	very compacted sediment and some decomposing soft rock.
RSA Fill Area																					
BT-07	I	0	60		5 YR 4/4	reddish brown	silty loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak		clear	smooth	none	n/a	A	semi-compacted soil with no rocks.
BT-07	II	40	200		5 YR 4/6	Yellowish Red	silty clay	strong	fine	crumb	very hard	friable	slightly sticky	weak		not visible	n/a	n.a	n.a	B	Very compacted with no stones.

EU	Stratum	Top Depth (cmts)	Bottom Depth (cmts)	Wall Face	Munsell	Color	Texture	Structure Grade	Structure Size	Structure Form	Dry	Moist	Wet	Cementation	Plasticity	Lower Boundary Distinctness	Lower Boundary Topography	Roots Qt.	Roots Size	Horizon	Special Characteristics
RSA Fill Area																					
BT-10	I	0	50	EW	5 YR 4/4	Reddish Brown	Silty Loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	wavy	many	fine/medium	Ap	Black plastic and black irrigating hoses semi-compacted soil very disturbed from pineapple cultivation -no rocks
BT-10	II	40	160	EW	5 YR 4/6	Yellowish Red	Silty Clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine	B	Very compacted dirt and appears to be natural. No rocks
BT-12	I	0	60		5 YR 4/4	reddish brown	Silty Loam	moderate	fine/medium	granular	hard	friable	slightly sticky	weak	slightly plastic	clear	smooth	many	fine/medium	A	Black plastic and irrigation hose semi-compacted disturbed soil.
BT-12	II	35	1.9		5 YR 4/6	Yellowish Red	silty clay	strong	fine/medium	crumb	very hard	friable	slightly sticky	weak	slightly plastic	not visible	n/a	few	fine/medium	B	Very compacted and sterile soil.

Appendix D

Documentation of Section 106 National Historic Preservation Act (NHPA) Consultation with State Historic Preservation Officer (SHPO) and Native Hawaiian Organizations

Appendix D

Documentation of Section 106 National Historic Preservation Act (NHPA) Consultation with State Historic Preservation Officer (SHPO) and Native Hawaiian Organizations

This summarizes the public involvement and agency coordination that occurred for the preparation of a National Environmental Policy Act (NEPA) Draft Environmental Assessment (DEA) for the Lānaʻi Airport Runway Safety Improvements Plan. The primary components of the agency and public participation program for this EA include publication of this Draft EA and the following written consultation between FAA and various agencies regarding the Section 106 process.

Date of Letter	From	To	Subject and Summary Notes
*March 11, 2013	FAA	SHPD	FAA request for review of Archaeological Assessment of Lānaʻi RSA Improvements Project and concurrence concerning no effect to historic resources.
March 13, 2013	FAA	OHA	Seeking input from OHA regarding any concerns of Native Hawaiians related to Runway Safety Area improvements.
March 13, 2013	FAA	OHA	Section 106 NHPA Contact List for Lanaʻi Airport RSA Project (attachment to letter)
March 21, 2013	DHHL	FAA	DHHL "has no comment to offer at this time".

*Note: See Appendix C of this Environmental Assessment for the Archaeological Assessment.

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March 11, 2013

Ms. Pua Aiu, PhD
Administrator
Hawaii Historic Preservation Division
Kakuhihewa Building
601 Kamokila Boulevard, Rm. 555
Kapolei, Hawaii 96707

**Subject: Runway Safety Area Improvements at the Lānaʻi Airport
Lānaʻi, Hawaii, Section 106 Consultation; TMK: (2) 4-9-002:041**

Dear Ms. Aiu:

The State of Hawaii, Department of Transportation, Airports Division (HDOTA) and the Federal Aviation Administration (FAA) are preparing a federal Environmental Assessment (EA) for the proposed improvements to the runway safety area (RSA) at Lānaʻi Airport (LNY), TMK: (2) 4-9-002:041. The EA is being prepared to comply with FAA requirements under the National Environmental Policy Act (NEPA). HDOTA and the FAA are preparing the EA for the proposed undertaking pursuant to the National Environmental Policy Act of 1969. The federal action is use of federal funds for the project and approval of the Airport Layout Plan.

Enclosed is the *Archaeological Assessment for the Proposed Lānaʻi Airport Runway Improvements* (Report) dated March 2013, that has been prepared for the proposed improvements at LNY.

For the purposes of this Section 106 consultation, the FAA has determined the area of potential effect (APE) consisting of approximately 67 acres within airport property (APE enclosed). The proposed undertaking will include the construction of the RSA (approximately 1,000' long X 500' wide) at the south end of the existing Lānaʻi Airport runway. Construction will involve excavation of approximately 49 acres (to be used for fill) that will be placed within the 11 acres area of the RSA to comply with FAA RSA design requirements. Related construction will include a new drainage swale and the possible need to replace the existing chain-link fencing. RSAs are clear areas around a runway, free of objects and structures. The RSA provides enhanced safety for aircraft and greater accessibility for firefighting and rescue equipment.

The purpose of this consultation effort is to address the potential impacts of the proposed undertaking to historic properties that occur or are likely to occur in the vicinity of the

airport. Historic and archaeological background research, pedestrian inspection, and subsurface testing were conducted and are described in the Report. No previously identified historic properties are known in the immediate vicinity of the short term project area. There were no new historic properties discovered as a result of the research and testing. The Report concludes there are no impacts on historic properties within the project site.

This project is defined as an “undertaking” by the procedures of the Advisory Council on Historic Preservation (36 Code of Federal Regulations (CFR) Part 800) and, therefore, is subject to the requirements of the *National Historic Preservation Act of 1966*, as amended.

Based on the above information and in accordance with 36 CFR Part 800, the FAA has determined that the proposed undertaking at LNY will not affect any historic properties. We request your written concurrence with the APE and our determination within 30 days of receipt of this letter. If we do not hear from your office within 30 days, we will consider a no-reply as a “concurrence.”

We note, in your letter of November 28, 2012 to HDOTA, you requested a listing of Native Hawaiian Organizations (NHOs) that have been/will be consulted with. We will provide you a listing shortly. If there are any specific NHOs you would like us to include, please inform us so we may include them in the consultation.

Your timely response will greatly assist us in incorporating your concerns into this environmental process. Please do not hesitate to contact Gordon Wong, Lead Program Manager, at 808-541-3565 or by e-mail at gordon.wong@faa.gov if you have any questions or require additional information.

Sincerely,



Ronnie V. Simpson
Manager, Airports District Office

Enclosures
Area of Potential Effect Sketch
Archaeological Assessment for the Proposed Lāna‘i Airport Runway Improvements dated March 2013

cc: (w/encls.)
Kimberly Evans, HDOTA
Brian Takeda, R.M. Towill Corp.



Department of Transportation
State of Hawaii

DESIGN: [] DRAWN: [] CHD: [] APPD: []

KEY PLAN / NOTES :



NO. DATE REVISIONS

PROJECT TITLE :

RUNWAY SAFETY AREA
(RSA) IMPROVEMENTS
AT LANAI AIRPORT

LANAI AIRPORT
GRAPHIC SCALE IN FEET

PROJECT NO. :

AM 4022-14

SHEET TITLE :

OVERALL
SITE PLAN

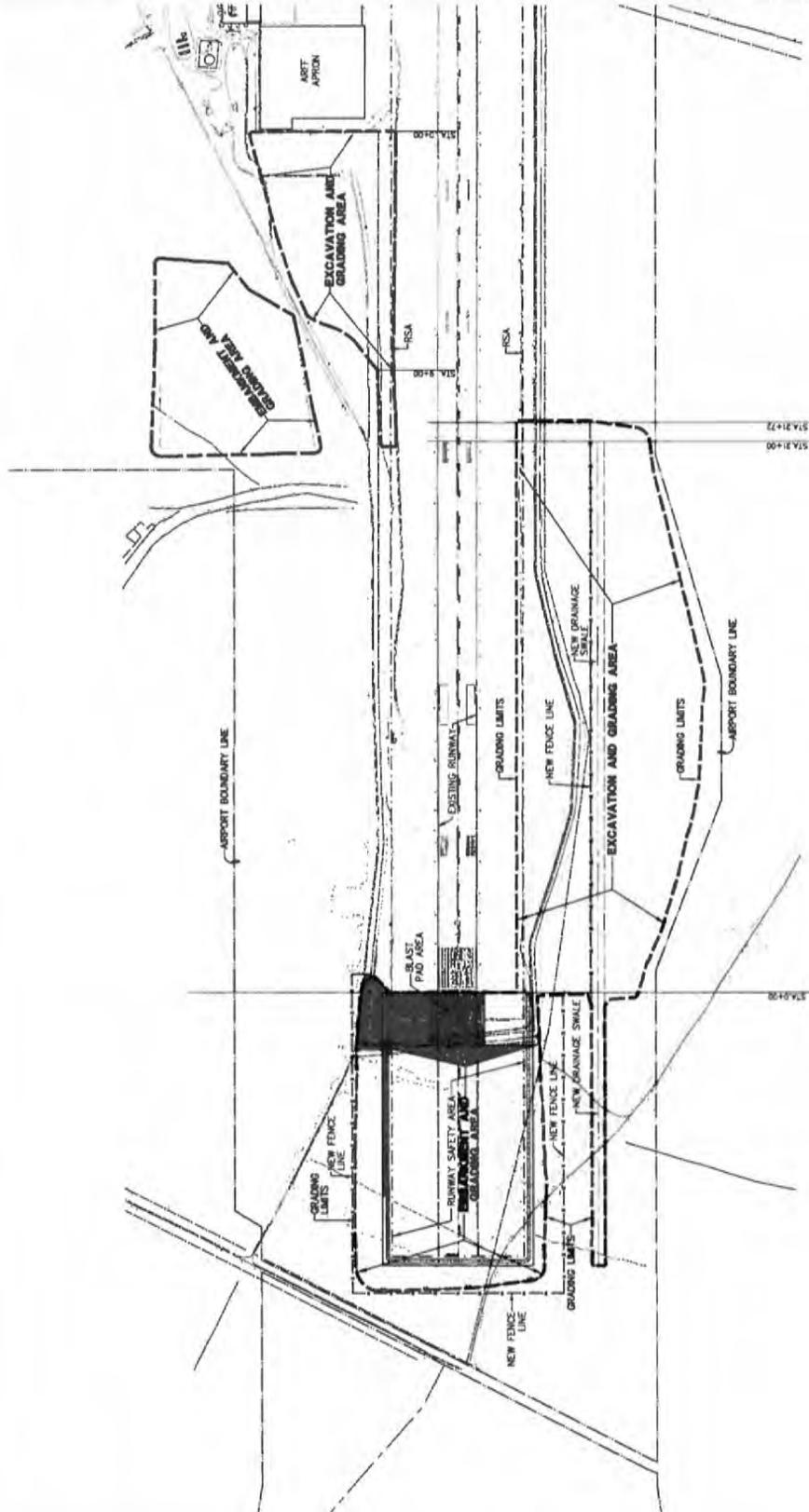
DATE:

OCTOBER 2011

DWG. NO.:

C-1.3

SHEET OF SHEET



OVERALL SITE PLAN
SCALE 1" = 200' PL

AREA OF POTENTIAL EFFECT

DATE: 2/20/2013 11:41:41 AM
DRAWN: []
DESIGN: []
CHD: []
APPD: []



U.S. Department
of Transportation
**Federal Aviation
Administration**

Western-Pacific Region
Airports District Office

300 Ala Moana Blvd, Rm. 7-128
Honolulu, HI 96813
MAIL: Box 50244
Honolulu, HI 96850-0001
Telephone: (808) 541-1232
FAX: (808) 541-3566

March 13, 2013

Dr. Kamana‘opono Crabbe
Ka Pouhana Chief Executive Officer
Office of Hawaiian Affairs
711 Kapiolani Blvd, Suite 500
Honolulu, HI 96813

**Subject: Runway Safety Area Improvements at the Lāna‘i Airport
Lāna‘i, Hawaii, Native Hawaiian Consultation**

Dear Dr. Crabbe:

The State of Hawaii, Department of Transportation, Airports Division (HDOTA) and the Federal Aviation Administration (FAA) are preparing a federal Environmental Assessment (EA) for the proposed improvements to the runway safety area (RSA) at Lāna‘i Airport (LNY). The EA is being prepared to comply with FAA requirements under the National Environmental Policy Act (NEPA). HDOTA and the FAA are preparing the EA for the proposed undertaking pursuant to the National Environmental Policy Act of 1969. The FAA is the lead Federal Agency for Native Hawaiian consultation for the proposed projects. HDOT-A is the sponsor for Lāna‘i Airport.

The primary purpose of consultation as described in the National Historic Preservation Act of 1966 (NHPA), as amended in 1992 to include consultation with Native Hawaiian Organizations (NHO), is to ensure that there is an opportunity to provide meaningful and timely input regarding proposed FAA actions that uniquely or significantly affect Native Hawaiians.

With this letter, the FAA is seeking input on concerns that uniquely or significantly affect Native Hawaiians related to proposed safety area improvements. Early identification of Native Hawaiian concerns will allow the FAA to consider ways to avoid and minimize potential impacts to Native Hawaiians resources and practices as project planning and alternatives are developed and refined. We are available to discuss details of the proposed project with you.

The proposed undertaking includes grading and filling of airport property (see enclosed project location and site plans) for construction of the RSA (approximately 1,000’ long X 500’ wide) at the south end of the existing Lāna‘i Airport runway. Construction will involve excavation of approximately 49 acres (to be used for fill) that will be placed within the 11 acres area of the RSA to comply with FAA RSA design requirements. Related construction will include a new drainage swale and the possible need to replace

the existing chain-link fencing. RSAs are clear areas around a runway, free of objects and structures. The RSA provides enhanced safety for aircraft and greater accessibility for firefighting and rescue equipment. The RSA will not extend the existing runway. It provides a safety area around the runway suitable for reducing the risk of damage to airplanes in the event of an undershoot, overshoot, or excursion from the runway.

We understand that you may have concerns about the confidentiality of information on areas or resources of religious, traditional and cultural importance to Native Hawaiians. We would be happy to discuss these concerns and develop procedures to ensure the confidentiality of such information is maintained. If you know of other Native Hawaiian Organizations, individuals or groups with whom we should consult, we would appreciate your help in putting us in contact with them.

Your timely response will greatly assist us in incorporating your concerns into this environmental process. We respectfully request that comments be submitted in writing by April 15, 2013. Please do not hesitate to contact Gordon Wong, Lead Program Manager, at 808-541-3565 or by e-mail at gordon.wong@faa.gov if you have any questions or require additional information.

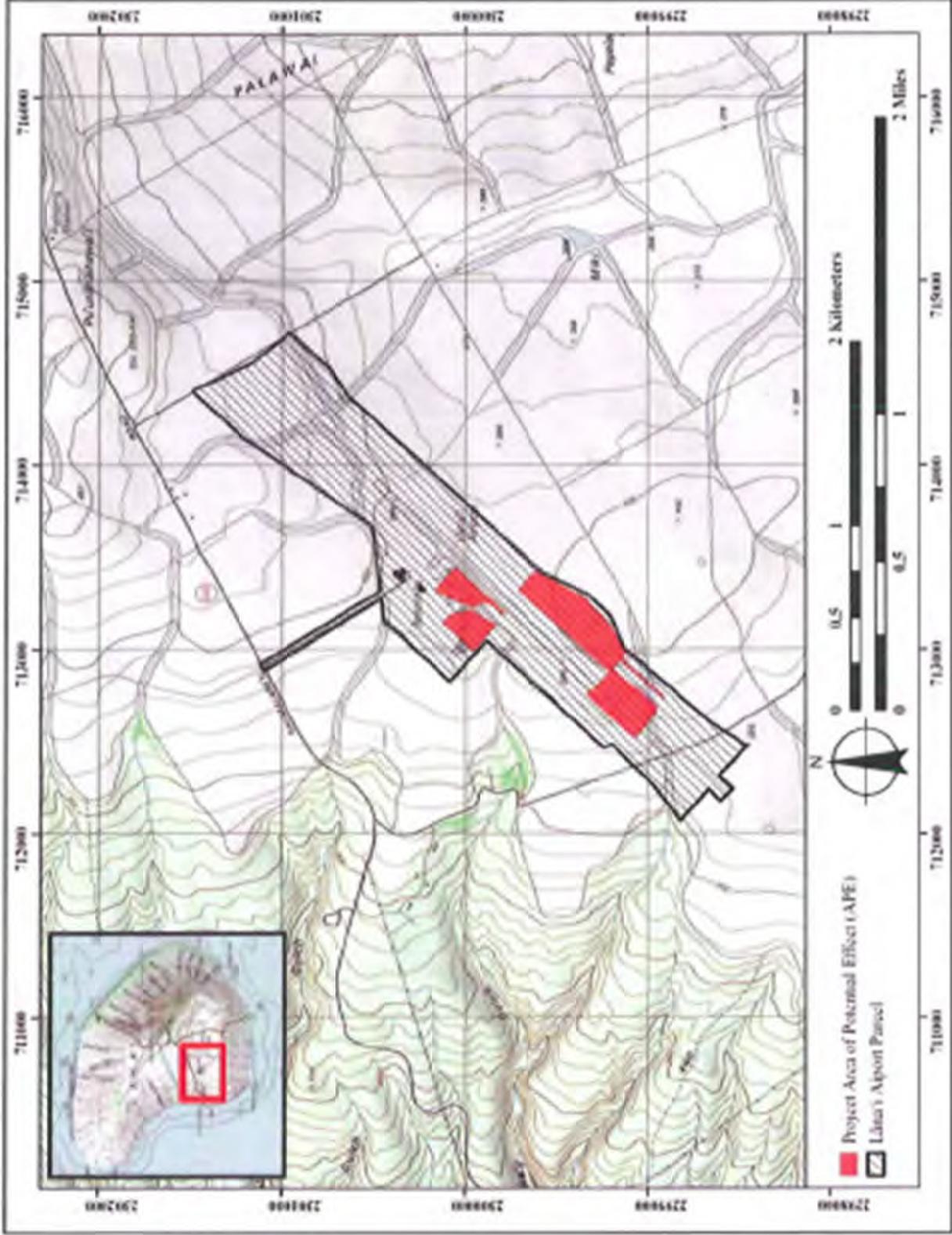
Sincerely,

A handwritten signature in black ink, appearing to read 'Ron V/S', with a long horizontal flourish extending to the right.

Ronnie V. Simpson
Manager, Airports District Office

Enclosures
Project Location and Site Plans

cc: (w/encls.)
Kimberly Evans, HDOTA
Brian Takeda, R.M. Towill Corp.



Lānaʻi Airport – Runway Safety Area Improvement
 OVERALL PROJECT LOCATION PLAN

Section 106 NHPA Contact List for Lanai Airport RSA Project
Updated as of March 12, 2013

Lanai Island Representative
Maui/Lanai Islands Burial Council
C/O State Historic Preservation Division, DLNR Maui Office Annex
130 Mahalani Street, Wailuku, HI 96793

Ms. Phyllis "Coochie" Cayan
History and Culture Branch
State Historic Preservation Division
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

Ms. Pua Aiu
SHPD Administrator
State Historic Preservation Division
601 Kamokila Blvd., Suite 555
Kapolei, HI 96707

Ms. Jenny Pickett
Maui Assistant Archaeologist
State Historic Preservation Division
DLNR Maui Office Annex
130 Mahalani Street
Wailuku, HI 96793

Mr. Hinano Rodrigues
Maui Cultural Historian
State Historic Preservation Division
DLNR Maui Office Annex
130 Mahalani Street
Wailuku, HI 96793

Ms. Winifred Manō Basques
Aha Moku Advisory Council
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawaii 96809-0621

(Note: this organization does not have a listed address. However, they are newly formed and administratively attached to DLNR. They list an e-mail address for Winifred as: winnie@aloha.net)

Mr. Kepa Maly
Lanai Culture & Heritage Center
P.O. Box 631500
Lanai City, HI 96763

Ms. Sandra Ropa
Hui Malama Pono O Lānaʻi
P.O. Box 630297
Lanai City, HI 96763

Ms. Mona Kapaku
Department of Hawaiian Homelands
655 Kaumualii Street, Suite 1
Wailuku, HI 96793

Mr. John Summers, Administrator
Maui County Cultural Resources Commission
Long Range Planning Division
2200 Main Street
One Main Plaza Building, Suite 335
Wailuku, HI 96793

Dr. Kamanaʻopono Crabbe
Ka Pouhana Chief Executive Officer
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, HI 96813

Mr. Edward Halealoha Ayau, Esq.
Hui Malama I Na Kupuna 'O Hawaii Nei
622 Wainaku Avenue
Hilo, HI 96720
halealoha@wave.hicv.net Responds only to email

Mr. Kunani Nihipali
Hui Malama I Na Kupuna 'O Hawaii Nei
P.O. Box 967
Kailua, HI 96734

Mr. Ron McOmber
President
Lanaians for Sensible Growth
P.O. Box 2160
Lanai City, Hawaii 96763



STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

March 21, 2013

Mr. Gordon Wong
U. S. Department of Transportation
Federal Aviation Administration
300 Ala Moana Blvd., Room 7-128
Honolulu, Hawai'i 96813

Dear Mr. Wong:

Subject: Runway Safety Area Improvements at the Lana'i Airport
Lana'i, Hawai'i, Native Hawaiian Consultation

Thank you for the opportunity to comment on the Runway Safety Area Improvements. The Department of Hawaiian Home Lands has no comment to offer at this time.

Should you have any questions, please contact the Planning Office at (808) 620-9480.

Aloha,

A handwritten signature in black ink, appearing to read "Darrell C. Yagodich".

Darrell C. Yagodich,
Planning Program Manager

