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DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
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WAILUKU, MAUI, HAWAI'I 96793
http://www.mauicounty.gov/water



April 9, 2026

TO: Mary Alice Evans
Director, Office of Planning and Sustainable Development

FROM: John Stufflebean, P.E.
Director, County of Maui Department of Water Supply

SUBJECT: Draft Environmental Assessment and Anticipated Finding of No Significant Impact for Proposed 2.0 Million-Gallon Water Storage Tank
Kīhei, Maui, Hawai'i
(TMK Nos. (2)2-2-002:084 and 086)

Dear Director Evans:

The County of Maui, Department of Water Supply (DWS) is transmitting the subject Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the proposed new 2.0 million-gallon (MG) water storage tank in Kīhei. The DEA-AFONSI has been prepared pursuant to Chapter 343, Hawai'i Revised Statutes, and Chapter 11-200.1, Hawai'i Administrative Rules.

We respectfully request that the DEA-AFONSI be published in the next issue of *The Environmental Notice*. The required materials for the submission will be provided via your online submittal site.

Should you have any questions about this project, please contact James Jensen of DWS at (808) 270-7816, or Finn Gibson of Munekiyo Hiraga at (808) 244-2015 or by email at finn@munekiyohiraga.com.

Sincerely,

for John Stufflebean, P.E.
Director

cc: Finn Gibson, Munekiyo Hiraga
James Jensen, County of Maui, Department of Water Supply

Enclosure

K:\DATA\PR\KiheiWaterTank\Apps\Draft EA\ERP\AFNSI.docx

"By Water All Things Find Life"

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Friday, April 10, 2026 11:29:27 AM

Action Name

Proposed 2.0 MG Water Storage Tank, Kīhei, Maui, Hawai'i

Type of Document/Determination

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

HRS §343-5(a) Trigger(s)

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

Judicial district

Wailuku, Maui

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

(2) 2-2-002:084; (2) 2-2-002:086

Action type

Agency

Other required permits and approvals

Please refer to Draft EA Chapter VIII, "List of Permits and Approvals"

Proposing/determining agency

County of Maui Department of Water Supply

Agency jurisdiction

County of Maui

Agency contact name

James Jensen

Agency contact email (for info about the action)

james.jensen@co.maui.hi.us

Email address for receiving comments

planning@munekiyohiraga.com

Agency contact phone

(808) 270-7816

Agency address

200 South High Street
Kalana O Maui Building, 5th Floor
Wailuku, Hawai'i 96793
United States
Map It

Is there a consultant for this action?

Yes

Consultant

Munekiyo Hiraga

Consultant contact name

Finn Gibson

Consultant contact email

planning@munekiyohiraga.com

Consultant contact phone

(808) 244-2015

Consultant address

305 High Street
Suite 104
Wailuku, Hawai'i 96793
United States
Map It

Action summary

The County of Maui, Department of Water Supply (DWS) proposes to develop a two (2) million-gallon (MG) potable water storage tank for integration into the County of Maui's drinking water system. The proposed 2.0 MG Water Storage Tank project includes construction of the new water storage tank, its associated appurtenances, and supporting infrastructure. The project will include clearing, grubbing, and grading, as well as the installation of waterlines, drainage, and electrical utilities, fire hydrants, and roadway access improvements. The purpose of the project is to increase redundancy, improve resiliency, and enhance reliability of the potable water storage infrastructure in Kīhei. The project does not increase source or transmission capacity.

Reasons supporting determination

Please refer to Draft EA Chapter VII, "Significance Criteria Assessment"

Attached documents (signed agency letter & EA/EIS)

- Proposed_2.0_MG_Water_Storage_Tank_Draft_EA_April_2026.pdf
- Proposed_2.0_MG_Water_Storage_Tank_AFNSI_April_2026.pdf

Action location map

- 2_MG_Water_Storage_Tank_Kihei_Shapefile.zip

Compliance certification (HRS §368-1.5):

The authorized individual listed below certifies that documents submitted are unlocked, searchable, and compliant with the Hawaii Electronic Information Technology Disability Access Standards (including, but not limited to transcripts, captions, and other descriptions accompanying audio/video files). The individual acknowledges that the submitter retains the responsibility for compliance after documents have been published and any compliance queries will be directed back to the agency and/or applicant.

Authorized individual

Finn Gibson

Authorized individual email
finn@munekiyohiraga.com
Authorized individual phone
(808) 244-2015
Authorization
• The above named authorized individual hereby certifies that he/she has the authority to make this submission.

Draft Environmental Assessment

PROPOSED 2.0 MG WATER STORAGE TANK, KĪHEI, MAUI, HAWAIʻI

TMK Nos. (2)2-2-002:084 and 086

Prepared for:
County of Maui
Department of Water Supply

Approving Agency:
County of Maui
Department of Water Supply

April 2026

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Planning. Project Management. Sustainable Solutions.

Draft Environmental Assessment

PROPOSED 2.0 MG WATER STORAGE TANK, KĪHEI, MAUI, HAWAIʻI

TMK Nos. (2)2-2-002:084 and 086

Prepared for:
County of Maui
Department of Water Supply

Approving Agency:
County of Maui
Department of Water Supply

April 2026

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CONTENTS

EXECUTIVE SUMMARY vi

LIST OF ACRONYMS ix

I. PROJECT OVERVIEW 11

A. PROPERTY BACKGROUND, EXISTING USE, AND LAND OWNERSHIP 11

B. BACKGROUND AND PROJECT NEED 14

C. PROPOSED ACTION 14

D. REGULATORY CONTEXT 15

1. Chapter 343, Hawai‘i Revised Statutes 15
2. Drinking Water State Revolving Fund Cross-Cutter Requirements 17

E. PROJECT COST AND IMPLEMENTATION SCHEDULE 17

II. DESCRIPTION OF EXISTING CONDITIONS, POTENTIAL IMPACTS, AND PROPOSED MITIGATION MEASURES 18

A. PHYSICAL SETTING 18

1. Surrounding Land Uses 18
2. Climate 19
3. Wildfire Hazard 20
4. Greenhouse Gas Considerations 21
5. Topography and Soil Characteristics 22
6. Agriculture 25
7. Flood and Tsunami Hazard 26
8. Streams and Wetlands 29
9. Sea Level Rise 33
10. Flora and Fauna 33
11. Air Quality and Noise 37
12. Historical and Archaeological Resources 37
13. Cultural Impact Assessment 39
14. Scenic and Open Space Resources 43
15. Traditional Beach and Mountain Access 43

B. SOCIO-ECONOMIC ENVIRONMENT 44

1. Regional Setting 44
2. Population and Demography 45
3. Economy and Labor Force 46
4. Housing 47

C. PUBLIC SERVICES 48

1. Solid Waste Disposal 48
2. Medical Facilities 48
3. Police and Fire Protection 49
4. Educational Facilities 50
5. Recreational Facilities 50

D. INFRASTRUCTURE 51

1. Roadways 51
2. Water System 53
3. Wastewater System 54
4. Drainage 54
5. Electrical, Telephone, and Cable Television (CATV) Services 55
E. CUMULATIVE AND SECONDARY IMPACTS 56

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS 58
A. STATE LAND USE DISTRICTS 58
B. HAWAIʻI STATE PLAN 58
C. STATE FUNCTIONAL PLAN 67
D. HAWAIʻI 2050 SUSTAINABILITY PLAN 72
E. GENERAL PLAN OF THE COUNTY OF MAUI 75
1. Countywide Policy Plan 75
2. Maui Island Plan 77
F. KIHEI-MAKENA COMMUNITY PLAN 83
G. COUNTY OF MAUI ZONING 86
H. MAUI ISLAND WATER USE AND DEVELOPMENT PLAN 88
I. HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM – OBJECTIVES AND ENFORCEABLE POLICIES 89
1. Recreational Resource 89
2. Historic Resources 92
3. Scenic and Open Space Resources 92
4. Coastal Ecosystems 93
5. Economic Use 94
6. Coastal Hazards 94
7. Managing Development 95
8. Public Participation 95
9. Beach and Coastal Dune Protection 96
10. Marine and Coastal Resources 97
J. FEDERAL REGULATORY REQUIREMENTS 98
1. Hawaiʻi Drinking Water State Revolving Fund Environmental Crosscutters 98
2. Department of the Army 103
3. Section 401 Water Quality Certification 103
4. Coastal Zone Management Consistency Review 103
5. Section 4(f) of the Department of Transportation Act 103
6. Section 6(f) of the Land and Water Conservation Fund Act 104
7. Section 106 of the National Historic Preservation Act 104
8. Section 7 of the Endangered Species Act 104

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED 105

V. ALTERNATIVES TO THE PROPOSED ACTION 106
A. PREFERRED ALTERNATIVE 106

B. NO ACTION ALTERNATIVE 106
C. DEFERRED ACTION ALTERNATIVE 106
D. REDUCED CAPACITY ALTERNATIVE 107
VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES....108
VII. SIGNIFICANCE CRITERIA ASSESSMENT....109
VIII. LIST OF PERMITS AND APPROVALS....113
IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS 114
X. REFERENCES i

List of Figures

Page

Figure 1. Regional Location Map....12
Figure 2. Project Location Map....13
Figure 3. Site Plan....16
Figure 4. Soil Association Map....23
Figure 5. Soil Classification Map....24
Figure 6. Agricultural Lands of Importance to the State of Hawai'i....27
Figure 7. Land Study Bureau Map....28
Figure 8. Flood Hazard Zones Map....30
Figure 9. Tsunami Zones Map....31
Figure 10. Streams Map....32
Figure 11. 3.2-Foot Sea Level Rise Exposure Area Map....34
Figure 12 State Land Use District Map....59
Figure 13. Maui Island Plan Map....79
Figure 14. Kihei-Makena Community Plan Map....84
Figure 15. Maui County Zoning Map....87
Figure 16. Special Management Area Map....90

List of Tables

Page

Table 1. Hawai'i State Plan, Chapter 226, HRS Part I....61
Table 2. Hawai'i State Plan, Chapter 226, HRS Part III....66
Table 3. Relationship Between the Proposed 2.0 MG Water Storage Tank and the State Functional Plans....69
Table 4. Hawai'i 2050 Sustainability Plan (HRS, Section 226-65)....72
Table 5. Countywide Policy Plan....76
Table 6. Maui Island Plan Goals, Objectives and Policies....80
Table 7. Environmental Cross-Cutters and Project Documentation....99

List of Appendices

Appendix A.	Project Plans
Appendix B.	Flora and Fauna Survey
Appendix C.	Archaeological Literature Review and Field Inspection Report
Appendix D.	State Historic Preservation Division Letter
Appendix E.	Cultural Impact Assessment
Appendix F.	Drainage Report
Appendix G-1.	Hawai‘i State Plan – Assessment of Project Applicability to Goals, Objectives, and Policies
Appendix G-2.	Countywide Policy Plan – Assessment of Project Applicability to Goals, Objectives, and Policies
Appendix G-3.	Maui Island Plan – Assessment of Project Applicability to Goals, Objectives, and Policies

Executive Summary

Project Name:	Proposed 2.0 MG Water Storage Tank, Kīhei, Maui, Hawai'i
Type of Document:	Draft Environmental Assessment (EA)
Legal Authority:	Chapter 343, Hawai'i Revised Statutes Title 11, Chapter 200.1, Hawai'i Administrative Rules
Determination:	Anticipated Finding of No Significant Impact (AFNSI)
Applicable Chapter 343. HRS "Triggers":	Use of State and County Funds
Location:	Maui Island Kīhei
Tax Map Keys:	TMK No. (2)2-2-002:084 TMK No. (2)2-2-002:086
Landowner TMK (2)2-2-002:084:	Haleakalā Ranch Company 529 Kealaloa Avenue Makawao, Hawai'i 96768 Phone: (808)572-1500
Landowner TMK (2)2-2-002:086:	Lipoa Investments, LLC P.O. Box 220 Kīhei, Hawai'i 96753 Phone: (808)874-5263
Proposing/Approving Agency:	County of Maui Department of Water Supply 200 S. High Street Kalana O Maui Building, 5th Floor Wailuku, Hawai'i 96793 Contact: James Jensen Phone: (808)270-7816
Consultant:	Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawai'i 96793 Contact: Finn Gibson, Analyst Phone: (808)983-1233 Email: planning@munekiyohiraga.com

Project Summary:

The County of Maui, Department of Water Supply (DWS) proposes to develop a two (2) million-gallon (MG) potable water storage tank for integration into the County of Maui's drinking water system. The tank will be located on a portion of the land parcel identified by TMK No. (2)2-2-002:084, currently owned by the Haleakalā Ranch Company.

The proposed 2.0 MG Water Storage Tank project includes construction of the new water storage tank, its associated appurtenances, and supporting infrastructure. The project will include clearing, grubbing, and grading, as well as the installation of water, drainage, electrical utilities, and roadway access improvements. The purpose of the project is to increase redundancy, improve resiliency, and enhance reliability of the potable water storage infrastructure in Kīhei. The project does not increase water source capacity or transmission capacity.

The proposed tank will be situated mauka of the Līpoa Parkway and Piʻilani Highway intersection at an approximate elevation of 387 feet above mean sea level (amsl) and will be enclosed within a fenced area encompassing 1.45 acres. This enclosed land area will be subdivided and dedicated to the County.

The tank will be a pre-stressed concrete structure with an interior wall diameter of approximately 134 feet. The tank will have a sidewall height of approximately 22 feet and an overall height of approximately 33.5 feet from the floor to the top of the domed roof. Two (2) parallel 16-inch inlet and outlet waterlines will connect the tank to the existing DWS system in the privately-owned roadway parcel identified by TMK No. (2)2-2-002:086 at the terminus of Līpoa Parkway. Four (4) fire hydrants will be installed along the waterline alignment.

Drainage improvements will be provided to manage stormwater runoff and tank overflow and will include a drainage basin, riprap-lined swales, associated drain lines, and outlet structures.

Electrical improvements will include installation of an antenna pole (approximately 35 feet tall) with a photovoltaic panel to supply power to an instrument enclosure. Electrical conduits will be installed within the tank site.

Access to the water tank will be provided from Līpoa Parkway via an existing access road. A portion of the road is currently paved, and the remaining unpaved portion will be paved as part of the project.

The proposed action involves the use of County and State funds, which is a trigger for the preparation of an Environmental Assessment (EA) pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS). As such, this EA is being prepared to evaluate the project’s technical characteristics and environmental impacts and alternatives, as well as to advance findings relative to the proposed project. The DWS will serve as the Approving Agency for the EA.

Furthermore, Federal Funds from the Drinking Water State Revolving Fund (DWSRF) are intended to be utilized for the project. As such, compliance with applicable Federal cross-cutter requirements will also be addressed during the Chapter 343, HRS environmental review process.

List of Acronyms

AFNSI	Anticipated Finding of No Significant Impact
ALISH	Agricultural Lands of Importance to the State of Hawai‘i
amsl	Above Mean Sea Level
ASEA	Aquifer Sector Area
BMP	Best Management Practice
CATV	Community Antenna Television
CFR	Code of Federal Regulations
cfs	Cubic Feet per Second
CIA	Cultural Impact Assessment
CO2 EQ	Carbon Dioxide Equivalent
CSH	Cultural Surveys Hawai‘i
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DA	Department of Army
DBEDT	Department of Business Economic Development and Tourism
DEM	Department of Environmental Management
DF&PS	Department of Fire and Public Safety
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOFAW	Division of Forestry and Wildlife
DOH	Department of Health
DOH-CWB	Department of Health, Clean Water Branch
DOH-SDWB	Department of Health, Safe Drinking Water Branch
DWS	Department of Water Supply
DWSRF	Drinking Water State Revolving Fund
EA	Environmental Assessment
EPA	Environmental Protection Agency
ERP	Environmental Review Program
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
GHG	Greenhouse Gases
GIS	Geographic Information Systems
HAR	Hawai‘i Administrative Rules
HCZMP	Hawai‘i Coastal Zone Management Program
HECO	Hawaiian Electric Company
HRS	Hawai‘i Revised Statutes
HWMO	Hawai‘i Wildfire Management Organization
IPCC	Intergovernmental Panel on Climate Change
KNXD	Keawakapu Extremely Stony Silty Clay Loam, 3 to 25 percent slopes
KPA	Ka Pa‘akai Analysis
LRFI	Literature Review and Field Inspection
LSB	Land Study Bureau
LWCFA	Land and Water Conservation Fund Act
MCC	Maui County Code
MG	Million Gallon

mgd	million gallons per day
MIP	Maui Island Plan
MPD	Maui Police Department
NHO	Native Hawaiian Organization
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
R-1	Non-Potable Reclaimed Water
SHPD	State Historic Preservation Division
SIP	State Implementation Plan
SLR-XA	Sea Level Rise Exposure Area
SMA	Special Management Area
TMK	Tax Map Key
UGB	Urban Growth Boundary
UH	University of Hawai‘i
UHERO	University of Hawai‘i Economic Research Organization
UHMC	University of Hawai‘i Maui College
USACE	U.S. Army Corps of Engineers
U.S. DOT	United States Department of Transportation
USFWS	U.S. Fish and Wildlife Service
USGS	United States Geological Survey
WID2	Waiakoa Extremely Stony Silty Clay Loam, 3 to 25 percent slopes
WQC	Water Quality Certification
WUDP	Water Use and Development Plan
WWRD	Wastewater Reclamation Division
WWRF	Wastewater Reclamation Facility

I. PROJECT OVERVIEW

I. PROJECT OVERVIEW

A. PROPERTY BACKGROUND, EXISTING USE, AND LAND OWNERSHIP

The County of Maui, Department of Water Supply (DWS) proposes to develop a two (2) million-gallon (MG) water storage tank for integration into the County of Maui's potable water system. The tank will serve the existing DWS system as an improvement to its water storage infrastructure and will be located on a portion of land identified by TMK No. (2)2-2-002:084. The tank site is currently pastureland and owned by Haleakalā Ranch Company. See **Figure 1**. The project will also involve improvements to an existing access road from Līpoa Parkway, under which inlet and outlet waterlines will be installed. Work on the access road, as well as the installation of the waterlines will extend into a roadway parcel identified by TMK No. (2)2-2-002-086, owned by Lipoa Investments, LLC. See **Figure 2**.

The water storage tank will be located east of the terminus of Līpoa Parkway at an elevation of 387 feet above mean sea level (amsl). Access to the water tank will utilize the existing access road, approximately 3,700 feet in length. A portion of this access road is currently paved (approximately 1,500 feet) while another portion is dirt (approximately 2,200 feet).

The proposed water tank location was selected based on its optimal elevation and proximity to existing DWS infrastructure, including an existing DWS 2.0 MG water storage tank and waterlines located makai or downhill of the proposed tank location. The existing DWS tank is situated near the mauka end of Līpoa Parkway, with associated waterlines located within the roadway corridor. This location allows for efficient integration of the new tank into the existing DWS system.

The portion of the land upon which the tank itself will be constructed, totaling 1.45 acres, will be subdivided and dedicated to the County. The tank, along with its appurtenant facilities and infrastructure will be County-owned and maintained. A 40-foot wide easement following the alignment of the access road and waterlines will be provided to the County for access and waterline purposes.

The entirety of both parcels (TMK Nos. (2) 2-2-002:084 and 086) is designated "Agriculture" by the State Land Use Commission and the Kihei-Makena Community Plan, and it is zoned as "AG Agriculture" under County of Maui zoning.

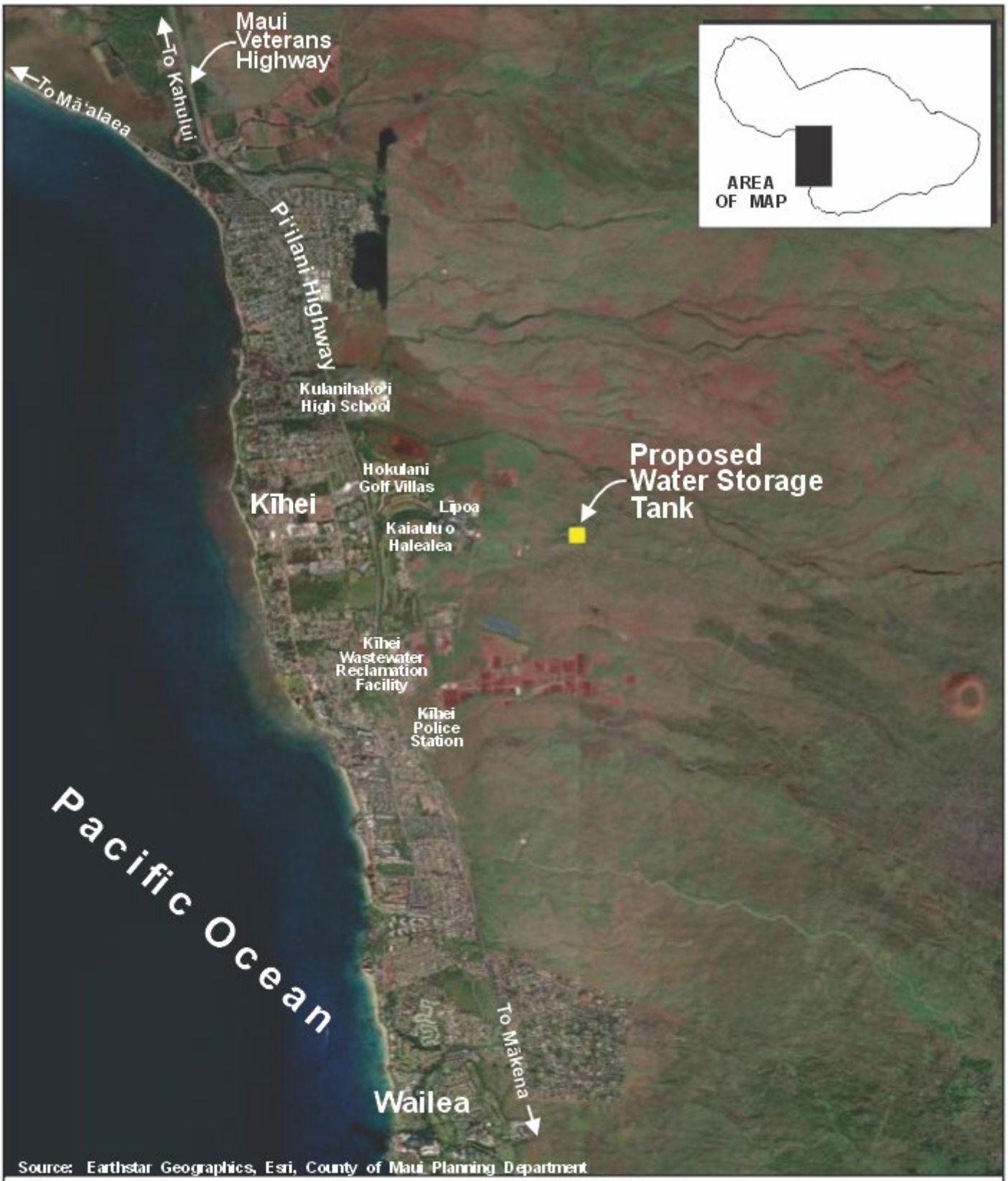


Figure 1

Proposed 2.0 MG Water Storage Tank

Regional Location Map

0 2,500 5,000

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

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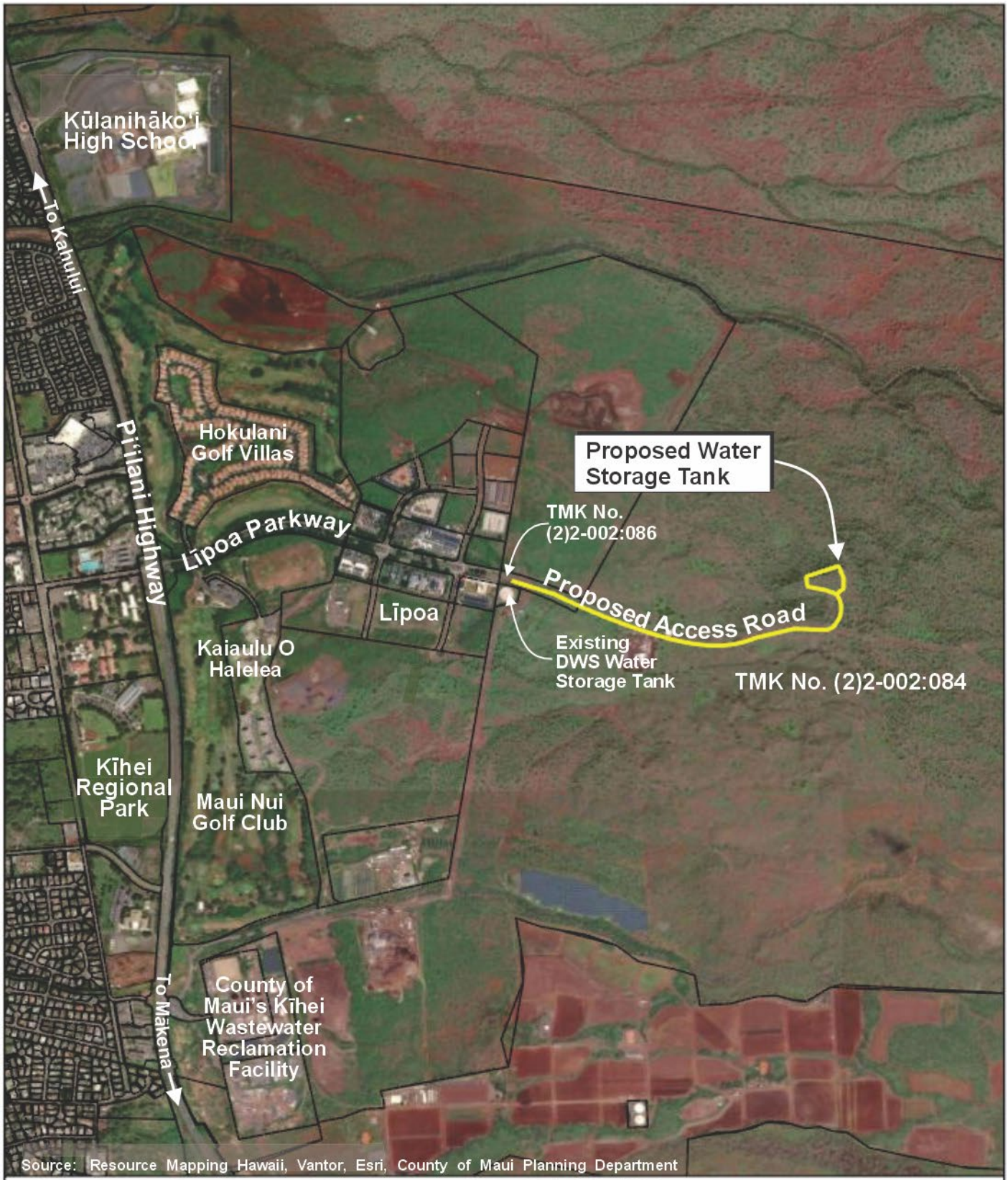


Figure 2

Proposed 2.0 MG Water Storage Tank

Project Location Map

0 750 1,500

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

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B. BACKGROUND AND PROJECT NEED

The County of Maui provides potable water across various areas throughout Maui County, with Kīhei serviced by its Central Maui System. The DWS' potable water infrastructure generally consists of three (3) main components: source, transmission, and storage. Through the proposed project, the County of Maui seeks to increase redundancy, improve resiliency, and enhance reliability within its potable water storage infrastructure in Kīhei.

The proposed water tank will support this goal by improving water storage within the existing water system in the region. The proposed project does not constitute an expansion in source or transmission capacity of the water system, nor does it increase water supply to support new development. Instead, the project is an effort to strengthen the existing system by improving available storage within the current service area.

The proposed tank will improve system redundancy by providing an additional storage facility that complements DWS' existing 2.0 MG storage tank located makai, near the mauka terminus of Līpoa Parkway. By adding storage at a strategically elevated location, the project will enhance the system's resilience. The water reserves provided by the proposed tank will improve the resiliency, redundancy, and reliability of the system in the event of mechanical failures, emergencies, maintenance or repairs of other facilities, or natural disasters such as drought and wildfire. In addition, the tank will be positioned at a higher elevation than any existing water storage infrastructure in the area, improving delivery reliability, particularly to higher-elevation areas. It will improve storage capacity in the system and provide water for drinking, irrigation, and fire protection purposes in Kīhei, Wailea, and Mākena.

C. PROPOSED ACTION

The proposed 2.0 MG Water Storage Tank project includes construction of the new water storage tank, its associated appurtenances, and supporting infrastructure. The project will include clearing, grubbing, and grading, as well as the installation of water, drainage, electrical utilities, and roadway access improvements. The estimated total area to be disturbed for clearing, grubbing, grading, and associated work areas is approximately 7.35 acres.

The water tank will be a pre-stressed concrete structure with an interior wall diameter of approximately 134 feet and will be constructed at an elevation of approximately 387 feet amsl. The tank will have a sidewall height of approximately 22 feet and an overall height of approximately 33.5 feet from the floor to the top of the domed roof.

Two (2) parallel 16-inch inlet and outlet waterlines, each approximately 3,700 feet in length, will connect the tank to DWS' existing water distribution network located near the

mauka end of Līpoa Parkway at an elevation of approximately 224 feet amsl. Four (4) fire hydrants will be installed along the waterline alignment.

Drainage improvements will be provided to manage stormwater runoff and tank overflow and will include a drainage basin, riprap-lined swales, associated drain lines, and outlet structures.

Electrical improvements will include installation of an antenna pole (approximately 35 feet tall) with a photovoltaic panel to supply power to an instrument enclosure. Electrical conduits will be installed within the tank site.

Access to the water tank will be provided from Līpoa Parkway via an existing access road approximately 3,700 feet in length. Approximately 1,500 feet of the road is currently paved; the remaining 2,200 feet of unpaved roadway will be paved as part of the project.

For the protection of the infrastructure, the tank site (the portion of the project upon which the water storage tank will be constructed) will be secured with a gated, 6-foot-high chain link fence.

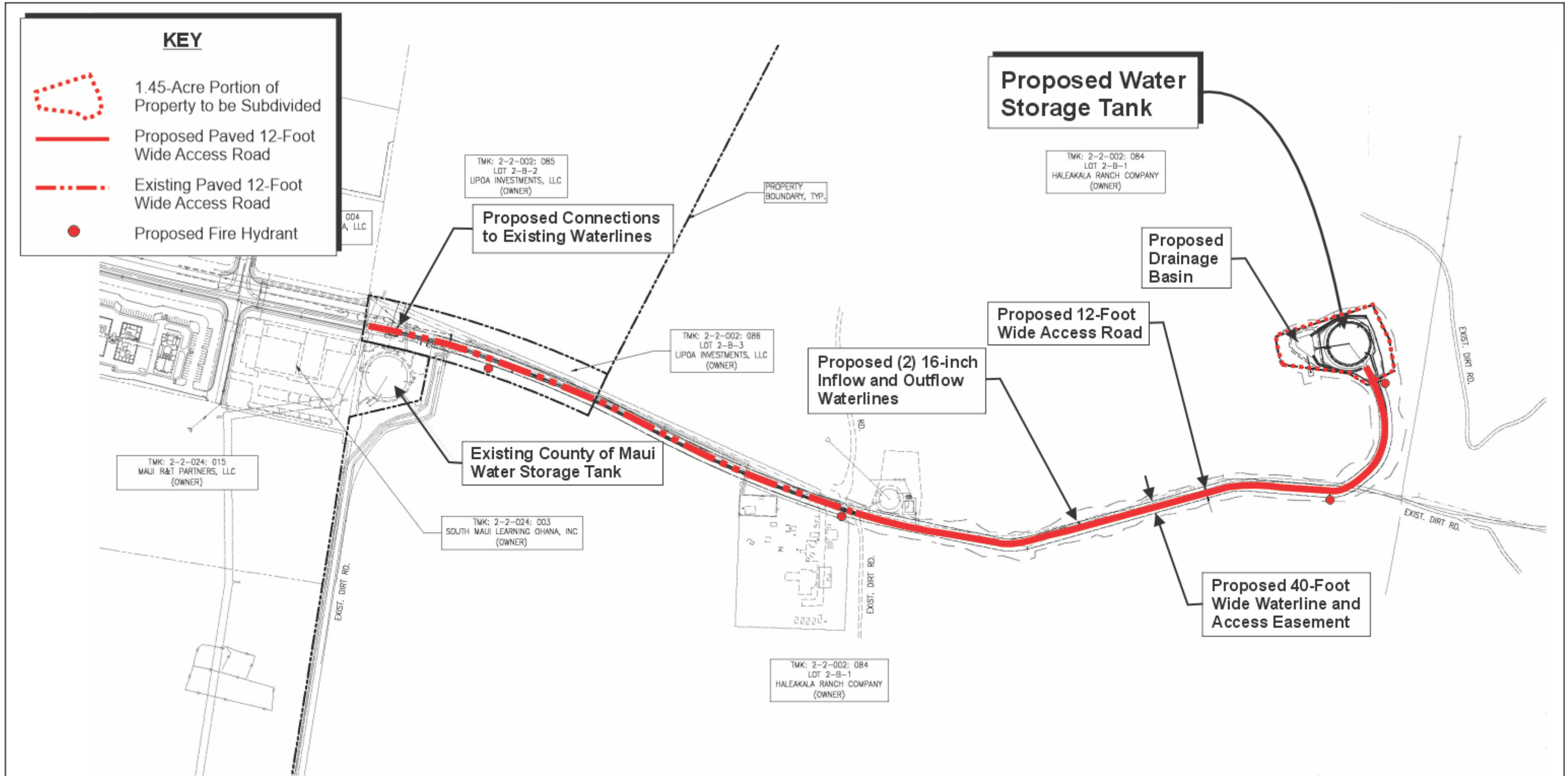
As noted previously, this tank site will be subdivided and the land dedicated to the County. The tank, along with its appurtenant facilities and infrastructure will be owned and maintained by the County, and a 40-foot wide easement will be provided for access and waterline purposes.

See **Figure 3** and project plans in **Appendix "A"**.

D. REGULATORY CONTEXT

1. Chapter 343, Hawai'i Revised Statutes

The proposed water tank project will involve the use of County and/or State funding. The use of County or State funds is a trigger for the preparation of an Environmental Assessment (EA), pursuant to Chapter 343, Hawai'i Revised Statutes (HRS). Based on the scope of work for the proposed project, this document is being prepared in accordance with Chapter 200.1 of Title 11, Hawai'i Administrative Rules (HAR) in order to review the project's technical characteristics, environmental impacts and alternatives, and to advance findings and conclusions relative to the significance of the project. The DWS will serve as the Approving Agency for the project.



Source: Austin, Tsutsumi & Associates Inc.

Figure 3

Proposed 2.0 MG Water Storage Tank
Site Plan

Prepared for: County of Maui, Department of Water Supply

MUNEKIYO HIRAGA

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2. Drinking Water State Revolving Fund Cross-Cutter Requirements

Funds from the Drinking Water State Revolving Fund (DWSRF) are intended to be utilized for this project. As such, compliance with applicable Federal Cross-Cutter requirements will also be addressed during the Chapter 343, HRS environmental review process.

E. PROJECT COST AND IMPLEMENTATION SCHEDULE

The cost of the proposed 2.0 MG Water Storage Tank project is estimated to be approximately $12.5 million.

Project construction is estimated to take approximately 12 months from receipt of all necessary permits.

II. DESCRIPTION OF EXISTING CONDITIONS, POTENTIAL IMPACTS, AND PROPOSED MITIGATION MEASURES

II. DESCRIPTION OF EXISTING CONDITIONS, POTENTIAL IMPACTS, AND PROPOSED MITIGATION MEASURES

A. PHYSICAL SETTING

1. Surrounding Land Uses

a. Existing Conditions

The proposed project is located in Kīhei, mauka of Piʻilani Highway and mauka of the terminus of Līpoa Parkway, with the proposed water storage tank located within a portion of pastureland currently owned by Haleakalā Ranch Company. The immediate surrounding area is characterized by similar agricultural land uses, consisting primarily of open pasture. Comparable infrastructure improvements are located in the vicinity, including the County of Maui's existing water tank at the terminus of Līpoa Parkway, approximately 3,000 feet to the west, and potable water infrastructure associated with a separate private water system, including a smaller tank, about 1,500 feet to the west.

Located makai and beyond the immediate vicinity of the project site is the master-planned community of Līpoa, (formerly known as the Maui Research and Technology Park), which includes a mix of business and commercial uses, government and civic facilities, research and institutional uses, and open space areas. These uses are served by an established network of paved streets and parking areas. Further makai of Līpoa and the project site are Hokulani Golf Villas and Kaiaulu O Halelea (existing residential communities), and the Maui Nui Golf Club.

Across Piʻilani Highway, land uses transition into a more densely developed corridor characterized by a mix of residential, commercial, and civic uses. Development in the vicinity of the Piʻilani Highway and Līpoa Parkway intersection includes County of Maui facilities and parks, as well as Kīhei Elementary School and Lokelani Intermediate School. Refer to **Figure 2**.

b. Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have adverse effects on the surrounding land uses. The project site is located on pastureland in proximity to similar utility infrastructure improvements, including existing water storage facilities in the immediate area. As such, the proposed use

is consistent and compatible with the established infrastructure character of the vicinity.

Temporary construction-related traffic, noise, and emissions are addressed in the respective technical sections of this document. As discussed therein, such impacts will be temporary in nature and will not result in long-term incompatibility with surrounding land uses.

In terms of long-term use, the proposed project will have no significant adverse impact on surrounding land use. The project does not expand potable water source capacity or transmission capacity and does not increase the system's service area. Operation of the proposed water tank will be passive in nature. The facility will function as essential public utility infrastructure and will not alter surrounding land use patterns.

The project represents a public benefit to the area by virtue of improving South Maui's potable water storage infrastructure and supporting long-term reliability and resiliency for the area.

2. Climate

a. Existing Conditions

Like most areas of Hawai'i, South Maui's climate is generally uniform year-round. South Maui's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean all contribute to stable climate conditions. Variations in climate among different regions on Maui are, therefore, largely influenced by elevation, slope, and other local terrain characteristics.

The Kīhei coast is generally sunny, warm, and dry throughout the entire year. Average daily temperatures typically range between 66.3 degrees and 83.9 degrees Fahrenheit in Kīhei. August is historically the warmest month, while February is the coolest (County of Maui, Office of Economic Development, 2022).

Rainfall amounts in South Maui are low year-round, but can vary from month to month. January is the wettest month, with 2.48 inches on average, and April is the driest, with 0.75 inches (County of Maui, Office of Economic Development, 2022).

b. Potential Impacts and Mitigation Measures

The proposed project consists of construction and operation of a water storage tank and related improvements. Significant adverse impacts to climate conditions are not anticipated as the project will not alter local topography at a scale that would affect wind patterns, precipitation, or temperature conditions. It is also noted that the proposed project will enable the County of Maui to improve emergency response capability by increasing stored potable water reserves for fire protection and drought response which are critical in South Maui's dry climate.

3. Wildfire Hazard

a. Existing Conditions

Agencies and organizations such as the State Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW), the Maui Department of Fire and Public Safety (DF&PS), and the Hawai'i Wildfire Management Organization (HWMO) have identified wildfires as an increasingly common hazard to communities and native ecosystems due to dry climatic conditions, non-native invasive species, increased commercial and residential development, and more people living in close proximity to wildland areas. In Hawai'i, wildfire has also been correlated to drought conditions. Wildfire history data show an increase in ignition likelihood and area burned during the warmer drier months of summer. The dry climate of the Kīhei area, combined with the dominant buffelgrass landscape characteristic of pasture land, may pose potential risk of wildfire at the project site.

b. Potential Impacts and Mitigation Measures

During construction, a water truck will be available onsite to mitigate the potential risk of fire ignition and fire safety protocols will be implemented to further reduce the risk.

During long-term use, the proposed water storage tank is not anticipated to pose significant fire risk, as it will be able to operate passively. The tank and supporting improvements will be designed and built in compliance with the Maui Fire Code. It is also noted that, in part, the water storage provided by the proposed project may support fire suppression and control efforts. Several fire hydrants will be installed along the waterline alignment and access road for the purpose of fire control.

4. Greenhouse Gas Considerations

a. Existing Conditions

Greenhouse gases (GHG) (carbon dioxide, methane, nitrous oxide, and fluorinated gases) trap heat in the earth's atmosphere. In the context of climate and ocean warming, increases in levels of atmospheric GHG have been attributed to human activity (IPCC, 2007). Within the State of Hawai'i, the energy sector (including burning fossil fuels for production of electricity, transportation, waste incineration, and natural gas systems) is identified as the source of 89.7 percent of GHG emissions (Hawai'i Department of Health, 2019). Other sources of GHG emissions include industrial facilities, agriculture and forestry, and waste treatment such as landfills, composting, and wastewater treatment.

The Federal Greenhouse Gas Reporting Program (40 CFR Part 98) requires mandatory reporting of GHG emissions from sources that emit 25,000 metric tons or more of carbon dioxide equivalent (CO2 EQ) per year in the United States. Categories of use which are generally associated with this level of reporting include power plants, petroleum and natural gas systems, refineries, and other heavy manufacturing processes. On Maui, the facilities operating at or above the 25,000 metric ton level include Hawaiian Electric Company's Kahului and Mā'alaea Power Plants and the Central Maui Landfill (U.S. Environmental Protection Agency (EPA), 2023). However, both power plants are expected to be decommissioned in the near future due to new emission requirements and aging technology and replaced by other energy sources (University of Hawai'i at Mānoa, 2023).

It is also noted that the State of Hawai'i has set a renewable energy portfolio standard of 100 percent by the year 2045 (Section 269-92, Hawai'i Revised Statutes (HRS)) to minimize dependence on fossil fuel combustion and has declared a policy to reduce GHG emissions to below 50 percent of 2005 levels by the year 2030. This goal follows the successful effort to limit emissions to below 1990 levels by 2020 (Act 238, Session Laws of Hawai'i, 2022).

b. Potential Impacts and Mitigation Measures

The proposed project involves construction of a water tank to provide redundancy and improve resiliency in South Maui's potable water storage infrastructure. The construction process will result in temporary fossil fuel use associated with construction equipment and vehicle trips, as well as indirect carbon emissions associated with the production and transport of the required construction materials. These impacts are nominal in the

context of overall carbon emissions on the island and will be temporary in nature.

Inasmuch as the project is a water storage improvement and operations will be passive in nature, it will not generate significant direct or indirect GHG emissions during long-term operation.

5. Topography and Soil Characteristics

a. Existing Conditions

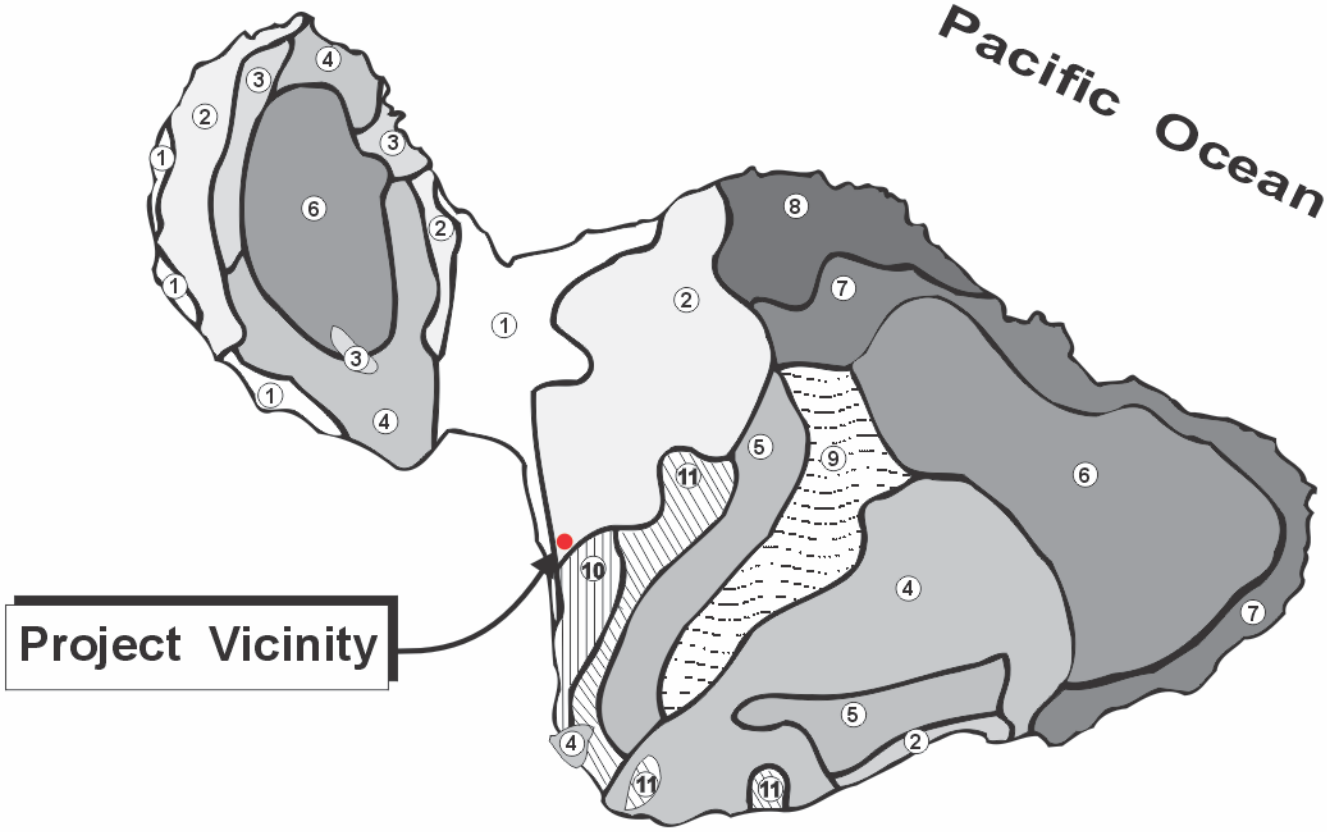
The project site slopes downward in an east to west direction with an average slope of 9 percent. The water tank will be located at about 387 feet amsl and the proposed access road and inlet and outlet waterlines will descend to meet Līpoa Parkway at 224 feet amsl.

The project area spans two (2) general soil associations, namely the Keawakapu-Makena and the Waiakoa-Keahua-Molokai Associations. See **Figure 4**. The *Soil Survey of the islands of Kauai, Oʻahu, Maui, Molokaʻi, and Lānaʻi, State of Hawaiʻi* characterizes the soils of the Keawakapu-Makena Association as consisting of well-drained, medium-textured soils on the low uplands of East Maui. These soils are gently sloping to moderately steep, and developed in material weathered from volcanic ash. The association makes up about two (2) percent of the island. The Waiakoa-Keahua-Molokai Association is characterized by well-drained, moderately fine textured soils on low uplands. The soils are nearly level to moderately steep and were formed in material weathered from basic igneous rocks. This type of soil is made up of about 15 percent of the island (U.S. Department of Agriculture, 1972).

The specific soil classification underlying the proposed water tank site is Keawakapu extremely stony silty clay loam, 3 to 25 percent slopes (KNXD). The access road and connecting waterlines bridge this classification and Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes (WID2). See **Figure 5**.

LEGEND

1. Pulehu-Ewa-Jaucas association
2. Waiakoa-Keahua-Molokai association
3. Honolua-Olelo association
4. Rock Land-Rough Mountainous Land association
5. Puu Pa-Kula-Pane association
6. Hydrandepts-Tropaquods association
7. Hana-Makaalae-Kailua association
8. Pauwela-Haiku association
9. Laumaia-Kaipoipoi-Olinda association
10. Keawakapu-Makena association
11. Kamaole-Oanapuka association



Source: USDA, Soil Conservation Service

Figure 4

Proposed 2.0 MG Water Storage Tank
Soil Association Map

NOT TO SCALE

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\Kihei\WaterTank\Apps\Figs\Soil Association

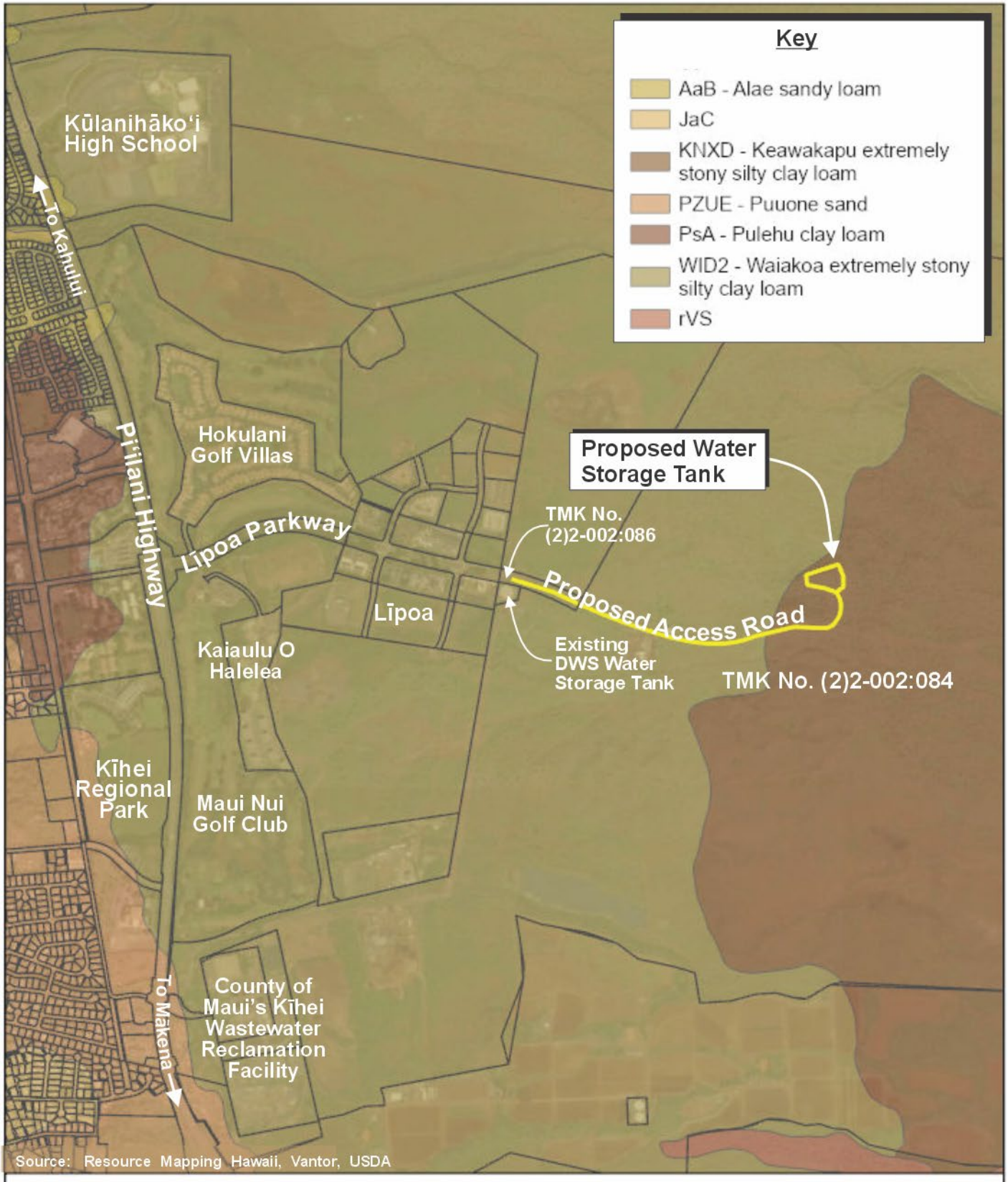


Figure 5

Proposed 2.0 MG Water Storage Tank
Soil Classification Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\KiheiWaterTank\Apps\Figs\Soil Class

KNXD soils are characterized by a two (2) inch thick surface layer of dark reddish-brown extremely stony silt loam atop 16 inches of dark reddish-brown silty clay loam. These soils have moderate permeability, slow to medium runoff, and slight to moderate erosion hazard potential.

WID2 soils generally have 3 to 15 percent of their surface covered with rocks. Underneath, there is a two (2) inch surface layer of dark reddish-brown silty clay loam and a 23-inch subsoil layer of dark reddish-brown and very dark grayish-brown silty clay loam. However, about half of the surface layer has been lost due to erosion in most areas. These soils have moderate permeability, medium runoff, and severe erosion hazard potential.

b. Potential Impacts and Mitigation Measures

Site work will involve grading of the site, installation of the water tank and underground inlet and outlet waterlines, and the reconstruction of the access roadway. In addition to preparing the site for construction, grading improvements will enable efficient collection of runoff. Additional drainage system components will include rip-rap-lined swales, drain lines, and a detention basin. These improvements, together with the implementation of Best Management Practices (BMPs), are considered adequate to control runoff, sedimentation, and erosion that may occur given the site's soil characteristics. See **Appendix "F"**.

6. Agriculture

a. Existing Conditions

The proposed water tank is located in pastureland currently owned by Haleakalā Ranch Company, a cattle ranching business that has been operating on Maui since it was founded in 1888 under the reign of King David Kalākaua. Their current herd is composed of 2,000 Black and Red Angus cattle, which are naturally grass-fed and pasture-raised (Haleakalā Ranch, 2025).

The State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawai'i (ALISH). The ALISH system classifies lands into "Prime", "Unique", and "Other Important Agricultural Land". The remaining lands are "Unclassified". Utilizing modern farming methods, "Prime" agricultural lands have the soil quality, growing season, and moisture supply needed to produce sustained crop yields economically, while "Unique" agricultural lands possess a combination of soil quality, location, growing season, and moisture supply currently used

to produce sustained high yields of a specific crop. “Other Important Agricultural Land” includes those which have not been rated as “Prime” or “Unique”. The project parcel is contained in the Agriculture State Land Use District, but the project site is not located on ALISH land. See **Figure 6**.

Additionally, the University of Hawai‘i (UH) Land Study Bureau (LSB) developed the Overall Productivity rating, which classified soils according to five (5) levels, with “A” representing the class of highest productivity soils and “E” representing the lowest. The project site is located on lands rated E, the lowest productivity classification. See **Figure 7**.

b. Potential Impacts and Mitigation Measures

Though the proposed project will be located on agricultural land, the proposed site is located near similar infrastructure improvements and operations, and the small footprint of the water tank means that any impact to ranching operations will be minimal. As such, the project will not substantially reduce the availability of land for grazing operations or materially affect the viability of ranching activities on the property.

Furthermore, the project site has not been designated as Important Agricultural Land by the State of Hawaii and the soils are rated E, the lowest UH LSB productivity rating. The proposed water tank development is compatible with surrounding agricultural uses, does not interfere with access to adjacent pasture areas, and does not preclude agricultural activities from continuing on adjacent lands. As such, significant adverse impacts to agricultural productivity will not occur as a result of the proposed project.

While the project will result in the permanent conversion of a limited area of pastureland to utility infrastructure, the scale of the conversion is minor relative to the overall agricultural use and will not significantly adversely impact agricultural productivity in the region.

7. Flood and Tsunami Hazard

a. Existing Conditions

The proposed water tank will be located at an elevation of approximately 387 feet above mean sea level (amsl). Due to its upland location mauka of Pi‘ilani Highway, the project site is located outside of both the tsunami evacuation zone and the extreme tsunami evacuation zone. The project site is also located within Flood Zone X, the area of least flood risk as

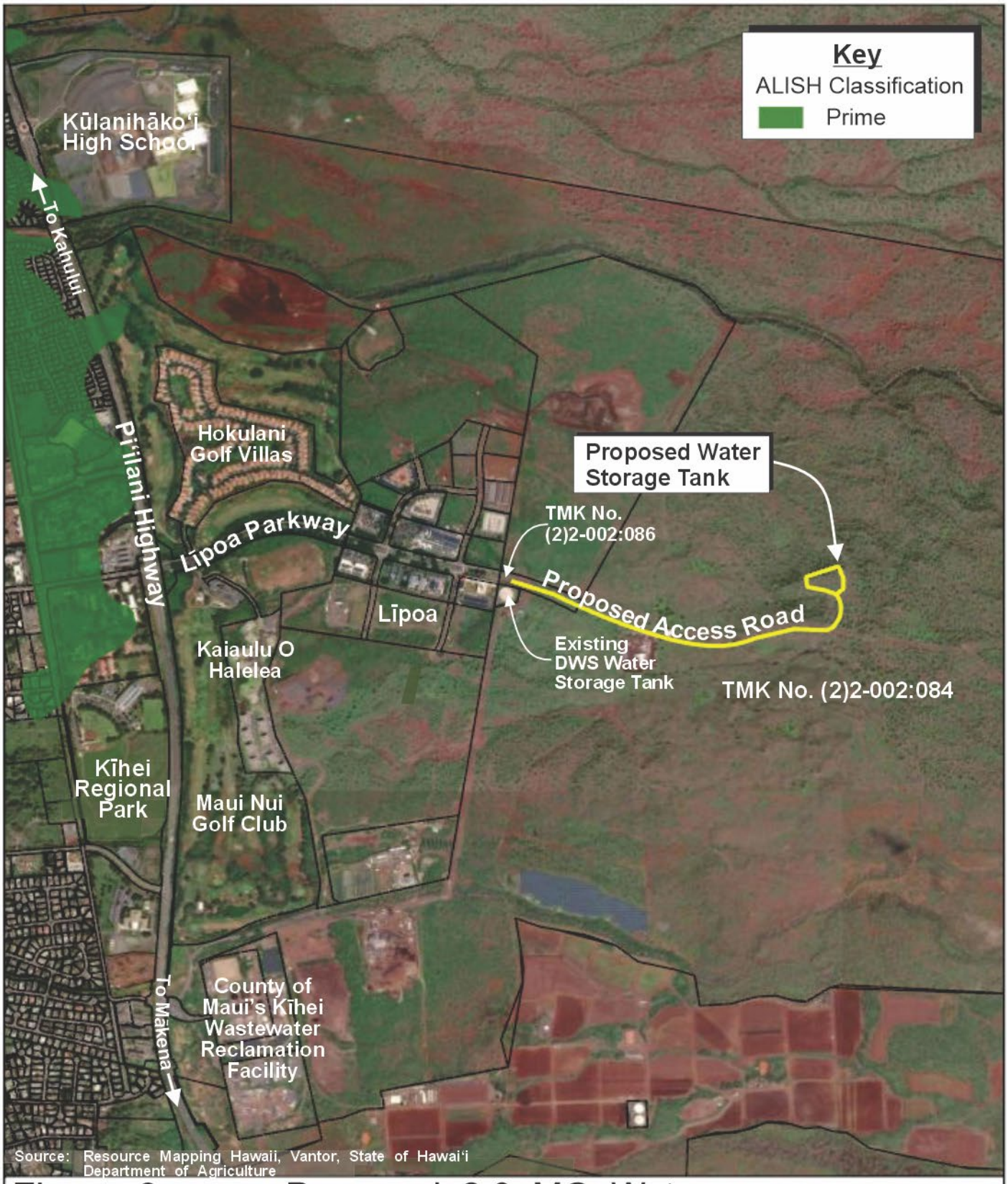


Figure 6

Proposed 2.0 MG Water Storage Tank

Agricultural Lands of Importance to the State of Hawai'i Map

0 750 1,500

Feet

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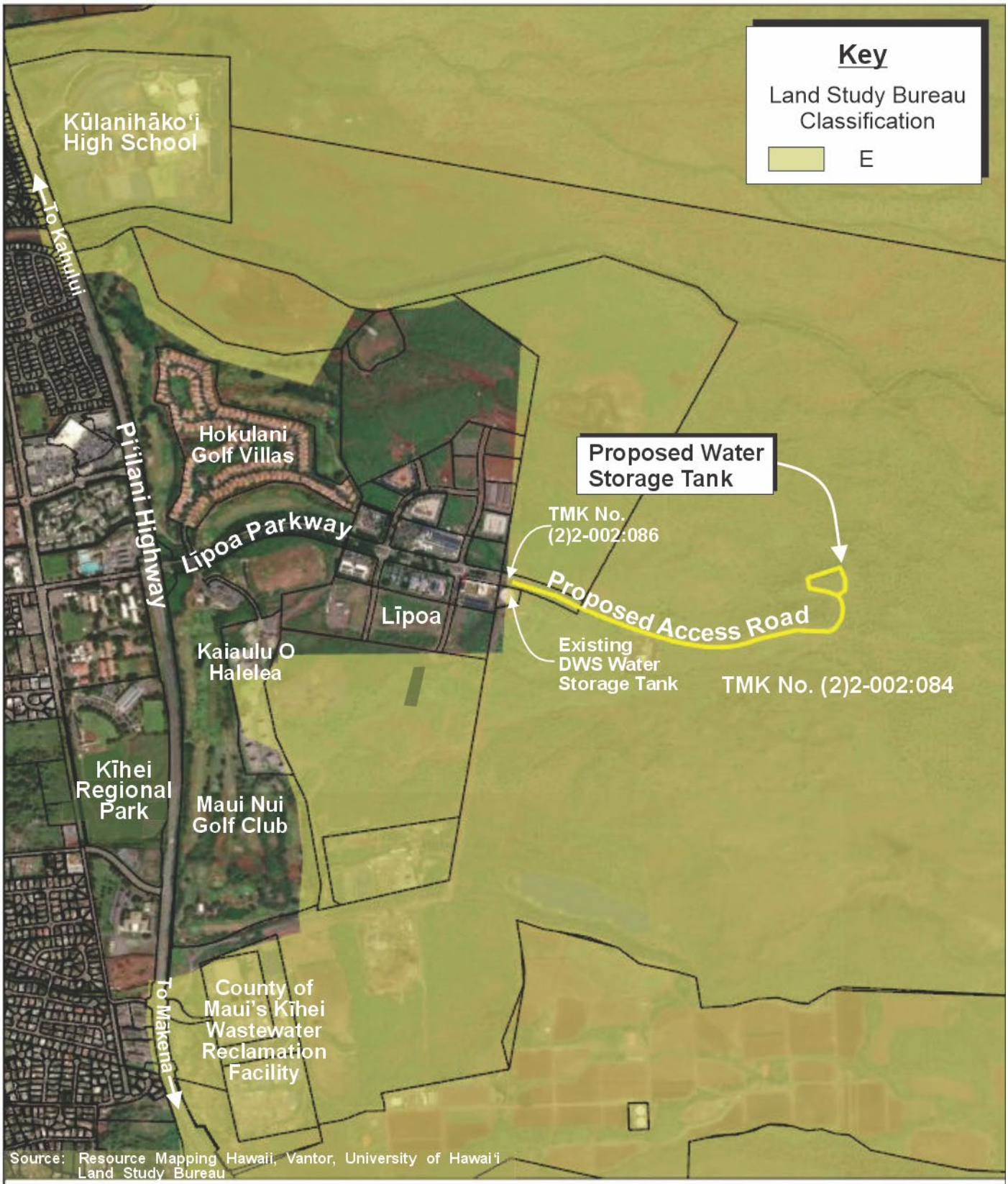


Figure 7

Proposed 2.0 MG Water Storage Tank

Land Study Bureau Map

0 750 1,500

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\Kihei\WaterTank\Apps\Figs\LSB

as identified by the Flood Insurance Rate Map (FIRM). See **Figure 8** and **Figure 9**.

b. Potential Impacts and Mitigation Measures

The proposed project is not located in a high-risk flood zone or a tsunami evacuation zone. As such, no adverse effects related to flood or tsunami hazards are anticipated.

8. Streams and Wetlands

a. Existing Conditions

The nearest stream or gulch to the proposed water tank is Waipuʻilani Gulch, located at a distance of about 0.5 miles to the north. See **Figure 10**. Waimāhaʻihaʻi Gulch is located approximately 0.7 miles to the south.

Waipuʻilani Gulch is part of the Hāpapa Watershed which occupies 10,721 hectares (26,493 acres) of the western flank of Haleakalā and extends from approximately 1,500 meters (4,900 feet) above mean sea level (amsl) to the ocean shore. The community of Kīhei is located within the watershed.

There are no wetlands in the project site or project parcels. The Lāʻie Wetlands are located 1.6 miles makai of the project site, across Piʻilani Highway and on the makai side of South Kihei Road.

b. Potential Impacts and Mitigation Measures

As the project site is not located near a stream or wetland, no adverse effects to bodies of fresh water are anticipated. In compliance with the County of Maui "Rules for the Design of Storm Water Treatment Best Management Practices," stormwater runoff from the project will receive treatment to maintain stormwater quality. The proposed project will incorporate BMPs for runoff water quality including the provision of vegetated filter strips, grassed swales, and dry extended detention ponds. During construction, temporary BMPs will be implemented for erosion and sedimentation control to mitigate potential impacts from construction on downstream properties. With implementation of these measures, no adverse impacts to streams or wetlands are anticipated.

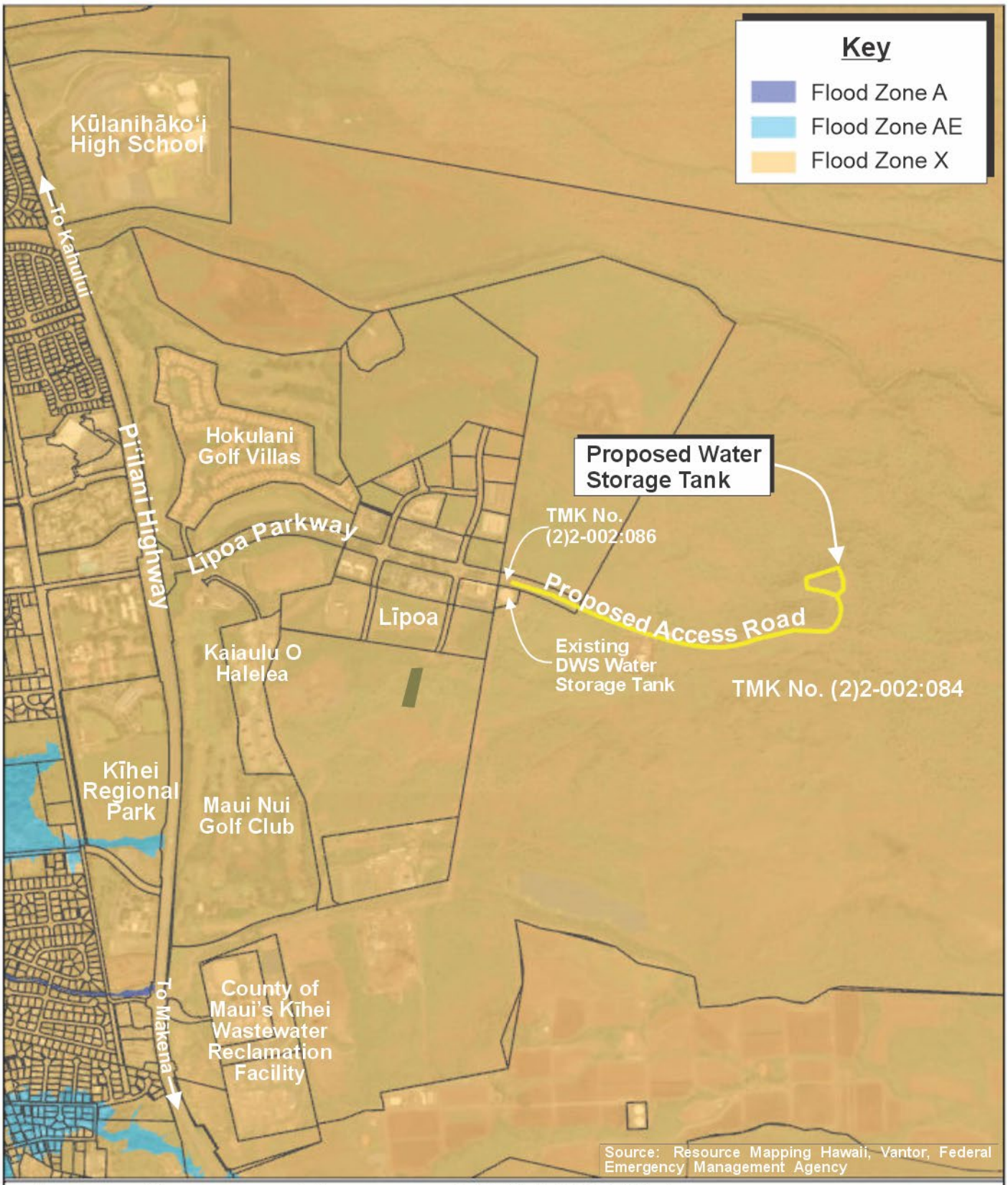


Figure 8

Proposed 2.0 MG Water Storage Tank

Flood Hazard Zones Map

0 750 1,500

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

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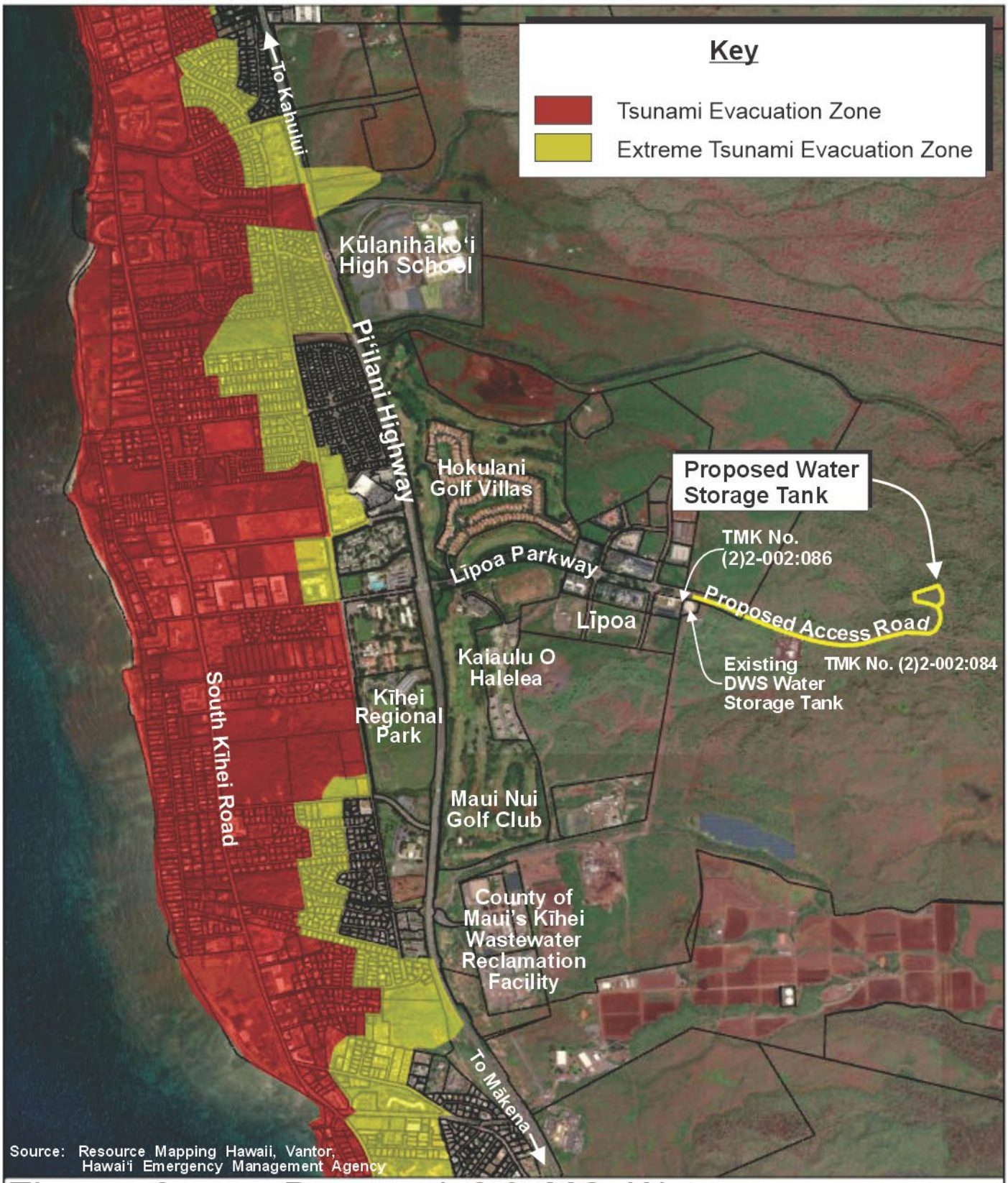


Figure 9

Proposed 2.0 MG Water Storage Tank

Tsunami Zones Map

0 1,000 2,000

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

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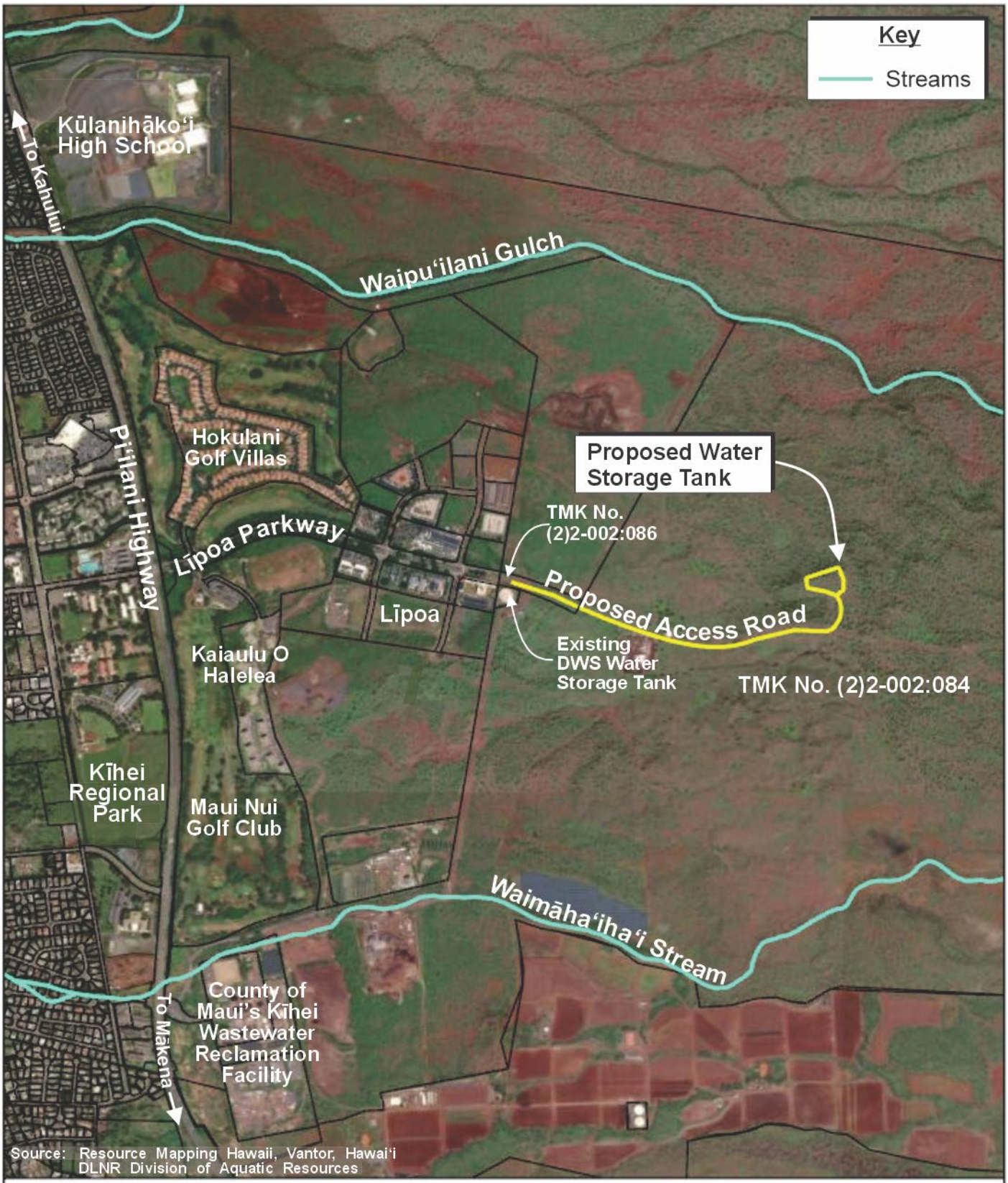


Figure 10 Proposed 2.0 MG Water Storage Tank Streams Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

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9. Sea Level Rise

a. Existing Conditions

The proposed water tank will be located over 2 miles mauka (inland) of the shoreline and at an elevation of approximately 387 feet amsl.

Due to Hawai‘i’s location in the Pacific Ocean, it is often faced with risks due to extreme weather events. Changing climatic patterns caused by climate change result in adverse effects, including rising sea levels, storm surge, increased flood potential, and beach erosion for ocean fronting and shoreline parcels. The Hawai‘i Sea Level Rise Vulnerability and Adaptation Report (Report), updated in 2022, provided a State-wide assessment of Hawai‘i’s vulnerability to sea level rise and recommendations to reduce exposure and sensitivity to sea level rise and increase the State’s capacity to adapt. The Report presents a Sea Level Rise Exposure Area (SLR-XA) to depict the area exposed to potential chronic flooding based on modeling of passive flooding, annual high wave flooding, and coastal erosion. Although the Report provides a range of sea level rise projections and vulnerability scenarios, the 3.2-foot SLR-XA was chosen to depict hazards that may occur in the mid to latter half of this century. The entirety of the project area is located outside of the 3.2-foot SLR-XA (Hawai‘i Climate Change Mitigation and Adaptation Commission, 2022). See **Figure 11**.

b. Potential Impacts and Mitigation Measures

As previously noted, all of the improvements are proposed outside of the SLR-XA. Therefore, the project is not anticipated to be exposed to sea level rise-related coastal flooding or erosion hazards. Significant adverse impacts from sea level rise are not anticipated as a result of the proposed project.

10. Flora and Fauna

a. Existing Conditions

The proposed project is located in Kīhei, mauka of Pi‘ilani Highway and mauka of the terminus of Līpoa Parkway. The tank site is current pastureland, sloping downward in an east to west direction.

A Flora and Fauna Survey Report for the proposed project was prepared by AECOS, Inc. in November of 2024 in order to identify and document existing flora and fauna. See **Appendix “B”**.



Figure 11 Proposed 2.0 MG Water Storage Tank
3.2-Foot Sea Level Rise Exposure Area Map

0 1,000 2,000
Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\Kihei\WaterTank\Apps\Figs\SLRXA

1). Flora

Plant species were identified, and their abundance recorded, during a pedestrian survey of the project site on July 1, 2024. The vegetation was described as highly disturbed pastureland. The undeveloped project area is characterized by a savannah landscape consisting mainly of buffelgrass and Carolina lovegrass interspersed intermittently with kiawe trees, golden crown beard, and the native ʻuhaloa and ʻilima shrubs. In total, 24 species of plants were documented during the survey, of which only ʻuhaloa and ʻilima are indigenous to Hawaiʻi. The remainder are naturalized plants that were brought to the islands after 1778. The two (2) native plants are abundant within the project site, found throughout the area, and are not threatened in the state. No endemic species were found. No plants proposed or listed as threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended were seen in the survey.

2). Fauna

During the same survey, biologists recorded all avian and mammalian species encountered at the project site. Bird species were observed with the aid of binoculars during the morning hours when they are typically most active. Weather conditions for the avian survey were fine, with no rain, light wind, and mostly clear skies. Mammalian species were recorded on sight, or by presence of scat, tracks, and other signs of activity.

Ten (10) bird species were recorded during the avian survey, representing eight (8) different families. All of them are non-native species that have become naturalized in Hawaiʻi. No bird species currently listed or proposed for listing under either the Federal or State of Hawaiʻi endangered species statutes were detected during the survey. Only one (1) mammal was observed, namely the small Indian mongoose. Notably, no signs of the endangered Hawaiian hoary bat were discovered, nor were any native or endangered birds.

Further, the project site is not within nor near federally delineated Critical Habitat.

b. Potential Impacts and Mitigation Measures

The project area consists of previously disturbed pastureland with limited native vegetation. No federally listed threatened or endangered species of plant or animal was documented during the biological survey. Likewise, only a limited number of native plants were found, and no native birds or mammals were sighted. No federally designated critical habitat occurs in or near the project site.

However, it is possible that protected Hawaiian seabirds may fly over the project area, including the Wedge-tailed Shearwater, Hawaiian Petrel, Newell's Shearwater, and Band-rumped Storm-Petrel. When flying at night, seabirds can become disoriented by exterior lighting and crash into man-made structures or the ground. Though these collisions are often not fatal, they render birds vulnerable to predation by feral mammals. To minimize potential danger to these avian species, the Flora and Fauna Report recommends avoiding nighttime construction and shielding exterior lighting. It is noted that nesting habitat for seabirds does not occur in or near the project site, and that no sign of Wedge-tailed Shearwater was documented on the site. The other aforementioned species make their nests at high elevation, meaning that the proposed project will not pose any adverse effects to their nesting routine.

Though the presence of the endangered Hawaiian hoary bat was not detected at the project site, it is possible that the bat uses resources in the area. These bats are solitary and rare, but have a widespread distribution in Hawai'i. The Hawaiian hoary bat uses multiple roosts within a home territory. As such, mitigation measures during construction include specific instruction for tree removal. Adult individuals can usually cope with this disturbance by moving to a remaining tree, but impact can be more severe to pups. The report recommends against clearing woody vegetation taller than 15 feet during the pupping season, which runs from June 1 to September 15 each year. In addition, barbed wire fencing should be avoided as it can be harmful to the bats.

Construction Best Management Practices (BMPs) will be implemented to mitigate impacts to the Hawaiian hoary bat during the pupping season and Hawaiian seabirds, including tree removal restrictions and nighttime lighting controls. As such, no adverse effect to flora and fauna resources is anticipated as a result of the proposed project.

11. Air Quality and Noise

a. Existing Conditions

The air quality of the Kīhei area is generally considered good, with existing airborne pollutants attributed primarily to automobile exhaust from the region's roadways. There are no point sources of airborne emissions in the immediate vicinity of the project site. Other sources of airborne emissions may include construction activities around Kīhei and dust produced from agriculture activities which take place in the Central Maui isthmus. These sources are intermittent, however, and prevailing trade winds quickly disperse any particulates which are generated.

Ambient noise conditions at the project site are characteristic of an upland, undeveloped pastureland setting. Background noise in the vicinity is influenced primarily by distant traffic on Piʻilani Highway and intermittent activity associated with developments located makai of the project area.

b. Potential Impacts and Mitigation Measures

Air quality impacts attributed to the proposed project area will include dust generated by short-term construction-related activities. Site work, such as clearing, grubbing and grading, and roadwork and construction will generate airborne particulates. BMPs, including periodic water spraying of lose soils, will be implemented to minimize air-borne dirt particles from reaching adjacent properties. Refer to **Appendix "F"**.

As with air quality, ambient noise conditions will be temporarily impacted by construction activities. Construction equipment, including bulldozers, loaders, and trucks, will be the dominant source of noise during site construction. However, these impacts will be localized and temporary in nature and the project site is separated by distance from the nearest residential uses.

In the context of long-term operations, the proposed water tank will be passive in nature and is not anticipated to significantly affect ambient noise levels nor generate ongoing air emissions.

12. Historical and Archaeological Resources

a. Existing Conditions

An Archeological Literature Review and Field Inspection Report (LRFI) was prepared for the proposed project by Cultural Surveys Hawaiʻi. See

Appendix "C". The report comprises the findings from both field work, which occurred between August 2020 and November 2021, and background research to determine the likelihood that historical or archeological resources may be affected by the proposed project.

According to the LRFI, the proposed project is located in the Waiohuli Ahupuaʻa, within the Kula Moku. In traditional times, due to the hot, dry climate, traditional food production relied on fishing near the coast, involving the use of several prominent loko iʻa (fishponds). However, potato cultivation could be undertaken in the uplands with the help of increased rainfall at higher elevation.

The Kīhei area was also the site of historic conflict between the aliʻi Kahekili and Kalaniʻōpuʻu, in which Kahekili successfully defended Maui from Kalaniʻōpuʻu who invaded from Hawaiʻi island. Kahekili's reign overlapped with early visits to Maui by European ships, including that of Captain George Vancouver. This period was marked by extreme depopulation of Hawaiian people due to the introduction of western diseases.

Background research conducted for the LRFI determined that no previous archeological studies have been completed for the proposed project site, but included the review of 12 archaeological studies conducted in the vicinity of the broader project area. Historic properties located in the area but outside of the project site mainly consist of pre-contact and historic features used for ranching, agricultural or habitation purposes. Previous research on pre-contact occupation in Kula Moku suggested that most permanent habitations were in the uplands with a smaller permanent population along the coastline.

The field inspection for the LRFI was completed over the course of four (4) person-days, and involved a 100 percent pedestrian survey of the project area. Relevant observations were documented with photographs and GPS locations. The inspection identified two (2) small, stacked stone structures on the project site as either modern hunting blinds or World War II era military training structures. However, subsequent field inspection with the State Historic Preservation Division (SHPD) confirmed the structures to be modern hunting blinds. No historic properties were observed within the project site as part of the field inspection with SHPD. See **Appendix "D"**.

b. <u>Potential Impacts and Mitigation Measures</u>

Grading and excavation will be necessary for the construction of the proposed project. However, based on the findings of the LRFI Report and site inspection by SHPD, the SHPD issued a determination of "No Historic

Properties Affected" for the proposed project. Refer to **Appendix "D"**. As such, archeological monitoring during construction was not required. However, in the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during construction, work will immediately cease in the immediate vicinity of the find and the SHPD will be consulted.

13. Cultural Impact Assessment

a. Existing Conditions

A Cultural Impact Assessment (CIA) report, including a Ka Paʻakai Analysis (KPA), was prepared for the proposed project by Cultural Surveys Hawaiʻi (CSH) to provide cultural and historical context for the project vicinity and assess potential impacts to cultural resources that could be caused by construction of the water tank and supporting infrastructure. In particular, the KPA addresses three specific criteria outlined in the 2000 Hawaiʻi Supreme Court Decision Ka Paʻakai o Ka ʻĀina vs Land Use Commission.

1. The identity and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area.

2. The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action.

3. The feasible action, if any, to be taken by the [agency] to reasonably protect Native Hawaiian Rights if they are found to exist.

See **Appendix "E"**.

Environmental data and interpretation of place names suggest that the lands of the Kīhei area were dry and unproductive for agriculture in pre-contact times as they are today. However, as noted in the previous section, marine resources were plentiful. As such, most of the Native Hawaiian population was centered in the uplands, where there was more rainfall, or by the shoreline. Upland farmers in Kula were highly skilled, and especially well known for cultivating ʻuala (sweet potato). The CIA also noted several moʻolelo (legends and stories), wahi pana (storied places), ʻōlelo noʻeau (proverbs), and mele (songs) that are associated with the project area, as

well as the aforementioned sites of conflict between Kalani‘ōpu‘u and Kahekili.

In addition to background research and two (2) previous cultural studies performed near the proposed project site, the CIA is supported by community consultation. CSH contacted 37 individuals and Native Hawaiian Organizations (NHOs), of which five (5) responded and one (1), Dr. Scott Fisher, Kama‘āina, Chair of the Maui/Lana‘i Island Burial Council, and Director of ‘Āina Stewardship for the Hawai‘i Land Trust, met with CSH for an interview. Background research and Dr. Fisher's consultation identified the following cultural resources and practices currently being exercised in Waiohuli Ahupua‘a:

- Agricultural practices, including kalo cultivation
- Freshwater resources, including Waipu‘ilani and Waimāha‘iha‘i Gulches and Lā‘ie Wetlands
- Marine resources and practices, including loko i‘a (fishponds)
- Wahi pana and mo‘olelo
- Cultural and historic sites, including burials

However, the CIA and KPA note that no ongoing cultural practices were identified within the project area itself. In particular, the proposed water tank is located over two (2) miles from the shoreline, where gathering of marine resources regularly occurs.

b. <u>Potential Impacts and Mitigation Measures</u>

As no ongoing cultural practices were identified by the CIA and KPA within the proposed project site, direct impacts to cultural resources are not anticipated as a result of the project. The CIA and KPA further concluded that "no impacts to ongoing cultural practices were identified within the project area during background research and community consultation." However, Dr. Fisher did express concern related to the broader community, specifically the possibility of sedimentation from the ground disturbing activities causing adverse impacts to the freshwater resources in the vicinity of the proposed project, namely the Waipu‘ilani and Waimāha‘iha‘i Gulches, and the Lā‘ie Wetlands.

Specifically, the KPA provides the following as it relates to the three (3) criteria outlined above:

1. **Valued Cultural, Historical, or Natural Resources in the Project Area:**

   The KPA notes that based on background research and community consultation conducted for the project, the vicinity of the project area has a long history of Native Hawaiian use and modification. The KPA references Waipuʻilani Gulch, located 0.5 miles to the north of the project site, and the Lāʻie Wetlands, located 1.6 miles makai, as well as various fishponds, wetlands, and burials located along the coast. The KPA pointed out that these resources are "far enough from where the current project area is located that they will not be impacted by the proposed project."

2. **The Extent to Which Traditional and Customary Native Hawaiian Resources will be Affected by the Proposed Action:**

   As noted above, the KPA references Dr. Fisher's concern regarding sedimentation from ground disturbing activities that could potentially impact Waipuʻilani Gulch, Waimāhaʻihaʻi Gulch, the Lāʻie Wetlands, and nearshore waters.

   Other historic sites in the vicinity of the project area include traditional Hawaiian temporary habitation and/or marker features.

   The KPA also highlights the LRFI conducted for the project, as well as the consultation with and site visit by SHPD, which provided a determination of "no historic properties affected" for the proposed action.

3. **Feasible Action, if any, to be Taken to Reasonably Protect Native Hawaiian Rights:**

   The KPA notes Dr. Fisher's recommendation to use appropriate and proper means and techniques to reduce sedimentation into the gulches and wetlands, as well as the use of a monitor during ground disturbance activities for the possibility of encountering cultural sites, including iwi kūpuna.

In addition to the recommendations provided by Dr. Fisher and noted above, the CIA and KPA outline the following mitigation measures (Refer to **Appendix "E"**):

- Project construction workers and all other personnel involved in the construction and related activities of the project should be informed

of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the State Historic Preservation Division (SHPD) will be notified pursuant to HAR §13-280-3. In the event that iwi kūpuna are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.

- In the event that iwi kūpuna and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinternment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

In terms of mitigation measures, the drainage improvements on the project site will include rip-rap ditches and a new detention basin (See **Chapter II, Section D-4**).

These improvements are designed to reduce the peak stormwater runoff rate compared to existing conditions, and will therefore prevent additional sedimentation in nearby freshwater resources. Furthermore, the proposed drainage design for the project will manage runoff and comply with the County of Maui "Rules for the Design of Storm Water Treatment Best Management Practices," and stormwater runoff from the project will receive treatment to maintain stormwater quality. The proposed project will incorporate BMPs for runoff water quality including the provision of vegetated filter strips, grassed swales, and dry extended detention ponds. During construction, temporary BMPs will be implemented for erosion and sedimentation control to mitigate potential impacts from construction on downstream properties.

With these measures in place, the proposed project is not expected to have adverse effects on downstream properties. Refer to **Appendix "F"**.

With regard to subsurface archaeological resources, the findings of the LRFI Report and site inspection by SHPD led SHPD to issue a determination of "No Historic Properties Affected" for the proposed project and require no further work for the project. Refer to **Appendix "D".**

With the above-mentioned controls in place, adverse impacts to cultural resources are not anticipated as a result of the proposed project. Refer to **Appendix "E"**.

14. Scenic and Open Space Resources

a. Existing Conditions

The project site is located mauka (inland) of urban Kīhei, between Piʻilani Highway to the west and the slopes of Haleakalā to the east. Primary view corridors in the area include views from Kīhei towards Haleakalā, as well as views toward Mauna Kahālāwai (West Maui Mountains) to the northwest and toward the Pacific Ocean to the west. Residential, business/commercial, and recreational uses are located makai of the project site and between the project site and the ocean.

The project site consists of open pastureland within a broader upland landscape characterized by agricultural use and some utility infrastructure.

b. Potential Impacts and Mitigation Measures

The proposed water tank lies within the general upland backdrop of the slopes of Haleakalā. However, the project site is located approximately 7,000 feet from Piʻilani Highway, the nearest public roadway, and is separated from urban Kīhei by distance and intervening development. The proposed tank will have an overall height of approximately 33.5 feet from the finished floor elevation to the top of the domed roof.

Due to its distance from primary public viewpoints, its location within an agricultural and utility context, and the presence of existing water storage infrastructure in the vicinity, the project is not anticipated to substantially degrade scenic view corridors. Views toward Haleakalā, Mauna Kahālāwai, and the ocean will remain largely intact.

Accordingly, adverse impacts to scenic or open space resources resulting from the project are not anticipated.

15. Traditional Beach and Mountain Access

a. Existing Conditions

There are no known traditional beach or mountain access points within the project area.

b. Potential Impacts and Mitigation Measures

The proposed project will be limited to construction of the new water tank, its associated appurtenances, and supporting infrastructure. Significant adverse impacts to traditional beach and mountain access are not anticipated as a result of the project.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Regional Setting

a. Existing Conditions

The project site is located within the Kihei-Makena Community Plan region, which stretches from Mā‘alaea in the north to La Perouse Bay in the south. The region includes a mix of residential, commercial, visitor-serving, and open space uses. With its dry and mild climate and proximity to recreation-oriented shoreline resources, the visitor-based economy has grown steadily over the years. The town of Kīhei serves as the commercial and residential center of the region, with the master-planned communities of Wailea and Mākena serving as the focal points for the majority of visitor activities. A number of internationally recognized luxury hotels and golf courses are located further south along the coastline at Wailea and Mākena.

As mentioned previously, the master-planned community of Līpoa provides the immediate setting of the proposed project. The Līpoa community includes a mix of business and commercial uses, government and civic facilities, research and institutional uses, and open space areas. Further makai of Līpoa and the project site are Hokulani Golf Villas and Kaiaulu O Halelea (residential communities) and the Maui Nui Golf Club.

b. Potential Impacts and Mitigation Measures

The proposed project will improve potable water storage redundancy and resiliency within the County of Maui’s existing water system. The project does not expand the system’s source capacity, transmission capacity, or service area. Accordingly, significant adverse impacts to the regional character of the Kīhei area are not anticipated.

2. Population and Demography

a. Existing Conditions

According to the 2020 U.S. Census, the population of Maui County was 164,754 in that year, an increase of 6.4 percent since 2010, when the County had a population of 154,834 (U.S. Census Bureau, 2020). It is noted, however, that population growth over the past decade has been uneven, with stronger growth in the early part of the decade. The U.S. Census Bureau's annual population estimate data indicates that the Maui County population grew steadily between 2010 and 2014, when annual population growth rates ranged from 1.2 percent to 1.3 percent. On the other hand, the estimated population in 2014 was 163,036, showcasing slower growth between 2014 and 2020. Furthermore, the American Community Survey 2023 population estimate for Maui County was 164,244, a slight decrease from 2020 (American Community Survey, 2023). Possible explanations for the decline in population growth include the effects of the Covid-19 pandemic and the recent wildfire in Lahaina.

The State of Hawai'i, Department of Business, Economic Development and Tourism (DBEDT) publishes population projections through 2050. According to the latest forecast, which was published in 2024, Maui County's population is expected to grow to 184,870 by 2040 (State of Hawai'i, DBEDT, 2024).

The proposed project is located within the Kihei-Makena Community Plan Area (also known as the South Maui Community Plan Area). According to the Population and Employment Forecast prepared for the South Maui Community Plan update, South Maui had approximately 29,000 residents, or 17 percent of Maui County's estimated population, in 2019. The percentage of the county's population living in South Maui has consistently been around 17 percent for the last decade. The communities of Kīhei and Wailea, in turn, have about 77 percent and 21 percent of South Maui's population, respectively, with the remaining portion living in Mā'alaea and Mākena. (Leland Consulting Group, 2019)

The proportion of the Maui population living in South Maui is not expected to change significantly in the coming years. To be precise, the population of South Maui is projected to increase by between 3,700 residents, in a low growth scenario, and 6,100 residents, in a high growth scenario, by 2045 (Leland Consulting Group, 2021).

South Maui households have historically been smaller than households in the county as a whole. In April 2018, South Maui averaged 2.59 residents

per household, compared to 3.05 for the rest of Maui County. South Maui has a slightly smaller share of households (15 percent versus 19 percent) earning $100,000.00 to $149,999.00 annually, and a slightly larger share of households those earning at least $150,000.00 (21 percent versus 19 percent), compared to the county overall (Leland Consulting Group, 2021).

With regard to demographics, South Maui is predominately made up of people who identify as being of one (1) race. Approximately 54 percent of the total South Maui population is White. People who identify as Asian make up about 18 percent of the South Maui population, while only six (6) percent are Native Hawaiian (U.S. Census, 2020). About 17 percent of people living in the area identify with being two (2) or more races. In comparison, 34 percent of Maui's total population identifies as White, 27 percent as Asian, 11 percent as Native Hawaiian, and 24 percent as having two (2) or more races (U.S. Census, 2020).

b. Potential Impacts and Mitigation Measures

The proposed project will not adversely affect population or demographic conditions. The project provides water storage redundancy and does not expand source capacity, transmission capacity, or the system's service area. As such, the proposed project is not anticipated to stimulate population growth. Rather, the project will improve water system reliability. The project is not anticipated to adversely affect any low-income or minority groups.

3. Economy and Labor Force

a. Existing Conditions

The economy of Maui is strongly influenced by the visitor industry, which supports the retail and service industries. The visitor industry is especially evident in the Kīhei-Mākena region, which is one of the State's major tourist destination areas. The foundation for the region's visitor strength lies in the availability of world-class resorts, hotels and visitor accommodations, and recreational facilities throughout Kīhei, Wailea, and Mākena.

Alongside visitor accommodations, various support services are found in Kīhei, where numerous retail commercial centers are located. North Kīhei contains mixed retail, office and warehouse spaces, South Kīhei offers beach-oriented retail, and Wailea offers higher-end retail and offices. In the vicinity of the project site, there are shopping centers with retail and office spaces, public recreation areas, schools, medical facilities, and residential neighborhoods.

The University of Hawai‘i Economic Research Organization (UHERO) projects that Hawai‘i continues to edge into a mild recession, with a tourism downturn underway. Job losses are expected to occur in a number of sectors in 2026. Inflation, while currently low, is projected to rise as tariffs pass through to consumers. UHERO notes that construction remains the one consistently strong sector, supported by major new federal contracts and ongoing housing and infrastructure needs (UHERO, 2025). The unemployment rate in December 2025 for Maui County was 2.4 percent compared to 3.4 percent in January 2025 (State of Hawai‘i, Department of Business, Economic Development and Tourism, 2026).

b. Potential Impacts and Mitigation Measures

The proposed project will result in temporary construction employment and related short-term economic activity. Long-term operation of the water tank will be passive in nature and will not generate substantial ongoing employment. No significant adverse impacts to the economy or labor force are anticipated.

4. Housing

a. Existing Conditions

The project site is located in Kīhei, the commercial and residential center of South Maui. Kīhei contains a mix of affordable and market priced single- and multi-family residential neighborhoods. The Maui County General Plan and Maui Island Plan encourage expansion of residential growth in the Kīhei-Mākena region, with a number of new residential and in-fill developments being captured within the Urban Growth Boundary of the Maui Island Plan.

The South Maui Community Plan Housing Technical Resource Paper noted the price of housing has increased steadily at a rate much higher than inflation over the past decade, indicating that demand has increased more quickly than supply. Compared to elsewhere in Maui County, a greater proportion of South Maui households spend more than 30 percent of their income on housing costs (rent or mortgage) (Leland Consulting Group, 2021).

b. Potential Impacts and Mitigation Measures

The proposed project is intended to improve potable water storage reliability within the existing DWS service area. The project does not increase water supply or expand the service area and is not a population

generator. As such, the project is not anticipated to affect housing supply, demand, or affordability in South Maui.

C. PUBLIC SERVICES

1. Solid Waste Disposal

a. Existing Conditions

Solid waste collection service is provided by the County of Maui and private collection companies. Residential solid waste collected by County crews is disposed of at the County's Central Maui Landfill facility, located four (4) miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill also accepts commercial waste from private collection companies and maintains a County supported green waste recycling facility. A new expansion to the landfill facility is planned to ensure continuing service capacity for island residents and visitors.

b. Potential Impacts and Mitigation Measures

Construction of the proposed project will generate temporary construction debris associated with site preparation, grading, and utility installation. Construction waste will be disposed of at an approved facility in accordance with applicable regulations.

Because the project consists of a passive water storage facility, no ongoing solid waste generation is anticipated during long-term operation.

Significant adverse impacts to solid disposal are not anticipated.

2. Medical Facilities

a. Existing Conditions

The only major medical facility on the island is Maui Memorial Medical Center, located approximately 12 miles from Kīhei, midway between Wailuku and Kahului. The 219-bed facility provides general, acute, and emergency care services.

Clinics and offices are situated throughout the Kīhei and Wailea areas, but these offer medical services on a lesser scale. Such clinics include Kīhei Clinic and Wailea Medical Services, Kīhei Pediatric Clinic, Kīhei Physicians, the Kīhei-Wailea Medical Center, Maui Medical Group, and Kaiser Permanente.

b. Potential Impacts and Mitigation Measures

The proposed water tank project will not generate population growth or ongoing operational demand that would increase use of medical facilities. Temporary construction activities will comply with applicable occupational health and safety requirements. No adverse impacts to medical service capacity are anticipated.

3. Police and Fire Protection

a. Existing Conditions

The headquarters of the County of Maui, Police Department (MPD) are located at its Wailuku Station. The department consists of several patrol, support, administrative, and investigative divisions that service the Hāna, Lānaʻi, Lahaina, Molokaʻi, and Wailuku regions.

The MPD also has a Kīhei Station that services the Kīhei-Mākena region from a facility along Piʻilani Highway, in close proximity to the proposed water tank.

Fire prevention, protection, and suppression services are provided by the County of Maui, Department of Fire and Public Safety (DF&PS). The Kīhei Fire Station, which services the Kīhei-Mākena region, is situated on South Kīhei Road near Kalama Park. Meanwhile, the Wailea Fire Station is located several miles to the south and services the area from Kamaole Beach Park II to Mākena while also providing back-up support for the Kīhei Station when required.

b. Potential Impacts and Mitigation Measures

As a utility improvement project, the proposed project will not expand service area boundaries or generate new population that would increase demand for police or fire services. In contrast, the proposed project will serve to benefit the existing community by enhancing water storage redundancy and reliability, thereby supporting fire suppression capability within the South Maui region. It is noted that four (4) fire hydrants will be installed along the waterline alignment to provide onsite fire protection capability.

Temporary traffic control measures may be required during project construction. However, as noted above, the proposed project takes place mauka of the terminus of Līpoa Parkway, so traffic impacts are likely to be

minor. No adverse impacts to police or fire protection services are anticipated.

4. Educational Facilities

a. Existing Conditions

The State Department of Education (DOE) operates four (4) schools in the Kīhei area. Kīhei Elementary School and Kamaliʻi Elementary School each cover grades Kindergarten to 5, and Lokelani Intermediate School covers grades 6 to 8. Kūlanihākoʻi High School covers grades 9 to 12. Two (2) public charter schools are located in the region. The Kīhei Public Charter School and the Hawaiʻi Technology Academy both serve grades Kindergarten to 12. The University of Hawaiʻi Maui College (UHMC), located in Kahului, is the primary higher education institution serving Maui.

b. Potential Impacts and Mitigation Measures

The proposed project will not generate population growth and therefore will not increase enrollment demand at area schools. The Kīhei Charter School is located within the master-planned community of Līpoa and near the terminus of Līpoa Parkway. Construction of the proposed project will occur on lands mauka of Līpoa Parkway and the school. As such, school access during construction will be maintained. Construction noise will be temporary and is not anticipated to disrupt educational programming. Accordingly, no significant adverse impacts to educational facilities are anticipated.

5. Recreational Facilities

a. Existing Conditions

Diverse recreational opportunities are available in the Kihei-Makena Community Plan region. Shoreline activities, such as fishing, surfing, jogging, camping, picnicking, snorkeling, swimming, and windsurfing, are the predominant forms of recreation in the area. Numerous public park facilities exist within a relatively short driving distance of the project site, including Waipuʻilani Park and Kīhei Regional Park. Other recreational resources available include the Kīhei Community Center and Aquatic Center, as well as the Maui Nui Golf Club.

b. Potential Impacts and Mitigation Measures

The proposed water tank does not abut any public recreational spaces. Construction work, including noise and air quality effects, will not interrupt

recreational land uses or shoreline resources. Long-term operation of the water storage facility will be passive in nature and will not affect recreational resources.

No significant adverse impacts to recreational facilities are anticipated.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

The proposed tank is located in pastureland in Kīhei. The nearest road is the privately owned Līpoa Parkway, by which the site will be accessed. Piʻilani Highway is the nearest public roadway. These and other roads in the vicinity of the project site are described below:

1. Piʻilani Highway

Piʻilani Highway is a four-lane, State arterial highway providing access between Kīhei and Wailea, and runs parallel to and mauka of South Kīhei Road. It is the main arterial road in the area. In addition to paved shoulders, Piʻilani Highway has traffic signals and right- and left-turn lanes at major intersections. It narrows to two (2) lanes near the Maui Meadows subdivision south of Kilohana Drive and ends at Wailea Ike Drive in the Wailea Resort.

2. Liloa Drive

Liloa Drive (also referred to as the North-South Collector Road), is a two-lane, undivided County roadway between East Waipuʻilani Road and Halekuai Street. Exclusive left-turn lanes are provided at its major intersections, with the exception of the intersection with Piʻikea Avenue which has been converted to a roundabout.

3. Līpoa Street

Līpoa Street is a two-lane, County road that runs from Piʻilani Highway at its east terminus, to South Kīhei Road at its west end. The Kīhei Community Center and Kīhei Aquatic Center are located along this road, as well as Kīhei Elementary School. Līpoa Street transitions to Līpoa Parkway mauka of Piʻilani Highway.

4. Līpoa Parkway

Līpoa Parkway is a private roadway that intersects Piʻilani Highway from the east and forms the access road for the Līpoa master-planned community, as well as for Hokulani Golf Villas and Kaiaulu O Halelea (existing residential developments), and the Maui Nui Golf Club. It has two (2) lanes at the highway intersection and later broadens to two (2) lanes in each direction, separated by a landscaped median. The posted speed limit ranges from 15 to 20 miles per hour.

5. Līpoa Development Private Roads

The master-planned community of Līpoa contains other privately owned roads branching off of Līpoa Parkway that provide access to its various properties. These include North Holopono Street, South Holopono Street, North Ninau Street, South Ninau Street and Hoʻokena Street. All of these streets have two (2) lanes with posted speed limits of 20 miles per hour.

b. Potential Impacts and Mitigation Measures

Construction activities for the proposed project, including the installation of the inlet and outlet waterlines and improvements to the existing access road will occur mauka of Līpoa Parkway. Līpoa Parkway primarily serves the master planned community of Līpoa and does not function as a through route for the broader community.

Temporary traffic control measures may be required during construction; however, impacts are anticipated to be localized and short-term in nature. Access to properties within the Līpoa community will be maintained. Any required lane closures or traffic control measures will be coordinated with affected property owners.

Following construction, the access road mauka of Līpoa Parkway will be restored in accordance with applicable requirements. Long-term operation of the water tank will not generate regular traffic as the operation will be passive in nature. No significant adverse impacts to roadway infrastructure are anticipated.

2. Water System

a. Existing Conditions

The County of Maui, Department of Water Supply's (DWS) Central Maui Water System infrastructure provides drinking water to the area between Waiheʻe and Pāʻia on Maui's north shore; Kahului, Wailuku, and Waikapū in Central Maui; and the area between Māʻalaea and Mākena in South Maui, including Kīhei.

The Central and Wailuku Aquifer Sector Areas (ASEAs) provide water for the Central Maui Water System. However, the majority of potable water supplied to the system is sourced from the Wailuku ASEA's ʻĪao and Waiheʻe aquifers alone (County of Maui, Department of Water Supply, 2019). Although not connected to the Kamaʻole aquifer, the proposed water storage tank site is located in the region of the Kamaʻole aquifer within the Central ASEA. Within the area, DWS operates an existing 2.0MG water storage tank at the mauka terminus of Līpoa Parkway with transmission and distribution lines in the vicinity.

It is noted that this region of Kīhei is also serviced by a non-potable water storage, transmission, and distribution system that is developed and managed by the County of Maui Department of Environmental Management (DEM), Wastewater Reclamation Division (WWRD). A 12-inch diameter transmission and distribution line provides non-potable (R-1) reclaimed water to the region. The County of Maui's Kīhei Wastewater Reclamation Facility is located nearby with R-1 infrastructure servicing the Līpoa community in the vicinity and beyond.

b. Potential Impacts and Mitigation Measures

The proposed water storage tank will be connected to the Central Maui Water System upon its completion, adding 2.0 MG of potable water storage capacity to the portion of the system serving South Maui. The project does not involve the development of a new water source within the Central Maui System nor the Kamaʻole aquifer where it is located. Further, the project does not increase transmission capacity, nor does it expand the system's service area. Instead, it improves system redundancy, resiliency, and reliability.

The additional storage capacity, along with the fire hydrants proposed along the waterline alignment, will also enhance emergency response capability, including fire protection and drought preparedness. Accordingly,

the project represents a beneficial improvement to the existing water system. No adverse impacts to water infrastructure are anticipated.

3. Wastewater System

a. Existing Conditions

The Kīhei region is currently serviced by a wastewater collection, treatment, and disposal system mostly owned and operated by the DEM, WWRD. The County-owned system consists of ten (10) pump stations and force mains which convey wastewater through the County's transmission lines. Wastewater is collected mainly by gravity fed lines that generally flow from mauka to makai. Those lines feed into the main sewer trunk line under South Kīhei Road and Wailea Alanui Drive. The combined flows are transported to the Kīhei Wastewater Reclamation Facility (WWRF), which is located mauka of Piʻilani Highway. The Kīhei WWRF provides treatment for the South Maui region to produce recycled water at the R-1 level, according to State Department of Health standards. R-1 recycled water is the highest quality of recycled water identified by the State Department of Health. There are also a number of private pump stations and sewers that exist in Kīhei, though all of them discharge into the County-owned system.

It is noted from the South Maui Community Plan Infrastructure and Public Facilities Assessment that the Kīhei WWRF is currently receiving up to 3.8 million gallons per day (mgd), of wastewater inflow, or 47 percent of its designed capacity. (Leland Consulting Group, 2021)

b. Potential Impacts and Mitigation Measures

The proposed water tank project will not generate wastewater flows and does not require connection to the wastewater system. The project will not interact with or affect existing wastewater collection, treatment, or disposal infrastructure. No adverse impacts to the South Maui wastewater system are anticipated.

4. Drainage

a. Existing Conditions

A Drainage Report has been prepared for the project by Austin, Tsutsumi, and Associates, Inc. (ATA). See **Appendix "F"**. According to the report, the water tank site slopes in an east to west (mauka to makai) direction with an average slope of nine (9) percent. As such, existing stormwater runoff from the site flows to the west towards the Līpoa development until

it is ultimately collected in an existing retention basin, where it typically infiltrates. In larger storms, runoff continues towards Piʻilani Highway, where it enters a culvert and ultimately empties into the Waipuʻilani Mauka Wetland north of Piʻikea Avenue.

b. Potential Impacts and Mitigation Measures

The proposed project will involve construction of a new water tank, as well as work on an access road leading to the tank from the terminus of Līpoa Parkway. Grading work will encompass both the access road and water tank site, which includes an onsite detention basin.

The drainage improvements on the project site will include grading and rip-rap ditches to direct onsite stormwater to the aforementioned detention basin. The system will be designed to capture the stormwater for infiltration into the ground from a 50-year, 1-hour storm recurrence interval in accordance with Maui County requirements. Post construction, total runoff leaving the site is estimated to be approximately 228.22 cubic feet per second (cfs), a decrease of 1.26 cfs compared to current existing conditions. Runoff not captured and percolated in the detention basin will follow the existing drainage patterns as described above.

In compliance with the County of Maui "Rules for the Design of Storm Water Treatment Best Management Practices," stormwater runoff from the project will receive treatment to maintain stormwater quality. The proposed project will incorporate BMPs for runoff water quality including the provision of vegetated filter strips, grassed swales, and dry extended detention ponds. During construction, temporary BMPs will be implemented for erosion and sedimentation control to mitigate potential impacts from construction on downstream properties.

The site design reduces stormwater runoff and does not affect natural drainage patterns. As such, no adverse effects related to drainage are expected.

5. Electrical, Telephone, and Cable Television (CATV) Services

a. Existing Conditions

There are existing overhead utility lines starting from the mauka (eastern) terminus of Līpoa Parkway along the existing access road to the proposed water tank site. The Līpoa master-planned community, Hokulani Golf Villas, Kalaulu O Halelea, and the Maui Nui Golf Club are served by underground utility lines.

Electrical, telephone, and CATV services to the South Maui region are provided by Hawaiian Electric Company (HECO), Hawaiian Telcom, and Spectrum, respectively.

b. Potential Impacts and Mitigation Measures

The proposed project will include installation of limited electrical infrastructure to support instrumentation and monitoring equipment at the water tank site. Electrical service will be provided through onsite photovoltaic panels and associated equipment.

The project will not increase demand for electrical, telephone, or cable television services in the region. No significant adverse impacts to utility services are anticipated.

E. CUMULATIVE AND SECONDARY IMPACTS

Pursuant to the Hawai'i Administrative Rules, Chapter 200.1, Section 11-200.1, entitled Environmental Impact Statement Rules, a cumulative impact means:

> *The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.*

The proposed project consists of construction of a 2.0 MG water storage tank to improve redundancy and resiliency within the County of Maui DWS' existing potable water system. The project does not increase source capacity, transmission capacity, or the service area of the Central Maui System. Rather, it provides additional storage within the existing system.

The project is located within an area that includes existing utility infrastructure. The addition of water storage capacity is not anticipated to combine with other past, present, or reasonably foreseeable projects in a manner that would result in cumulatively significant impacts. The project does not introduce new land uses, expand development boundaries, or increase allowable development intensity.

The proposed project is not considered to be part of a larger action, nor would it occur within the context of such actions. There are no direct community growth impacts resulting from or occurring with the subject project. There are no other DWS projects anticipated within the project context.

Secondary impacts are those which have the potential to occur later in time or are farther in distance but are still reasonably foreseeable. They can be viewed as actions of others

that are taken because of the presence of the subject project. Secondary impacts from highway projects can occur, for example, because they can induce development by removing one of the impediments to growth: lack of transportation access. However, the proposed project does not expand water source or transmission capacity and does not increase the system's service area.

There are no foreseeable secondary impacts associated with the proposed project. The proposed project does not constitute an expansion in the capacity of the water system that would result in secondary growth impacts. Rather, the project will bolster the water system's reliability in the event of mechanical failures, emergencies, maintenance or repairs of other facilities, or natural disasters such as drought or wildfire. In addition, the tank will be positioned at a higher elevation than any existing water storage infrastructure, improving delivery reliability, particularly to higher-elevation areas. It will add storage to the system and provide water for drinking, irrigation, and fire protection purposes in South Maui.

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

Pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), all lands in the State have been placed into one (1) of four (4) major land use districts by the State Land Use Commission. These land use districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The proposed project is located within the State "Agricultural" district. See **Figure 12**. Pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), the "Agricultural" districts shall include uses or activities provided by ordinances or regulations of the County in which the "Agricultural" district is located. **Section G** below, outlines the County of Maui's zoning regulations that are applicable to the proposed project. Pursuant to HRS Section 205-4.5 (7), permitted uses in the "Agricultural" district include:

> *"Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures".*

As such, the proposed water storage tank is consistent with the "Agricultural" district designations.

B. HAWAI'I STATE PLAN

Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Plan consists of three (3) parts. Part I includes the Overall Theme, Goals, Objectives, and Policies; Part II includes Planning, Coordination, and Implementation; and Part III establishes Priority Guidelines. Part II of the State Plan covers its administrative structure and implementation process.

The overall theme of the Hawai'i State Plan is governed by the following general principles.

1. Individual and family self-sufficiency
2. Social and economic mobility
3. Community or social well-being

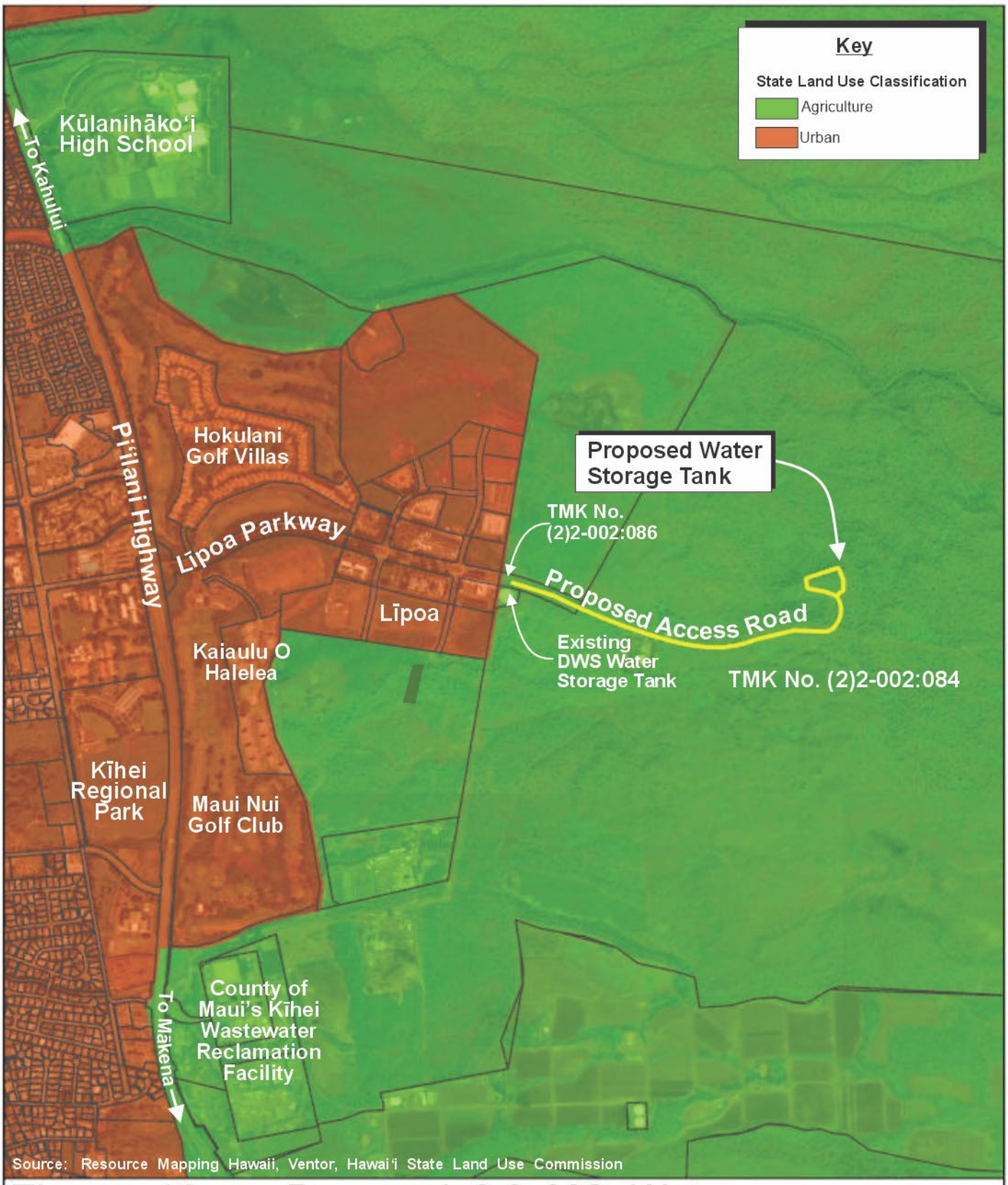


Figure 12

Proposed 2.0 MG Water Storage Tank

State Land Use Districts Map

0 750 1,500

Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\Kihei\WaterTank\Apps\Figs\SLUD

In consonance with the foregoing principles, the Hawai‘i State Plan identifies three (3) clarifying goals:

1. A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai‘i’s present and future generations.

2. A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.

3. Physical, social, and economic well-being, for individuals and families in Hawai‘i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

This section of the environmental assessment examines the applicability of the proposed action as it relates to the objectives, policies, and priority guidelines of the Hawai‘i State Plan, as set forth in HRS Sections 226-5 through 226-27.

The table below summarizes the relationship between the proposed action and the goals of the Hawai‘i State Plan. The relationship between the action and the goals are categorized into the following groups. More detailed analysis and discussion, including the methodology used, is presented in **Appendix “G-1”**.

1. **Directly applicable:** the action and its potential effects directly advances or promotes the objective, policy or priority guideline.

2. **Indirectly applicable**: the action and its potential effects indirectly supports or advances the objective, policy or priority guideline.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Hawai‘i State Plan.

In general, a proposed action’s applicability to the objectives, policies and priority guidelines of the Hawai‘i State Plan is judged on the basis of the action’s direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of “applicability” is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 1** and summarized below focuses on key elements of the proposed action’s relationship to the Hawai‘i State Plan. Detailed discussion on the applicability of the proposed action to each goal and related objectives, policies, and implementing actions of the Hawai‘i State Plan is provided in **Appendix “G-1”**.

Table 1. Hawai'i State Plan, Chapter 226, HRS Part I.
Overall Themes, Goals, Objectives and Policies (HRS 226-1 to 226-27)

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies **Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable**	**DA**	**IA**	**NA**
HRS 226-1: Findings and Purpose			
HRS 226-2: Definitions			
HRS 226-3: Overall Theme			
HRS 226-4: State Goals. In order to ensure, for the present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self determination, it shall be the goal of the State to achieve: (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations. (2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people. (3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.			
Chapter 226-5 Objective and Policies for Population			
Objective:			
It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.			**X**
Chapter 226-6 Objectives and policies for the economy – – in general			
Objectives:			
Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			**X**
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.			**X**
Chapter 226-7 Objectives and policies for the economy – – agriculture.			
Objectives:			
Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawaii's sugar and pineapple industries.			**X**
(2) Growth and development of diversified agriculture throughout the State.			**X**
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.			**X**
Chapter 226-8 Objective and policies for the economy – – visitor industry.			
Objective:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.			X
Chapter 226-9 Objective and policies for the economy – – federal expenditures.			
Objective:			
Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaii's economy.		X	
Chapter 226-10 Objective and policies for the economy – – potential growth and innovative activities.			
Objective:			
Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawaii's economic base.			X
Chapter 226-10.5 Objectives and policies for the economy – – information industry.			
Objective:			
Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region.			X
Chapter 226-11 Objectives and policies for the physical environment – – land based, shoreline, and marine resources.			
Objectives:			
Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.			X
(2) Effective protection of Hawaii's unique and fragile environmental resources.			X
Chapter 226-12 Objective and policies for the physical environment – – scenic, natural beauty, and historic resources.			
Objective:			
Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.			X
Chapter 226-13 Objectives and policies for the physical environment – – land, air, and water quality.			
Objectives:			
Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives.			
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.		X	
(2) Greater public awareness and appreciation of Hawaii's environmental resources.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-14 Objective and policies for facility systems – – in general.			
Objective:			
Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.	X		
Chapter 226-15 Objectives and policies for facility systems – – solid and liquid waste.			
Objectives:			
Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.			X
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.			X
Chapter 226-16 Objective and policies for facility systems – – water.			
Objective:			
Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.	X		
Chapter 226-17 Objectives and policies for facility systems – – transportation.			
Objectives:			
Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			X
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
Chapter 226-18 Objectives and policies for facility systems – – energy.			
Objectives:			
Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation.			X
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;			X
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			X
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-18.5 Objectives and policies for facility systems – – telecommunications.			
Objective:			
Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			X
Chapter 226-19 Objectives and policies for socio-cultural advancement – – housing.			
Objectives:			
Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawaii's population.			X
(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			X
Chapter 226-20 Objectives and policies for socio-cultural advancement – – health.			
Objectives:			
Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.			X
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.			X
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
Chapter 226-21 Objectives and policies for Socio-cultural advancement – – education.			
Objective:			
Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.			X
Chapter 226-22 Objective and policies for socio-cultural advancement – – social services.			
Objective:			
Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.			X
Chapter 226-23 Objective and policies for socio-cultural advancement – – leisure.			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			X
Chapter 226-24 Objective and policies for socio-cultural advancement – – individual rights and personal well-being.			
Objective:			
Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			X
Chapter 226-25 Objective and policies for socio-cultural advancement – – culture.			
Objective:			
Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.			X
Chapter 226-26 Objectives and policies for socio-cultural advancement – – public safety.			
Objectives:			
Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.			X
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			X
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			X
Chapter 226-27 Objectives and policies for socio-cultural advancement – – government.			
Objectives:			
Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.	X		
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			X

The proposed 2.0 MG Water Storage Tank project is directly applicable to objectives and policies related to facility systems and socio-cultural advancement. The proposed project represents an action that will improve public water storage infrastructure and ensure reliable water service for the Kīhei community. The project also indirectly supports other objectives and policies of the Hawai'i State Plan, including those related to conservation of natural resources. The increased storage redundancy and resiliency will ensure that infrastructure remains dependable for the residents of Kīhei. Upgrading water storage

infrastructure also supports the goal of effectively managing potable water as a natural resource.

Priority Guidelines

"Priority guidelines" means those guidelines which shall take precedence when addressing areas of statewide concern. This section addresses applicability criteria to the priority guidelines set forth in HRS 226-103.

Priority guidelines of the Hawai'i State Plan covers the economy, population growth and land resources, crime and criminal justice, affordable housing, quality education, sustainability, and climate change adaptation.

Table 2 below summarizes the relationship between the proposed action and the priority guidelines of the Hawai'i State Plan. More detailed discussion is presented in **Appendix "G-1"**.

Table 2. Hawai'i State Plan, Chapter 226, HRS Part III.
Priority Guidelines (Chapters 226-101 to 226-109)

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines **Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable**	**DA**	**IA**	**NA**
Chapter 226-101: Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
Chapter 226-102: Overall direction. The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.			
Chapter 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy			**X**
(b) Priority guidelines to promote the economic health and quality of the visitor industry			**X**
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries			**X**
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture			**X**
(e) Priority guidelines for water use and development			**X**
(f) Priority guidelines for energy use and development			**X**
(g) Priority guidelines to promote the development of the information industry			**X**
Chapter 226-104: Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution			**X**

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Priority guidelines for regional growth distribution and land resource utilization			**X**
Chapter 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice			**X**
Chapter 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing			**X**
Chapter 226-107: Quality education.			
Priority guidelines to promote quality education			**X**
Chapter 226-108: Sustainability			
Priority guidelines and principles to promote sustainability			**X**
Chapter 226-109: Climate change adaptation priority guidelines			
Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:	**X**		

The project will support the provision of reliable water storage for the residents and businesses of Kīhei. In addition, the new water tank will increase the resiliency of water storage in the Kīhei region, as well as provide several fire hydrants along its waterline alignment, directly supporting the priority guidelines related to climate change adaptation.

C. STATE FUNCTIONAL PLAN

A key element of the Statewide Planning System is the Functional Plans which set forth the policies, statewide guidelines, and priorities within a specific field of activity. There are thirteen (13) Functional Plans which have been developed by the State agency primarily responsible for a give functional area. Together with the County General Plans, the State Functional Plans establish more specific strategies for implementation. In particular, State Functional Plans provide for the following:

- Identify major Statewide priority concerns
- Define current strategies for each functional area
- Identify major relationships among functional areas
- Provide direction and strategies for departmental policies, programs, and priorities
- Provide a guide for the allocation of resources
- Coordinate State and County roles and responsibilities in the implementation of the Hawai'i State Plan

Thirteen (13) Functional Plans have been prepared by State agencies. **Table 3** provides an assessment of the relationship between the proposed action and each of the 13 Functional Plans.

Table 3. Relationship Between the Proposed 2.0 MG Water Storage Tank and the State Functional Plans

	State Functional Plan	State Coordinating Agency	Purpose	Analysis
1	Agriculture Functional Plan (1991)	Department of Agriculture	Continued viability of agriculture throughout the State	The proposed public utility use is a permitted use within State Agricultural lands.
2	Conservation Lands State Functional Plan (1991)	Department of Land and Natural Resources	Addresses issues of population and economic growth and its strain on current natural resources; broadening public use of natural resources while protecting lands and shorelines from overuse; additionally, promotes the aquaculture industry	The proposed project does not involve any Conservation designated lands in the Kīhei service area. As such, the proposed project is not applicable to the Conservation Lands State Functional Plan.
3	Education State Functional Plan (1989)	Department of Education	Improvements to Hawai'i's educational curriculum, quality of educational staff, and access to adequate facilities	The proposed project is not applicable to the Education State Functional Plan.
4	Employment State Functional Plan (1990)	Department of Labor and Industrial Relations	Improve the qualifications, productivity, and effectiveness of the State's workforce through better education and training of workers as well as efficient planning of economic development, employment opportunities, and training activities	The proposed project is indirectly applicable to the Employment State Functional Plan. During construction, the proposed project will support temporary employment in the construction and trades industry. In the long-term, the project will indirectly benefit the economy by virtue of bolstering an essential infrastructure system.
5	Energy State Functional Plan (1991)	Department of Business, Economic Development and Tourism	Lessen the reliance on petroleum and other fossil fuels in favor of alternative sources of energy so as to keep up with the State's increasing energy demands while also becoming a more sustainable island state; achieving dependable, efficient, and economical statewide energy systems	The proposed project is not applicable to the Energy State Functional Plan.
6	Health State Functional Plan (1989)	Department of Health	Improve health care system by providing for those who don't have access to private health care providers; increasing preventative health measures; addressing 'quality of care' elements in private and public sectors to cut increasing costs	The proposed project is not applicable to the Health State Functional Plan.

	State Functional Plan	State Coordinating Agency	Purpose	Analysis
7	Higher Education Functional Plan (1984)	University of Hawai'i	Prepare Hawai'i's citizens for the demands of an increasingly complex world through providing technical and intellectual tools	The proposed project is not applicable to the Higher Education Functional Plan.
8	Historic Preservation State Functional Plan (1991)	Department of Land and Natural Resources	Preservation of historic properties, records, artifacts and oral histories; provide public with information/education on the ethnic and cultural heritages and history of Hawai'i	The proposed project has received a determination of "No Historic Properties Affected" following consultation with the SHPD. As such, the project is not expected to contravene the Historic Preservation State Functional Plan.
9	Housing State Functional Plan (2017)	Hawai'i Housing Finance and Development Corporation	Based largely on joint public/private efforts to finance, build, and maintain an adequate supply of affordable housing. It will be a working tool to guide the State, the counties, as well as the private sector in meeting the overall goal that every Hawaii resident will have the opportunity to live in a safe, decent and affordable home.	The proposed project involves improvements to the Kīhei water storage system which will ensure the reliable provision of drinking water to the residents of Kīhei into the future. The water tank will also be used for fire protection in the event of fire emergencies. As such, the project indirectly supports the Housing State Functional Plan.
10	Human Services State Functional Plan (1989)	Department of Human Services	Refining support systems for families and individuals by improving elderly care, increasing preventative measures to combat child/spousal abuse and neglect; providing means for 'self-sufficiency'	The proposed project is not applicable to the Human Services State Functional Plan.
11	Recreation State Functional Plan (1991)	Department of Land and Natural Resources	Manage the use of recreational resources via addressing issues: (1) ocean and shoreline recreation, (2) mauka, urban, and other recreation opportunities, (3) public access to shoreline and upland recreation areas, (4) resource conservation and management, (5) management of recreation programs/facilities/areas, and (6) wetlands protection and management	The proposed project is not applicable to the Recreation State Functional Plan.

	State Functional Plan	State Coordinating Agency	Purpose	Analysis
12	Tourism State Functional Plan (1991)	Department of Business, Economic Development and Tourism	Balance tourism/economic growth with environmental and community concerns; development that is cognizant of the limited land and water resources of the islands; maintaining friendly relations between tourists and community members; development of a productive workforce and enhancement of career and employment opportunities in the visitor industry	The proposed project is not applicable to the Tourism State Functional Plan.
13	Transportation State Functional Plan (1991)	Department of Transportation	Development of a safer, more efficient transportation system that also is consistent with planned physical and economic growth of the state; construction of facility and infrastructure improvements; develop a transportation system balanced with new alternatives; pursue land use initiatives which help reduce travel demand	The proposed project is not applicable to the Transportation State Functional Plan.

D. HAWAIʻI 2050 SUSTAINABILITY PLAN

The Hawaiʻi 2050 Sustainability Plan is intended to serve as the State's climate and sustainability strategic action plan pursuant to Hawaiʻi Revised Statutes (HRS) Section 226-65. The Hawaiʻi 2050 Sustainability Plan was developed using public engagement consistent with a community-driven approach in addition to collaboration with state and county stakeholder agencies.

The analysis to follow focuses on what the Plan describes as the Decade of Action. The Decade of Action is defined as 2020-2030, a timeframe set by the United Nations during which to accelerate sustainable solutions for the biggest climate challenges. This analysis looks at eight (8) Recommended Actions which contain 38 strategies intended to guide Hawaiʻi to a more sustainable future. **Table 4** outlines the ways in which the project meets the Recommended Actions outlined by the Plan.

Table 4. Hawaiʻi 2050 Sustainability Plan (HRS, Section 226-65)

Hawaiʻi 2050 Sustainability Plan (HRS, Section 226-65) **Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable**	**DA**	**IA**	**NA**
1. Promote a Sustainable Economic Recovery			
Strategy 1: Support farmer livelihoods			X
Strategy 2: Support local markets for locally grown food			X
Strategy 3: Promote sustainable & resilient farmland, practices, and infrastructure			X
Strategy 4: Invest in green workforce development beginning with youth.			X
Strategy 5: Foster the development of jobs that can sustain families financially.			X
Strategy 6: Support diversification of the economy.			X
Strategy 7: Reduce the environmental footprint of the tourism industry.			X
Strategy 8: Support native Hawaiian culture and reduce impacts of the tourism industry to local communities.			X
Analysis: **The proposed project will increase resiliency in the potable water storage infrastructure for South Maui, which will indirectly support the local economy by improving water system reliability. However, the project is not applicable to the specific strategies related to sustainable economic recovery.**			
2. Reduce Greenhouse Gas Emissions			
Strategy 9: Measure, manage, and plan for GHG emission reduction.			X
Strategy 10: Incorporate climate change planning into decision-making processes.			X
Strategy 11: Promote energy conservation and efficiency through outreach, communication, and community and public engagement.			X
Strategy 12: Continue to invest in the deployment of clean energy technologies to reduce reliance on fossil fuels.			X
Strategy 13: Expand the adoption of zero emission vehicles.			X

Hawai‘i 2050 Sustainability Plan (HRS, Section 226-65) Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Strategy 14: Promote alternative modes of transportation.			X
Strategy 15: Reduce the generation of waste, including plastic waste.			X
Strategy 16: Increase diversion of waste through recycling, reuse, and composting.			X
Analysis: **The proposed project consists of a water storage tank and is therefore not applicable to the recommended action of reducing Greenhouse Gas Emissions.**			
3. Improve Climate Resilience			
Strategy 17: Integrate climate change adaptation and resilience considerations into planning and implementation.			X
Strategy 18: Assess and communicate the impacts of climate change to residents, businesses, and communities most likely to be impacted.			X
Strategy 19: Implement actions that improve the state’s resilience to climate change.	X		
Strategy 20: Increase the resilience of vulnerable populations to the impacts of climate change and other shocks and stressors.			X
Analysis: **The proposed project is meant to improve the resilience of the South Maui water storage infrastructure system by way of providing redundancy storage. The water tank will be able to provide relief in the event of drought or damage to the system from coastal or other climate change-related hazards. Further, fire hydrants are proposed along the tank's waterline alignment.**			
4. Advance Sustainable Communities			
Strategy 21: Advance smart growth initiatives and multimodal transportation systems.			X
Strategy 22: Advance sustainability in school and university operations			X
Strategy 23: Integrate sustainable design principles into new and existing buildings.			X
Analysis: **The proposed project constitutes am infrastructure improvement intended to enhance water storage reliability and redundancy and is therefore not applicable to strategies 21-23.**			
5. Advance Equity			
Strategy 24: Strengthen broadband access to support digital learning and online solutions in rural areas.			X
Strategy 25: Continue to improve economic and social sustainability of individuals through access to affordable housing.			X
Strategy 26: Continue to implement strategies that reduce homelessness in Hawai‘i to enhance livelihoods.			X
Strategy 27: Continue to advance opportunities for all, regardless of gender.			X
Analysis: **The proposed project constitutes an infrastructure improvement intended to enhance water storage reliability and redundancy and is therefore not applicable to the recommended action of advancing equity.**			

Hawai‘i 2050 Sustainability Plan (HRS, Section 226-65) Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6. Institutionalize Sustainability Throughout Government			
Strategy 28: Invest in staff and other resources to coordinate and advance sustainability goals across state agencies and local governments.			X
Strategy 29: Update state policies to reflect sustainability and climate change priorities.			X
Strategy 30: Incorporate sustainability into government operations.			X
Analysis: **The proposed project constitutes an infrastructure improvement intended to enhance water storage reliability and redundancy and is therefore not applicable to the recommended action of institutionalizing sustainability throughout government.**			
7. Preserve the Natural Environment			
Strategy 31: Improve water quality through reduced pollution and dumping.			X
Strategy 32: Support water reuse strategies to conserve water.			X
Strategy 33: Establish policies to protect Hawai‘i’s unique marine ecosystems.			X
Strategy 34: Manage climate change impacts to marine resources.			X
Strategy 35: Protect and manage watersheds.			X
Strategy 36: Continue to adopt strategies that protect land-based natural resources.			X
Strategy 37: Conserve working forest landscapes, protect forests from harm, and enhance public benefits from trees and forests.			X
Analysis: **The proposed project constitutes an infrastructure improvement intended to enhance water storage reliability and redundancy and is therefore not applicable to the recommended action of preserving the natural environment.**			
8. Perpetuate Traditional Ecological Knowledge and Values			
Strategy 38: Ground climate and sustainability strategies in our cultural foundation.			X
Analysis: **The proposed project constitutes an infrastructure improvement intended to enhance water storage reliability and redundancy and is therefore not applicable to the recommended action of perpetuating traditional ecological knowledge and values.**			

The proposed water tank directly supports the goal of improving climate resilience as one central purpose of the project is to provide redundancy water storage for use in emergencies such as drought and natural disasters, both of which are occurring with increasing frequency due to climate change. The proposed project will also provide fire hydrants located along the proposed waterline alignment and access road for fire suppression purposes. The proposed water tank is located away from areas at risk of damage from natural hazards, such as Flood Hazard Areas, tsunami evacuation zones, and the Sea Level Rise Exposure Area. As such, it is ideally poised to support water storage in South Maui should failure occur in a more hazard-prone area.

E. GENERAL PLAN OF THE COUNTY OF MAUI

As indicated by the Maui County Charter, the purpose of the general plan shall be to:

> *…indicate desired population and physical development patterns for each island and region within the county; shall address the unique problems and needs of each island and region; shall explain opportunities and the social, economic, and environmental consequences related to potential developments; and shall set forth the desired sequence, patterns, and characteristics of future developments. The general plan shall identify objectives to be achieved, and priorities, policies, and implementing actions to be pursued with respect to population density, land use maps, land use regulations, transportation systems, public and community facility locations, water and sewage systems, visitor destinations, urban design, and other matters related to development.*

Chapter 2.80B of the Maui County Code, relating to the General Plan and Community Plans, implements the forgoing Charter provision through enabling legislation which calls for a Countywide Policy Plan and a Maui Island Plan.

1. Countywide Policy Plan

The Countywide Policy Plan was adopted in March 2010 and is a comprehensive policy document for the islands of Maui County to the year 2030. The plan replaces the General Plan of the County of Maui 1990 Update and provides the policy framework for the development of the Maui Island Plan as well as for updating the nine (9) detailed Community Plans. The Countywide Policy Plan provides broad goals, objectives, policies and implementing actions that portray the desired direction of the County's future. Goals are intended to describe a desirable condition of the County by the year 2030 and are intentionally general. Objectives tend to be more specific and may be regarded as milestones to achieve the larger goals. Policies are not intended as regulations, but instead provide a general guideline for County decision makers, departments, and collaborating organizations toward the attainment of goals and objectives. Implementing actions are specific tasks, procedures, programs, or techniques that carry out policy.

Table 5 below summarizes the relationship between the proposed action and the 11 goals of the Countywide Policy Plan. The relationship between the action and the goals are categorized into the following groups. More detailed analysis and discussion, including the methodology used, is presented in **Appendix "G-2"**.

1. **Directly applicable:** the action and its potential effects directly advances, promotes or affects the relevant goal, objective, or policy.

2. **Indirectly applicable:** the action and its potential effects indirectly supports, advances or affects the objective, policy or priority guideline.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Countywide Policy Plan.

In general, a proposed action's applicability to the goals, objectives, policies and implementing actions of the Countywide Policy Plan is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 5** and summarized below focuses on key elements of the proposed action's relationship to the Countywide Policy Plan provided in **Appendix "G-2"**.

Table 5. Countywide Policy Plan

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
A.	**PROTECT THE NATURAL ENVIRONMENT**			
Goal:	Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.		X	
B.	**PRESERVE LOCAL CULTURES AND TRADITIONS**			
Goal:	Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.			X
C.	**IMPROVE EDUCATION**			
Goal:	Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.			X
D.	**STRENGTHEN SOCIAL AND HEALTHCARE SERVICES**			
Goal:	Health and social services in Maui County will fully and comprehensively serve all segments of the population.			X
E.	**EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS**			
Goal:	Quality, island-appropriate housing will be available to all residents.			X
F.	**STRENGTHEN THE LOCAL ECONOMY**			
Goal:	Maui County's economy will be diverse, sustainable, and supportive of community values.			X
G.	**IMPROVE PARKS AND PUBLIC FACILITIES**			
Goal:	A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.			X
H.	**DIVERSIFY TRANSPORTATION OPTIONS**			
Goal:	Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.			X
I.	**IMPROVE PHYSICAL INFRASTRUCTURE**			
Goal:	Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.	X		

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT			
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.			X
K. STRIVE FOR GOOD GOVERNANCE			
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.			X
L. MITIGATE CLIMATE CHANGE AND WORK TOWARD RESILIENCE			
Goal: Minimize the causes and negative effects of climate change.			X

The proposed project is directly applicable to objectives and policies related to physical infrastructure. The project represents an action that will promote the proper storage of water for the needs of the Kīhei community. The project will improve resiliency in the County water system through development of storage infrastructure in a location that is not susceptible to flood, tsunami, or sea level rise hazards.

2. Maui Island Plan

The Maui Island Plan (MIP) is applicable to the island of Maui only, providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and wastewater systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

1. An island wide land use strategy, including a managed and directed growth plan

2. A water element assessing supply, demand and quality parameters

3. A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration

4. An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule

5. Milestone indicators designed to measure implementation progress of the MIP

The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies and implementing actions. These planning categories address the following areas:

1. *Population*
2. *Heritage Resources*
3. *Natural Hazards*
4. *Economic Development*
5. *Housing*
6. *Infrastructure and Public Facilities*
7. *Land Use*

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally, and culturally prudent. Among the directed growth management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries and rural growth boundaries. The respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

A portion of the project site is located within the UGB of the MIP and a portion is outside of the UGB. However, the project is not intended to expand the capacity or extent of Maui‘s water system, and therefore would not lead to urban growth outside the UGB. The proposed project represents critical utility infrastructure improvements that will support potable water storage in Kīhei. Development of the water tank does not contravene the directed growth strategy defined via growth maps adopted in the MIP. See **Figure 13**.

Table 6 below summarizes the relationship between the proposed action and the goals of the MIP. The relationship between the action and the goals are categorized into the following groups. More detailed analysis and discussion, including the methodology used, is presented in **Appendix “G-3”**.

1. **Directly applicable:** the action and its potential effects directly advances or promotes the objective policy or priority guideline.

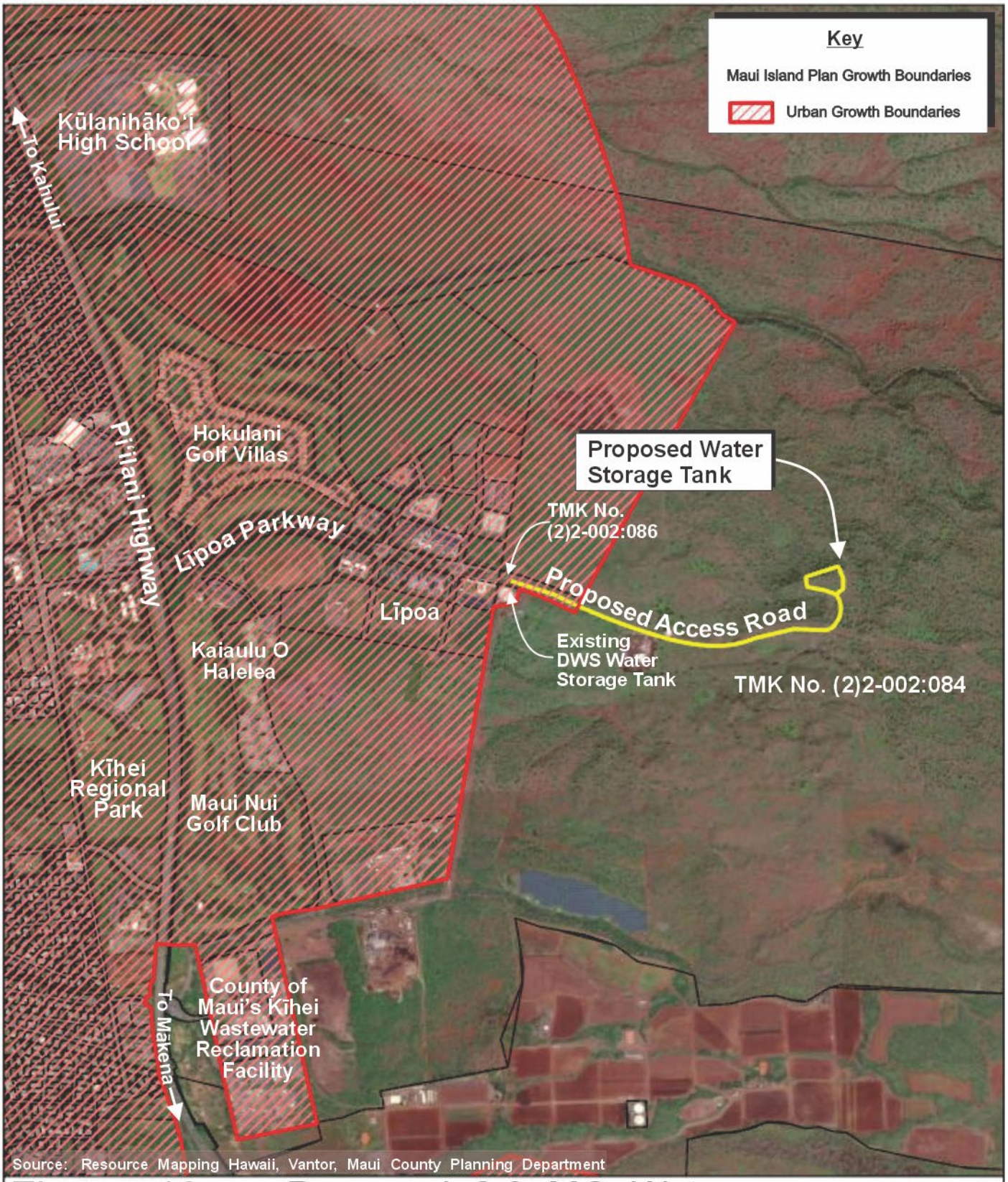


Figure 13 Proposed 2.0 MG Water Storage Tank
Maui Island Plan Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\KiheiWaterTank\Apps\Figs\MIP

2. **Indirectly applicable:** the action's potential effects indirectly supports or advances the objective, policy or priority guideline.

3. **Not applicable:** The action and its potential effects have no direct or indirect relationship to the objectives and policies of the Maui Island Plan.

In general, a proposed action's applicability to the MIP is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 6** and summarized below focuses on key elements of the proposed action's relationship to the MIP. Detailed discussion on the applicability of the proposed action to each goal and related objectives, policies, and implementing actions of the MIP is provided in **Appendix "G-3"**.

Table 6. Maui Island Plan Goals, Objectives and Policies

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
CHAPTER 1 – POPULATION			
1.1 Maui's people, values, and lifestyles thrive through strong, healthy, and vibrant island communities.			X
CHAPTER 2 – HERITAGE RESOURCES			
CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES ISSUES			
2.1 Our community respects and protects archaeological and cultural resources while perpetuating diverse cultural identities and traditions.		X	
SHORELINE, REEFS, AND NEARSHORE WATERS			
2.2 An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.			X
WATERSHEDS, STREAMS, AND WETLANDS ISSUES			
2.3 Healthy watersheds, streams, and riparian environments.			X
WILDLIFE AND NATURAL AREAS			
2.4 Maui's natural areas and indigenous flora and fauna will be protected.			X
SCENIC RESOURCES			
2.5 Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.			X
CHAPTER 3 – NATURAL HAZARDS			
3.1 Maui will be disaster resilient.		X	
CHAPTER 4 – ECONOMIC DEVELOPMENT			
ECONOMIC DIVERSIFICATION			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.1 Maui will have a balanced economy composed of a variety of industries that offer employment opportunities and well-paying jobs and a business environment that is sensitive to resident needs and the island's unique natural and cultural resources.			X
TOURISM			
4.2 A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.			X
AGRICULTURE			
4.3 Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.			X
EMERGING SECTORS			
4.4 A diverse array of emerging economic sectors.			X
SMALL BUSINESS DEVELOPMENT			
4.5 Small businesses will play a key role in Maui's economy.			X
HEALTH CARE SECTOR			
4.6 Maui will have a health care industry and options that broaden career opportunities that are reliable, efficient, and provide social well-being.			X
EDUCATION AND WORKFORCE DEVELOPMENT			
4.7 Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.			X
CHAPTER 5 – HOUSING			
5.1 Maui will have safe, decent, appropriate, and affordable housing for all residents developed in a way that contributes to strong neighborhoods and a thriving island community.			X
CHAPTER 6 – INFRASTRUCTURE AND PUBLIC FACILITES			
SOLID WASTE			
6.1 Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.			X
WASTEWATER			
6.2 Maui will have wastewater systems that comply with or exceed State and Federal regulations; meet levels-of-service needs; provide adequate capacity to accommodate projected demand; ensure efficient, effective, and environmentally sensitive operation; and maximize wastewater reuse where feasible.			X
WATER			
6.3 Maui will have an environmentally sustainable, reliable, safe, and efficient water system.	X		
TRANSPORTATION			
6.4 An interconnected, efficient, and well-maintained, multimodal transportation system.			X
TRANSIT			
6.5 An island-wide transit system that addresses the needs of residents and visitors and contributes to healthy and livable communities.			X
PARKS			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.6 Maui will have a diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all.			X
PUBLIC FACILITIES			
6.7 Maui will have adequate public facilities that meet the diverse needs of residents.			X
SCHOOLS AND LIBRARIES			
6.8 Maui will have school and library facilities that meet residents' needs and goals.			X
HEALTH CARE			
6.9 All of Maui residents will have the best possible health care to include healthy living, disease prevention, as well as acute and long-term care.			X
ENERGY			
6.10 Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.			X
HARBORS AND AIRPORT			
6.11 Maui will have harbors and airports that will efficiently, dependably, and safely facilitate the movement of passengers and cargo.			X
CHAPTER 7 – LAND USE			
AGRICULTURAL LANDS			
7.1 Maui will have a prosperous agricultural industry and will protect agricultural lands.			X
RURAL AREAS			
7.2 Maui will have a rural landscape and lifestyle where natural systems, cultural resources and farm lands are protected and development enhances and compliments the viability and character of rural communities.			X
URBAN AREAS			
7.3 Maui will have livable human-scale urban communities, an efficient and sustainable land use pattern, and sufficient housing and services for Maui residents.			X
CHAPTER 8 – DIRECTED GROWTH PLAN			
URBAN AND SMALL TOWN GROWTH AREA			
8.1 Maui will have well-serviced, complete, and vibrant urban communities and traditional small towns through sound planning and clearly defined development expectations.			X
RURAL GROWTH AREA			
8.2 Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations.			X

Overall, the proposed project is directly applicable to the Maui Island Plan's goals, objectives, and policies for infrastructure and public facilities, insofar as it bolsters the local water storage infrastructure. In addition, the added redundancy storage provided by the new tank will be available to protect Maui from natural disasters.

The proposed project will also provide fire hydrants located along the proposed waterline alignment and access road for fire suppression purposes.

F. KIHEI-MAKENA COMMUNITY PLAN

The project site is located within the Kihei-Makena Community Plan region, one (1) of nine (9) community plan regions established in the County of Maui. Each region's growth and development is guided by a Community Plan. The County's Community Plan reflects current and anticipated conditions in the Kihei-Makena region and advances planning goals, objectives, policies, and implementation considerations to guide decision-making in the region. The primary purpose of the Community Plan is to outline a detailed agenda for carrying out these policies and objectives. The Kihei-Makena Community Plan was adopted by the County of Maui through Ordinance Number 2641, and became effective on March 6, 1998. It is noted that the County of Maui, Department of Planning has begun the process of updating the Kihei-Makena Community Plan, which will be referred to as the South Maui Community Plan.

The project area is designated "Agricultural (AG)" as determined by the current Kihei-Makena Community Plan map. See **Figure 14**. The proposed action is the development of a water tank which will bolster the existing water storage infrastructure in Kīhei. The proposed 2.0 MG Water Storage Tank is in consonance with the following goals and objectives and policies of the Kihei-Makena Community Plan.

LAND USE

Goal:

A well-planned community with land use and development patterns designed to achieve the efficient and timely provision of infrastructural and community needs while preserving and enhancing the unique character of Ma'alaea, Kihei, Wailea and Makena as well as the region's natural environment, marine resources and traditional shoreline uses.

Discussion and Response:

The proposed action is directly related to the goal of a well-planned community to achieve efficient and timely provision of infrastructural community needs. The proposed project intends to bolster the current potable water storage infrastructure in Kīhei. The water reserves provided by the proposed tank will improve the resiliency, redundancy, and reliability of the system in the event of mechanical failures, emergencies, maintenance or repairs of other facilities, or natural disasters such as drought and wildfire.

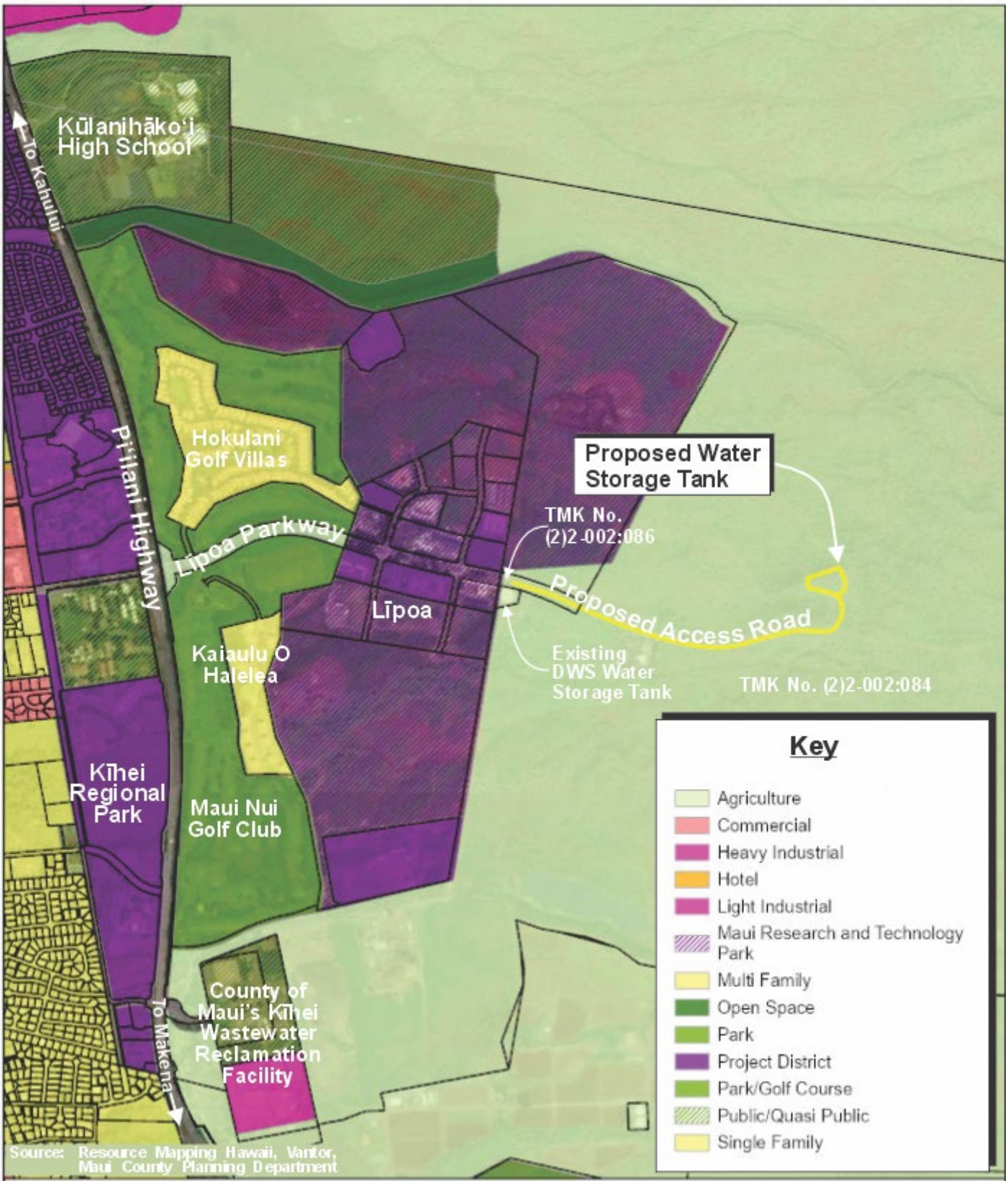


Figure 14 Proposed 2.0 MG Water Storage Tank

Kihei-Makena Community Plan Map

Prepared for: County of Maui, Department of Water Supply

MUNEKIYO HIRAGA

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ECONOMIC ACTIVITY

Goal:

A diversified and stable economic base which serves resident and visitor needs while providing long-term resident employment.

Objective and Policy:

- *Establish a sustainable rate of economic development consistent with concurrent provision of needed transportation, utilities, and public facilities improvements.*

Discussion and Response:

The proposed water storage tank project indirectly supports the goals outlined in the economic activity section of the Kihei-Makena Community Plan insofar as it will temporarily provide jobs in the construction industry during the development phase of the water tank. Furthermore, the proposed project will bolster water storage capacity, indirectly supporting economic activity.

PHYSICAL AND SOCIAL INFRASTRUCTURE

Goal:

Provision of facility systems, public services and capital improvement projects in an efficient, reliable, cost effective, and environmentally sensitive manner which accommodates the needs of the Kihei-Makena community, and fully support present and planned land uses, especially in the case of project district implementation.

Allow no development for which infrastructure may not be available concurrent with the development's impacts.

Discussion and Response:

The proposed project is directly related to the goals set forth for physical and social infrastructure in the Kihei-Makena Community Plan. In particular, the proposed project will increase redundancy, improve resiliency, and enhance reliability within its potable water storage infrastructure in Kīhei. The project site is strategically located away from areas prone to coastal hazards. The proposed project does not constitute an expansion in source or transmission capacity of the water system, nor does it increase water supply to support new development.

As previously mentioned, the County of Maui, Department of Planning is currently in the process of updating the Kihei-Makena Community Plan, which will be referred to as the South Maui Community Plan moving forward. Since the Kihei-Makena Community Plan is

in the process of being updated, the proposed water tank is also analyzed with regard to the draft South Maui Community Plan. The project was found to be in consonance with the following draft goals and policies.

2.3 Goal: Ready and Resilient Systems

Policies:

2.3.18: Current and future development must adhere to and be consistent with the public trust doctrine, and the State Water Codes which includes the Maui Island Water Use and Development Plan (WUDP).

Discussion and response: The proposed project is consistent with the objectives and water stewardship strategies outlined in the Maui Island Water Use and Development Plan (WUPD). (See **Chapter III, Section H**). In particular, the main purpose of the new water storage tank is to provide increased resilience and redundancy to storage infrastructure in South Maui.

2.5 Goal: Responsible Stewardship of Wahi Kūpuna and Historic Properties

Policies:

2.5.2: Development projects must engage in consultation with Native Hawaiian Organizations, and those who have genealogical ties, those with generational ties, cultural practitioners and knowledgeable individuals connected or associated with the project area and provide evidence of this engagement to the appropriate reviewing agency.

Discussion and response: A Cultural Impact Assessment (CIA) was prepared by Cultural Surveys Hawai‘i for the proposed project. As part of the CIA process, 37 Native Hawaiian Organizations (NHOs) and cultural practitioners were contacted to provide feedback regarding the proposed water tank, five (5) of which responded and one (1) of which, cultural expert and kama‘āina Dr. Scott Fisher, agreed to provide further consultation in an interview. See **Appendix “E”**.

G. COUNTY OF MAUI ZONING

The proposed project site is zoned as “AG Agricultural” under the Maui County Code (MCC). See **Figure 15**. According to the MCC, “minor utility facilities” are a permitted use of agricultural land. The code defines “minor utilities” as follows:

“Minor utility facilities” means transmission lines used directly in the distribution of utility services that have minor impact on adjacent land uses which include, but which are not limited to, twenty-three kilovolt transmission substations, vaults, water wells, tanks and distribution equipment, sewage pump stations, and other similar type uses.

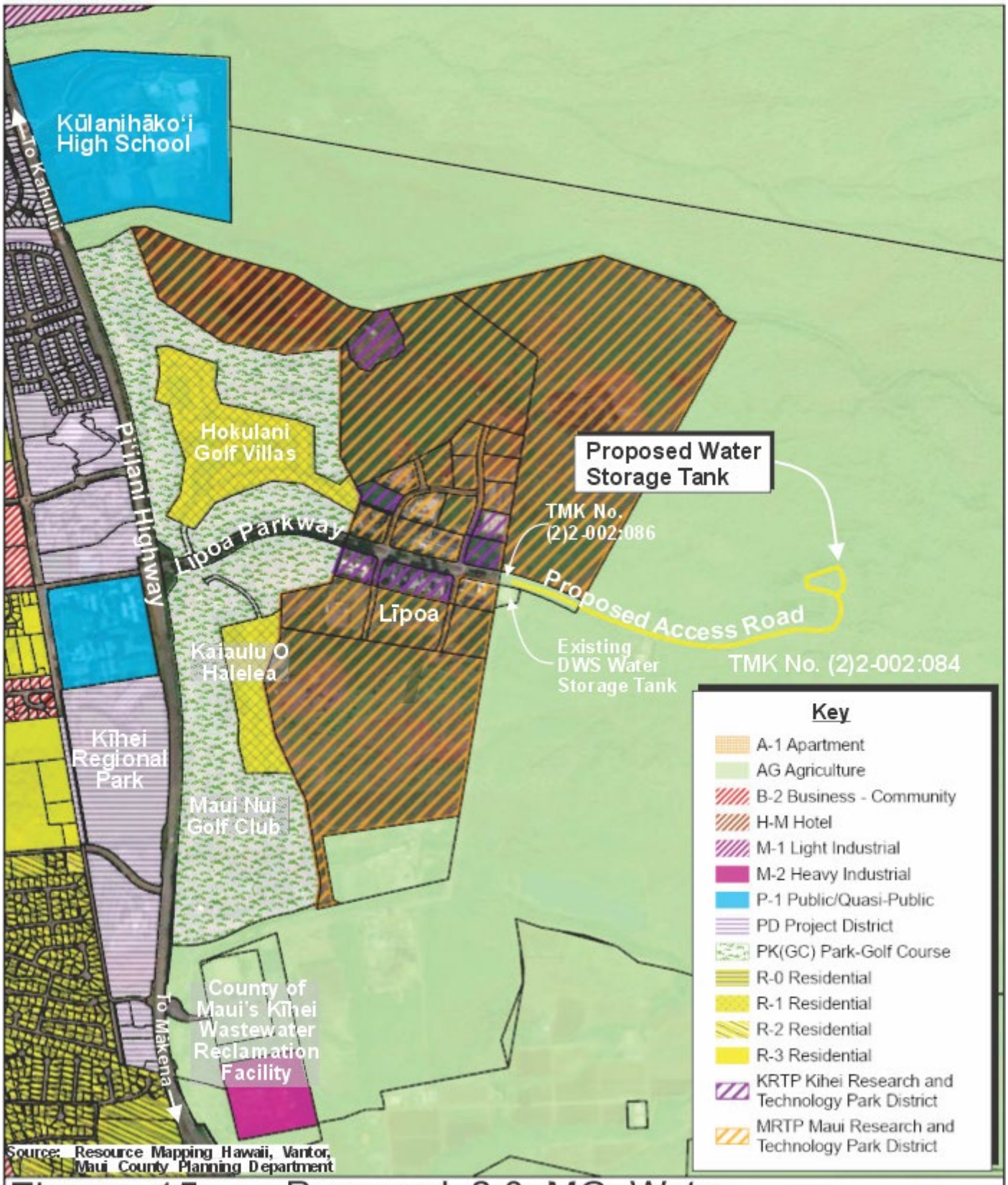


Figure 15 Proposed 2.0 MG Water Storage Tank
Maui County Zoning Map

0 750 1,500
Feet

MUNEKIYO HIRAGA

Prepared for: County of Maui, Department of Water Supply

PR\Kihei\WaterTank\Apps\Figs\Zoning

The proposed water storage tank is therefore a permitted use under County of Maui Zoning code.

H. MAUI ISLAND WATER USE AND DEVELOPMENT PLAN

The Maui County Water Use and Development Plan (WUDP) is a part of the Hawai‘i Water Plan, the purpose of which is to provide planning guidelines for stewardship of water resources to the Commission on Water Resource Management (CWRM). The Maui County WUDP was adopted by the Maui County Council in 1990, with the ability to be updated separately for each island. The Maui Island WUDP was most recently updated in 2019, and subsequently adopted by Ordinance 5335 in 2022 and approved by the CWRM in 2023.

The Maui Island WUDP divides the island into six (6) Aquifer Sector Areas (ASEA). The proposed water tank is located in the Central ASEA, which encompasses significant portions of the Wailuku-Kahului, Makawao-Pukalani-Kula, Pā‘ia-Ha‘ikū, and Kīhei-Mākena community plan areas. The South Maui area, where the proposed project is located, is serviced by the Central Maui Water System operated by the County of Maui, Department of Water Supply (DWS).

The Maui Island WUDP establishes island-wide planning objectives to facilitate sound stewardship of water resources. The proposed water tank has been deemed directly applicable to the following objectives:

- Culture: Protect cultural resources
- Reliability: Maximize reliability of water service
- Conformity: Maintain consistency with general and community plans

The Maui Island WUDP also highlights key issues, objectives, policies, and strategies specific to each ASEA. Key issues identified for the Central ASEA generally relate to managing transportation of water from areas with abundant rainfall to areas with scarce rainfall, subsidizing infrastructure in water scarce areas, maintenance of traditional resource management using the ahupua‘a system, and ensuring that traditional and customary practices are safeguarded. Policies and strategies are meant to address these issues and the overall goals of sound resource management and providing affordable water for future needs. The proposed water tank project is directly applicable to the following strategies. The proposed water tank has been deemed directly applicable to the following key issues:

Water Management and Transport:

- Understanding of the concepts of "precautionary planning" to reduce and adapt to the effects of drought and climate change upon water resource availability and quality is important.

  Response: Through the proposed project, the County of Maui seeks to increase redundancy, improve resiliency, and enhance reliability within its potable water storage infrastructure in Kīhei. In particular, the new water storage tank will provide support in the event of mechanical failures, emergencies, maintenance or repairs of other facilities, or natural disasters such as drought and wildfire. The project site is strategically located away from areas prone to coastal hazards, including sea level rise, in order to plan for the effects of climate change.

Streamflow Protection and Native Hawaiian Rights and Uses:

- Consultation and coordination with Native Hawaiian community/moku and local experts on resource management and invasive species removal should be prioritized.

  Response: Consultation with NHOs and community members regarding the proposed project occurred during preparation of the CIA prepared for the proposed project. Recommendations from the CIA have been incorporated into the design and construction of the new water storage tank. Refer to **Appendix "E"**.

I. HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM – OBJECTIVES AND ENFORCEABLE POLICIES

The Hawaiʻi Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A-2, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaiʻi's coastal zone. The proposed project is not located along the shoreline or within the County of Maui's Special Management Area (SMA). See **Figure 16**. Nevertheless, the applicability of coastal zone management considerations applies to all lands in the State of Hawaiʻi and, as such, has been reviewed and assessed as follows.

1. Recreational Resource

Objective:

Provide coastal recreational opportunities accessible to the public.

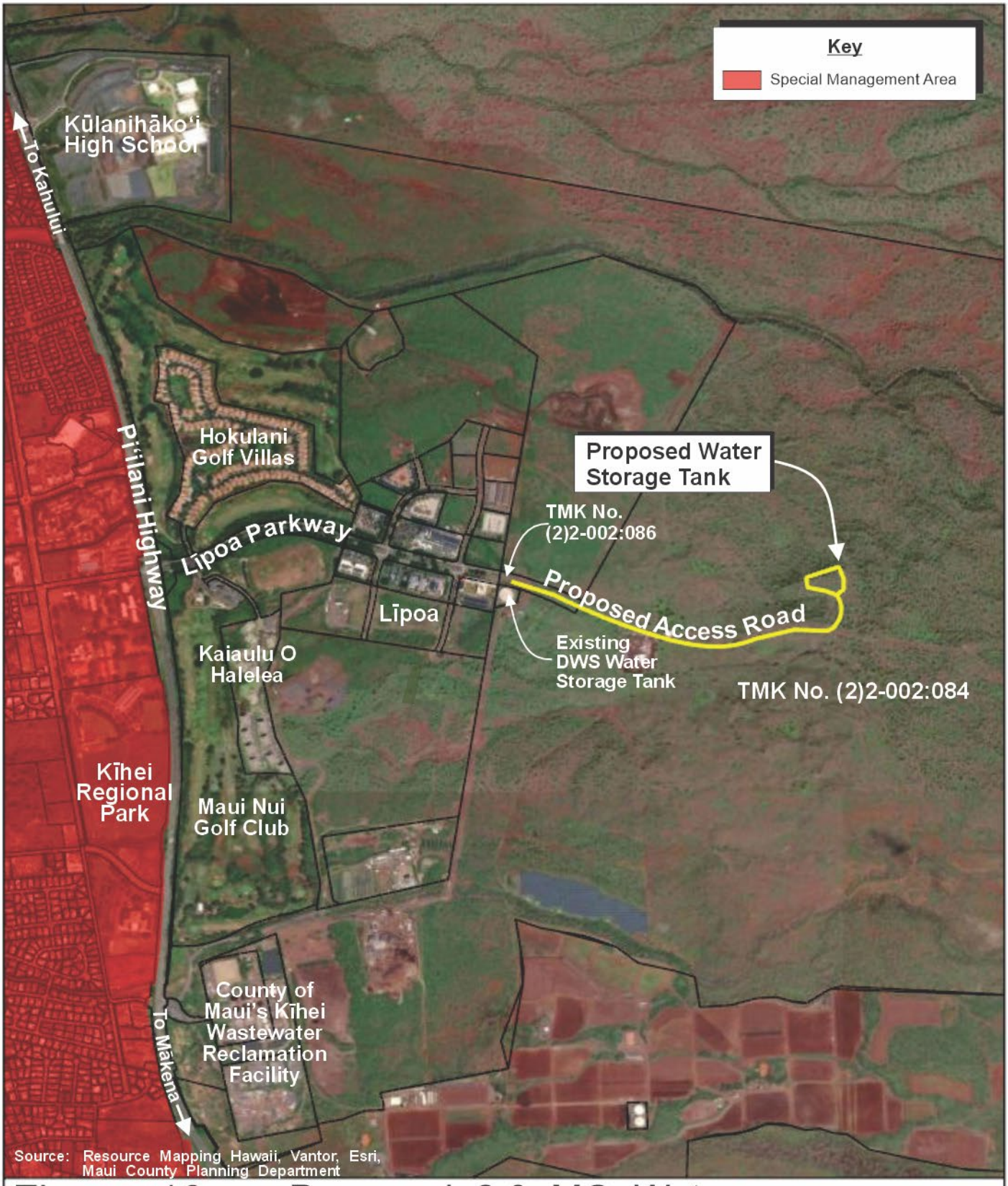


Figure 16 Proposed 2.0 MG Water Storage Tank
Special Management Area Map

0 750 1,500
Feet

Prepared for: County of Maui, Department of Water Supply

MUNEKIYO HIRAGA

PR\KiheiWaterTank\Apps\Figs\SMA

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 restoration of coastal resources that have recreational and ecosystem value including, but not limited to coral reefs, surfing sites, fishponds, sand beaches, and coastal dunes when these resources will be unavoidably damaged by development; or requiring monetary compensation to the State for recreation when restoration 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.

Response: The proposed water tank will be located over two (2) miles mauka of the coastline at an elevation of approximately 387 feet amsl. The project site does not contain shoreline parks, beaches, coastal accessways, or recreational facilities, nor does it provide access to

such resources. Construction and operation of the proposed tank will not restrict public access to shoreline areas or coastal recreational resources and will not impact coastal recreational opportunities.

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.

Response: Based on the findings of the Archaeological Literature Review and Field Inspection (LRFI), the State Historic Preservation Division has issued a determination of "No Historic Properties Affected" for the proposed project. Refer to **Appendix "D"**.

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 those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

c. Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

d. Encourage those developments that are not coastal dependent to locate in inland areas.

Response: The proposed water tank is located inland with an upland agricultural area and will not adversely impact shoreline open space and scenic resources.

4. Coastal Ecosystems

Objective:

Protect valuable coastal ecosystems, including reefs, beaches, and coastal dunes, 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 of significant biological or economic importance, including reefs, beaches, and dunes;

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.

Response: Because the proposed project is located away from the shoreline, impacts to coastal ecosystems are not anticipated. The project site does not contain reefs, beaches, dunes, estuaries, wetlands, or other coastal ecosystems. The project will incorporate drainage improvements and erosion control measures in accordance with County standards to manage stormwater runoff and prevent sediment transport. Given its inland location and implementation of water quality protection measures, the project is not anticipated to adversely affect coastal ecosystems.

5. Economic Use

Objective:

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

Policies:

a. Concentrate coastal dependent development in appropriate areas;

b. Ensure that coastal dependent development and coastal related development are located, designed, and constructed to minimize exposure to coastal hazards and adverse social, visual, and environmental impacts in the coastal zone management area; and

c. Direct the location and expansion of coastal development to areas designated and used for that development and permit reasonable long-term growth at those areas, and permit coastal development outside of designated areas when:

i. Use of designated locations is not feasible;

ii. Adverse environmental effects and risks from coastal hazards are minimized; and

iii. The development is important to the State's economy.

Response: The project does not constitute a coastal-dependent development. The water storage facility will be located inland within an area designated for agricultural use and near existing utility infrastructure. The project supports the regional economy by enhancing potable water storage infrastructure reliability, redundancy, and fire protection capability within the existing service area.

6. Coastal Hazards

Objective:

Reduce hazard to life and property from coastal hazards.

Policies:

a. Develop and communicate adequate information about the risk of coastal hazards;

b. Control development, including planning and zoning control, in areas subject to coastal hazards;

c. Ensure that developments comply with requirements of the National Flood Insurance Program; and

d. Prevent coastal flooding from inland projects.

Response: The proposed water tank is located outside of flood hazard areas, tsunami evacuation zones, and the Sea Level Rise Exposure Area (SLR-XA). Further the water tank will be constructed at approximately 387 feet amsl and over two (2) miles inland. Based on the location of the proposed water tank, no adverse impacts from coastal hazards are expected as a result of the proposed project.

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.

Response: The proposed project is subject to review under Chapter 343, HRS, and other applicable State and County permitting requirements. The environmental review process provides opportunity for agency coordination and public input.

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 mediations to respond to coastal issues and conflicts.

Response: Opportunities for public participation and review of the project will be provided through the Chapter 343, HRS Environmental Assessment (EA) process.

9. Beach and Coastal Dune Protection

Objective:

A. Protect beaches and coastal dunes for:

(i) Public use and recreation;

(ii) The benefit of coastal ecosystem; and

(iii) Use as natural buffers against coastal hazards; and

B. Coordinate and fund beach management and protection.

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 shoreline hardening structures, including seawalls and revetments, at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;

c. Minimize the construction of public shoreline hardening structures, including seawalls and revetments at sites having sand beaches and at sites where shoreline hardening structures interfere with existing recreational and waterline activities;

d. Minimize grading of and damage to coastal dunes;

e. Prohibit private property owners from creating a public nuisance by inducing or cultivating the private property owner's vegetation in a beach transit corridor; and

f. Prohibit private property owners from creating a public nuisance by allowing the private property owner's unmaintained vegetation to interfere or encroach upon a beach transit corridor.

Response: The project is located inland and does not involve construction within shoreline setback areas, beaches, or coastal dunes. No shoreline hardening structures are proposed. Based on the project location, no adverse impacts to beaches and coastal dunes are expected as a result of the proposed project.

10. Marine and Coastal 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 and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and

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

Response: The proposed water tank project does not involve the use, development, or alteration of marine or coastal waters or resources. Based on the project location, no adverse impacts to marine and coastal resources are expected as a result of the proposed project.

In addition to the foregoing objectives and policies, HRS Section 205A-30.5, Prohibitions, provides specification for the limitation of lighting in coastal shoreline areas:

> *No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:*
>
> *(1) Directly illuminates the shoreline and ocean waters; or*
>
> *(2) Is directed to travel across property boundaries toward the shoreline and ocean waters.*

Response: In addressing light pollution issues, the proposed project's lighting plan will call for all lights to be shielded and downward facing. In addition, it is noted that the proposed water tank is not located in the SMA. Refer to **Figure 16**. Impacts to shoreline ecosystems are thus not anticipated.

J. FEDERAL REGULATORY REQUIREMENTS

1. Hawai'i Drinking Water State Revolving Fund Environmental Crosscutters

The proposed project is intended to be funded in part by the Hawai'i Drinking Water State Revolving Fund (DWSRF). As such, the project will comply with the relevant Environmental Cross-Cutters and Federal Requirements. **Table 7** provides a listing of the environmental cross-cutters, as well as the documentation received for the proposed project in addressing the requirement criteria.

Table 7. Environmental Cross-Cutters and Project Documentation

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
1.	Archaeological and Historical Preservation Act of 1974	Obtain review for all projects.	State Historic Preservation Division (SHPD)	The SHPD issued a determination of "No Historic Properties Affected" determination for the subject project pursuant to Chapter 6E HRS.	See **Chapter II (Section A-12)** of this EA document for discussion of historic and archaeological resources and **Appendix "D"** for SHPD determination letter.
2.	Bald and Golden Eagle Protection Act	Permit required for taking eagles.	U.S. Department of the Interior	Not applicable. Bald and Golden Eagles do not exist in Hawai'i.	Not applicable.
3.	Clean Air Act	Coordinate to assure project conforms with State Implementation Plan (SIP).	State Department of Health, Clean Air Branch	The Draft EA will be provided to the Department of Health for review and comment.	See **Chapter II** (**Section A-11**) of this EA document for discussion of potential air quality impacts and mitigation measures.
4.	Coastal Barrier Resources Act	Obtain review, if project is located on a coastal barrier island.	State Coastal Zone Management Agency	Not applicable. Project site is not located on a coastal barrier island.	Not applicable.
5.	Coastal Zone Management Act	Obtain review, if project is located in coastal zone.	State Coastal Zone Management Agency	Pursuant to Chapter 205A-2, HRS, the project site is within the Coastal Zone Management Area, which encompasses all lands of the State.	See **Chapter III** (**Section I**) of this EA document for discussion of the Coastal Zone Management Program review criteria.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
6.	Endangered Species Act	Obtain review by U.S. Fish and Wildlife Service for all projects.	U.S. Fish and Wildlife Service (USFWS)	The Draft EA will be provided to USFWS for review and comment. It is noted that, as reported in the Flora and Fauna Survey Report, the project site is not within nor near the federally delineated Critical Habitat.	Refer to **Chapter II (Section A-10)** of this EA document for a discussion of biological resources.
7.	Environmental Justice	Are low income and minority groups affected?	U.S. Environmental Protection Agency (EPA)	No low-income or minority groups will be adversely affected as a result of the proposed project. The link from the Environmental Review Program (ERP) publication to this project's Draft EA will be sent to the EPA for their specific notification. The EPA will be able to provide comments if deemed necessary.	Refer to **Chapter II (Section B-2)** of this EA document for a discussion of socioeconomic and demographic parameters.
8.	Floodplain Management	Obtain review, if project is located in or affects 100-year flood plain.	Federal Emergency Management Agency (FEMA)	The project site is located within flood zone X, the area of lowest flood risk, as determined by the Flood Insurance Rate Map (FIRM).	Refer to **Chapter II (Section A-7)** of this EA document for a discussion of flood and tsunami hazards.
9.	Protection of Wetlands	Obtain review, if project area contains wetlands.	U.S. Army Corps of Engineers (USACE)	There are no wetland features within the project site.	Refer to **Chapter II (Section A-8)** of this EA document for a discussion of streams and wetlands.
10.	Farmland Protection Policy Act	Obtain review, if project area contains prime farmland.	Natural Resources Conservation Service (NRCS)	The proposed project will be not be located in an area designated as Prime Agricultural land by the Agricultural Lands of Importance to the State of Hawai‘i.	Refer to **Chapter II (Section A-6)** of this EA document for discussion of agriculture.
11.	Fish and Wildlife Coordination Act	Obtain review for all projects.	USFWS	The Draft EA will be provided to USFWS for review and comment.	Refer to **Chapter II (Section A-10)** of this EA document for discussion of flora and fauna resources.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
12.	Marine Mammal Protection Act	Permit required for taking of marine mammals.	USFWS	The proposed project is located in agricultural areas inland from the coastline. The proposed project will not affect marine mammal habitats.	Not applicable.
13.	Migratory Bird Treaty Act	Obtain review, if project impacts breeding bird species.	USFWS	The Draft EA will be provided to USFWS for review and comment.	Refer to **Chapter II (Section A-10)** of this EA document for discussion of flora and fauna resources.
14.	National Historic Preservation Act	Obtain review for all projects.	SHPD	The project will initiate Section 106 Consultation with the SHPD and various Native Hawaiian Organizations.	To be included in the Final EA.
15.	Rivers and Harbors Act	Obtain review, if project requires construction of any structure in or over a navigable water of the U.S. or if structure or work will affect the course, location, or condition of a water body.	USACE	The proposed project will have no effect on rivers or harbors.	Refer to **Chapter II** (**Section A-8**) of this EA document for a discussion on streams and wetlands.
16.	Safe Drinking Water Act	Obtain review, if project could affect sole source aquifer.	State Department of Health, Safe Drinking Water Branch (DOH-SDWB)	There are no sole source aquifers on the island of Maui.	Not applicable.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
17.	Wild and Scenic Rivers Act	Obtain review, if project is located in area with Wild and Scenic Rivers.	National Park Service	Not applicable. The project site is not located in an area with Wild or Scenic Rivers. There are no Wild or Scenic Rivers in the State of Hawai‘i.	Not applicable.
18.	Consultation Process Under the Magnuson-Stevens Fishery Conservation and Management Act	Obtain review, if it will affect essential fish habitat.	National Marine Fisheries Service	Not applicable. The project site is located in an agricultural area inland of the coastline. The proposed project will not affect essential fish habitats.	Not applicable.

2. Department of the Army

The Department of the Army (DA) permit program is authorized by Section 10 of the Rivers and Harbors Act of 1899, and Section 404 of the Clean Water Act. Section 10 of the Rivers and Harbors Act of 1899 requires authorizations from the DA prior to the undertaking of any work in, over or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Section 404 of the Clean Water Act requires permit authorization to discharge dredged or fill material into the waters of the United States, including wetlands.

The proposed project will not be located near a navigable body of water. As such, a DA Permit is not anticipated to be required for the project.

3. Section 401 Water Quality Certification

Under Section 401 of the Clean Water Act, the Department of Health (DOH), Clean Water Branch (CWB) is responsible for issuing or denying Section 401 Water Quality Certifications (WQC) for any project/activity that requires a federal license or permit and may result in a water pollutant discharge to State surface waters.

As the proposed project will not require a DA Permit, a 401 WQC is also not required.

4. Coastal Zone Management Consistency Review

The National Coastal Zone Management Act (CZMA), Section 307, requires Federal agency activities and development projects affecting any coastal use or resource, or activities requiring a Federal permit or license that affect coastal uses and resources, to be undertaken in a manner consistent to the maximum extent practicable with the State's Coastal Zone Management (CZM) program. However, the DWSRF is not on the State of Hawai'i, Office of Planning and Sustainable Development's list of federal financial assistance programs that trigger the CZM federal consistency review in Hawai'i. Further, because the project does not need a federal permit or license, it will not be held to Hawai'i CZM federal consistency review.

5. Section 4(f) of the Department of Transportation Act

Section 4(f) refers to the section of the U.S. Department of Transportation Act of 1966 which provided for consideration of park and recreation lands, wildlife and waterfowl refuges, and historic sites during transportation project development. Requirements of Section 4(f) applies only to the U.S. Department of Transportation (U.S. DOT) and is implemented by the Federal Highway Administration (FHWA)

and the Federal Transit Administration. Section 4(f) is not an applicable consideration for the project.

6. Section 6(f) of the Land and Water Conservation Fund Act

Section 6(f) is included in the Land and Water Conservation Fund Act (LWCFA) of 1965. The LWCFA is a Federal program that was established by Congress in 1964 to provide funds and matching grants to federal, state and local governments for the acquisition of land and water, and easements on land and water, for recreational benefits. The LWCFA is administered by the Department of Interior's National Park Service (NPS). The NPS oversight pertains to projects that would cause impacts on or the permanent conversion of recreational property acquired with LWCFA monies. Under Section 6(f), it is prohibited to convert property acquired or developed with LWCFA grant money to non-recreational purposes without approval from the NPS. The proposed water tank will be located on privately-owned lands that are not used for recreational purposes, so the proposed project is not applicable to Section 6(f).

7. Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout the country. In the State of Hawai'i, Section 106 regulations place particular emphasis on consultation with Native Hawaiian Organizations (NHO).

In this regard, Section 106 consultation with the SHPD and NHOs will be initiated.

8. Section 7 of the Endangered Species Act

The Endangered Species Act (ESA) directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, called "Interagency Cooperation," is the mechanism by which Federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. The Draft EA will be provided to USFWS for review and comment. It is noted that, as reported in the Flora and Fauna Survey Report, the project site is not within nor near the federally delineated Critical Habitat.

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Construction of the proposed 2.0 MG water storage tank and associated improvements will have limited, unavoidable, and temporary effects on the environment, as described in **Chapter II**. These include short-term increases in ambient noise levels due to operation of heavy equipment and construction vehicles, as well as temporary air emissions associated with dust generation and equipment exhaust.

Although appropriate Best Management Practices (BMPs), will be implemented to minimize these effects — including dust control measures (setting up dust fences, watering graded areas), erosion and sediment control (grassing of graded areas), and compliance with applicable construction standards—temporary construction-related noise and emissions cannot be completely eliminated. However, these effects will be localized to the project vicinity and limited to the duration of the construction period.

In the long term, the operation of the proposed water storage tank will be passive in nature and is not expected to generate ongoing harmful emissions or pollutants, noise, or other adverse environmental effects.

V. ALTERNATIVES TO THE PROPOSED ACTION

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A. PREFERRED ALTERNATIVE

The proposed project, as outlined in **Chapter I**, Project Overview, is the preferred alternative. This alternative consists of construction of a new potable water storage tank and related improvements mauka of Piʻilani Highway in Kīhei, including installation of inlet and outlet waterlines and improvements to an existing access road. The primary objectives of the proposed project are to improve potable water storage redundancy, resiliency, and reliability within the existing Department of Water Supply (DWS) potable water system and service area.

The proposed water tank location was selected based on its optimal elevation and proximity to existing DWS infrastructure, including an existing DWS 2.0 million-gallon (MG) water storage tank and waterlines located makai or downhill of the tank site. The existing DWS tank is situated near the mauka end of Līpoa Parkway, with associated waterlines located within the roadway corridor. This location allows for efficient integration of the new tank into the existing DWS system and supports improved storage redundancy and reliability.

B. NO ACTION ALTERNATIVE

Under the No Action Alternative, the proposed water tank and related improvements would not be constructed. The existing potable water storage configuration would remain unchanged, relying solely on current storage facilities.

While this alternative would avoid construction-related impacts, it would not address the need to improve system redundancy and resiliency. The absence of additional storage would limit operational flexibility during maintenance, mechanical failures, or emergency events. Accordingly, the No Action Alternative would not meet the project's purpose and need.

As a result, the No Action Alternative was not considered feasible.

C. DEFERRED ACTION ALTERNATIVE

Under the Deferred Action Alternative, implementation of the proposed tank would be postponed to a future date.

While deferral would temporarily delay construction-related impacts, it would also postpone the resiliency and redundancy benefits associated with additional storage capacity. The existing system would continue to operate without the additional buffer needed to support emergency response and fire protection under peak demand or drought

conditions. For these reasons, the Deferred Action Alternative does not meet the identified system needs within an appropriate timeframe.

D. REDUCED CAPACITY ALTERNATIVE

A reduced-capacity alternative was evaluated, involving construction of a smaller water tank (e.g., approximately 500,000 G and 1.0 MG).

Although a smaller tank would reduce construction scale and footprint, it would also provide reduced storage redundancy and resiliency benefits. It would not provide the same level of redundancy or emergency reserve capacity as the proposed 2.0 MG tank. A reduced-capacity facility would offer limited operational flexibility during outages or emergency events and may not adequately support system reliability for the South Maui service area.

Because the project objective is to meaningfully enhance storage redundancy and resiliency within the existing system, the reduced-capacity alternative was not selected.

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed action will result in the permanent conversion of privately owned pastureland to public utility use for water storage infrastructure. Once constructed, the tank site will be dedicated to the County of Maui and maintained and operated as a water storage facility. This represents an irreversible commitment of land to utility purposes for the foreseeable future.

Construction of the proposed project will involve a commitment of energy, labor, fiscal, and material resources. The manufacture and transportation of these materials involve the consumption of energy and natural resources. Fossil fuels will also be consumed during construction through operation of heavy equipment. These resources, once expended, cannot be recovered and therefore constitute an effectively irreversible commitment.

While these commitments of land, materials, energy, and fiscal resources are irreversible to the extent described above, the project is considered to be beneficial overall as it will provide long-term public infrastructure improvements in the form of increased potable water storage capacity, system redundancy, and resiliency within the existing service area.

VII. SIGNIFICANCE CRITERIA ASSESSMENT

VII. SIGNIFICANCE CRITERIA ASSESSMENT

The “Significance Criteria”, defined in Chapter 11-200.1-13 of the Hawai‘i Administrative Rules (HAR), were reviewed and analyzed to determine whether the proposed project will have significant effect on the environment. As defined under Chapter 343, Hawai‘i Revised Statutes (HRS), “significant effect” means the sum of effects on the quality of the environment, including actions that irrevocably commit a natural resource, curtail the range of beneficial uses of the environment, are contrary to the State’s environmental policies or long-term environmental goals as established by law, or adversely affect the economic welfare, social welfare, or cultural practices of the community and State. The analysis required to determine whether a proposed action may have a significant effect requires that every aspect of the proposed action, expected primary and secondary consequences, and the cumulative as well as the short-term and long-term effects are evaluated in accordance with the Significance Criteria of Section 11-200.1-13, HAR. The following criteria and analyses are provided.

1. <u>Irrevocably commit a natural, cultural, or historic resource.</u>

The project will result in the permanent conversion of pastureland to utility use. The site consists of previously disturbed agricultural land with limited native vegetation. No streams, wetlands, or designated critical habitat occur within the project site. A Flora and Fauna Survey did not identify rare, threatened, or endangered species within the project area. As such, adverse effects to flora and fauna are not anticipated. See **Appendix “B”**. During operation, the water tank will be passive in nature and is not expected to pose significant adverse effects to natural resources.

Based on the Cultural Impact Assessment (CIA) prepared for the proposed project, no cultural resources or ongoing cultural practices occur within the project site. The CIA also concluded that "no impacts to ongoing cultural practices were identified within the project area during background research and community consultation." The only potential impact discussed in the CIA arose from the testimony of Dr. Scott Fisher, who expressed concern that sedimentation caused by ground disturbance may negatively affect nearby freshwater resources. Refer to **Appendix "E"**. However, this concern is anticipated to be adequately mitigated by the proposed drainage and erosion controls. Refer to **Appendix "F"**.

Based on the above, the proposed project is not anticipated to result in a significant irrevocable commitment of natural or cultural resources.

2. <u>Curtail the range of beneficial uses of the environment.</u>

The proposed action is limited to the construction of a water tank and related improvements within agricultural land in proximity to existing and similar utility infrastructure. The project will not preclude surrounding and existing agricultural,

residential, or commercial uses from continuing. The project will not curtail the range of beneficial uses of the environment.

3. <u>Conflict with the state's environmental policies or long-term environmental goals established by law.</u>

The proposed action conforms with the State's Environmental Policy and Guidelines as set forth in Chapter 344, Hawai'i Revised Statutes (HRS). The project enhances public infrastructure resiliency within the existing service area. No conflict with established environmental policies or long-term goals is anticipated.

4. <u>Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State.</u>

The proposed project will bolster the existing potable water storage infrastructure in the region, which will have a positive impact on the long-term economic and social welfare in Kīhei in addition to a temporary benefit from construction employment.

According to the Cultural Impact Assessment (CIA) that was prepared for the proposed project, substantially adverse effects on cultural practices are not expected, as none occur in the direct vicinity of the proposed water tank site. Refer to **Appendix "E"**. Concern from Dr. Scott Fisher, who provided consultation for the CIA, regarding sedimentation in nearby freshwater resources is anticipated to be adequately mitigated by the proposed drainage and erosion controls. Refer to **Appendix "F"**.

5. <u>Have a substantial adverse effect on public health.</u>

No adverse impacts to public health and welfare are anticipated as a result of the proposed action. Temporary construction-related air and noise impacts will be mitigated through implementation of Best Management Practices (BMPs). Long-term operation of the facility will be passive in nature and will not generate significant ongoing emissions. The project will support potable water storage reliability and fire protection capability. No substantial adverse effects on public health are anticipated.

6. <u>Involve adverse secondary impacts, such as population changes or effects on public facilities.</u>

The purpose of the proposed project is to increase redundancy, improve resiliency, and enhance reliability of the potable water storage infrastructure in Kihei. The proposed project does not increase water source capacity, transmission capacity, or the service area of the Department of Water Supply system. The project does not introduce new land uses, expand development boundaries, or increase allowable development intensity. As such, it is not anticipated to induce population growth or secondary development. No substantial

secondary impacts are anticipated. The proposed improvements will directly benefit public facilities.

7. <u>Involve a substantial degradation of environmental quality.</u>

Construction activities associated with the proposed water tank project will have temporary effects on ambient air and noise quality. Appropriate Best Management Practices (BMPs) will be employed to mitigate the nuisance effects to air and water quality and noise during construction.

From a long-term perspective, the project will not produce harmful ongoing emissions or pollutants. Long-term operation of the water tank will be passive in nature. As such, the proposed project will not cause a substantial degradation of environmental quality.

8. <u>Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions.</u>

The project is a water storage infrastructure improvement within the existing service area. It does not represent a commitment to a larger action nor is it anticipated to produce cumulatively significant impacts. No significant cumulative adverse effects are anticipated.

9. <u>Have a substantially adverse effect on a rare, threatened, or endangered species, or its habitat.</u>

A Flora and Fauna Survey Report for the proposed project area was prepared by AECOS, Inc. in November of 2024 in order to identify and document existing flora and fauna in the vicinity of the project area. The survey did not reveal the presence of any rare, threatened, or endangered species. Further, the project site is not within nor near federally delineated Critical Habitat. Avoidance and mitigation measures for potential seabird and Hawaiian hoary bat interactions will be implemented during construction. No adverse effects on endangered species or their habitat are anticipated as a result of the proposed project. Refer to **Appendix "B"**.

10. <u>Have a substantial adverse effect on air or water quality or ambient noise levels.</u>

Short-term construction activities will have an impact on air and noise quality, but these impacts will be limited to the construction period and minimized to the extent possible.

Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts are expected to be minor due to the project site's significant distance from the nearest populated area.

Implementation of drainage improvements designed in accordance with the Drainage Standards of the County of Maui to address stormwater runoff from the project area will include permanent BMPs to protect water quality and coastal resources in the area. It is

noted that the project is located sufficiently far from the nearest stream to ensure that pollution due to runoff is insignificant.

In the long term, the passive operation of the water tank operation will not significantly affect air or water quality or ambient noise levels.

11. Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The elevation of the project site is sufficient to exclude it from a high-risk flood zone, the tsunami evacuation zone, or the sea level rise exposure area. The site does not contain wetlands or streams. With implementation of BMPs during construction, as well as permanent erosion control and drainage improvements, the project is not anticipated to have a substantial adverse effect on environmentally sensitive areas or be subject to damage from such hazards.

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

The proposed tank will be located in an upland agricultural area at a substantial distance from primary public roadways. Due to its distance from primary public viewpoints, its location within an agricultural and utility context, and the presence of existing water storage infrastructure in the vicinity, the project is not anticipated to substantially degrade scenic view corridors. Views toward Haleakalā, Mauna Kahālāwai, and the ocean will remain largely intact.

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

The proposed action involves constructing a new water tank and related improvements. The construction process will involve energy consumption and emission of greenhouse gases from production and transportation of the required materials. Long-term operation of the water storage facility will be passive and will not result in substantial energy consumption or greenhouse gas emissions. The project is not anticipated to result in a significant greenhouse gas impact.

Based on the foregoing analysis, the proposed project is seeking an Anticipated Finding of No Significant Impact (AFNSI).

VIII. LIST OF PERMITS AND APPROVALS

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The following permits and approvals may be required prior to the implementation of the project:

Federal

1. Compliance with Section 106, National Historic Preservation Act

2. Federal Environmental Crosscutters (Refer to **Chapter III**)

State

14. Hawai‘i Administrative Rules (HAR) Chapter 11-46, Community Noise Control, as applicable

15. National Pollutant Discharge Elimination System (NPDES) Permit, as applicable

16. Hawai‘i Revised Statutes (HRS) Chapter 6E Review

County of Maui

1. Construction Permits (Grading, Building, Plumbing, Electrical)

IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS

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The following agencies were consulted during preparation of the Draft Environmental Assessment (EA). Agency comments and responses to substantive comments are included herein.

Federal Agencies

1. Mr. Jason Hew, Acting District Conservationist
   Natural Resources Conservation Service
   U.S. Department of Agriculture-NRCS
   77 Hoʻokele Street, Suite 202
   Kahului, Hawaiʻi 96732
2. Sir or Madame
   Pacific Islands Contact Office
   U.S. Environmental Protection Agency
   (Pacific Islands Contact Office)
   300 Ala Moana Blvd., Room 5124
   Honolulu, Hawaiʻi 96850
3. Sir or Madame
   Pacific Islands Fish and Wildlife Office
   U.S. Fish and Wildlife Service Pacific Islands Fish and Wildlife Ofc
   300 Ala Moana Blvd., Rm. 3-122
   Honolulu, Hawaiʻi 96850
   Via email: pifwo_admin@fws.gov

State Agencies

4. Mr. Keith Regan, Comptroller
   State of Hawaiʻi
   Department of Accounting and General Services
   1151 Punchbowl Street
   Honolulu, Hawaiʻi 96813
5. Ms. Sharon Hurd, Chair
   State of Hawaiʻi
   Department of Agriculture
   1428 South King Street
   Honolulu, Hawaiʻi 96814-2512
6. Mr. James Kunane Tokioka, Director
   State of Hawaiʻi
   Department of Business, Economic Development & Tourism (DBEDT)
   P.O. Box 2359
   Honolulu, Hawaiʻi 96804
7. Major General Stephen Logan, Adjutant General
   State of Hawaiʻi
   Department of Defense
   3949 Diamond Head Road
   Honolulu, Hawaiʻi 96816-4495
8. Mr. Keith Hayashi, Superintendent
   State of Hawaiʻi
   Department of Education
   P. O. Box 2360
   Honolulu, Hawaiʻi 96804
9. Mr. Kali Watson, Chair
   State of Hawaiʻi
   Department of Hawaiian Home Lands
   P. O. Box 1879
   Honolulu, Hawaiʻi 96805
10. Dr. Kenneth S. Fink, MD, MGA, MPH, Director
    State of Hawaiʻi
    Department of Health
    1250 Punchbowl St., Room 325
    Honolulu, Hawaiʻi 96813
11. Mr. Darryl Lum, P.E., Chief
    State of Hawaiʻi
    Department of Health, Clean Water Branch
    Environmental Management Division
    2827 Waimano Home Road
    Hale Ola, Room 225
    Pearl City, Hawaiʻi 96782-1487
12. Ms. Patti Kitkowski, District Environmental Health Program Chief
    State of Hawaiʻi
    Department of Health, Maui Sanitation Branch
    Environmental Health Service Division (EHSD)
    54 High Street, Room 300
    Wailuku, Hawaiʻi 96793

13. Mr. Gaudencio Lopez, P.E., Chief
State of Hawai'i Environmental Management Division
Department of Health, Safe Drinking Water Branch
Environmental Management Division
Uluakupu Building 4
2385 Waimano Home Road, Suite 110
Pearl City, Hawai'i 96782-1400

14. Ms. Dawn N.S. Chang, Chairperson
State of Hawai'i
Department of Land and Natural Resources
P. O. Box 621
Honolulu, Hawai'i 96809
Via email: dlnr@hawaii.gov and dlnr.land@hawaii.gov

15. Mr. Ed Sniffen, Director
State of Hawai'i
Department of Transportation
869 Punchbowl Street, Room 509
Honolulu, Hawai'i 96813-5097

16. Ms. Stacy Kealohalani Ferreira, Chief Executive Officer (Ka Pouhana)
State of Hawai'i
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, Hawai'i 96817

17. Ms. Mary Alice Evans, Director
State of Hawai'i
Office of Planning and Sustainable Development
P. O. Box 2359
Honolulu, Hawai'i 96804-2359

18. Mr. Dan Orodenker, Executive Officer
State of Hawai'i
Land Use Commission, DBEDT
P.O. Box 2359
Honolulu, Hawai'i 96804

State Organization

19. Ms. Elizabeth Pickett, Co-Executive Director
Hawai'i Wildfire Management Organization
65-1279 Kawaihae Road, Suite 211
Kamuela, Hawai'i 96743

County Agencies

20. Ms. Rogerine "Kali" Arce, Director
County of Maui
Department of Agriculture
200 S. High Street
Wailuku, Hawai'i 96793

21. Mr. Shayne Agawa, P.E., Director
County of Maui
Department of Environmental Management
200 S. High Street
Wailuku, Hawai'i 96793
Via email: tammy.yeh@co.maui.hi.us and MAPPS WWRD

22. Ms. Marcy Martin, Director
County of Maui
Department of Finance
200 S. High Street, 2nd Floor
Wailuku, Hawai'i 96793

23. Mr. Bradford Ventura, Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, Hawai'i 96732
Via email: fire.planreview@mauicounty.gov

24. Mr. Richard E. Mitchell, Esq., Director
County of Maui
Department of Housing
2065 Main Street, Suite 108
Wailuku, Hawai'i 96793

25. Ms. Margaret Willis, Director
County of Maui
Department of Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawai'i 96793

26. Mr. Kapono'ai Molitau, Director
County of Maui
Department of 'Ōiwi Resources
Kalana O Maui Building
200 S. High Street
Wailuku, Hawai'i 96793

27. Mr. Patrick McCall, Director
County of Maui
Department of Parks and Recreation
P.O. Box 1405
Wailuku, Hawai'i 96793-6405

28. Ms. Jacky Takakura, Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

29. Mr. Jordan Molina, Director
County of Maui
Department of Public Works
200 S. High Street, 4th Floor
Wailuku, Hawai'i 96793

30. County of Maui
Department of Water, Engineering Division
200 S. High Street, 5th Floor
Wailuku, Hawai'i 96793

31. Mr. Amos Lonokailua-Hewett, Administrator
County of Maui
Maui Emergency Management Agency
200 S. High Street, 1st Floor
Wailuku, Hawai'i 96793

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

33. Ms. Luana Mahi, Director
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, Hawai'i 96793

Maui County Mayor and Council

34. Honorable Richard T. Bissen, Jr., Mayor
County of Maui
Mayor's Office
200 S. High Street, 9th Floor
Wailuku, Hawai'i 96793

35. Mr. Thomas Cook, Councilmember
County of Maui (South Maui)
Maui County Council - Cook
200 S. High Street, 8th Floor
Wailuku, Hawai'i 96793

Maui County Organizations

36. Mr. Marc Grider, Manager, Engineering
Hawaiian Electric Company, Inc.
P. O. Box 398
Kahului, Hawai'i 96733

37. Ms. Charlene Schulenberg, President
Kihei Community Association
P.O. Box 662
Kihei, Hawai'i 96753

38. Mr. Ke'eaumoku Kapu, CEO
'Aha Moku O Maui - Ke'eaumoku Kapu
Via email:
kapukapuakea@gmail.com

39. Cody Nemet, Interim
Kula Makai Moku
'Aha Moku O Maui - Cody Nemet
Via email: kokoroots@gmail.com

Subject: Early Technical Assistance Request for Proposed 2.0 MG Water Storage Tank, Kīhei, Maui
Attachments: IPaC Info Letter_Species List Instructions_PIFWO_20Apr2022_Final.pdf

From: Javar-Salas, Chelsie <chelsie_javar-salas@fws.gov>
Sent: Wednesday, February 19, 2025 3:56 PM
To: General eMail <planning@munekiyohiraga.com>
Subject: Early Technical Assistance Request for Proposed 2.0 MG Water Storage Tank, Kīhei, Maui

This is an EXTERNAL e-mail.
Only open links and attachments from a Trusted Sender.

This is an EXTERNAL e-mail.
Only open links and attachments from a Trusted Sender.

Aloha Finn Gibson,

Our office received your correspondence requesting early technical assistance for the Proposed 2.0 MG Water Storage Tank in Kīhei, Maui.

We have a handful of online resources available, including documents of all recommended Avoidance and Minimization Measures (AMMs) for listed plants (https://www.fws.gov/media/plant-avoidance-and-minimization-measures-may-2023) and animals (https://www.fws.gov/media/animal-avoidance-and-minimization-measures-may-2023-0), as well as our Information for Planning and Consultation (IPaC) online portal, https://ipac.ecosphere.fws.gov/. We recommend incorporating into your project description our best management practices to minimize and avoid sedimentation and erosion impacts to water quality [https://www.fws.gov/media/best-management-practices-work-or-around-aquatic-environments-bmps] and our biosecurity protocols [https://www.fws.gov/media/invasive-species-biosecurity-protocols].

First, we recommend using the IPaC system for each individual project that comes up, because it will give you a species list based on the geographic location of the project. Then you can include AMMs for each species that are on the IPaC list in your project, and if species are present, you can request Section 7 consultation with our office. You are always welcome to contact our office to clarify and confirm species that you receive on your IPaC list. I've attached instructions for using IPaC to this email.

We appreciate your efforts to conserve federally protected species. Please contact me for additional assistance.

Mahalo,
Chelsie

Chelsie Javar-Salas (she/her) | Island Team Manager - Maui Nui and Hawai'i | U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office | 300 Ala Moana Blvd., Room 3-122 Honolulu, HI 96850 | office phone: 808-210-6131 | work cell: 808-490-5451 | email: chelsie_javar-salas@fws.gov | website: https://www.fws.gov/office/pacific-islands-fish-and-wildlife

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

Subject: IPaC generated official species list for the Pacific Islands Fish and Wildlife Office

Dear Action Agency or Applicant:

The Pacific Islands Fish and Wildlife Office (PIFWO) is transitioning to the Information for Planning and Consultation (IPaC) online portal, https://ipac.ecosphere.fws.gov/ for federal action agencies and non-federal agencies or individuals to obtain official species lists, including threatened and endangered species, designated critical habitat, and avoidance and minimization measures to consider in your general project design. IPaC has been used by continental USFWS offices to provide official species lists and avoidance and minimization guidance since 2017. Using IPaC expedites the process for species list distribution. Obtaining a species list in IPaC is relatively straightforward and takes minimal time to complete. Step by step instructions are included below.

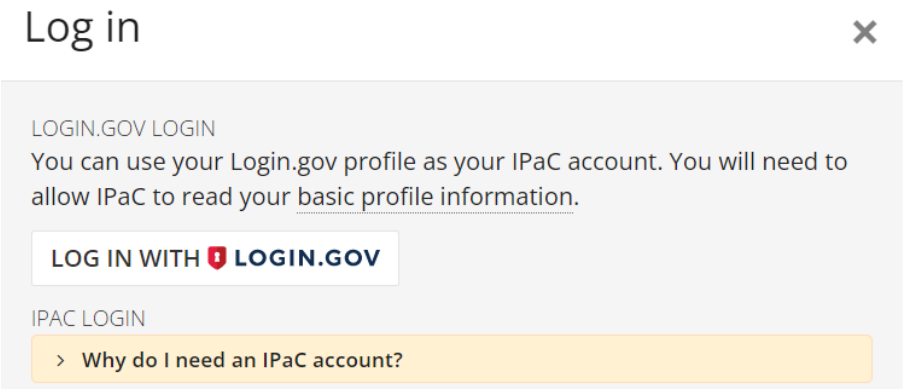
Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change the species list. Verification can be completed by visiting the IPaC website at regular intervals during project planning and implementation. An updated list may be requested through the IPaC system by completing the same process used to obtain the initial species list.

We hope this process provides efficiencies to our partners in obtaining a species list. For federal action agencies, it also opens additional IPaC functionality that the PIFWO office is still working on, such as the use of Determination Keys for informal section 7 programmatic consultations. We will let our agency partners know when that functionality becomes available.

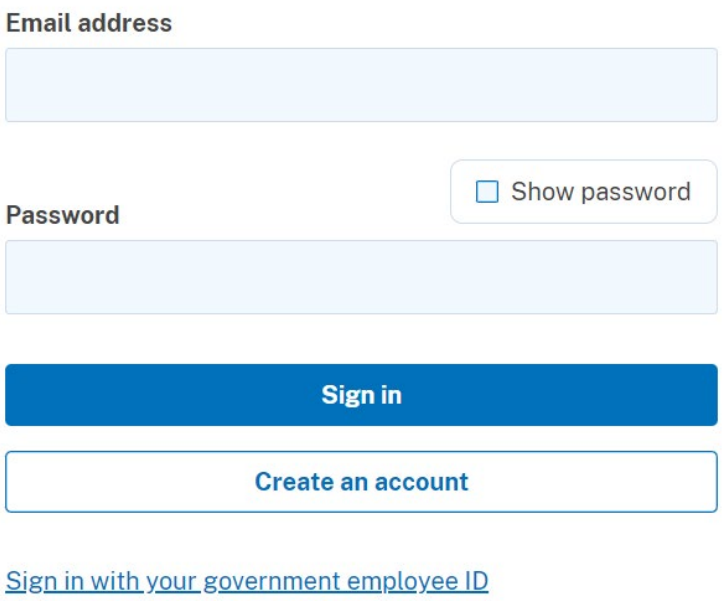
If you have questions about a species list obtained through the IPaC system or need assistance in completing an IPaC species list request, please contact the Service at 808-792-9400 or via email at pifwo_admin@fws.gov. We appreciate your efforts to conserve listed species across the Pacific Islands.

Instructions for Action Agencies and partners to obtain an official species list in IPaC

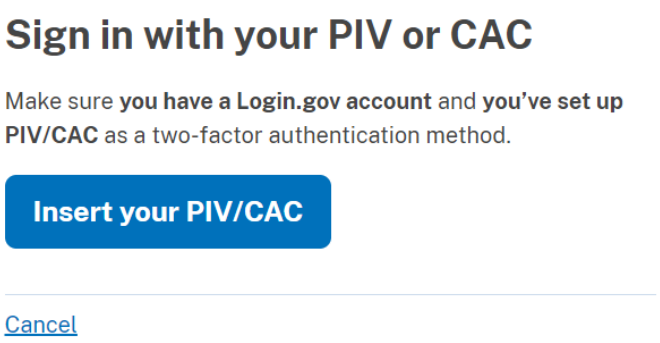
- Navigate to https://ipac.ecosphere.fws.gov/
- You can get an unofficial species list without logging in. However, if you want an official species list you will need to log in first using your Login.gov account. If you don't have an IPaC account, they are easy to create.



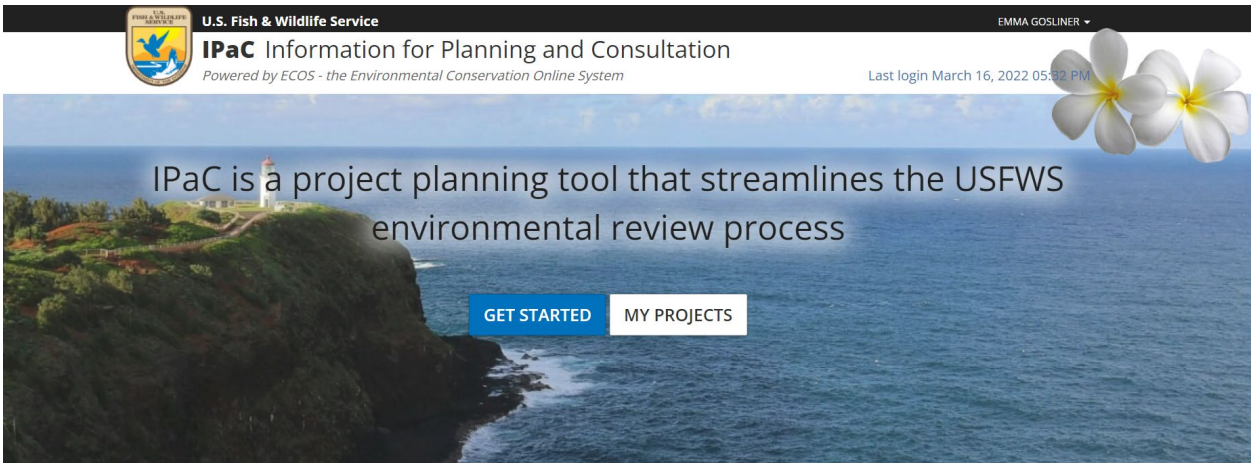
Select Log in with Login.gov and sign in using your email and password.



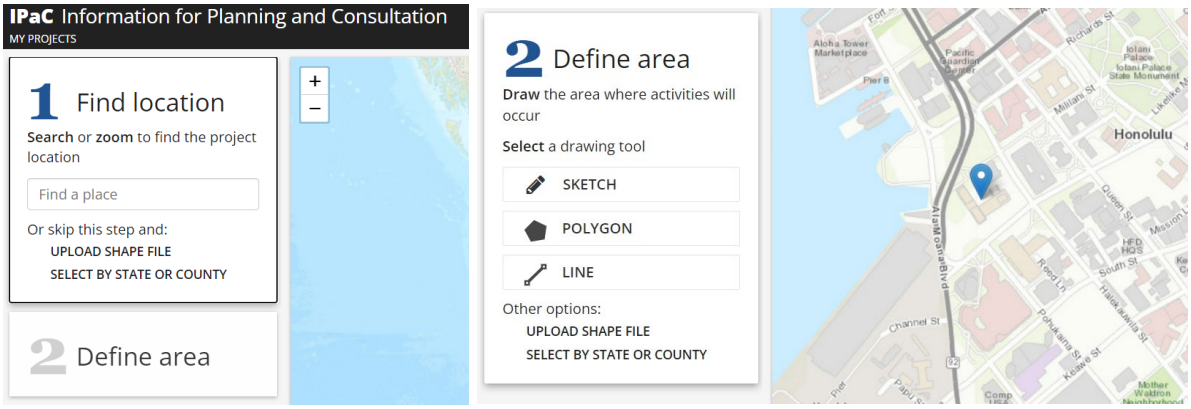
If you have a PIV or CAC card, you can sign in using that method as well.

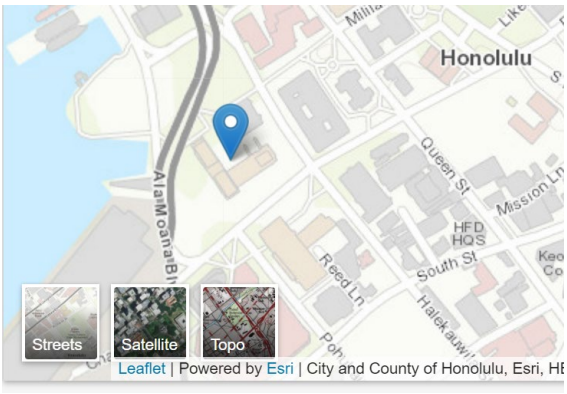


- Once you log in, select "Get Started".

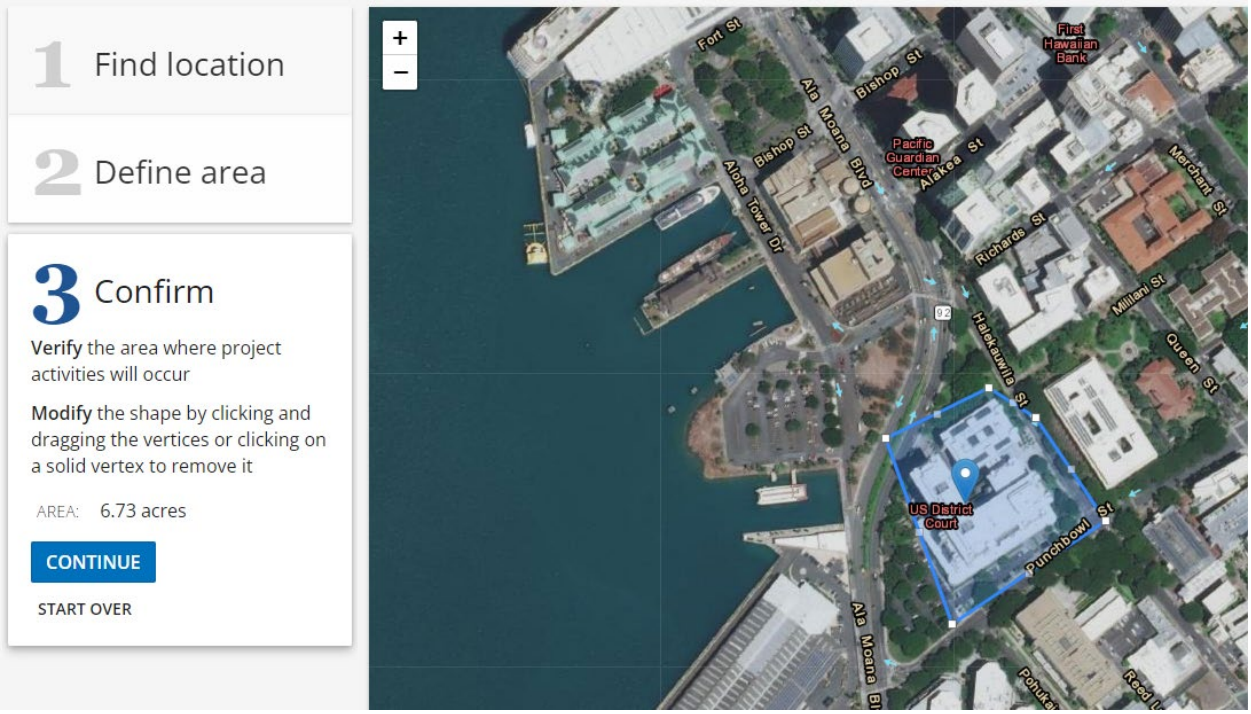


- Define the action area: Identify the location of the proposed action by uploading an existing shapefile or by entering an address or coordinates of the action area. Once identified on the map, you can manually draw the action area using the drawing tools.



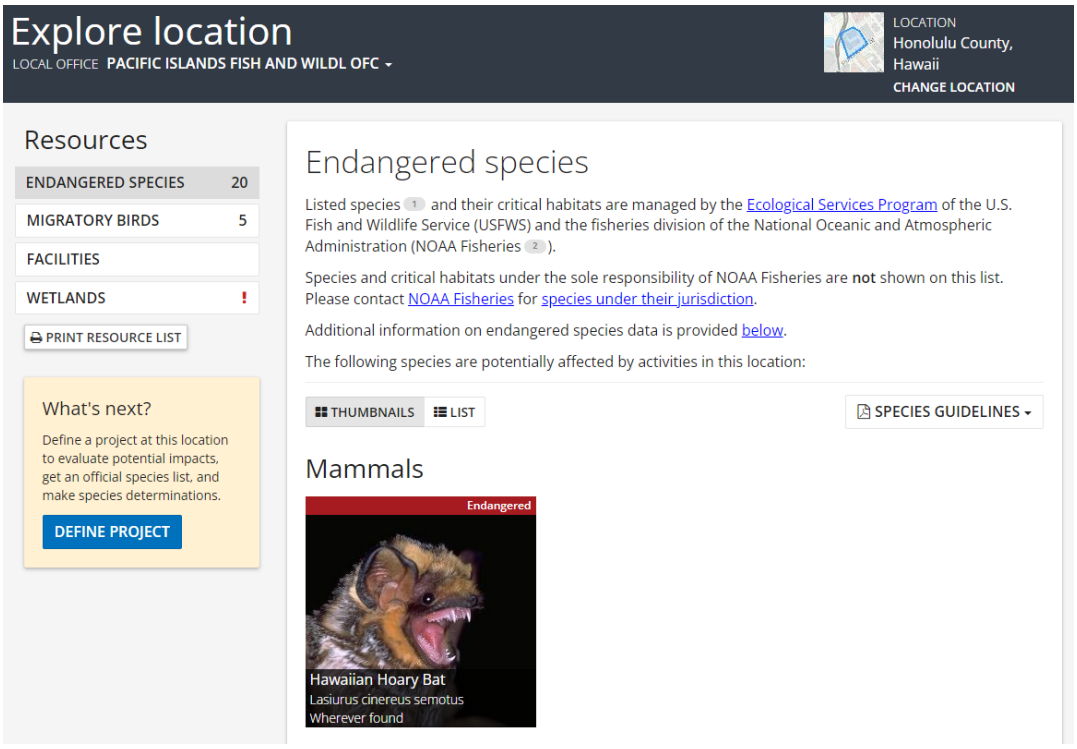


To help identify your action area you can choose between multiple base maps available.

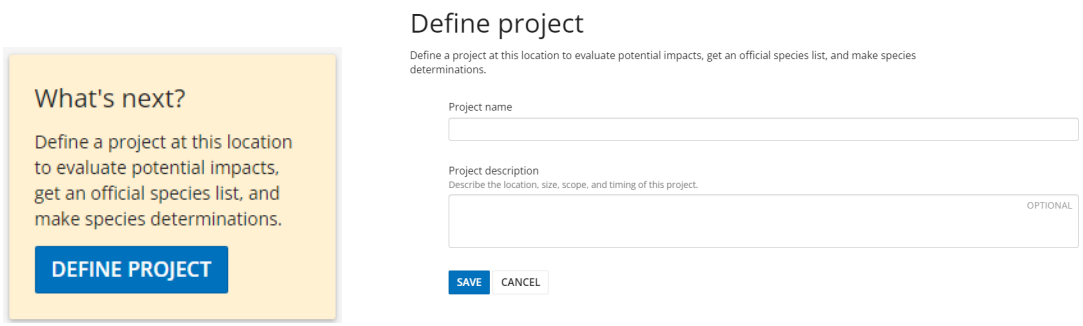


Press continue when you have finished drawing or uploading the action area location.

- The species information on the page that follows is not official. However, it identifies the project County, local Fish and Wildlife Field Office, species covered under NOAA Fisheries as well as Migratory Bird Treaty Act species. The list can be viewed in Thumbnail or List format.
- Once the species list populates you will see images of the species that may occur on, near, or transgress across your project. Click on SPECIES GUIDELINES on your top right to see Avoidance and Minimization measures to incorporate into your General Project Design Guidelines.

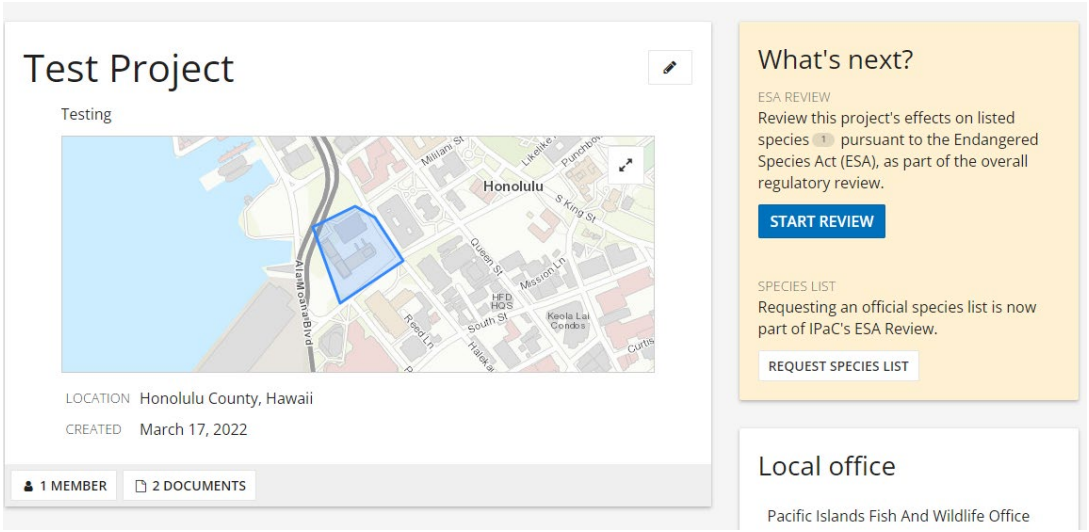


- Continue with the following steps to comply with the requirements of ESA section 7 to obtain an **official species list**.
- Select Define Project

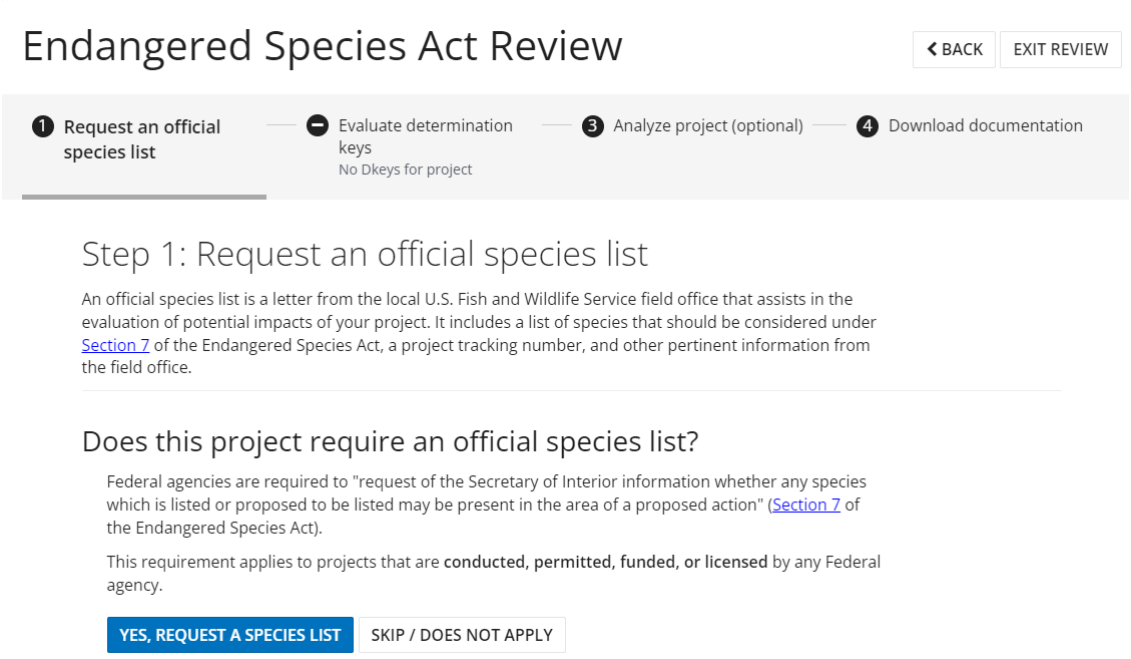


Enter the Project Name and a brief description of the project (a description is not mandatory, but recommended for future coordination with the Service). Click SAVE at bottom of page.

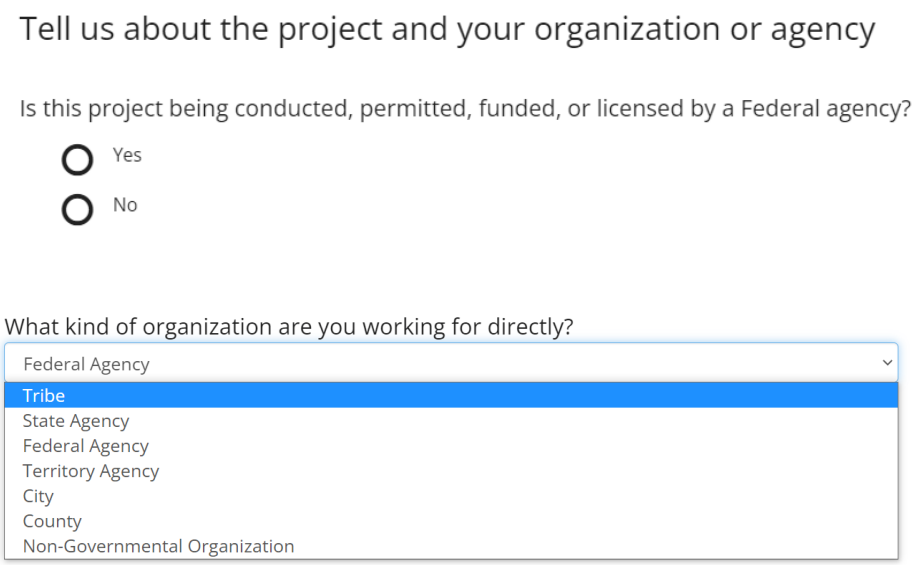
- At the bottom of the What's next box on the right, click Request Species List



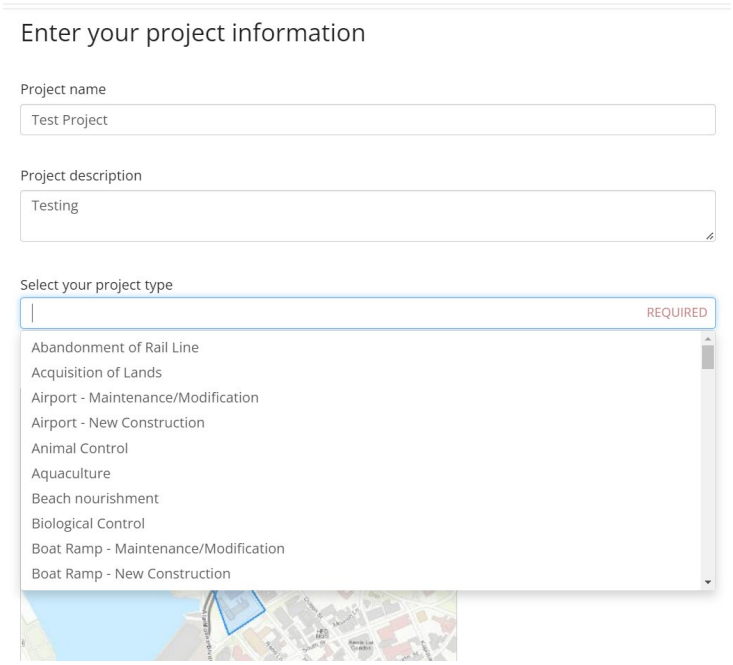
- on the following screen, click Yes, Request Species List



- Fill out the contact information for yourself or your agency. Contractors, state partners, and any other project proponents may request a species list and should be covered using the dropdown menus.



- From the pull-down menu for Classify Type of Project, select the project type that best fits the proposed action.

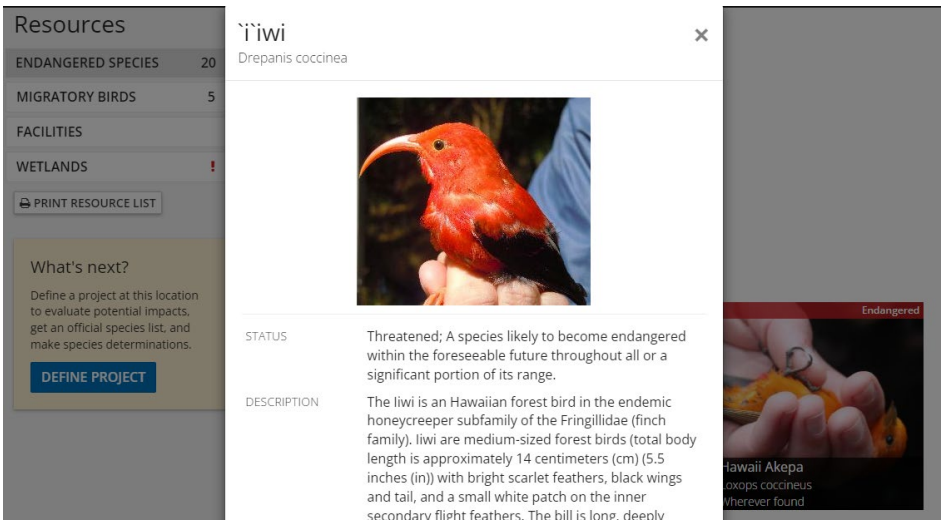


- Once all required sections are filled out, press SUBMIT OFFICIAL SPECIES LIST REQUEST



- An Official Species List should be generated and available for download in a couple of seconds.

- If you need additional information on a species, click on their name that is hot-linked to their species information page. A brief overview of the species' status, description and critical habitat will appear as well as a link to their ECOS species profile.



MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Chelsie Javar-Salas, Manager
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Ms. Javar-Salas:

Thank you for your comments dated February 19, 2025, regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS) we thank you for providing the online resources available for consultation. A project specific Flora and Fauna Survey Report has been prepared and will be included in the Draft Environmental Assessment (EA). The Survey did not identify any State or Federally protected or vulnerable species of plants or animals in the vicinity of the project site.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\USFWS.docx

MAR 1 0 2025

JOSH GREEN, M.D.
GOVERNOR
KE KIA'ĀINA

KEITH A. REGAN
COMPTROLLER
KA LUNA HO'OMALU HANA LAULĀ

MEOH-LENG SILLIMAN
DEPUTY COMPTROLLER
KA HOPE LUNA HO'OMALU HANA LAULĀ

STATE OF HAWAI'I | KA MOKU'ĀINA O HAWAI'I
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES | KA 'OIHANA LOIHELU A LAWELAWE LAULĀ
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)25.032

MAR - 5 2025

Finn Gibson
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Finn Gibson:

Subject: Early Consultation for Proposed 2.0MG Water Storage Tank
Kihei, Maui, Hawaii
TMK Nos (2)2-2-002:084, (2)2-2-002:086

Thank you for the opportunity to comment on the subject project. We have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Dora Choy-Johnson of the Planning Branch at (808) 586-0488.

Sincerely,

GORDON S. WOOD
Public Works Administrator

DC:va
c: Eric Agena, MDO

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Gordon S. Wood, Administrator
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, Hawai'i 96810

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086)

Dear Mr. Wood,

Thank you for your letter dated March 5, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS) we acknowledge that the project does not impact any of the Department of Accounting and General Services's projects or existing facilities.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment that is being prepared for this project. Should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DAGS.docx

JOSH GREEN, M.D.
GOVERNOR
KE KIAʻĀINA

STEPHEN F. LOGAN
MAJOR GENERAL
ADJUTANT GENERAL
KA ʻAKUKANA KENELALA

PHILLIP L. MALLORY III
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL
KA HOPE ʻAKUKANA KENELALA

STATE OF HAWAIʻI
KA MOKUʻĀINA O HAWAIʻI
DEPARTMENT OF DEFENSE
KA ʻOIHANA PILI KAUA
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAIʻI 96816-4495

March 11, 2025

Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96793
Attn: Finn Gibson

SUBJECT: Early Consultation for Draft Environmental Assessment
Proposed 2.0MG Water Storage Tank, Kihei, Maui
TMK: (2) 2-2-002:084 (portion)

Aloha Mr. Gibson:

Thank you for your early consultation letter dated February 10, 2025 regarding the above subject project. The State of Hawaiʻi, Department of Defense has no comments to offer at this time.

Should there be any questions, please contact Major Randall Duldulao at 808-369-3487 or randall.s.duldulao@hawaii.gov.

Best Wishes,

Wade Ishii

Wade Ishii
Assistant Chief Engineering Officer

JOSH GREEN, M.D.
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

STATE OF HAWAIʻI
DEPARTMENT OF EDUCATION
KA ʻOIHANA HOʻONAʻAUAO
P.O. BOX 2360
HONOLULU, HAWAIʻI 96804

OFFICE OF FACILITIES AND OPERATIONS

March 6, 2025

Mr. Finn Gibson
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for Proposed 2.0 MG Water Storage Tank, Kihei, Maui, Hawaii

Dear Mr. Gibson:

Thank you for your letter dated February 10, 2025. Based on the information provided, we have determined that the proposed project will not impact on the operations of the Hawaii State Department of Education campuses.

Should you have any questions, please contact Cori China of the Facilities Development Branch, Planning Section, at (808) 784-5080 or via email at cori.china@k12.hi.us.

We appreciate the opportunity to comment.

Sincerely,

Roy Ikeda
Interim Public Works Manager
Planning Section

RI:ctc
c: Facilities Development Branch

JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

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

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
Maui District Health Office
54 South High St. Rm. #300
Wailuku, HI 96793

DATE: February 25, 2025

TO: Finn Gibson, Analyst
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96793
Email: planning@munekiyohiraga.com

FROM: Patti Kitkowski, Maui District EH Program Chief
Maui District Health Office
54 S. High St. Rm. 300
Wailuku, HI 96793

SUBJECT: Early Consultation request for proposed 2.0MG Water Storage Tank
TMK: (2) 2-2-002:084

In most cases, the District Health Office will no longer provide individual comments to agencies or project owners to expedite the land use review and process.

Agencies, project owners, and their agents should apply Department of Health "Standard Comments" regarding land use to their standard project comments in their submittal. Standard comments can be found on the Land Use Planning Review section of the Department of Health website: https://health.hawaii.gov/epo/landuse/. Contact information for each Branch/Office is available on that website.

Note: Agencies and project owners are responsible for adhering to all applicable standard comments and obtaining proper and necessary permits before the commencement of any work.

General summary comments have been included for your convenience. However, these comments are not all-inclusive and do not substitute for review of and compliance with all applicable standard comments for the various DOH individual programs.

Clean Air Branch

1. All project activities shall comply with the Hawaii Administrative Rules (HAR), Chapters11-59 and 11-60.1.
2. Control of Fugitive Dust: You must reasonably control the generation of all airborne, visible fugitive dust and comply with the fugitive dust provisions of HAR, Chapter 11-60.1-33. Note that activities that occur near existing residences, businesses, public areas, and major thoroughfares exacerbate potential dust concerns. It is recommended that a dust control management plan be developed which identifies and mitigates all activities that may generate airborne and visible fugitive dust and that buffer zones be established wherever possible.
3. Standard comments for the Clean Air Branch are at: https://health.hawaii.gov/epo/landuse/

Clean Water Branch

1. All project activities shall comply with the HAR, Chapters 11-53, 11-54, and 11-55. The following Clean Water Branch website contains information for agencies and/or project owners who are seeking comments regarding environmental compliance for their projects with HAR, Chapters 11-53, 11-54, and 11-55: https://health.hawaii.gov/cwb/clean-water-branch-home-page/cwb-standard-comments/

Hazard Evaluation & Emergency Response Office

1. A Phase I Environmental Site Assessment (ESA) and Phase II Site Investigation should be conducted for projects wherever current or former activities on site may have resulted in releases of hazardous substances, including oil or chemicals. Areas of concern include current and former industrial areas, harbors, airports, and formerly and currently zoned agricultural lands used for growing sugar, pineapple, or other agricultural products.
2. Standard comments for the Hazard Evaluation & Emergency Response Office are at: https://health.hawaii.gov/epo/landuse/.

Indoor and Radiological Health Branch

1. Project activities shall comply with HAR Chapters 11-39, 11-45, 11-46, 11-501, 11-502,11-503, and 11-504.
2. Construction/Demolition Involving Asbestos: If the proposed project includes renovation/demolition activities that may involve asbestos, the applicant should contact the Asbestos and Lead Section of the Branch at https://health.hawaii.gov/irhb/asbestos/

Safe Drinking Water Branch

1. Agencies and/or project owners are responsible for ensuring environmental compliance for their projects in the areas of 1) Public Water Systems; 2) Underground Injection Control; and 3) Groundwater and Source Water Protection in accordance with HAR

Chapters 11-19, 11-20, 11-21, 11-23, 11-23A, and 11-25. They may be responsible for fulfilling additional requirements related to the Safe Drinking Water program: https://health.hawaii.gov/sdwb/.
2. Standard comments for the Safe Drinking Water Branch can be found at: https://health.hawaii.gov/epo/landuse/.

Solid & Hazardous Waste Branch

1. Hazardous Waste Program - The state regulations for hazardous waste and used oil are in HAR Chapters 11-260.1 to 11-279.1. These rules apply to the identification, handling, transportation, storage, and disposal of regulated hazardous waste and used oil.
2. Solid Waste Programs - The laws and regulations are contained in HRS Chapters 339D,342G, 342H, and 342I, and HAR Chapters 11-58.1 and 11-282. Generators and handlers of solid waste shall ensure proper recycling or disposal at DOH-permitted solid waste management facilities. If possible, waste prevention, reuse, and recycling are preferred options over disposal. The Office of Solid Waste Management also oversees the electronic device recycling and recovery law, the glass advanced disposal fee program, and the deposit beverage container program.
3. Underground Storage Tank Program – The state regulations for underground storage tanks are in HAR Chapter 11-280.1. These rules apply to the design, operation, closure, and release response requirements for underground storage tank systems, including unknown underground tanks identified during construction.
4. Standard comments for the Solid & Hazardous Waste Branch can be found at: https://health.hawaii.gov/epo/landuse/.

Wastewater Branch
For comments, please email the Wastewater Branch at: doh.wwb@doh.hawaii.gov.

Sanitation Branch/Local DOH Comments:

1. According to HAR, Chapter 11-26-35, Vector Control, no person, firm, or corporation shall demolish or clear any structure, place, or vacant lot without first ascertaining the presence or absence of rodents that may endanger public health by dispersal from such premises. Should any such inspection reveal the presence of rodents, the rodents shall be eradicated before demolishing or clearing the structure, site, or vacant lot. A demolition or land clearing permit is required prior to demolition or clearing.

Other

1. CDC - **Healthy Places - Healthy Community Design Checklist Toolkit** recommends that state and county planning departments, developers, planners, engineers, and other interested parties apply these principles when planning or reviewing new developments or redevelopment projects.
2. If new information is found or changes are made to your submittal, DOH reserves the right to implement appropriate environmental health restrictions as required. Should there be any questions on this matter, please contact the Department of Health, Maui District Health Office, at (808) 984-8230.

JOSH GREEN, M.D.
GOVERNOR OF HAWAI'I
KE KIA'ĀINA O KA MOKU'ĀINA 'O HAWAI'I

KENNETH S. FINK, MD, MGA, MPH
DIRECTOR OF HEALTH
KA LUNA HO'OKELE

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

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
KA 'OIHANA OLAKINO
Maui District Health Office
54 South High St. Rm. #300
Wailuku, HI 96793

February 25, 2025

Finn Gibson
Analyst
Munekiyo & Hiraga
305 High Street, Suite 104
Wailuku, HI 96793
planning@munekiyohiraga.com

Dear Mr. Gibson:

Subject: Proposed 2.0 MG Water Storage Tank
TMK: (2) 2-2-002:084

Thank you for the opportunity to comment on this project. We have no comment to offer.

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

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

Sincerely,

Patti Kitkowski

Patti Kitkowski
Program Chief Environmental Health

c: Joanna Seto, EMD Administrator

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Karlynn K. Fukuda
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VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Patti Kitkowski, Program Chief
State of Hawai'i
Department of Health, Maui District Health Office
54 South High Street, Room #300
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084 and 086)

Dear Ms. Kitkowski:

Thank you for your comments dated February 25, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. In response to the general comments of the Clean Air Branch, we confirm that measures will be implemented during construction of the proposed water tank to manage and contain fugitive dust, in compliance with Hawai'i Administrative Rules (HAR), section 11-60.1-33. Dust control measures may include watering of graded areas.

2. We offer the following information with regard to the general comments from the Clean Water Branch:

   a. The proposed project will involve implementation of stormwater management measures to ensure that water quality of nearby state waters is not adversely affected. It is noted that there are no streams in or around the project site, including the proposed access road, so adverse effects on water quality are not anticipated.

   b. The provisions of an NPDES permit will be followed closely during construction of the proposed project.

   c. A Section 401 Water Quality Certification (WQC) is not anticipated to be required for the project.

   d. Any discharge of stormwater runoff will be managed through the use of temporary and permanent Best Management Practices (BMPs) in order to ensure compliance with HAR Chapters 11-53, 11-54, and 11-55.

   e. The State's position on water quality is acknowledged. The project team will protect water quality through the use of BMPs to the extent practicable.

3. We offer the following information with regard to the general comments from the Hazard Evaluation and Emergency Response (HEER) Office:

    a. The water tank site is owned by Haleakalā Ranch Company, which was established in 1888 and has been used extensively for cattle grazing. It is therefore unlikely that sugar or other crops were grown in the vicinity of the proposed site. As such, a Phase I Environmental Site Assessment and Phase II Site Investigation have not been undertaken for the project.

    b. No HEER sites, incidents, or HEPCRA facilities are located on or around the proposed project site, including the proposed access road, according to a search of the iHEER service on May 12, 2025.

    c. The site has no known history of release of hazardous substances.

    d. The site has no known history of release of hazardous substances, and, as such, no investigation has been undertaken at this time. A HEER Sampling and Analysis Plan is not anticipated to be required for the proposed project.

    e. The site is not expected to exhibit high levels of contamination due to its history of use as grazing land for cattle.

    f. To DWS's knowledge, the site has never been used for cultivation of sugar or pineapple.

    g. DWS recognizes the importance of alerting HEER in the event of discovering previously unreported contamination.

    h. The proposed project will not make use of hazardous chemicals in any amount. As such, Tier II HEER reporting is not anticipated to be required.

4. We note compliance requirements with relevant chapters of HAR as provided by the Indoor and Radiological Health Branch.

5. It is noted that the Safe Drinking Water Branch has provided its own early consultation comments with regard to the proposed project. In response to those comments, we note that the proposed water tank will be equipped with all necessary sanitation features and be subjected to a sanitary inspection prior to public use.

6. The DWS acknowledges the standard Solid and Hazardous Waste Branch comments. The proposed water tank will not generate solid waste or wastewater.

Thank you for your participation in the Chapter 343, Hawai‘i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment (EA) being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DOH.docx

From: Tagupa, Steve <steve.tagupa@doh.hawaii.gov>
Sent: Monday, March 3, 2025 1:42 PM
To: General eMail
Subject: Chapter 343 HRS Early Consultation Request for Proposed 2.0 MG Tank, Kihei, Maui (MDWS)

This is an EXTERNAL e-mail.
Only open links and attachments from a Trusted Sender.
This is an EXTERNAL e-mail.
Only open links and attachments from a Trusted Sender.

Aloha,

This is regarding your letter to Mr. Gaudencio Lopez of the Hawaii Department of Health, Safe Drinking Water Branch (SDWB) requesting early HRS 343 consultation for a proposed 2.0 MG potable water tank at Kihei, Maui . We do not have any substantive comments at this time except for a general comment to ensure that the new tank possesses all required sanitary features. We will await submittal of the construction plans showing that the tank will be constructed with these features in place and will pass a sanitary survey inspection upon completion.

Thank you.

Steve Tagupa
Environmental Engineer | Environmental Management Division | Safe Drinking Water Branch
Hawai'i State Department of Health | Ka 'Oihana Olakino
2385 Waimano Home Road | Uluakupu Building 4 | Pearl City, Hawaii 96782-1400
Office: (808) 586-4258 | **Direct**: (808) 586-4266 | **Fax**: (808) 586-4351
Email: steve.tagupa@doh.hawaii.gov

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Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Steve Tagupa
State of Hawai'i
Department of Health, Safe Drinking Water Branch
Uluakupu Building 4
2385 Waimano Home Road
Pearl City, Hawai'i 96782

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084 and 086)

Dear Mr. Tagupa:

Thank you for your comments dated March 3, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. We confirm that the proposed water tank will possess all required sanitary features and undergo a sanitary inspection upon completion and prior to public use.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DOH SDWB.docx

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

March 11, 2025

Munekiyo Hiraga
Attn: Mr. Finn Gibson, Analyst
305 High Street, Suite 104
Wailuku, Hawaii 96793

via email: planning@munekiyohiraga.com

SUBJECT: Early Consultation Request for the Proposed 2.0MG Water Storage Tank located at Kihei, Island of Maui; TMKs: (2) 2-2-002:084 and (2) 2-2-002:086 on behalf of County of Maui, **Department of Water Supply**

Dear Mr. Gibson:

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request pertaining to the subject matter to DLNR's Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

February 11, 2025

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (dlnr.land.maui@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Early Consultation Request for the Proposed 2.0MG Water Storage Tank
LOCATION: Kihei, Island of Maui; TMKs: (2) 2-2-002:084 and (2) 2-2-002:086
APPLICANT: Munekiyo Hiraga on behalf of County of Maui, **Department of Water Supply**

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **March 11, 2025.**

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(✓) Comments are included/attached.

Signed: _____
Print Name: Dina U. Lau, Acting Chief Engineer
Division: Engineering Division
Date: Feb 27, 2025

Attachments
cc: Central File

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji

Ref: Early Consultation Request for the Proposed 2.0MG Water Storage Tank
Location: Kihei, Island of Maui
TMK(s): (2) 2-2-002:084 and (2) 2-2-002:086
Applicant: Munekiyo Hiraga on behalf of County of Maui, Department of Water Supply

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible for researching the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (fhat.hawaii.gov) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: _____
DINA U. LAU, ACTING CHIEF ENGINEER

Date: Feb 27, 2025

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

DAWN N.S. CHANG
CHAIRPERSON

KENNETH S. FINK, M.D., MGA, MPH
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER
LAWRENCE H. MIIKE, M.D., J.D.
V.R. HINANO RODRIGUES

CIARA W.K. KAHAHANE
DEPUTY DIRECTOR

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES | KA 'OIHANA KUMUWAIWAI 'ĀINA
COMMISSION ON WATER RESOURCE MANAGEMENT | KE KAHUWAI PONO
P.O. BOX 621
HONOLULU, HAWAII 96809

Mar 3, 2025

REF: RFD.6385.6

TO: Mr. Russell Tsuji, Administrator
Land Division

FROM: Ciara W.K. Kahahane, Deputy Director
Commission on Water Resource Management

SUBJECT: Proposed 2.0MG Water Storage Tank, Kīhei, Maui

FILE NO.: RFD.6385.6
TMK NO.: (2) 2-2-002:084, (2) 2-2-002:086

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at http://dlnr.hawaii.gov/cwrm.

Our comments related to water resources are checked off below.

- [X] 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- [ ] 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- [ ] 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- [ ] 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at http://www.usgbc.org/leed. A listing of fixtures certified by the EAP as having high water efficiency can be found at http://www.epa.gov/watersense.
- [ ] 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at http://planning.hawaii.gov/czm/initiatives/low-impact-development/
- [ ] 6. We recommend the use of alternative water sources, wherever practicable.
- [ ] 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at http://energy.hawaii.gov/green-business-program.
- [ ] 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

☐ 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.

☐ 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.

☐ 11. The Hawaii Water Plan is directed toward the achievement of the utilization of reclaimed water for uses other than drinking and for potable water needs in one hundred per cent of State and County facilities by December 31, 2045 (§174C-31(g)(6), Hawaii Revised Statutes). We strongly recommend that this project consider using reclaimed water for its non-potable water needs, such as irrigation. Reclaimed water may include, but is not limited to, recycled wastewater, gray water, and captured rainwater/stormwater. Please contact the Hawai'i Department of Health, Wastewater Branch, for more information on their reuse guidelines and the availability of reclaimed water in the project area.

☐ 12. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.

☐ 13. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.

☐ 14. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.

☐ 15. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.

☐ 16. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.

☐ 17. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.

☐ 18. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.

☐ 19. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If you have any questions, please contact Ryan Imata of the Groundwater Regulation Branch at (808) 587-0225 or Katie Roth of the Planning Branch (808) 587-0216.

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Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Dina U. Lau, Acting Chief Engineer
State of Hawai'i
Department of Land and Natural Resources
Engineering Division
P.O. Box 621
Honolulu, Hawai'i 96809

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Chief Lau:

Thank you for your comments dated March 11, 2025 and May 12, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. Through review of the official FEMA Flood Insurance Rate Maps, it has been determined that the proposed project site lies entirely within Flood Zone X. As such, no flood-related permitting requirements are applicable.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DLNR ENGR.docx

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Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Ciara W. K. Kahahane, Deputy Director
State of Hawai'i
Department of Land and Natural Resources
Commission on Water Resource Management
P.O. Box 621
Honolulu, Hawai'i 96809

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Deputy Director Kahahane:

Thank you for your comments dated March 11, 2025 and May 12, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. The proposed project is a County DWS project and is part of the Department's efforts to continue to increase redundancy and improve resiliency in its potable water storage infrastructure within the South Maui region. The project is consistent with the goals of the County Water Use and Development Plan (WUDP), which includes strategies pertaining to storage. Discussion of the WUDP will be included in the Environmental Assessment (EA).

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DLNR CWRM.docx

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

May 12, 2025

Munekiyo Hiraga
Attn: Mr. Finn Gibson, Analyst
305 High Street, Suite 104
Wailuku, Hawai'i 96793

via email: planning@munekiyohiraga.com

SUBJECT: Early Consultation Request for the Proposed 2.0 MG Water Storage Tank located at Kihei, Island of Maui; TMK (2) 2-2-002:084 and 2-2-002:086 (por.) on behalf of County of Maui, Department of Water Supply – Late Comment

Dear Mr. Gibson:

Thank you for the opportunity to review and comment on the subject matter. The Land Division of the Department of Land and Natural Resources (DLNR) distributed or made available a copy of your request to the DLNR Divisions for their review and comments and we provided a previous reply with comments dated March 11, 2025.

We are providing you with the attached late comment for your potential inclusion and review in any future processing of the subject project.

If you have any questions, please contact Raymond Severn at (808) 587-0554 or email raymond.severn@hawaii.gov.

Sincerely,

Ian C. Hirokawa
Acting Land Administrator

Enclosures
cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N. S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA
LAND DIVISION

P.O. BOX 621
HONOLULU, HAWAII 96809

February 11, 2025

MEMORANDUM

FROM: **DLNR Agencies:**
___Div. of Aquatic Resources
___Div. of Boating & Ocean Recreation
_X_ Engineering Division (DLNR.ENGR@hawaii.gov)
_X_ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)
___Div. of State Parks
_X_ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)
___Office of Conservation & Coastal Lands
_X_ Land Division – Maui District (dlnr.land.maui@hawaii.gov)
_X_ Aha Moku Advisory Committee (leimana.k.damate@hawaii.gov)

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: Early Consultation Request for the Proposed 2.0MG Water Storage Tank
LOCATION: Kihei, Island of Maui; TMKs: (2) 2-2-002:084 and (2) 2-2-002:086
APPLICANT: Munekiyo Hiraga on behalf of County of Maui, **Department of Water Supply**

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **March 11, 2025.**

If no response is received by the above date, we will assume your agency has no comments. Should you have any questions about this request, please contact Darlene Nakamura at darlene.k.nakamura@hawaii.gov. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: JDO
Print Name: Jason D. Omick, Wildlife Program Manager
Division: Forestry and Wildlife
Date: May 11, 2025

Attachments
cc: Central File

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAIʻI | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

CIARA W.K. KAHAHANE
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

May 6, 2025

Log no. 4912

MEMORANDUM:

TO: Russell Y. Tsuji, Land Administrator
Land Division

FROM: Jason D. Omick, Wildlife Program Manager
Division of Forestry and Wildlife

The Department of Land and Natural Resources—Division of Forestry and Wildlife (DOFAW) has received Munekiyo Hiraga's communication regarding early review and comment on the proposed 2.0MG water storage tank slated for construction near Kihei, Maui; impacting TMKs (2) 2-2-002:084 and (2) 2-2-002:086. The proposed project consists of **1)** improvements to an existing access road from Līpoa Parkway, **2)** installation of inlet and outlet waterlines beneath this access road; **3)** extension of the access road from TMK (2) 2-2-002-:086 to the tank site; and **4)** construction of the new 2.0MG holding tank to include a concrete pad, chain link fencing, and drainage basin.

DOFAW has concluded that the project site is not located near any protected Federal lands; however, it is at the urban-wildland interface (where most wildland fire ignitions occur) and within seven to eight miles of ʻĀhihi-Kīnaʻu Natural Area Reserve, and Kula Forest Reserve. These reserves protect unique botanical assets that provide habitat for a variety of native wildlife species. Therefore, DOFAW requests that special attention is paid to the recommendations made at the end of this letter regarding fire prevention, forest pathogens, and invasive species.

The Division notes that there is potential for several State listed species, protected under HRS § 195D, to found within the proposed project area. These include: **1)** ʻōpeʻapeʻa, or Hawaiian Hoary Bat (*Lasiurus semotus*); **2)** several species of seabirds; and **3)** Blackburnʻs Sphinx Moth (*Manduca blackburni*). The pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*) may also occur within this area as well. While it is not a State listed species on the island of Maui, the Division will still provide important guidance to the applicant to reduce any potential impact to this species.

The State listed ʻōpeʻapeʻa or Hawaiian hoary bat (*Lasiurus semotus*) could potentially occur at or in the vicinity of the project and may roost in nearby trees. Any required site clearing should be timed to avoid disturbance to bats during their birthing and pup rearing season (June 1 through September 15). During this period woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed. Barbed wire should also be avoided in any construction as bats can become ensnared and killed by such fencing material during flight.

Artificial lighting can adversely impact seabirds that may pass through the area at night by causing them to become disoriented. This disorientation can result in their collision with manmade structures or the grounding of birds. For nighttime work that might be required, DOFAW recommends that all lights used be fully shielded to minimize the attraction of seabirds. Nighttime work that requires outdoor lighting should be avoided during the seabird fledging season, from September 15 through December 15, when young seabirds make their maiden voyage to sea.

If nighttime construction is required during the seabird fledgling season (September 15 to December 15), we recommend that a qualified biologist be present at the project site to monitor and assess the risk of seabirds being attracted or grounded due to the lighting. If seabirds are seen circling around the area, lights should then be turned off. If a downed seabird is detected, please follow DOFAW's recommended response protocol by visiting https://dlnr.hawaii.gov/wildlife/seabird-fallout-season/

Permanent lighting found at facilities also poses a risk of seabird attraction, and as such should be eliminated or minimized to the greatest extent possible to protect seabird flyways and preserve the night sky. If lighting is needed please review https://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf for illustrations and guidance related to seabird-friendly light styles that also protect seabirds and the dark starry skies of Hawaiʻi.

The project area is within the range of the State listed Blackburn's sphinx moth (*Manduca blackburni*) or BSM. Larvae of BSM feed on many nonnative hostplants, which includes tree tobacco (*Nicotiana glauca*), that grow in disturbed areas. We recommend contacting the **Maui Island Branch DOFAW office at (808) 984-8100** for further information about where BSM may be present and whether a vegetation survey should be conducted to determine the presence of BSM host plants. DOFAW recommends removing plants less than one meter in height or during the dry season to avoid harming BSM. If there is intent to either remove tree tobacco over one meter in height, or to disturb the ground around or within several meters of these plants, they must be thoroughly inspected by a qualified entomologist for the presence of BSM eggs and larvae.

The endemic pueo or Hawaiian short-eared owl (*Asio flammeus sandwichensis*) could potentially nest in the project area. Pueo nest on the ground and active nests have been found year-round. Before any potentially disturbing activity like clearing vegetation, especially ground-based disturbance, DOFAW recommends a qualified biologist

conduct surveys during crepuscular hours. Observation surveys should be done at those times from vantage points where they can see the whole project area for 2-3 nights before construction is to start. If any breeding displays are observed, it is likely there could be a nest. If pueo nests are detected in the area, a buffer zone should be established in which no activity occurs within a minimum buffer distance of 100 meters until the nesting cycle is complete and the chicks are capable of flight. DOFAW staff should be notified of any nests or adult displayed breeding behavior.

Due to the arid climate, high fine fuel load (grasses) surrounding the worksite, and risks of wildfire to listed species and native habitats, we recommend coordinating with the **Hawai‘i Wildfire Management Organization at (808)-850-0900 or admin@hawaiiwildfire.org**, on how wildfire prevention can be addressed in the project area. When engaging in activities that have a high risk of starting a wildfire—like wielding in/near tall grass, it is recommended that you: **1)** wet down the area before starting your task, **2)** continuously wet down the area as needed, **3)** have a fire extinguisher on hand, and **4)** in the event that your vision is impaired, (i.e. welding goggles) have a spotter to watch for fire ignitions. Additionally, do not park any vehicles in or near tall grass as heat from the engine/exhaust may ignite dry vegetation.

To prevent the spread of Rapid ‘Ōhi‘a Death (ROD), DOFAW requests that removal, pruning/trimming, and potentially injury to ‘ōhi‘a trees be avoided as much as possible. Wounds serve as entry points for ROD fungus and increase the odds that the tree will be infected and die. Also, clean gear/tools, clothes, footwear, and vehicles before and after use. Make sure to removal all loose soil from the aforementioned items, spray gear/tools with 70% rubbing alcohol, and wash clothes with hot water and soap. Wash tires and undercarriages of all vehicles/machinery with a high-pressure water source. If ‘ōhi‘a trees must be removed or pruned/trimmed, please conduct these activities on a still day to minimize blown sawdust and use a sharp saw to create chips rather than dust. Seal all wounds to these trees with a stump seal product (e.g. Spectricide, etc.). For more information, please consult https://cms.ctahr.hawaii.edu/rod.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid ‘Ōhi‘a Death), vertebrate and invertebrate pests (e.g., Coqui Frogs, Little Fire Ants, etc.), or invasive plant parts (e.g., Miconia, Mullein, etc.) that could harm our native species and ecosystems. We recommend consulting the **Maui Invasive Species Committee (MISC) at (808) 573-6472** to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

Mahalo for contacting our office to receive guidance regarding the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. Should the scope of the project change significantly, or should it become apparent that threatened or

endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Jesse W. Adams, Protected Species Habitat Conservation Planning Associate, at jesse.w.adams.researcher@hawaii.gov or call (808) 265-3276.

Sincerely,

JASON D. OMICK
DOFAW Wildlife Program Manager

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Jason D. Omick, Wildlife Program Manager
State of Hawai'i
Department of Land and Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl Street, Room 325
Honolulu, Hawai'i 96813

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084 and 086)

Dear Mr. Omick:

Thank you for your comments dated February 11, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. A Flora and Fauna Survey was completed by AECOS Inc. for the proposed project. As part of the survey, the 'ōpe'ape'a (Hawaiian Hoary Bat), Hawaiian seabirds, Blackburn's Sphinx Moth, and the pueo were not encountered or detected at the project site.

2. DWS acknowledges the recommendations regarding protection of the 'ōpe'ape'a and clearing of trees during the pup rearing season.

3. Nighttime work will be avoided whenever possible, particularly during the fledgling season, and outdoor lighting will be shielded downward to prevent harm to seabirds and light pollution.

4. As previously noted, the Flora and Fauna Survey did not locate any evidence of Blackburn's Sphinx Moth or its habitat in the vicinity of the proposed project. If any tree tobacco is detected on the property, it will be removed or protected with the help of a qualified biologist, as applicable.

5. The Flora and Fauna Survey, which included a morning avian survey, did not locate any evidence of pueo presence or nesting on the project site. DWS acknowledges the recommended buffer of 100 meters if pueo nests are discovered, and the notification of DOFAW.

6. DWS acknowledges the recommendations related to fire prevention. During construction, watering and fire suppressant devices will be used to minimize wildfire risk. It is noted that

the proposed water tank is intended in part to make the South Maui fire prevention system more robust by providing additional water storage.

7. The Flora and Fauna Survey included a comprehensive botanical survey of the project area. ʻŌhiʻa was not detected on the project site. As such, no trimming or removal of these trees will be necessary.

8. DWS acknowledges the recommendations to clean equipment and materials of excess soil and debris in order to prevent the spread of harmful invasive species.

Thank you for your participation in the Chapter 343, Hawaiʻi Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
K:\DATA\PR\KiheiWaterTank\Apps\ECL\Response Letters\DLNR DOFAW.docx

From: DBEDT State Planning <dbedt.stateplanning@hawaii.gov>
Sent: Friday, February 14, 2025 4:18 PM
To: General eMail <planning@munekiyohiraga.com>
Cc: Edwards, Ruby M <ruby.m.edwards@hawaii.gov>
Subject: Chapter 343, Hawai'i Revised Statutes, Early Consultation Request for Proposed 2.0MG Water Storage Tank, Kihei, Maui, Hawaii

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Sending on behalf of Mary Alice Evans, Director, Office of Planning & Sustainable Development

Aloha,

The Office of Planning & Sustainable Development (OPSD) appreciates the opportunity to provide comments as part of the early consultation for EA being prepared for the subject project. OPSD does not have any comments at this time and will provide any comments we may have on the Draft EA when it distributed for review during the public comment period.

Mahalo,

Megumi Nakayama
Administrative Assistant, Land Use Division
State of Hawai´i Office of Planning & Sustainable Development
Dept. of Business, Economic Development & Tourism
235 S. Beretania Street, 6th Floor
Honolulu, Hawaii 96813
(808) 587-2842

RICHARD T. BISSEN, JR.
Mayor

JOSIAH K. NISHITA
Managing Director

PATRICK S. MCCALL
Director

SHANE T. DUDOIT
Deputy Director

DEPARTMENT OF PARKS AND RECREATION
COUNTY OF MAUI
700 HALI'A NAKOA STREET, UNIT 2
WAILUKU, MAUI, HAWAI'I 96793
www.mauicounty.gov



February 19, 2025

Finn Gibson
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96763

Dear Mr. Gibson:

SUBJECT: CHAPTER 343, HAWAI'I REVISED STATUES, EARLY CONSULTATION REQUEST FOR PROPOSED 2.0MG WATER STORAGE TANK, KIHEI, MAUI HAWAI'I

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

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

Sincerely,

PATRICK S. MCCALL
Director of Parks and Recreation

c: Samual Marvel, Chief of Planning and Development

PSM:SAM:gh

Subject: Proposed 2 MG Water Storage Tank Kihei

From: Marcy L. Martin <Marcy.Martin@co.maui.hi.us>
Sent: Friday, February 14, 2025 7:46 AM
To: General eMail <planning@munekiyohiraga.com>
Subject: Proposed 2 MG Water Storage Tank Kihei

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Once the possessory interest of the County of Maui is established, make sure to apply for a Real Property Assessment exemption.

Marcy Martin
Director of Finance
(808) 270-7474

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Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Marcy Martin, Director
County of Maui
Department of Finance
200 South High Street
Kalana O Maui Building, 2nd Floor
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Director Martin:

Thank you for your comments dated February 14, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS) we confirm that DWS will apply for a Real Property Assessment exemption upon establishing interest in ownership.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment (EA) being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
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FEB 24 2025

RICHARD T. BISSEN, JR.
Mayor

RICHARD E. MITCHELL, ESQ.
Director

SAUMALU MATA'AFA
Deputy Director



DEPARTMENT OF HOUSING
COUNTY OF MAUI
2065 MAIN STREET, SUITE 108
WAILUKU, MAUI, HAWAI'I 96793
PHONE: (808) 270-7110
FAX: (808) 270-6284

February 14, 2025

Finn Gibson, Analyst
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawai'i 96793

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES, EARLY CONSULTATION REQUEST FOR PROPOSED 2.0 MG WATER STORAGE TANK, KIHEI, MAUI, HAWAI'I

Dear Mr. Gibson,

The Department of Housing (Department) is in receipt of your letter dated February 10, 2025, requesting early consultation on the above-referenced project (Project). The Department is responsible for enforcement of Chapter 2.96, Maui County Code.

The Department has reviewed the information submitted. The proposed Project does not trigger Chapter 2.96, Maui County Code, and therefore a residential workforce housing agreement is not required.

If you have any additional questions, please contact the Department at (808) 270-7110 or director.housing@co.maui.hi.us.

Sincerely,

RICHARD E. MITCHELL, ESQ.
Director of Housing

MUNEKIYO HIRAGA
Planning. Project Management. Sustainable Solutions.

Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Richard E. Mitchell, Esq., Director
County of Maui
Department of Housing
2065 Main Street, Suite 108
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Director Mitchell,

Thank you for your comments dated February 14, 2025, regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we thank you for your confirmation that a residential workforce housing agreement is not required for the proposed project.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment (EA) being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
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RICHARD T. BISSEN, JR.
Mayor

LORI TSUHAKO
Director

JESSICA CROUSE
Deputy Director



DEPARTMENT OF HUMAN CONCERNS
COUNTY OF MAUI
2200 MAIN STREET, SUITE 546
WAILUKU, MAUI, HAWAI'I 96793
PHONE: (808) 270-7805

February 13, 2025

Finn Gibson, Analyst
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Gibson:

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES, EARLY CONSULTATION REQUEST FOR PROPOSED 2.0MG WATER STORAGE TANK, KIHEI, MAUI, HAWAII

Thank you for the notification of the proposed subject project. Upon review of the materials provided, I have determined that this project will not have an impact on any existing or proposed projects, plans, policies, or programs coordinated by the Department of Human Concerns. I have no additional comments to provide at this time.

Sincerely,

for LORI TSUHAKO, LSW, ACSW
Director of Human Concerns

MUNEKIYO HIRAGA
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Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Margaret Willis, Director
County of Maui
Department of Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Director Willis,

Thank you for your letter dated February 13, 2025 regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS) we acknowledge your determination that the project will not have an impact on any existing or proposed projects, plans, policies, or programs by the Department of Human Concerns.

Thank you again for your participation in the Chapter 343, Hawai'i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft Environmental Assessment that is being prepared for this project. Should you have any questions or require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
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Tracy Nakamoto

From: John K. Molitau <John.K.Molitau@co.maui.hi.us>
Sent: Thursday, February 27, 2025 12:20 PM
To: General eMail
Cc: Deanna L. Thyssen
Subject: Chapter 343, Hawai'i Revised Statutes, Early Consultation Request from Proposed 2.0MG Water Storage Tank, Kīhei, Maui, Hawai'i

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Aloha e Finn,

I am sending this email in response to mail correspondence received at the Department of ʻŌiwi with regards to the above Subject matter. First of all, mahalo for the correspondence and going through early consultation requests from our department to offer questions that lend to this discussion. Here are a few of our initial questions for this project:

1. Has there been any cursory review of any archaeological features on project site including road?
2. Are there cultural sites being impacted in these areas, if so, what is the plan for these cultural sites impacted?
3. Has there been any burials inadvertent or known in this location? Will there be a GPR utilized to locate potential anomalies in the project area?
4. Will you have a cultural monitor/archaeological monitor on site during ground disturbance and construction?

Please let me know if you need further clarifications to my questions and mahalo for your time in sending over this correspondence and going through early consultation.
Mahalo nui,

Kapono'ai Molitau
Po'o
ʻOihana Kumuwaiwai ʻŌiwi
David Trask Building
2145 Kaohu Street Suite 203
Wailuku, Maui, Hawaiʻi 96793
Kelepona: 808.270.6177
Kelepona Lawe Lima: 808.318.0713

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Karlynn K. Fukuda
PRESIDENT
Mark Alexander Roy AICP, LEED AP
VICE PRESIDENT
Tessa Munekiyo Ng AICP
VICE PRESIDENT

Michael T. Munekiyo AICP
FOUNDER

April 21, 2026

Kapono'ai Molitau, Po'o
County of Maui
Department of 'Ōiwi Resources
200 South High Street
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed 2-Million-Gallon Water Storage Tank Located in Kīhei, Maui, Hawai'i (TMK No. (2)2-2-002:084) and 086

Dear Po'o Molitau:

Thank you for your comments dated February 27, 2025, regarding the proposed 2-million-gallon (MG) water storage tank located in Kīhei. On behalf of the County of Maui, Department of Water Supply (DWS), we offer the following information in response to your comments.

1. An archaeological Literature Review and Field Inspection (LRFI) Report was prepared for the proposed project, including the access road.The LRFI included detailed historical, cultural, and archaeological background research and field inspection.

2. A Cultural Impact Assessment (CIA) was also prepared for the proposed project. The CIA noted that no ongoing cultural practices or cultural resources are located within or around the project site, including the access road. As such, the CIA did not suggest any mitigation measures**.**

3. The LRFI noted that, based on review of the natural and historic background of the project area, combined with a review of previous archaeological studies in the vicinity, subsurface historic properties are unlikely to exist within the shallow soil deposits present within the project area. The LRFI further stated that "archaeological monitoring of project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties".

3. Based on a site survey and review of past archaeological documentation of the project area, the LRFI concluded that subsurface historic properties, including burials, are not likely to be present on the project site. Based on this conclusion, further analysis has been deemed unnecessary.

   The State Historic Preservation Division (SHPD) also conducted a site visit for the proposed project and issued a determination of "no historic properties affected." No historic properties were observed within the project area. Archaeological monitoring was not required by SHPD.

4. As noted above, the LRFI prepared for the proposed project noted that archaeological monitoring during construction and ground disturbance is not warranted. SHPD concurred with this determination during its site visit.

Thank you for your participation in the Chapter 343, Hawai‘i Revised Statutes environmental review process. A copy of your letter and this response will be included in the Draft EA being prepared for this project. Should you have any questions or required additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



Finn Gibson, Analyst
Munekiyo Hiraga

FG:de
cc: James Jensen, County of Maui, Department of Water Supply
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X. REFERENCES

X. REFERENCES

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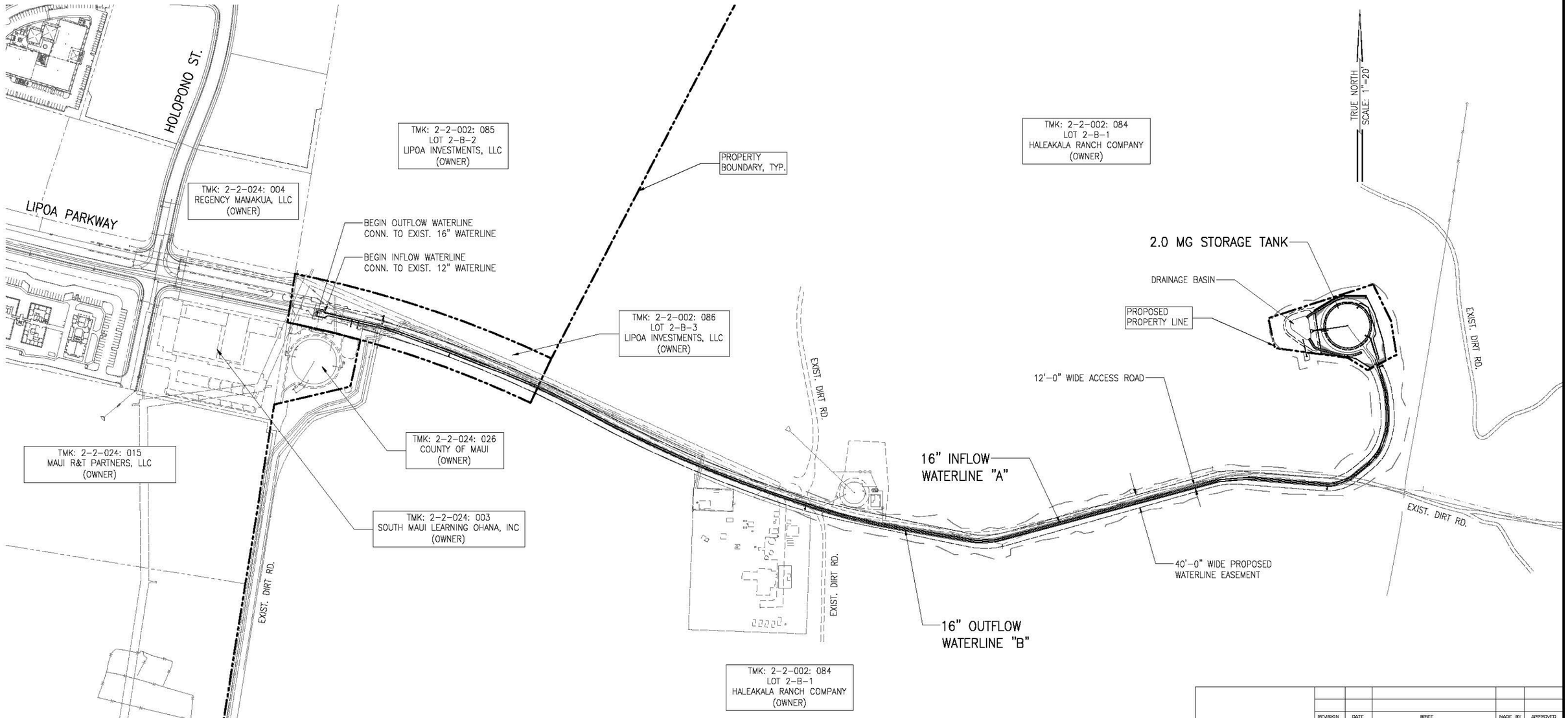
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APPENDIX A.
PROJECT PLANS



NOTE:
DRAINAGE STUDY DOES NOT INCLUDE ACCESS ROAD FROM STATION 0+00 TO STATION 33+00. THE PROPOSED PAVED ROAD WILL REPLACE THE EXISTING DIRT ACCESS ROAD AND WILL NOT AFFECT THE DRAINAGE CONDITIONS ONSITE OR DOWNSTREAM.

GENERAL SITE PLAN

SCALE: 1"=150'

REVISION	DATE	BRIEF	MADE BY	APPROVED

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
GENERAL SITE PLAN

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

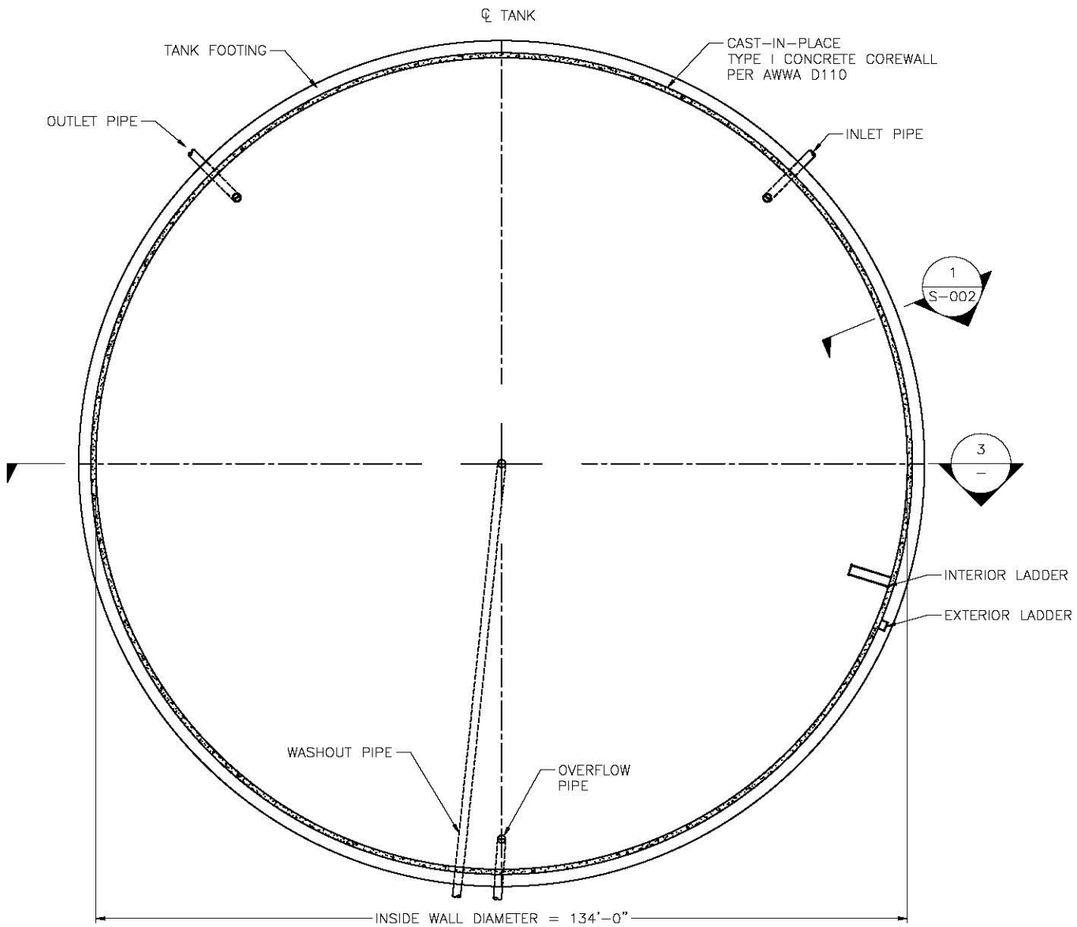
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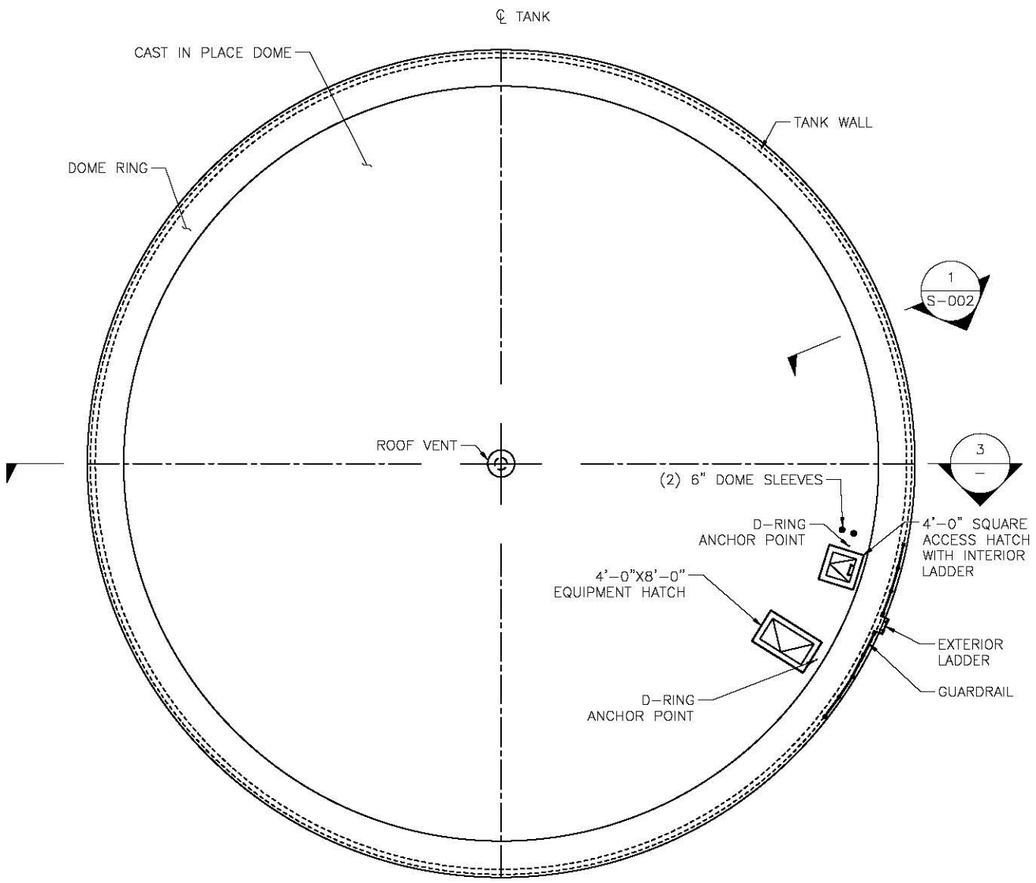
DWG. NO. EXH 1
SHEET 1 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

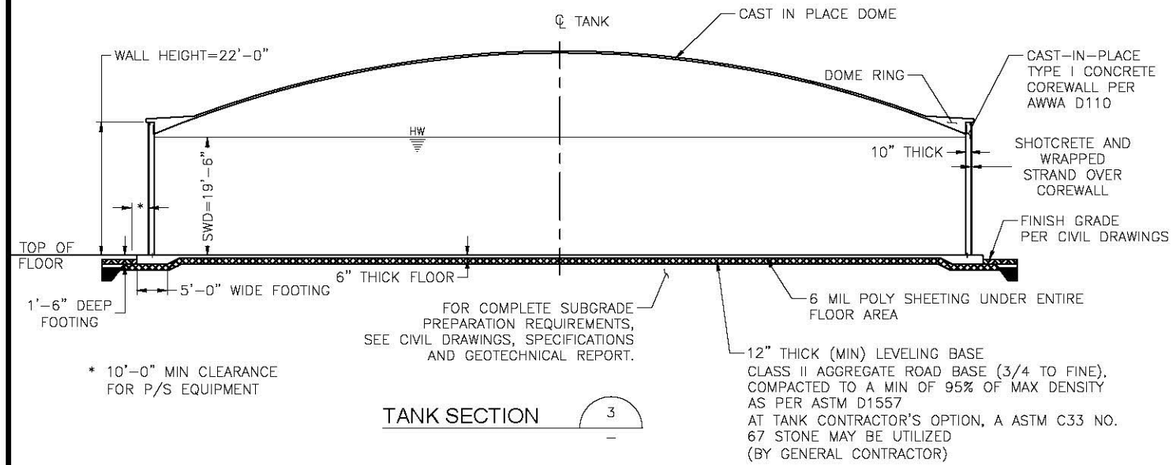
FN:\2022\22-536 MRTP 1.0 MG RESERVOIR\ENGINEERING\REPORTS AND CALCULATIONS\DRAINAGE REPORT\EXHIBITS\EXH 1 GENERAL SITE PLAN.DWG Feb 06, 2026-11:17 AM



FLOOR PLAN 1



ROOF PLAN 2



TANK SECTION 3

GENERAL NOTES:

*ALL DIMENSIONS SHOWN ARE MINIMUM REQUIREMENTS. TANK CONTRACTOR TO VERIFY DIMENSIONS WITH STRUCTURAL CALCULATIONS.

A. DESIGN LOADS
1. ROOF LOAD : 20.0 PSF LIVE; SNOW
2. LIQUID (WATER) : 62.4PCF
3. Ri, IMPULSIVE STRUCTURAL RESPONSE COEFFICIENT : 3.25 (ASCE 7 WITH CABLES) 1.50 (ASCE 7 W/O CABLES) 3.50 (AWWA WITH CABLES) 1.50 (AWWA W/O CABLES)
4. Rc, CONVECTIVE STRUCTURAL RESPONSE COEFFICIENT : 1.0
5. ANALYSIS PROCEDURE USED : EQUIVALENT LATERAL FORCE ANALYSIS

B. CONCRETE AND SHOTCRETE
1. FLOOR, AND FOOTINGS : 4000 PSI
2. DOME : 4000 PSI
3. COREWALL : 4000 PSI
4. SHOTCRETE FOR STRAND COVER AND COVER COAT (1C:3S) : 4500 PSI
5. SEE TECHNICAL SPECIFICATION FOR COMPLETE MIX DESIGN INFORMATION INCLUDING MINIMUM CEMENT CONTENT, MAXIMUM WATER–CEMENT RATIO, AGGREGATE SIZE AND ACCEPTABLE ADMIXTURES.
6. SEE TECHNICAL SPECIFICATION FOR CONCRETE PLACING AND FORMING PROCEDURES.

C. METALS
1. ALL ALUMINUM SHALL BE 6061–T6 UNLESS OTHERWISE NOTED.
2. ALL STAINLESS STEEL (SST) SHALL BE 304L UNLESS OTHERWISE NOTED.
3. ALL EXTERIOR CONNECTORS SHALL BE 304 SST UNLESS OTHERWISE NOTED.
4. ALL INTERIOR CONNECTORS SHALL BE 316 SST UNLESS OTHERWISE NOTED.
5. ALL DISIMILAR METALS SHALL HAVE ISOLATION KITS (MJ TEE BOLTS TO BE PTFE COATED OR EQUAL).

D. REINFORCING STEEL
1. ALL REINFORCING IN TANK SHALL CONFORM TO ASTM A615 GRADE 60 UNLESS OTHERWISE NOTED ON THESE DRAWINGS.
2. REINFORCING STEEL CALLED OUT AS GALVANIZED SHALL HAVE A CLASS 1 COATING IN ACCORDANCE WITH ASTM A767, WITHOUT CHROMATE.

E. EARTHWORK REQUIREMENTS
1. MINIMUM COMPACTION OF CRUSHED ROCK AND SUBGRADE BENEATH FLOOR, FOOTINGS AND PIPES SHALL BE PER GEOETECHNICAL REPORT AND SHALL AT A MINIMUM EQUAL 95% RELATIVE COMPACTION AS DETERMINED IN ACCORDANCE WITH ASTM D1557.
2. COMPACTION OF BACKFILL AROUND TANK SHALL BE PER GEOTECHNICAL REPORT AND SHALL AT A MINIMUM EQUAL 90% RELATIVE COMPACTION AS DETERMINED IN ACCORDANCE WITH ASTM D1557. USE ONLY HAND HELD COMPACTION EQUIPMENT WITHIN 5' OF TANK WALL AND LIGHTWEIGHT EQUIPMENT (15,600 LBS MAX) BETWEEN 5' AND 15' OF THE TANK WALL SO AS NOT TO DAMAGE THE WALL. INSTALL THE BACKFILL AROUND THE TANK IN UNIFORM LIFTS WHEN POSSIBLE. VARIANCE IN BACKFILL HEIGHTS AROUND THE TANK DURING INSTALLATION SHALL NEVER EXCEED THE FINAL DIFFERENTIAL IN BACKFILL HEIGHTS.

2.00 MG WATER STORAGE TANK

Kihei, HI

REV	DATE	DESCRIPTION
DWN:WWINTERS	CHK:WWINTERS	DATE: 06/19/2024
	DESIGNER	

AWWA D110 TYPE I CAST IN PLACE CONCRETE STORAGE TANK

TANK PLANS AND SECTION

DRAWING NUMBER
S–001

APPENDIX B.

FLORA AND FAUNA SURVEY

Flora and fauna assessment for a 2.0 MG water tank installation, Kihei, Maui



AECOS Inc.
45-939 Kamehameha Highway
Suite 104
Kāneʻohe, Hawaiʻi 96744

November 21, 2024

Flora and fauna assessment for a 2.0 MG water tank installation, Kihei, Maui

November 21, 2024 *AECOS* No. 1831[1]

Victor Unnone and Eric Guinther
AECOS Inc.
45-939 Kamehameha Highway, Suite 104
Kāneʻohe, Hawaiʻi 96744
Phone: (808) 234-7770 Fax: (808) 234-7775 Email: victor@aecos.com

Introduction

The County of Maui, Department of Water Supply (DWS) proposes to develop a two-million gallon water storage reservoir (water tank) and associated overflow catchment basin in Kihei, Maui (the "Project"). Work includes the installation of parallel tank inlet and outlet waterlines mostly along an existing road, these to connect the tank to existing waterlines located within Lipoa Parkway. *AECOS*, Inc. was contracted to conduct a biological survey of flora and fauna within the Project site[2] (Figure 1).

The Project site (Figure 2) is approximately 7 ac (2.8 ha) in area and comprises a gated, paved road that extends some 500 m (1,640 ft) from the upper end of Lipoa Parkway to second (farm) gate, where the road (owned by Haleakala Ranch) becomes graveled (Figure 3). Proposed access off the graveled road curves through an area of dense *kiawe* in a small gully to reach a more-or-less level area around 118 m (387 ft) elevation above sea level where the reservoir and an overflow catchment (detention) basin would be constructed (Figure 4).

[1] This report is ADA compliant.

[2] This report was prepared for DWS and is intended to become part of the public record by incorporation into the EA prepared for the subject project.

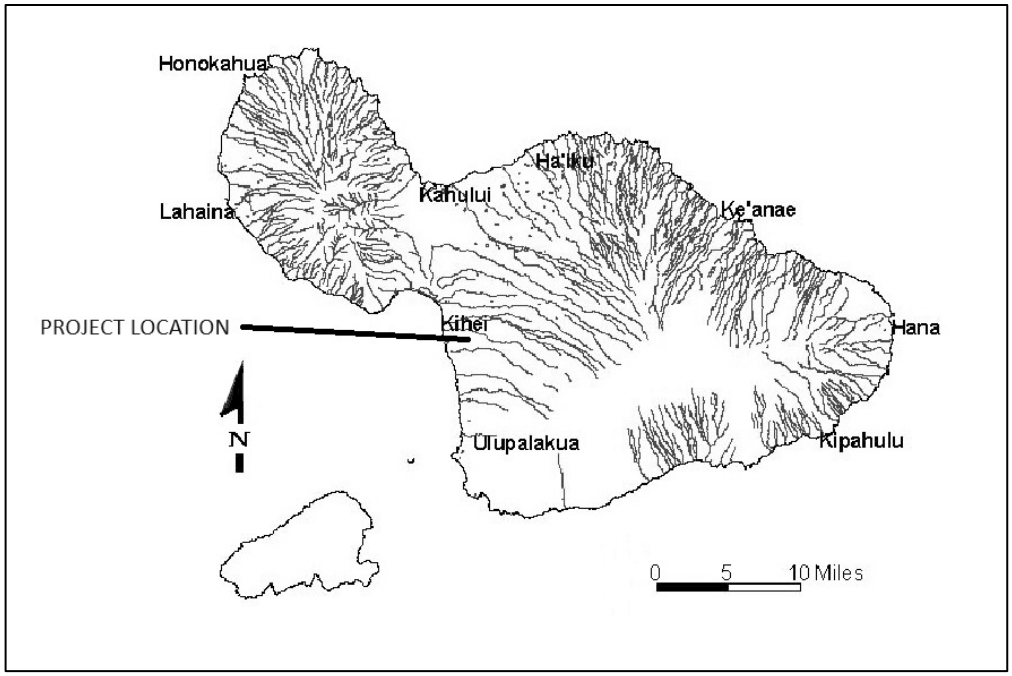


Figure 1. Project location on the Island of Maui.

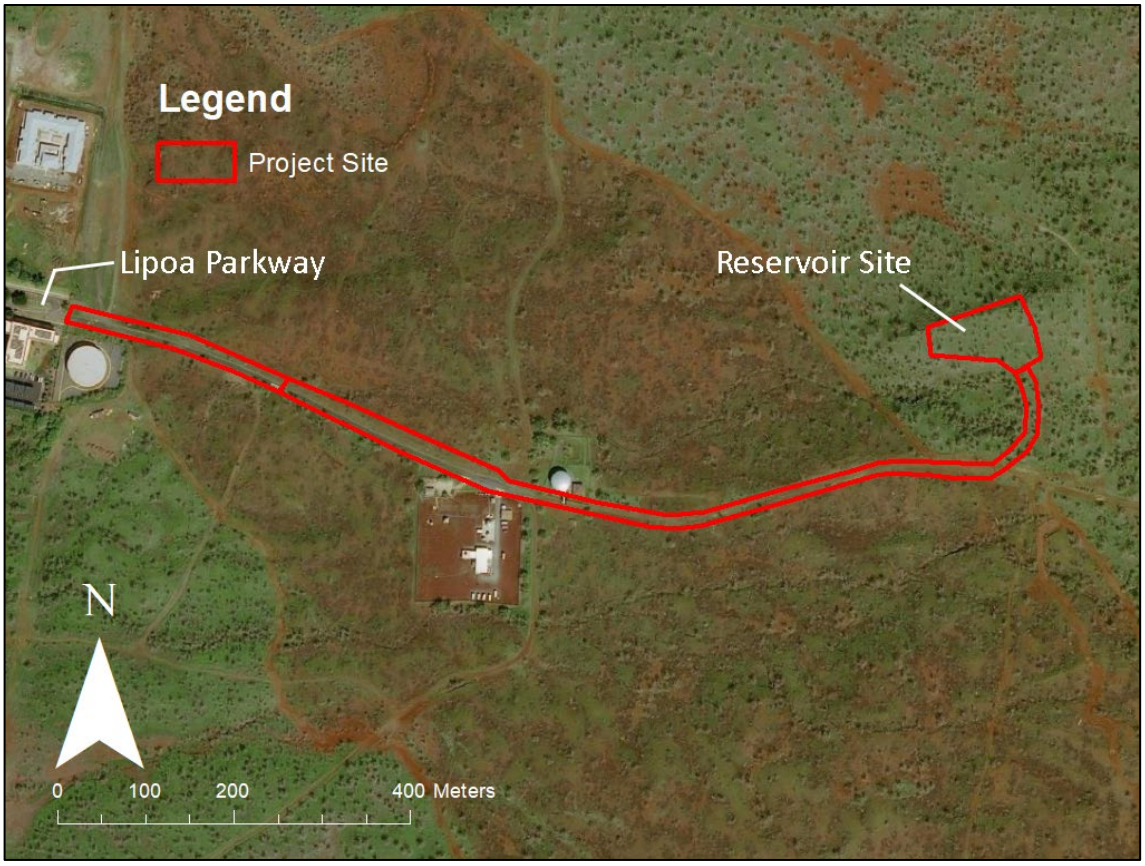


Figure 2. Map of the survey area off Lipoa Parkway in Kihei, Maui.



Figure 3. Graveled ranch road portion of the Project site.



Figure 4. Site of proposed reservoir.

Methods

Botanical Survey

AECOS biologists Victor Unnone and Eric Guinther walked the survey area on the morning of July 1, 2024. Plant species were identified as they were encountered, and notes were taken to develop a relative abundance of each species recorded. Species names follow *Manual of the Flowering Plants of Hawai'i* (Wagner et al., 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental and agricultural plants. More recent name changes for naturalized flowering plants mostly follow Imada (2019).

Terrestrial Vertebrates Survey

Avian Biota

AECOS biologists characterized the avian assemblage at the Project site in the morning hours, the most active time of day for birds. Visual observations were aided by Bushnell 10 x 42 mm binoculars. Weather conditions were good for avian observations, with no rain, and moderate wind (5-10 mph). Cloud cover was around 20%.

The avian phylogenetic order and nomenclature used in this report follows the AOU *Check-List of North and Middle American Birds* 2022 (Chesser et al., 2022) and the 64th supplement to the checklist (Chesser et al., 2023).

Terrestrial Mammals

AECOS biologists recorded all mammals encountered during the survey. Indicators of mammalian presence, such as tracks, scat, and other sign were noted. Mammalian phylogenetic order and nomenclature follow *Mammal Species of the World* (Wilson & Reeder, 2005) and Pinzari et al. (2020) for Hawaiian hoary bat.

Results

Vegetation

Across the entirety of the Project Site, the undeveloped landscape is a savanna dominated by two introduced grasses: buffelgrass (*Cenchrus ciliaris*) and Carolina

lovegrass (*Eragrostis pectinacea*), with scattered *kiawe* (*Prosopis pallida*) trees (Figure 5). In addition to the very abundant two grass species, golden crown beard (*Verbesina encelioides*), ʻ*uhaloa* (*Waltheria indica*), and *ʻilima* (*Sida fallax*) are abundant small shrubs found throughout the area.



Figure 5. *Kiawe* savanna pasture typical of the Project area above Kihei.

Flora

A listing of all plant taxa encountered in the survey is presented in Table 1. Entries are arranged alphabetically under family names and include scientific name, common name, status (i.e., native or non-native; see key at end of table), and relative abundance within the survey area. "Status" reflects the state-wide distribution of the species.

A total of 24 plant taxa were recorded during the survey. Among them, two are native (indigenous) species (8% of the total). No endemic natives were recorded. The remaining taxa are naturalized plants (i.e., grow naturally in the wild) introduced to the Hawaiian Islands after 1778.

Table 1. Listing of plants observed in the survey area.

Species listed by family	Common name	Status	Abundance	Notes
	FLOWERING PLANTS - MONOCOTS			
POACEAE				
Cenchrus ciliaris L.	buffelgrass	Nat	AA	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	U	
Eragrostis pectinacea (Michx.) Nees	Carolina lovegrass	Nat	AA	
	FLOWERING PLANTS – EUDICOTS			
AMARANTHACEAE				
Alternanthera pungens Kunth	khaki weed	Nat	C	
ASCLEPIADACEAE				
Calotropus gigantea (L.) W. T. Aiton	crown flower	Nat	U	
ASTERACEAE (COMPOSITAE)				
Bidens pilosa (L.)	*kī*	Nat	R	
Emilia sp.	---	Nat	R	<1>
Lactuca serriola L.	prickly lettuce	Nat	R	
Parthenium herterophorus L.	false ragweed	Nat	O	
Tridax procumbens L.	coat buttons	Nat	R	
Verbesina encelioides (Cav) Benth. & Hook.	golden crown beard	Nat	A	
BORAGINACEAE				
Heliotropium procumbens Mill.	---	Nat	R	
EUPHORBIACEAE				
Euphorbia hirta L.	garden spurge	Nat	O	
FABACEAE				
Crotalaria pallida Aiton	smooth rattlepod	Nat	O	
Desmodium tortuosum (Sw.) DC.	Florida beggarweed	Nat	R	
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	U	
Indigofera hendecaphyla (Forssk.)	creeping indigo	Nat	R	
Prosopis pallida (Humb. & Bonpl. Ex Willd.) Kunth	*kiawe*	Nat	C	
LAMIACEAE				
Leonotis nepetifolia (L.) R. Br.	lion's ear	Nat	U	
MALVACEAE				
Sida fallax Walp.	*'ilima*	**Ind**	A	
Waltheria indica L.	*'uhaloa*	**Ind**	A	
NICTAGINACEAE				
Boerhavia coccinea Mill.	false *alena*	Nat	O	

Table 1 (continued).

Species listed by family	Common name	Status	Abundance	Notes
PAPAVERACEAE				
Argemone mexicana L.	Mexican poppy	Nat	U	
SOLANACEAE				
Nicotiana glauca R. C. Graham	tree tobacco	Nat	R	

<1> Observed specimen(s) dried and without flowers.

Legend to Table 1.

STATUS = distributional status for the Hawaiian Islands:
Ind - indigenous; native to Hawai'i, but not unique to the Hawaiian Islands.
Nat - naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of the Cook Expedition in 1778, and well-established outside of cultivation.

ABUNDANCE = occurrence ratings for plants by area:

R – Rare	seen in only one or perhaps two or three times.
U - Uncommon	seen at most in several locations.
O - Occasional	seen with some regularity.
C - Common	observed numerous times during the survey.
A – Abundant	found in large numbers; may be locally dominant.
AA – Very abundant	abundant and dominant; defining vegetation type.

Avian Fauna

A total of 10 bird species, representing 8 separate families, were recorded during the survey as incidental observations and are presented in Table 2. All species recorded are non-native introductions that have become naturalized in Hawai'i.

Table 2. Avian species detected in the vicinity of the survey area.

Common Name	**ORDER** FAMILY *Species*	**Status**
	GALLIFORMES	
	PHASIANIDAE	
Gray Francolin	*Francolinus pondicerianus*	NN
Red Junglefowl	*Gallus gallus*	NN

Table 2 (continued).

Common Name	ORDER FAMILY *Species*	Status
	COLUMBIFORMES	
	COLUMBIDAE	
Spotted Dove	*Streptopelia chinensis*	NN
Zebra Dove	*Geopelia striata*	NN
	PELECANIFORMES	
	ARDEIDAE	
Cattle Egret	*Bubulcus ibis*	NN
	PASSERIFORMES	
	STURNIDAE	
Common Myna	*Acridotheres tristis*	NN
	ESTRILDIDAE	
African Silverbill	*Euodice cantans*	NN
	CARDINALIDAE	
Northern Cardinal	*Cardinalis cardinalis*	NN
	THRAUPIDAE	
Red-crested Cardinal	*Paroaria coronata*	NN
	PASSERIDAE	
House Sparrow	*Passer domesticus*	NN

Legend to Table 2.

STATUS = distributional status for the Hawaiian Islands:
NN = Non-native; naturalized, introduced to the Hawaiian Islands.

Terrestrial Mammals

One mammal was observed during our survey, the Small Indian mongoose (*Herpestes javanicus*).

Discussion and Recommendations

Recommendations are partly based on U.S. Fish and Wildlife Service Animal Avoidance and Minimization Measures (USFWS-PIFWO, 2023). Implementation of the recommendations (provided below as bulleted items) by the project

contractor will minimize impacts to protected species to the maximum extent practicable.

Botanical Resources

The vegetation of the Project area is highly disturbed pasture land. No plants proposed or listed as threatened or endangered species as set forth in the Endangered Species Act of 1973 as amended (16 U.S.C. 1531-1543; USFWS, n.d.-a; HDLNR, 1998) were seen in the survey area. For plants, state listing follows the federal listing.

Avian Resources

No avian species currently listed or proposed for listing under either the federal or State of Hawai'i endangered species statutes (HDLNR, 2015; USFWS, nd-a) were detected during the course of this survey.

It is possible Hawaiian seabirds may overfly the Project Area. Protected seabirds in Hawai'i include Wedge-tailed Shearwater (*Ardenna pacifica*), Hawaiian Petrel (*Pterodroma sandwichensis*), Newell's Shearwater (*Puffinus newelli*), and Band-rumped Storm-Petrel (*Hydrobates castro*). In the summer and fall, night-flying seabirds (especially fledglings) transiting to the sea from inland nest sites can become disoriented by exterior lighting. When disoriented, these birds may collide with man-made structures or the ground. If not killed outright, dazed or injured birds are targets of opportunity for feral mammals (Podolsky et al., 1998; Ainley et al., 2001; Day et al., 2003). The primary cause of mortality in these seabird species is predation by alien mammalian species at the nesting colonies (USFWS, 1983; Ainley et al., 2001). Collision with man-made structures is considered second-most significant as a cause of mortality of these seabirds in Hawai'i. No suitable nesting habitat for seabird species occurs in the survey area, or close to the Project site.

- The project can minimize or avoid risks to protected night-flying seabirds by not conducting night-time construction and ensuring that all outdoor lighting is fully shielded (dark sky compliant; see HDLNR-DOFAW, 2016).

No sign of Wedge-tailed Shearwater (e.g., feathers, eggs, scat) were observed at the Project site. It is unlikely that Wedge-tailed Shearwater would nest in the area, as preferable habitat—littoral vegetation at the coast (USFWS-PIFWO, 2023)—is absent. The other night-flying Hawaiian seabird species (Hawaiian Petrel, Newell's Shearwater, and Band-rumped Storm-petrel) nest at high elevations in the mountains, precluding nesting disturbance at the Project site.

Terrestrial Mammalian Resources

Hawaiian Hoary Bat

It is possible that the endangered Hawaiian hoary bat (*Lasiurus semotus*) uses resources in the area. This bat species is solitary and rare but has a widespread distribution in Hawai'i. The Hawaiian hoary bat uses multiple roosts within a home territory (Bonaccorso, 2015), so the disturbance associated with removal of any particular tree would be minimal. An exception might be during the pupping season if a female bat carrying a pup, or an unattended pup, is in a tree being felled; these individuals could be unable to flee the tree.

- Potential adverse impacts to Hawaiian hoary bat can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) between June 1 and September 15, the bat pupping season, and by avoiding the use of barbed wire for fencing (USFWS-PIFWO, 2023).

Other Resources of Potential Concern

Critical Habitat

The Project site is not within nor near federally delineated Critical Habitat (USFWS, n.d.-a). No equivalent designation exists under state law.

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APPENDIX C.

ARCHAEOLOGICAL LITERATURE REVIEW AND FIELD INSPECTION REPORT

Final
Archaeological Literature Review and Field Inspection Report for the 2.0 Million-Gallon (MG) Water Storage Tank Project, Waiohuli Ahupua‘a, Makawao District, Maui Island TMKs: [2] 2-2-002:084 (por.), [2] 2-2-002:086 (por), and [2] 2-2-024:026 (por.)

Prepared for
County of Maui, Department of Water Supply

Prepared by
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Management Summary

Reference	Archaeological Literature Review and Field Inspection Report for the 2.0 Million-Gallon (MG) Water Storage Tank Project, Waiohuli Ahupua‘a, Makawao District, Maui Island TMKs: [2] 2-2-002:084 (por.), [2] 2-2-002:086 (por), and [2] 2-2-024:026 (por.) (Yucha et al.2022)
Date	December 2022
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: WAIOHULI 2B
Investigation Permit Number	CSH completed the fieldwork component of this study under archaeological fieldwork permit number 20-07 (for 2020) and 21-10 (for 2021), issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD
Land Jurisdiction	Private: Lipoa Investments, LLC; Haleakala Ranch Company
Project Funding	Intended use of Federal, State and County Funds
Project Location	The project area extends from the eastern end of Lipoa Parkway above the Maui Research and Technology Park to a proposed water tank site. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle.
Project Description	The project involves the installation of a new water tank and associated utility connections.
Project Acreage	The project area comprises of approximately 7.0 acres (2.8 hectares).
Document Purpose	This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project, and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project’s planning and support the project’s historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-13-276. Consequently, this report cannot be used to make formal recommendations for SHPD review and acceptance.
Fieldwork Effort	Fieldwork was accomplished between 28 August 2020 and 10 November 2021 by Jonas Madeus, B.A., Layne Krause, M.A., and Jennifer J. Frey B.A., under the general supervision of Principal Investigators, Josephine Yucha, M.S. and Hallett H. Hammatt, Ph.D. This work required approximately 4 person-days to complete.
Results Summary	Although studies have been completed on adjacent lands, no previous archaeological studies have covered the current project area and therefore no previously documented historic properties are located

	within the project area. During the current study, CSH identified two small, stacked stone C-shaped enclosures (CSH 1) that are interpreted by CSH as either being modern hunting blinds or WWII Era military training structures.
Recommendations	Consultation with the SHPD is recommended in order to determine historic preservation requirements for this project. A field inspection of the project area has identified two small, stacked stone C-shaped enclosures (CSH 1) that are interpreted by CSH as either being modern hunting blinds or WWII Era military training structures. No soil deposits or material cultural were identified at CSH 1 to provide additional temporal context or indication that the structures are more than 50 years old. CSH recommends no further work for CSH 1. Additionally, based on a review of the natural and historic background of the project area, combined with a review of previous archaeological studies in the vicinity, subsurface historic properties are unlikely to exist within the shallow soil deposits present within the project area. Based on the foregoing, archaeological monitoring of project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties.

Table of Contents

Management Summary ..... **i**

Section 1 Introduction **1**

1.1 Project Background 1
1.2 Document Purpose 1
1.3 Environmental Setting 1
1.3.1 Natural Environment 1
1.3.2 Built Environment 5

Section 2 Methods **7**

2.1 Field Methods 7
2.1.1 Pedestrian Survey 7
2.1.2 GPS Data Collection 7
2.2 Research Methods 7

Section 3 Background Research **8**

3.1 Traditional and Historical Background 8
3.1.1 Traditional Accounts 8
3.1.1 Early Historic Period 14
3.1.2 The Māhele and the Kuleana Act 17
3.1.3 Late 1800s through Early 1900s 18
3.1.4 Mid- to Late 1900s 29
3.2 Previous Archaeological Research 35
3.2.1 Cox (1976) 35
3.2.2 Cordy (1977) 35
3.2.3 Miura (1982) 41
3.2.4 Kennedy (1986) 41
3.2.5 Donham (1990b) 41
3.2.6 Donham (1990a) 42
3.2.7 Fredericksen et al. (1993) 43
3.2.8 Fredericksen and Fredericksen (1995) 43
3.2.9 Hammatt and Shideler (2000) 43
3.2.10 Kikiloi et al. (2000) 44
3.2.11 McDermott (2001) 44
3.2.12 Dega (2008) 44

Section 4 Results of Fieldwork **46**

Section 5 Site Description **51**

5.1 CSH 1 51

Section 6 Summary and Recommendations **53**

6.1 Summary 53
6.2 Recommendations 54

Section 7 References Cited **55**

List of Figures

Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992) 2
Figure 2. Tax Map Key (TMK) [2] 2-002 showing the location of the project area (Hawaii TMK Service 2014) 3
Figure 3. Aerial photograph showing location of the project area (Esri 2018; Resource Mapping Hawai‘i 2017) 4
Figure 4. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001) 6
Figure 5. Ko‘ie‘ie Fishpond ruins as viewed from the shore, near former site of Kalepolepo (James 2002:73) 13
Figure 6. Shoreline extent of Ko‘ie‘ie Fishpond ruins in proximity to condominium development (Wikimedia 2008) 13
Figure 7. The Koa House at Kalepolepo built by John Halstead circa 1849 (Wilcox 1921:66) 16
Figure 8. Artist rendition of Kilolani Church, also known as Trinity By the Sea (Skolleborg 1993:65); the church was reputedly burned circa 1983 and further destroyed by a storm. 16
Figure 9. Portion of Dodge (1885) map showing the project area within Crown Lands....19
Figure 10. Portion of the 1992 Puu o Kali USGS quadrangle showing the project area almost entirely within Land Grant 9325:1 (U.S. Geological Survey 1992) 20
Figure 11. Portion of TMK: [2] 2-2-002 showing the project area within Land Grant 9325:1, consisting of approximately 2,611 acres owned by Haleakala Ranch....21
Figure 12. TMK: [2] 2-2-002 showing the project area and land grants labeled in areas surrounding and *mauka* from the project area owned by various ranching companies (Hawaii TMK Service 2014) 22
Figure 13. Portion of a Wall (1929) map of Maui showing Waiakoa Homesteads and a segment of HC&S railroad north of the project area 23
Figure 14. Portion of a 1933 USGS topographic map of Maui showing the project area south of Waiokoa Homesteads, north of Kama‘ole Homesteads, and within and surrounded by grazing lots (U.S. Geological Survey 1933) 24
Figure 15. Portion of 1954 USGS topographic Maalaea and Puu o Kali quadrangles showing Hawaiian homesteads along coastal areas north (Waiokoa), west (Waiohuli-Keokea Beach), and south (Kama‘ole) of the project area (U.S. Geological Survey 1954a, 1954b) 25
Figure 16. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973:231)....28
Figure 17. KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4” (Condé and Best 1973:231) 28
Figure 18. Aerial image showing the project area undeveloped in 1950-51; tracts of land makai from the project area appear to be in initial stages of development (U.S. Geological Survey 1950-51)....31
Figure 19. A 1965 aerial image showing the project area undeveloped and some development minor developments *makai*, along the coast (USDA 1965) 32

Figure 20. A 1976 aerial image showing the project area undeveloped, though with some development adjacent to its western border; coastal development has increased since the prior decade (U.S. Geological Survey 1976) 33
Figure 21. A 2000 aerial image showing paved roadways within the project area, some other developments of adjacent areas of Maui Research and Technology Park, and moderate to heavy developments along coastal areas (NOAA 2000) 34
Figure 22. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing previous archaeological studies conducted within the project area and immediate vicinity (U.S. Geological Survey 1992) 39
Figure 23. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing historic properties previously identified within the project area vicinity (U.S. Geological Survey 1992) 40
Figure 24. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of CSH 1 within the project area (U.S. Geological Survey 1992) 47
Figure 25. Aerial photograph showing location of CSH 1 within the project area (Esri 2018; Resource Mapping Hawai‘i 2017) 48
Figure 26. General view of the western end of the project area showing the asphalt-paved roadway, view to the east 49
Figure 27. General view of the modern wooden bridge within the western portion of the project area, view to the south 49
Figure 28. General view of the water tank adjacent to the western end of the project area, view to the northeast 50
Figure 29. CSH 1 Feature 1 (C-shaped enclosure), view to north 52
Figure 30. CSH 1 Feature 2 (C-shaped enclosure), view to northwest 52

List of Tables

Table 1. Kīhei *wahi pana* and other place names near the project area 10
Table 2. Previous archaeological studies conducted in the vicinity of the project area 37

Section 1 Introduction

1.1 Project Background

Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this literature review and field inspection report (LRFI) for the 2.0 Million-Gallon (MG) Water Storage Tank Project, Waiohuli Ahupua‘a, Makawao District, Maui Island TMKs: [2] 2-2-002:084 (por.), [2] 2-2-002:086 (por.), and [2] 2-2-024:026 (por.). The project area extends from the eastern end of Lipoa Parkway above the Maui Research and Technology Park to a proposed water tank site. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2018 aerial photograph (Figure 3).

The project area is understood to be privately owned by Lipoa Investments, LLC and Haleakala Ranch Company. The project area comprises of approximately 7.0 acres (2.8 hectares). The project involves the installation of a new water tank and associated utility connections.

1.2 Document Purpose

This investigation was designed—through detailed historical, cultural, and archaeological background research and a field inspection of the project area—to determine the likelihood that historic properties may be affected by the project, and, based on findings, consider cultural resource management recommendations. This document is intended to facilitate the project's planning and support the project's historic preservation and environmental review compliance. This investigation does not fulfill the requirements of an archaeological inventory survey investigation, per HAR §13-13-276. Consequently, this report cannot be used to make formal recommendations for SHPD review and acceptance.

1.3 Environmental Setting

1.3.1 Natural Environment

The property is located approximately 1.2 km (about 0.8 miles) from the coast on the lower portion of the southwestern, leeward slope of Haleakalā with elevations ranging from 23 m to 73 m (74 ft to 240 ft) above mean sea level (AMSL). This region is in an area of scarce fresh water resources resulting from the rain shadow effect of Haleakalā. The nearest stream gulch is Waipu‘ilani Gulch at approximately 0.8 km (0.5 mi) to the north.

In 2014, the average annual air temperature for the project area was between 21.45°C (70.61°F) in February and 25.46°C (77.83°F) in August, with an average annual air temperature of 23.51°C (74.32°F) (Giambelluca et al. 2014). According to the University of Hawai‘i 2011 *Online Rainfall Atlas of Hawaii,* the vicinity of the project area received a mean annual rainfall of 294.2 mm (11.6 in) between 1978 and 2007 (Giambelluca et al. 2013). The mean monthly rainfall varied between 3.0 mm (0.2 in) in July and 70.1 mm (2.8 inches) in January.

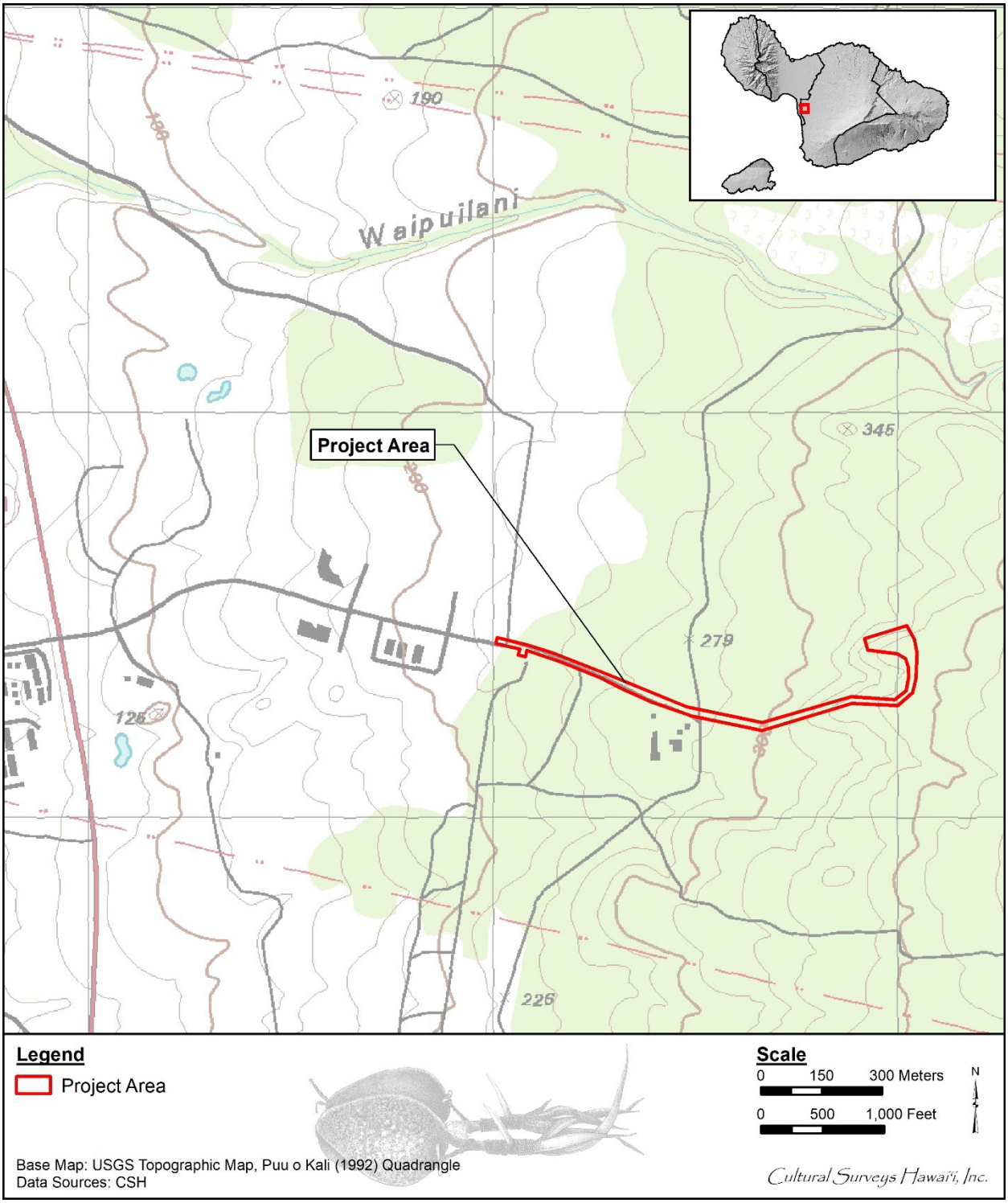


Figure 1. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 1992)

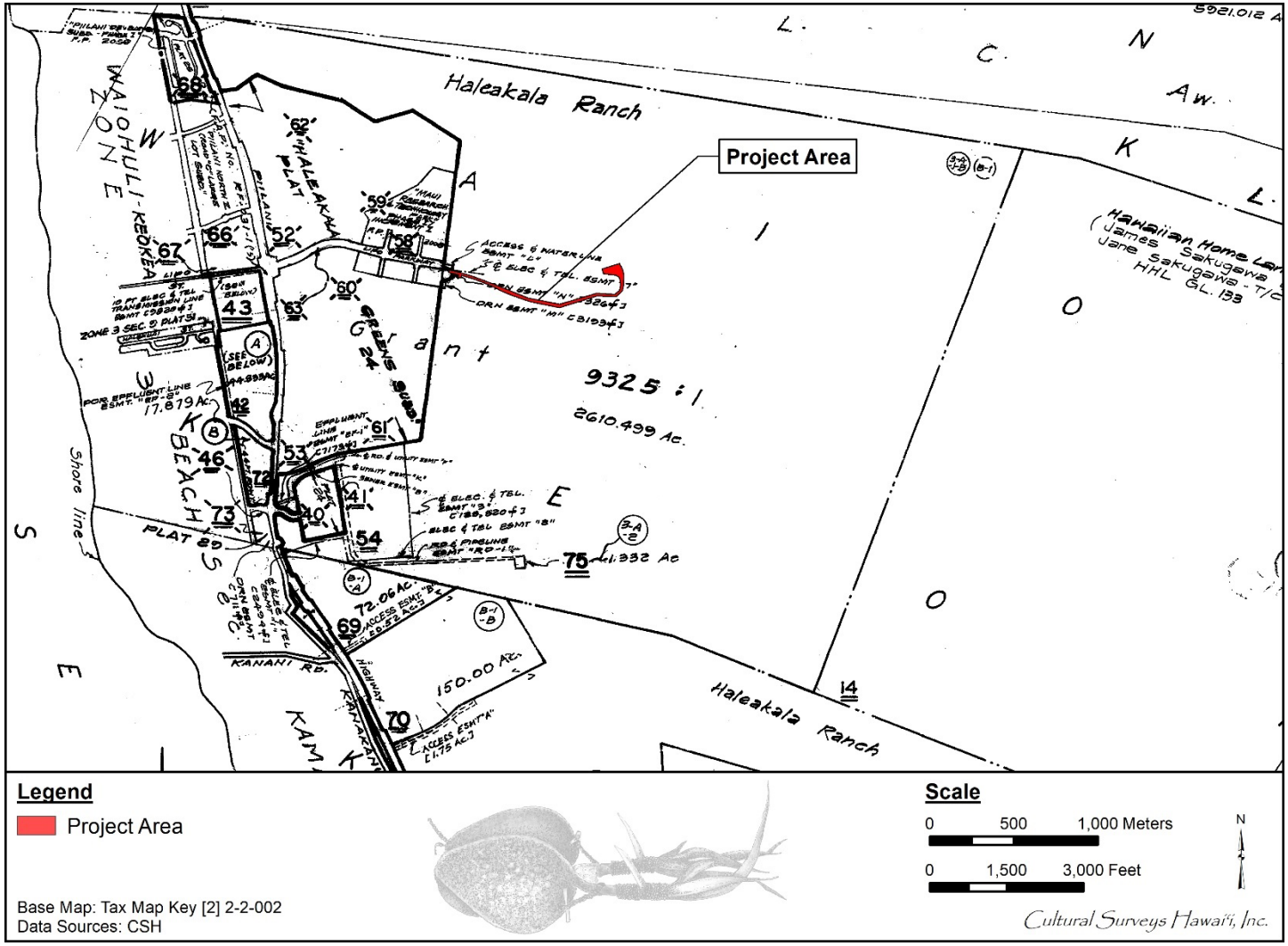


Figure 2. Tax Map Key (TMK) [2] 2-002 showing the location of the project area (Hawaii TMK Service 2014)

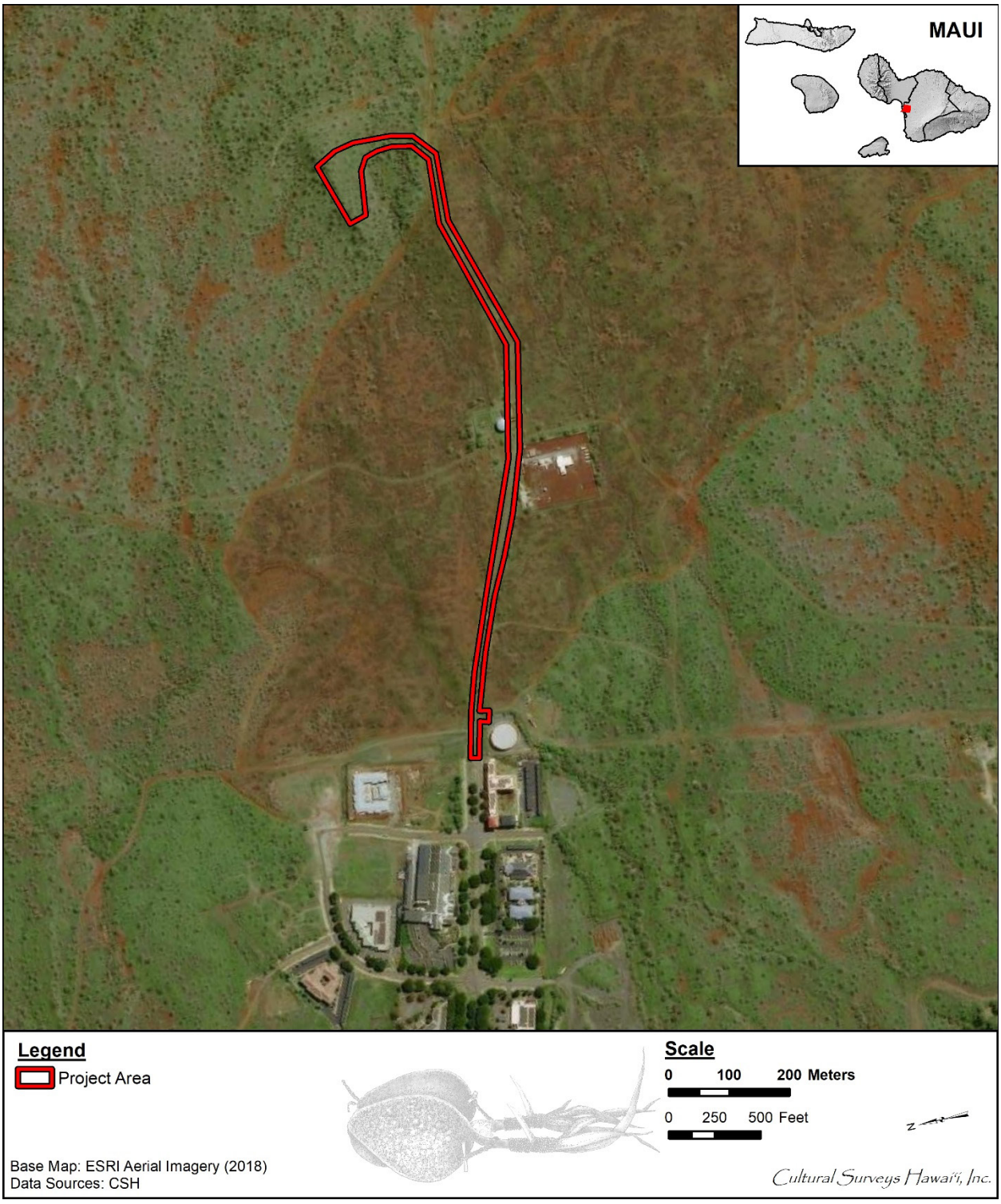


Figure 3. Aerial photograph showing location of the project area (Esri 2018; Resource Mapping Hawai‘i 2017)

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area's soils consist of Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2) and Keawakapu extremely stony silty clay loam, 3 to 25 percent slopes (KNXD) (Figure 4). The Waiakoa series consists of "gently sloping to moderately steep," "well-drained" Maui uplands soils that "developed in material weathered from basic igneous rock" and contain an upper profile "influenced by volcanic ash" (Foote et al. 19925:126). WID2 soils are described as follows:

> This soil is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes, except that it is eroded and stones cover 3 to 15 percent of the surface. In most areas about 50 percent of the surface layer has been removed by erosion. Runoff is medium, and the erosion hazard is severe. Included in mapping were small, steep areas. Also included were a few cinder cones.
>
> This soil is used for pasture and wildlife habitat. [Foote et al. 1972:127]

Keawakapu extremely stony silty clay loam, 3 to 25 percent slopes (KNXD) is described as follows:

> This soil is on low uplands. Included in mapping were small areas of Kamaole and Oanapuka soils.
>
> In a representative profile the surface layer, about 2 inches thick, is dark reddish-brown extremely stony silt loam that has platy structure. The subsoil, about 16 includes thick, is dark reddish-brown silty clay loam and silty clay that has prismatic and subangular blocky structure. The substratum is fragmental Aa lava that has a little soil material in the voids. The soil is neutral in the surface layer and subsoil.
>
> Permeability is moderate. Runoff is slow to medium, and the erosion hazard is slight to moderate. [Foote et al. 1972:68]

The soils, topography, and rainfall pattern would have once sustained a dry shrubland and grassland environment (Pratt and Gon 1998:122). Prior to human modification, the grass and shrubland biota may have included pili (Heteropogon contortus) grasslands and *ʻaʻaliʻi* (Dodonaea variabilis), dry cliff vegetation, small patches of *maʻo* or Hawaiian cotton (*Gossypium tomentosum*), and *ʻākoko* (Chamaesyce sp.) (Pratt and Gon 1998:127-128). The natural landscape of the project area has been more recently described as a Hawaiian introduced perennial grassland (Giambelluca et al. 2014).

1.3.2 Built Environment

The built environment of the project area is almost entirely composed of asphalt-paved access road mauka of Lipoa Parkway. The project area transects a mixed-use development area known as MRTP, which currently includes buildings for various commercial, medical, and technological use as well as a Kihei Charter School campus. The surrounding built environment also includes utility features, concrete sidewalks, and asphalt-paved parking areas. Residential development along Lipoa Parkway consists of Hokulani Golf Villas, a resort community surrounded by Maui Nui Golf Course.

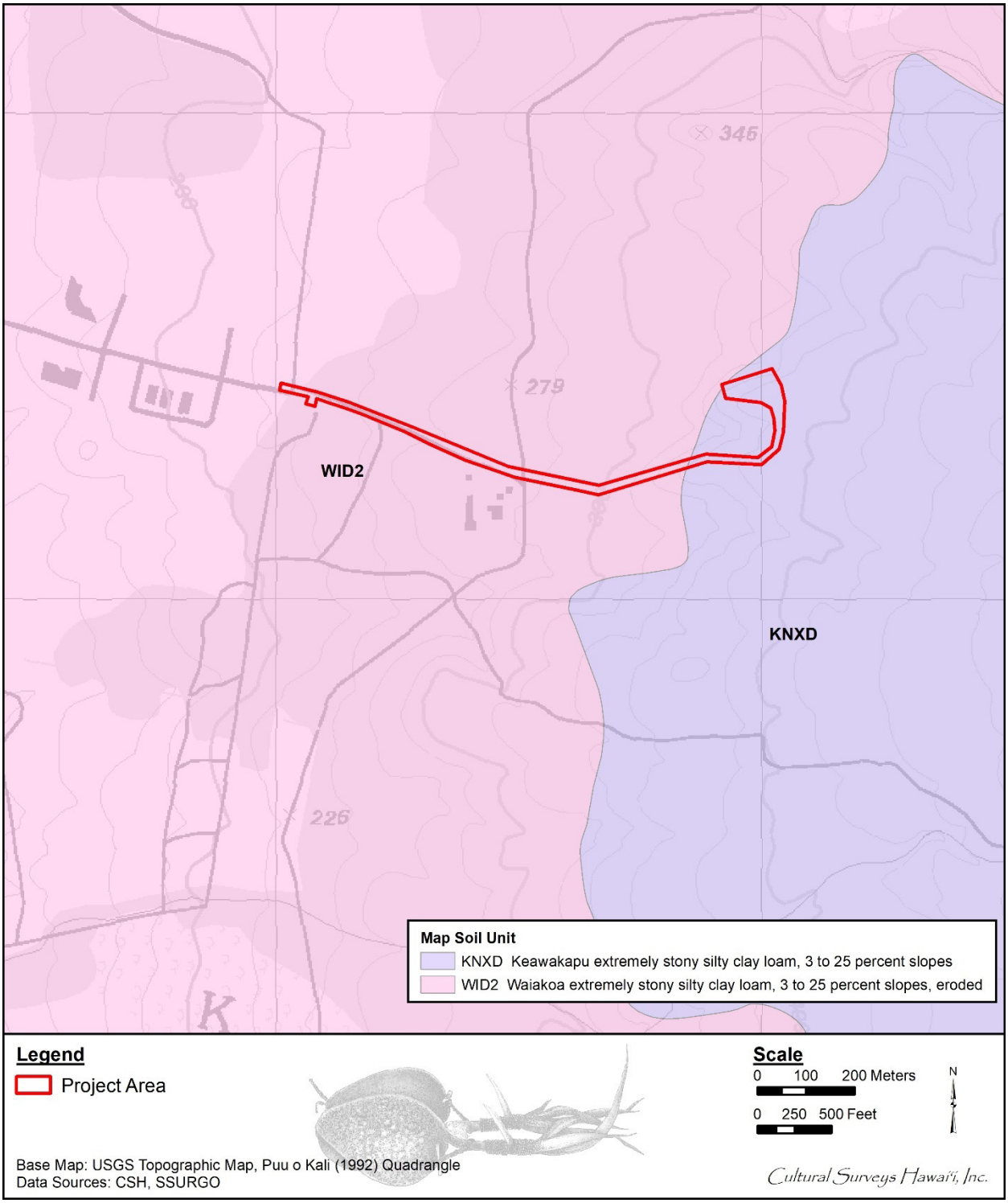


Figure 4. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (U.S. Department of Agriculture Soils Survey Geographic Database [SSURGO] 2001)

Section 2 Methods

2.1 Field Methods

CSH completed the fieldwork component of this study under archaeological permit # 20-07 (for 2020) and 21-10 (for 2021), issued by the SHPD pursuant to HAR §13-13-282. Fieldwork was accomplished between 28 August 2020 and 10 November 2021 by Jonas Madeus, B.A., Layne Krause, M.A., and Jennifer J. Frey B.A., under the general supervision of Principal Investigators, Josephine Yucha, M.S. and Hallett H. Hammatt, Ph.D. This work required approximately 4 person-days to complete.

In general, fieldwork included 100% pedestrian inspection of the project area, GPS location, and standard documentation recorded using an Apple iPad equipped with a digital camera.

2.1.1 Pedestrian Survey

A 100%-coverage pedestrian inspection of the project area was undertaken for the purpose of historic property identification and documentation. The pedestrian survey was accomplished through systematic sweeps spaced 5 m apart.

2.1.2 GPS Data Collection

Historic property locations and other points of interest were recorded with a Trimble Geo 7X mapping grade GPS unit with real-time differential correction. This unit provides sub-meter horizontal accuracy in the field. GPS field data was postprocessed, yielding horizontal accuracy between 0.5 and 0.3 m. GPS location information was converted into GIS shape files using GPS Pathfinder Office Software, Version 5.9, and graphically displayed using ArcGIS Desktop 10.6.1.9270.

2.2 Research Methods

Background research included a review of previous archaeological studies on file at the SHPD; review of documents at Hamilton Library of the University of Hawai‘i, the Hawai‘i State Archives, the Mission Houses Museum Library, the Hawai‘i Public Library, and the Archives of the Bishop Museum; study of historic photographs at the Hawai‘i State Archives and the Archives of the Bishop Museum; and study of historic maps at the Survey Office of the Department of Land and Natural Resources. Historic maps and photographs from the CSH library were also consulted. In addition, Māhele records were examined from the Waihona ‘Aina database.

This research provided the environmental, cultural, historic, and archaeological background for the project area. The sources studied were used to formulate a predictive model regarding the expected types and locations of historic properties in the project area.

Section 3 Background Research

3.1 Traditional and Historical Background

The *moku o loko*, or *moku* as it is most commonly called, literally means “to cut across, divide, separate” (Lucas 1995:77). When used as a term of traditional land tenure, a *moku* is similar to a political district that can contain smaller divisions of land such as ‘*okana, kalana, ahupua‘a, ‘ili,* and *mo‘o*. The division of Maui’s lands into several *moku* occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna*, Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in 12 *moku* during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā‘anapali, and Lāhainā. By 1932, the 12 traditional *moku* had been consolidated into the four modern tax districts of Lahaina, Wailuku, Makawao and Hana (Sterling 1998:4). The project area is located in the Kīhei area of South Maui, which is in Waiohulu Ahupua‘a within the traditional *moku* of Kula and the modern district of Makawao.

3.1.1 Traditional Accounts

3.1.1.1 Place names

In *Native Planters in Old Hawaii,* E. S. C. Handy et al. (1991:23-24,42) summarize the relationship that traditional Hawaiians have had with the natural environment:

> The sky, sea, and earth, and all in and on them are alive with meaning indelibly impressed upon every fiber of the unconscious as well as the conscious psyche. Hawaiian poetry and folklore reveal this intimate rapport with the elements. [Handy et al. 1991:23-24]
>
> (T)he relationship which existed from very early times between the Hawaiian people …is abundantly exemplified in traditional mele (songs), in pule (prayer chants), and in genealogical records which associate the ancestors, primordial and more recent, with their individual homelands, celebrating always the outstanding qualities and features of those lands. [Handy et al. 1991:42]

Regarding Hawaiian place names, Pukui et al. (1974) cite a description by Samuel Elbert:

> Hawaiians named taro patches, rocks and trees that represented deities and ancestors, sites of houses and *heiau*, canoe landings, fishing stations in the sea, resting places in the forests, and the tiniest spots where miraculous or interesting events are believed to have taken place.
>
> Place names are far from static… names are constantly being given to new houses and buildings, land holdings, airstrips, streets, and towns and old names are replaced by new ones… it is all the more essential, then to record the names and the lore associated with them now. [Pukui et al. 1974:x]

While creative writings and traditional accounts of Kīhei are relatively scarce, an analysis of the *wahi pana* (legendary places/sacred sites) meanings for the region may yield some insight into the patterns of life in the area prior to Western contact. Table 1 provides translations for *wahi pana* and other place names in the general project area vicinity, which are taken from Pukui et al. (1974) unless otherwise noted.

3.1.1.2 Settlement and Subsistence

The project area is the lower midland portion of Waiohuli, Ahupua‘a and Kula Moku, a region scarce of water due to the rain shadow of Haleakalā. Traditional land-use in Kula Moku was known for potato cultivation:

> Kula was always an arid region throughout its long low seashore, vast stony *kula* [pasture] lands, and broad uplands. On the coast, where fishing was good, and the lower westward slopes of Haleakala, a considerable population existed, fishing and raising occasional crops of potatoes along the coast, and cultivating large crops of potatoes inland, especially in the central and northeastern section including Keokea, Waiohuli, Koheo, Kaonoulu, and Waiakoa, where rainfall drawn round the northwest slopes of Haleakala increases toward Makawao. (Handy 1940:161)

Coastal Kīhei also shows a few vestiges of lifestyles and subsistence activities of the *maka‘āinana* (commoner) that lived there as well as the works of powerful *ali‘i*. Keālia Pond has been known as a source of high quality salt from the pans in its immediate vicinity. Van James (2002:71) describes Keālia as follows :

> It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko‘a* (fishing shrine) or possible *heiau* platform stands near the site. [James 2002:71]

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Stream to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Table 1. Kīhei *wahi pana* and other place names near the project area

Place Name	Meaning/Translation
‘Alae	*Lit.,* “mudhen” (p.8); name of *ahupua‘a* north of the project area
Kale‘ia	*Lit.,* “the abundance;” possibly referring to resources available from the fishponds and offshore fishing grounds (p.76)
Kalepolepo	*Lit.,* “the dirt” (p.77); name of a fishpond approximately 2 km northwest of the project area
Kaluaihākōkō	*Lit*., “the pit (for) wrestling;” Hākōkō was the name of a chief (p.78)
Kama‘ole	*Lit*., “childless,” (p.80); name of *ahupua‘a,* homesteads, and beach parks south and *makai* of the project area
Ka‘ono‘ulu	Lit., “the desire (for) breadfruit;” name of a gulch and a 3,051-ft peak (p.86); also, an *ahupua‘a* north and adjacent to Waiohuli Ahupua‘a
Keāhuaiwi	*Lit.,* “the bone pile” (p.101); the name of a gulch adjacent to and north of Waiakoa Gulch
Keālia	*Lit.,* “salt encrustation;” a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kekuawaha‘ula‘ula	*Lit.,* “the red-mouth god” (p.107)
Kēōkea	*Lit*., “the white sand,” (p.107); name of a village, park and homesteads south and upslope from the project area; Kēōkea Ahupua‘a borders Waiohuli Ahupua‘a to the south
Kīhei	*Lit.,* “cape or cloak;” sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	*kīhei* literally translates as “cape or cloak” and *pūko‘a* literally translates as “coral head;” Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kōheo	*Lit.,* “to show off *or* to twirl” (p.115); an *ahupua‘a* north and adjacent to Waiohuli Ahupua‘a
Kō‘ie‘ie	*Lit.,* “a plaything for floating in the rapids;” ancient name of Kalepolepo (Sterling 1998:252)
Kula (*moku*)	*Lit.,* "plain;" always an arid region (Handy in Sterling 1998:242)
Lā‘ie	*Lit.,* " *‘ie* leaf;" coastal area (p.127-128) west of the project area

Līpoa	“An edible brown seaweed with many branches and a unique aroma. A popular food which many people gather from the ocean” (Budnick 1991:99); name of the parkway comprising most of the project area and name of the street extending from the parkway to the ocean
Nāwāowaeo‘Alika	*Lit.,* “the feet of Alex or the feet of Arctic;” may be a new name (p.164)
Pūlehu Nui	*Lit.,* “large *pūlehu*” where *pūlehu* is literally translated as “broiled;” Possibly in reference to abundant sweet potato cultivation in the uplands (p.193); name of an *ahupua‘a* north of the project area
Pu‘u o Kali	*Lit*., “hill of waiting;” quadrangle and 1,481-ft high hill; believed once a *mo‘o*, the wife of nearby Pu‘uhele; their child, Pu‘uoinaina (hill of wrath) was placed on Ko‘oolawe and later was a lover of Pele’s sweetheart, Lohi‘au (p.203); the project area is in Pu‘u o Kali quadrangle; the hill by the same name is southeast of the project area
Waiakoa	*Lit.,* “water (used) by warrior” (p.220); name of a gulch and an *ahupua‘a* north of the project area
Waimāha‘iha‘i	*Lit*., “broken water;” coastal area (p.225) southwest of the project area; name of a shallow, intermittent stream that appears to have once flowed just south of the project area
Waiohuli	*Lit*., “water of change;” (p.226); name of the ahupua‘a containing the project area, a gulch approximately 0.8 km north of the project area, and a village/ homesteads upland from the project area
Waipu‘ilani	*Lit*., “waterspout” (p.227); name of gulch nearest and north of the project area

Further testament of resource gathering in the area comes from neighboring Kō‘ie‘ie Fishpond (Figure 6), which can still be seen along the Kīhei coastline in ruins (Figure 6). This fishpond was once part of a broader distribution of these types of structures along the coast:

> In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei ("cloak") coastline. With the exception of Ko‘ie‘ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *menehune* constructed them. [James 2002:73]
>
> It [Kō‘ie‘ie] is a small pond of three arces. At low tide, another fishpond ruin can be seen just south of Kō‘ie‘ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. [James 2002:74]

The associations of these fishponds to the *menehune*, placing their times of construction in deep antiquity, suggest that this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to and during the first days of Western contact:

> It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu.* Later, Kamehameha, who noticed Kō‘ie‘ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief ‘Umilīloa, in the mid-1500s, also had the pond walls rebuilt. [James 2002:73-74]

Based on its history of rehabilitation from conquering Hawai‘i Island chiefs, the fishpond at Kō‘ie‘ie is believed to have been "a royal pond always stocked with the best fish" (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period in which Kihawahine, the family *‘aumakua* of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha's sons at Kalepolepo in 1815 (James 2002:74).

Meanings of place names, together with the environmental data, suggest that the lands of and surrounding coastal Kīhei were dry and barren in an agricultural sense but rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection. However, the relative scarcity of recorded coastal place names may be an indication of a smaller population that was widely spread out across the leeward coast.



Figure 5. Ko‘ie‘ie Fishpond ruins as viewed from the shore, near former site of Kalepolepo (James 2002:73)



Figure 6. Shoreline extent of Ko‘ie‘ie Fishpond ruins in proximity to condominium development (Wikimedia 2008)

3.1.1.3 Political Conflicts

Kīhei lands were also a site of conflict between the Hawai‘i Island chief Kalani‘ōpu‘u and Maui Island chief Kahekili and is perhaps the historic origins for such place names as “Waiakoa” and “Keāhuaiwi.” The earliest account concerning Kīhei and Hawaiian politics is given by Samuel Kamakau (1961:70) during the time of Alapa‘i and Kekaulike:

Alapa‘i sailed from Kohala on Hawai‘i... But when he landed at Mokulau in Kaupō (Maui) and heard that Ke-kau-like was dying, he gave up all thought of war and wished only to meet Ke-kau-like and his (half) sister Ke-ku‘i-apo-iwa-nui...He landed at Kīheipukoa with all his chiefs and fighting men...While he was at Kīhei, Alapa‘i heard that the ruling chief of Oahu was making war upon Molokai. Most of the chiefs of Molokai... were of Hawai‘i... Alapa‘i's sympathy was aroused, for these were his own brothers and children (relatives), and he made ready to go to their help on Molokai. (Kamakau 1961:70)

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani‘ōpu‘u of Hawai‘i Island during the late 18th century. Following a losing battle at Kaupō in 1775, Kalani‘ōpu‘u dedicated several war *heiau* on Hawai‘i Island to aid in the defeat of Kahekili. Upon hearing this news, Kahekili sent for the *kahuna* (priest) Kaleopu‘upu‘u who directed construction of the *heiau* of Kaluli and Pu‘uohala on the north side of Wailuku. When Kaluli Heiau was completed Kaleopu‘upu‘ said to Kahekili, “This is the house of your god; open the sluice gate that the fish may enter” (Kamakau 1961:85).

In 1776, the army of Kalani‘ōpu‘u landed at Keoneo‘o‘io, with their war canoes extending to Makena at Honua‘ula, and proceeded to ravage the countryside. Kalani‘ōpu‘u landed with additional forces at Kīhepuko‘a at Kealia to Kapa‘ahu, 800 strong and eager to drink the waters of Wailuku:

> Across the plains of Pu‘u‘ainako (Can-trash-hill) and Kama‘oma‘o shone the feather cloaks of the soldiers… Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka‘ilipoe at Pohakuaokahi… Kaleopu‘upu‘u [said] to Kahekili, “The fish have entered the sluice; draw in the net.” (Kamakau 1961:85)

The forces of Kahekili descended upon and destroyed the soldiers of Kalani‘ōpu‘u, slaying the Alapa (elite soldiers of Kalani‘ōpu‘u) on the Sand Hills at the southeast of Kalua. Only two men escaped to Kīheipuko‘a to tell Kalani‘ōpu‘u the news of their defeat. After a second day of warfare, Kalani‘ōpu‘u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko‘a (Kamakau 1961:88-89).

3.1.1 Early Historic Period

Kīhei was one of the locations visited by Captain George Vancouver. A monument at Mai Poina ‘Oe Ia‘u Beach Park in Kīhei commemorates Vancouver’s on-shore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to Upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships. 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 traditionally 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. Kuykendall (1938:313) notes the following about 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. [Kuykendall 1938:313]

Kuykendall’s observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku, located approximately 2 km northwest of the current project area (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

> The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. [Kolb et al. 1997:68]

In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lahaina, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "[f]rom the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs, particularly, the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area (between 2000 and 5000 ft. amsl) of highest potato production and was known as "the potato district." During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula Trails to the landing at Kalepolepo. Donham (1992:5) notes that the inundation of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."

Around 1849, John Halstead built the Koa House at Kalepolepo in Kīhei (Figure 7). The building, part store and part residence, thrived on both the trade of the whaling industry and the then booming potato industry. During the Gold Rush years, the store became "an emporium for Irish potatoes" and served as a gathering place for the whaling sailors (Burgett and Spear 1995:6). David Malo created a balance for the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852 (Figure 8).



Figure 7. The Koa House at Kalepolepo built by John Halstead circa 1849 (Wilcox 1921:66)

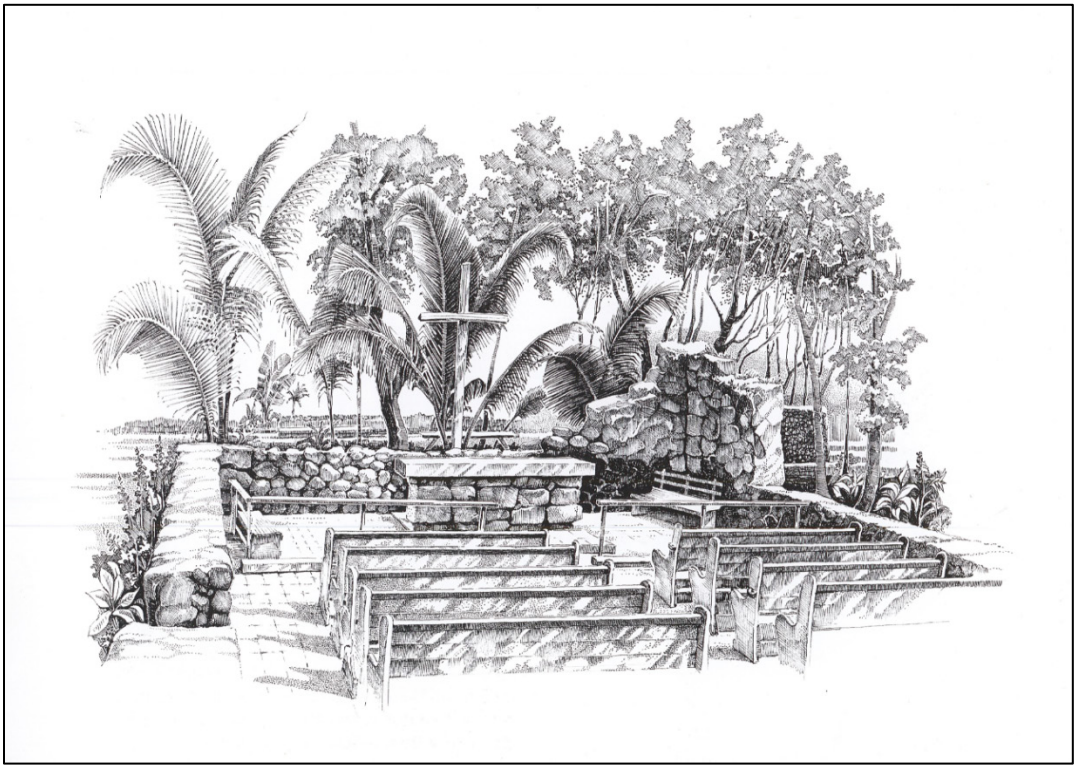


Figure 8. Artist rendition of Kilolani Church, also known as Trinity By the Sea (Skolleborg 1993:65); the church was reputedly burned circa 1983 and further destroyed by a storm.

Potato production prospered in Kula from 1830 through 1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6-7). Halstead ran his store until 1876, closing shop when the potato industry diminished (Janion 1977:25-31).

3.1.2 The Māhele and the Kuleana Act

Initiated by the Organic Acts of 1845 and 1846, the most significant change in land-use patterns and land allocation came with the Māhele of 1848 and the privatization of land in Hawai‘i. This action hastened the shift of the Hawaiian economy from subsistence-based to market-based. During the Māhele, all lands in the Kingdom of Hawai‘i were divided between *mō‘ī* (king), *ali‘i* (chiefs), *konohiki* (resident overseers of an *ahupua‘a*), and *maka‘āinana* (tenants of the land), which allowed the land to pass into the Western land tenure model of private ownership. On 8 March 1848, Kauikeaouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners (Chinen 1958).

Native Hawaiians who desired to claim the lands on which they resided were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay in unused land. Following this payment, a Royal Patent was issued that gave full title of ownership to the tenant (Chinen 1958:8-14). In this way, the government of Hawai‘i offered land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants. in 1900; congregations began attending the church ruins in the late 1970s; open-air services are still held at the ruins today (Trinity Church By-the-Sea 2020).

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka‘āinana* (common people/tenants of the land). The Kuleana Act of 1850 confirmed these rights. Under this act, the claimant was required to produce two witnesses who knew the claimant and boundaries of the land, knew that the claimant had lived on the land for a minimum of two years, and knew that no one had challenged the claim. The land also had to be surveyed. Native tenants or naturalized foreigners who could prove occupancy on the parcels before 1845 could be awarded lands they occupied or that they cultivated as *kuleana* (land holding of a tenant or *hoa‘āina* residing in the *ahupua‘a*) awards. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award, as the commutation fee had presumably already been paid by *ali‘i*/*konohiki* who had been awarded the entire *ahupua‘a*, or an *‘ili* (a land division within an *ahupua‘a*) in which the native tenant claimed his own small parcels (Chinen 1958:29-30).

Despite the effort to allocate lands to the *maka‘āinana*, the *ali‘i* control of the majority of lands persevered and much of these lands were ultimately obtained by foreigners for commercial agriculture and ranching enterprises. In many cases, land sales to foreigners were vast and often encompassed large portions of the *ahupua‘a* in which they were located. Additionally, while *kuleana* awards were granted to native tenants in fee simple and free of commutation at Honua‘ula, payment to the government surveyors and Land Commission to cover costs to survey the lots also became a factor in decisions to keep or abandon claims. According to Alexander (1890:119), between 1850 and 1860, nearly all desirable government lands were sold.

An 1885 Hawaii Territorial Government Survey map shows the current project area within Crown Lands (Figure 9), which the king divided into large land grants. The project area is within Land Grant 9325:1 (Figure 10). Tax map key (TMK): [2] 2-2-002 indicates that Land Grant 9325:1 consists of over 2,600 acres under ownership to Haleakala Ranch (Figure 11), which was likely granted this parcel in the late 1800s or early 1900s. CSH does not currently have additional information regarding Land Grant 9325:1.

3.1.3 Late 1800s through Early 1900s

By the time John Halstead closed shop in 1876, the boom years of Kalepolepo had passed. By 1880, the government survey of the Kula area showed the demarcation of only a few LCAs, and those who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). Kennedy (1992:9) notes that at this time *kiawe* (*Prosopis pallida*) was imported to feed cattle and provide wood.

Regarding the settlement at Kalepolepo and the impact of the changes associated with the conversion to ranching on the general area known as Kīhei, Clark (1980:48) comments:

> Halstead finally closed his store in 1876, as demands for his goods had steadily decreased, and moved to Ulupalakua… By this time the once thriving Hawaiian village at Kalepolepo had been almost totally abandoned as well. The slopes of Haleakala had gradually become denuded of their forests and torrential rains had caused heavy soil runoffs into the Kalepolepo shoreline. Cattle had trampled down the brush and grassy fields, causing sand dunes to drift and fill up the pond. Clouds of dust filled the air instead of cooling winds. Except for a handful of fishing families, Kalepolepo [and likely the Kīhei area in general] was deserted [Clark 1980:48]

The shift in the economics of coastal areas to ranching was also discussed by E.S. Craighill Handy, who noted that large sections of “Crown Lands” which had not been claimed as *kuleana* [family homestead property] during the Māhele (1848 and later) were given by the Kingdom to various ranchers (Figure 11). The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains were soon covered in *kiawe* forests (Handy and Handy 1972:510-511). In this manner, upland agricultural pursuits gradually gave way to ranching activities. A 1933 map shows the project area and surrounding lands labeled as grazing lots (Figure 14).

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai‘i or were recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians; with leasehold terms generally lasting 99 years at one dollar a year. The following year, the program began attracting people to Moloka‘i where Kalaniana‘ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920 (Keesing 1936). By 1929, the program had expanded, and Waiakoa Homesteads had been established north of the project area (see Figure 13). By 1933, Kama‘ole Homesteads were present southwest of the project area (see Figure 14). A 1954 map shows additional homesteads, Waiohuli-Keokea Beach Homesteads, spanning across lands west of the project area (Figure 15). The Hawaiian Homes Commission encouraged agricultural pursuits, raising livestock, and ranching on homestead lands.

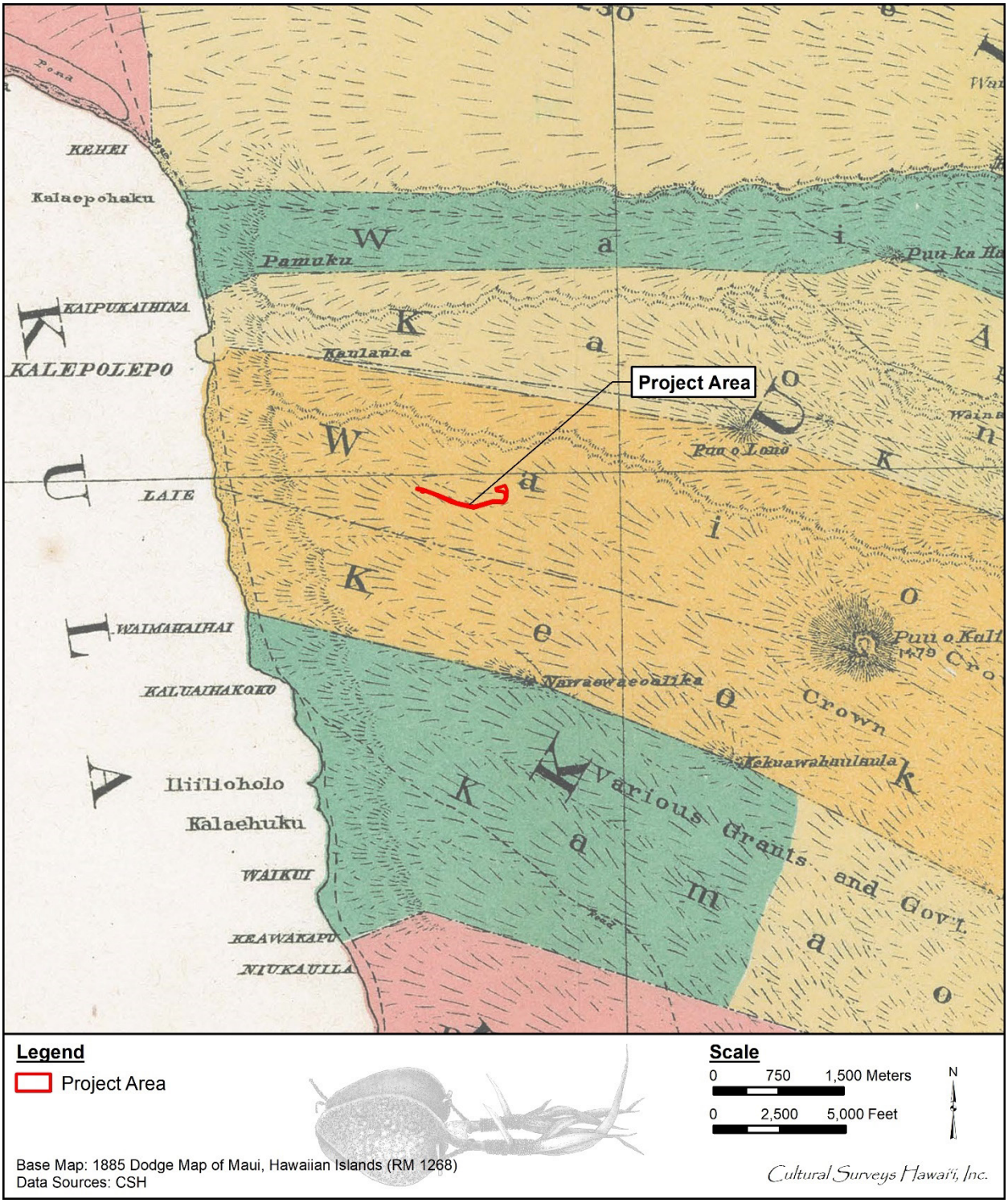


Figure 9. Portion of Dodge (1885) map showing the project area within Crown Lands

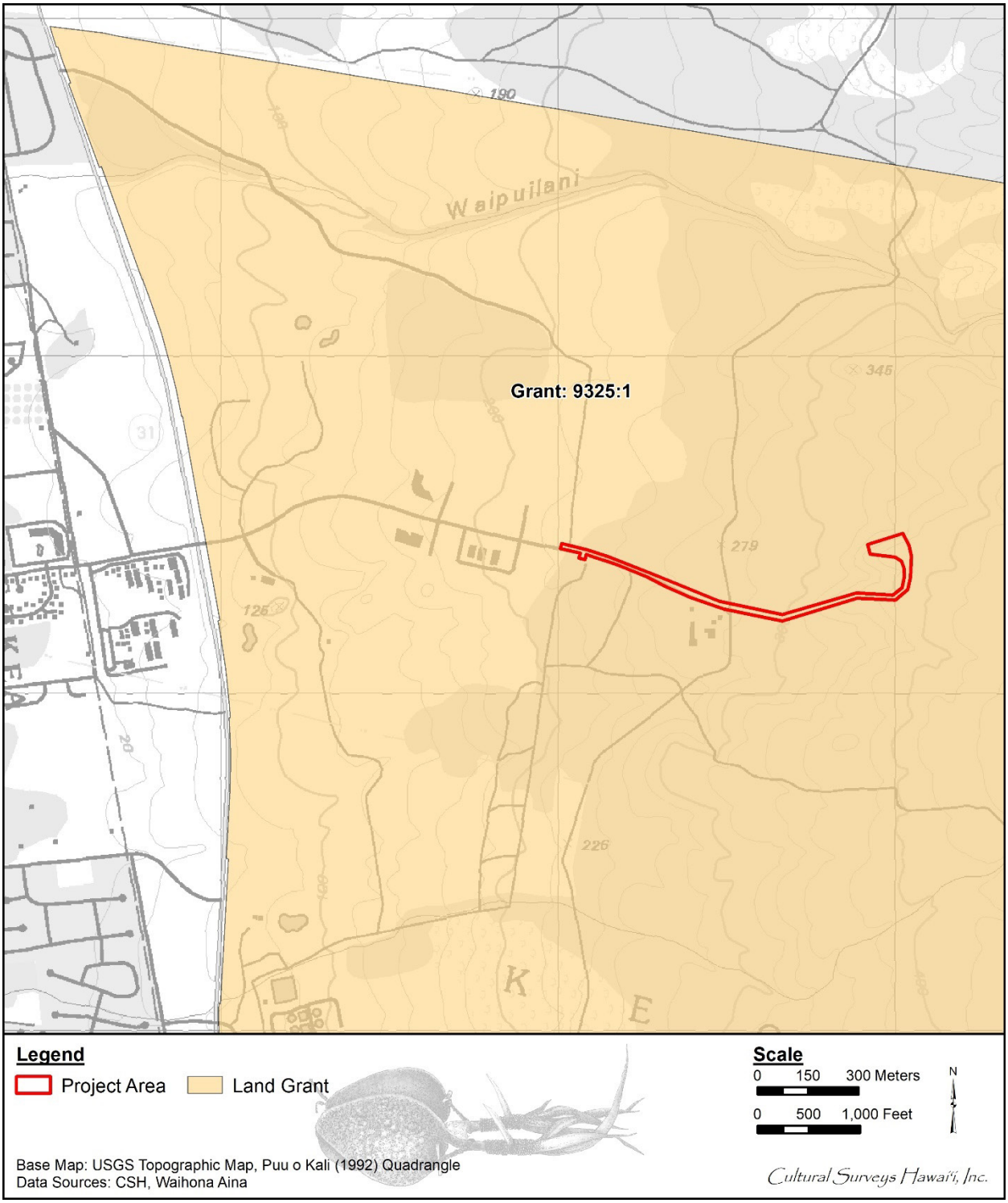


Figure 10. Portion of the 1992 Puu o Kali USGS quadrangle showing the project area almost entirely within Land Grant 9325:1 (U.S. Geological Survey 1992)

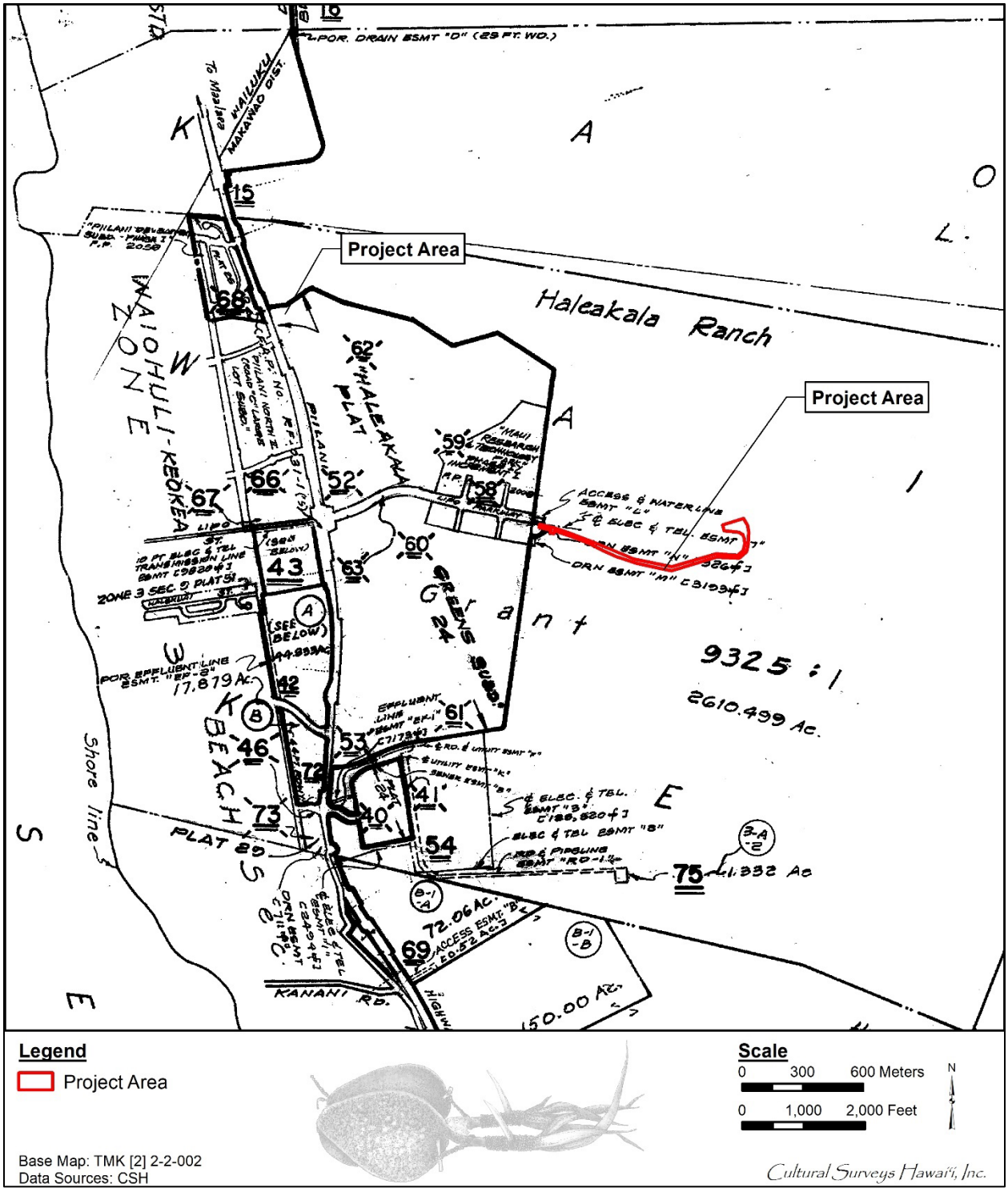


Figure 11. Portion of TMK: [2] 2-2-002 showing the project area within Land Grant 9325:1, consisting of approximately 2,611 acres owned by Haleakala Ranch

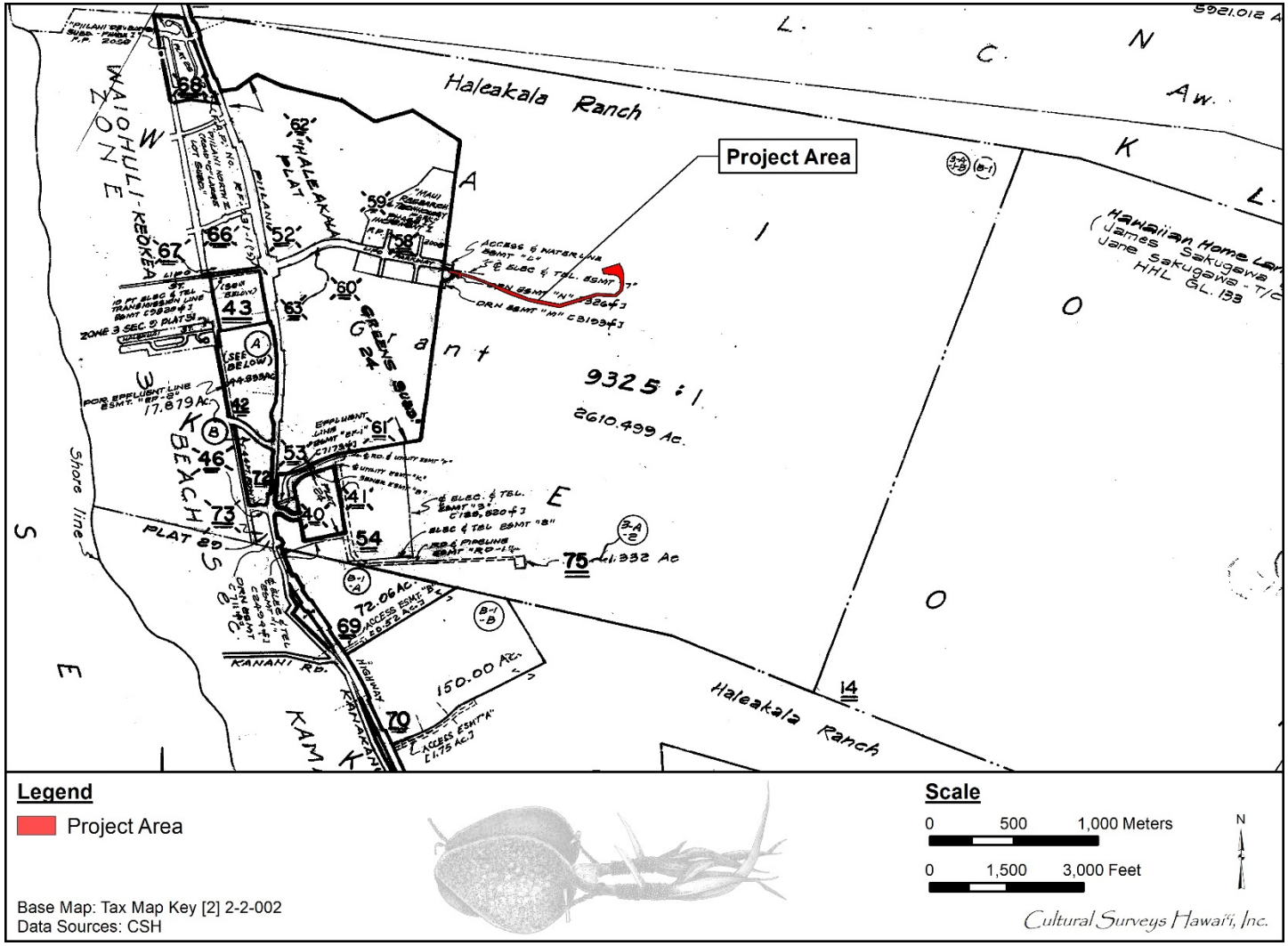


Figure 12. TMK: [2] 2-2-002 showing the project area and land grants labeled in areas surrounding and *mauka* from the project area owned by various ranching companies (Hawaii TMK Service 2014)

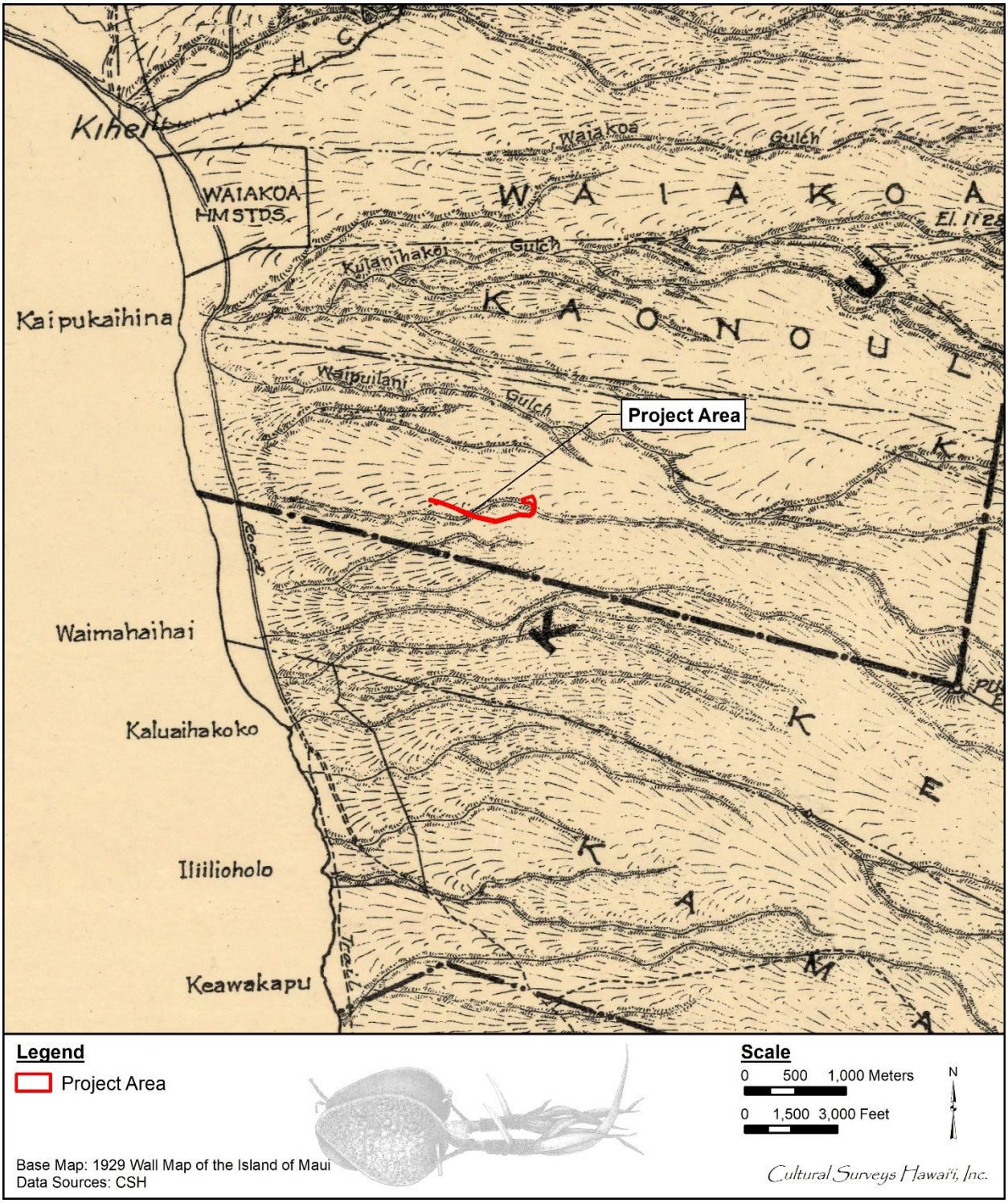


Figure 13. Portion of a Wall (1929) map of Maui showing Waiakoa Homesteads and a segment of HC&S railroad north of the project area

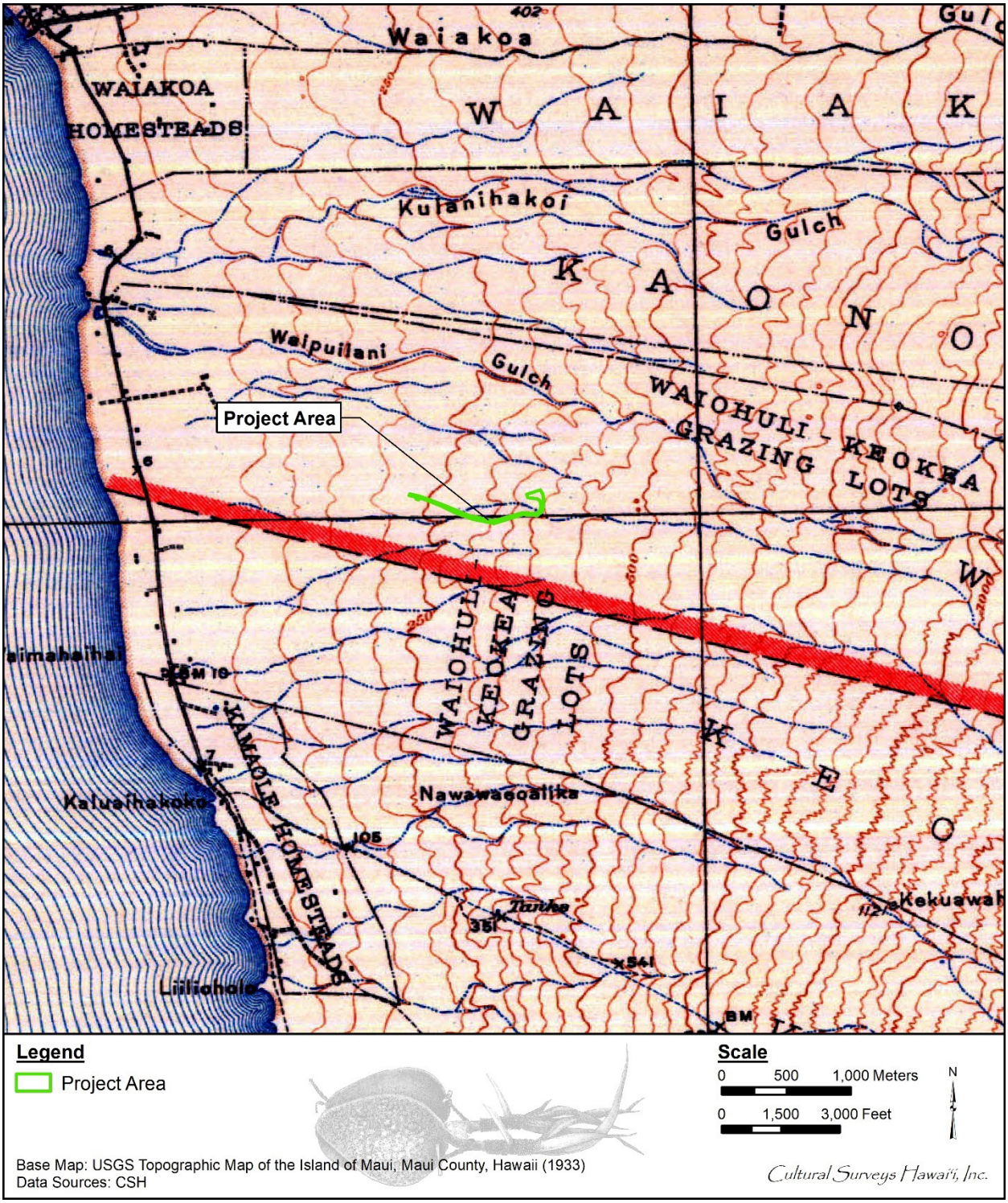


Figure 14. Portion of a 1933 USGS topographic map of Maui showing the project area south of Waiokoa Homesteads, north of Kama‘ole Homesteads, and within and surrounded by grazing lots (U.S. Geological Survey 1933)

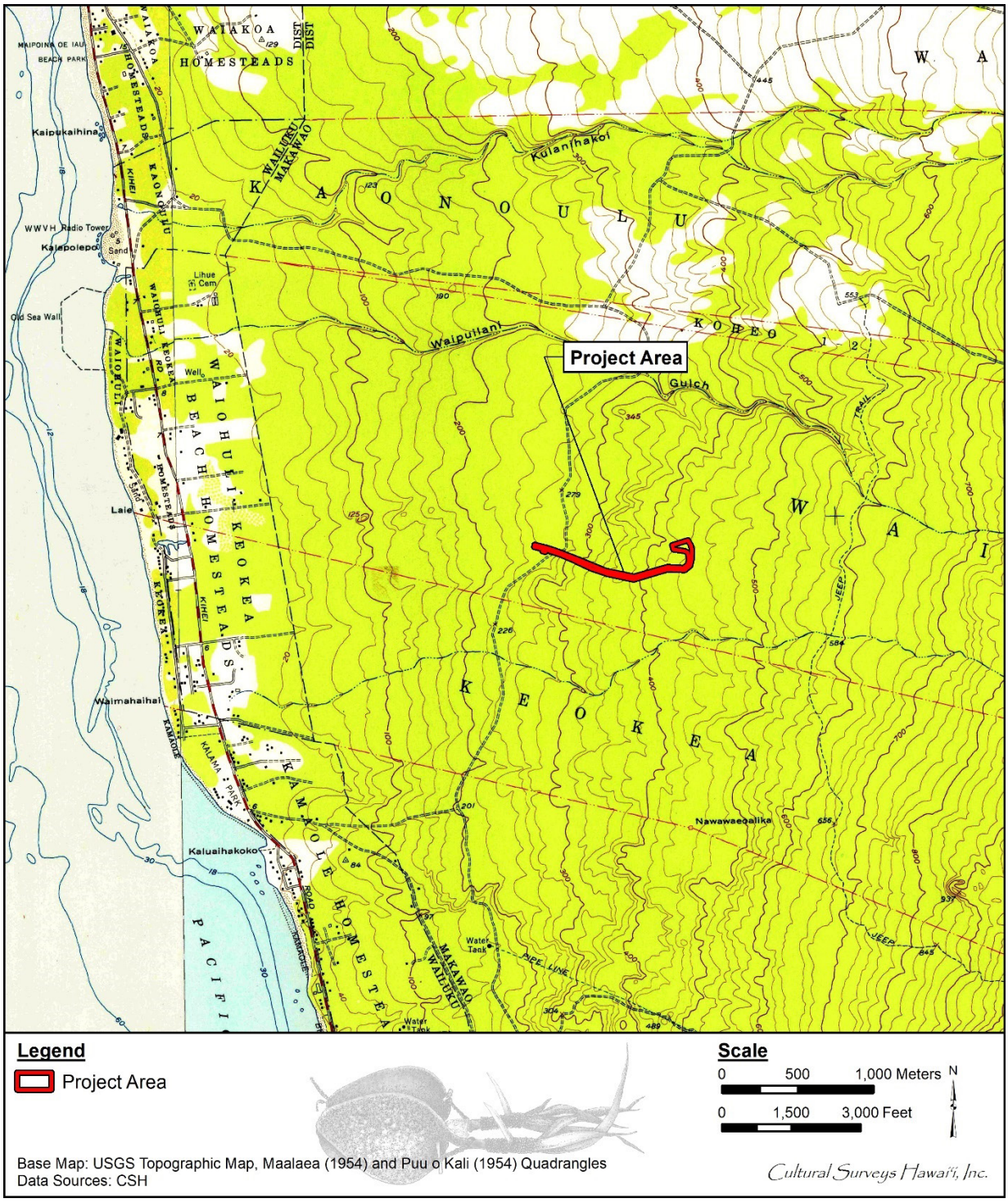


Figure 15. Portion of 1954 USGS topographic Maalaea and Puu o Kali quadrangles showing Hawaiian homesteads along coastal areas north (Waiokoa), west (Waiohuli-Keokea Beach), and south (Kama‘ole) of the project area (U.S. Geological Survey 1954a, 1954b)

3.1.3.1 Sugar Cultivation

Demand for locally produced agriculture dropped with the closure of the entrepot at Kalepolepo. However, sugar would soon fill the void, and in late 1898, Kīhei Plantation Company, Ltd (KPC) was organized with a capitalization of 60,000 shares at $50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui's arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. Sugar prices were rising due to the outbreak of war between the United States and Spain over the colonies in Cuba, Puerto Rico and the Philippines. Henry P. Baldwin, of the Maui plantation of HC&S, entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston's landholdings in Kīhei into a sugar enterprise (Dean 1950:62).

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē (Wilcox 1996).

The McCandless Brothers drilled a successful Maui-Type well (U.S.Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 feet through the Honomanū basalts, and tunneled laterally over 1,500 feet in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei, and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu‘unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the ‘Ōla‘a Sugar Company in Hawai‘i, in exchange for a supply of steel rails for new railway requirements at Pu‘unēnē. A large scale Kona storm hit the plantation on 15 November 1900 and caused immense damage to both Kīhei and the HC&S fields in Pu‘unēnē. Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu‘unēnē commencing operations 29 January 1902 (Dean 1950).

Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was fully developed. It would have been named the HC&S K2 well and would have included a large pumping station (Stearns and Macdonald 1942).

3.1.3.2 Railway Operations

Kihei Plantation Company planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive "Haleakala" was built and sent on to Maui (Condé and Best 1973).

By March of 1900, the first annual report of the Kihei Sugar Company stated, "It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February" (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made possible harvesting and transporting over 2,000 tons of sugar in a single year (Figure 16) (Dean 1950).

The laying of the railroad and the cultivation of the sugar cane was performed primarily by Japanese field labor. Kīhei's plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided by HC&S in Pu‘unēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907).

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company's rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kīhei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from "Haleakala" to "Hawaiian Commercial & Sugar #4," becoming renamed again in 1910 as "Kihei" (Figure 17) (Condé and Best 1973:230-231). A portion of HC&S railroad into Kīhei is depicted on 1929 and 1933 maps of Maui (see Figure 13 and Figure 14).

3.1.3.3 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa‘a‘ea Reservoir, at the 1,000 ft. elevation, and maintain a four-foot drop per mile following the ditch's initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. Halehaku Gulch, at 250 feet deep, and Māliko Gulch, at over 350 feet deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in Lowrie Ditch was divided out to Pā‘ia Plantation (an 11/20ths share) and Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation's Kīhei boundary, was 21.9 miles (Thrum 1900).

More water was required from wells and the East Maui watershed. The manager for Kihei Plantation Company, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. Kihei Plantation Company would receive 2/9ths of the capacity from the enterprise (Dean 1950).

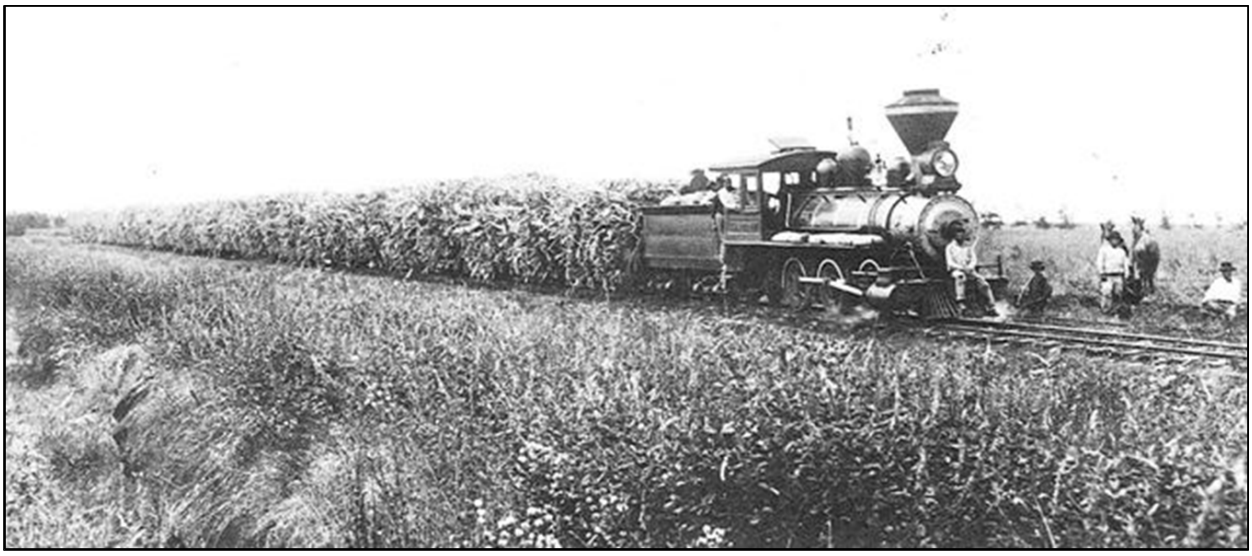


Figure 16. KPC locomotive “Haleakala” transporting cane from Kīhei fields to the mill at Pu‘unēnē, circa 1905 (Condé and Best 1973:231)



Figure 17. KPC locomotive servicing HC&S mill as “Hawaii Commercial & Sugar No. 4” (Condé and Best 1973:231)

The Kihei Plantation Company failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko‘olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to $7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined that the best course of action was to buy out the company for $375,000 (Condé and Best 1973).

In 1908, the lands of Kihei Plantation Company were divided up between five new major business entities of HC&S: Kailua Plantation Company (994 acres); Kalialinui Plantation Company (923 acres); Kula Plantation Company (996 acres); Makawao Plantation Company (982 acres); and Pulehu Plantation Company (978 acres), which acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were reapportioned between the new plantations (Dean 1950). The best fields continued to be cultivated, while other plantation sugar lands became cattle pasture (Cox 1976:14-15). Sugar was never grown within the current project area or its immediate surroundings. Sugar operations continued in North Kīhei until circa 1968, when HC&S leased lands to a corn research farm.

3.1.4 Mid- to Late 1900s

While World War I had little impact on Maui, World War II brought with it a significant military presence. United States (U.S.) Marines resided and trained at Camp Maui in Kokomo, and held training maneuvers on Kaho‘olawe and at Ma 'alaea Bay, including amphibious landing training along beaches and other exercises carried out in *kiawe* groves east of the bay (Allen 1950; Speakman 1978). U.S. Navy presence on Maui included the Combat Demolition Training Station at Kama‘ole and two naval air stations, one at Pu‘unēnē and the other at Kahului (Allen 1950). The training station at Kama 'ole was responsible for research work at Kīhei as early as 1940.

The Kīhei shoreline served as an invaluable training ground for amphibious warfare in the Pacific during World War II. Of all the Navy training in the Hawaiian Islands, probably the most rigid and intense was that of the Combat Demolition Training Station at Kama‘ole, Maui, where, after the autumn of 1943, 40 teams of 100 men each were prepared for reconnaissance and demolition work (Allen 1950:191). As early as May 1942, servicemen from the 108th Infantry Regimental Combat Team of the 27th Infantry Division guarded the south Maui beach areas (Love 1949:19). Structures that remain from the World War II garrison forces include intact reinforced concrete pillbox positions, one of which is located at the beach adjacent to the Hale Hui Kai Condominium on Keawakapu Beach and another at the seaward edge of Ulua Beach in Wailea.

Statehood in 1959 resulted in the adoption of new civic plans for South Maui. Beginning in the 1960s, development of the coastal Kīhei area shifted from sugar plantation and related railroad operations to vacation condominium development. Kihei underwent a rapid residential and commercial development beginning in the 1970s. Clark (1980:49) notes that the groundwork for this development was established in the late 1950s when investors began purchasing coastal property. However, the construction boom of high rise apartments, hotels, and condominiums and corresponding shopping centers, restaurants, and real estate offices did not occur until the 1970s. Along with the condominiums and "classy" hotels (Maui's "hallmark") came the construction of millionaire homes in the dry hills overlooking Kihei and the view beyond of Kaho 'olawe and

Moloka'i (Speakman 1984:188). Speakman (1984:188-189) comments on the congestion and overcrowding that resulted from this development:

> It was partially blamed on the fact that Kihei was owned by many proprietors or speculators, each with individual plans uncoordinated with general planning, and partly on the failure of the County planners to hold the line against the runaway development. Kihei became the model for the wrong way to go about expansion [Speakman 1984:188-189]

Between 1970 and 1996 vacation rental units increased from 2,641 to 17,442. The leeward coasts, including Kīhei, became popular tourist destinations (Juvik 1998:14). Groundbreaking for Pi'ilani Highway, which constitutes a portion of the current project area, occurred in October 1979 (The Honolulu Advertiser 1979). This bypass highway was constructed to ease the congested Kihei traffic which resulted from commercial and residential development and expansion of the tourist industry. A series of aerial images shows development of areas within and surrounding the project area from 1950 until the year 2000 (Figure 18 through Figure 21).

As discussed by Wong Smith, agriculture and cattle raising continued to be important activities in the Kula area through the twentieth century (Brown and Haun 1989:C-7). TMK [2] 2-2-002 shows the following landholders: Haleakala Ranch Co., Kaonoulu Ranch Co., Ltd., Maui [Land and] Pineapple Co., Ltd., the State of Hawai'i, and Hawaiian Homes Lands (see Figure 12). While Haleakala Ranch Co. and Kaonoulu Ranch Co., Ltd., appear to own large portions of this TMK, Ulupalakua Ranch, Inc., is another significant ranching enterprise in the Kula area. During the 1970s, Kula produced the majority of Hawai'i's locally grown produce; livestock ranches comprised most of the remaining land use. At present, non-residential areas are still in use as centers of agricultural production, particularly in the "potato district" of Kula (Donham 1992:5). Haleakala, Ulupalakua and Kaonoulu Ranches are also still in operation. Lands surrounding the project area were still being utilized as grazing grounds for cattle in the year 2000 (Kikiloi et al. 2000).

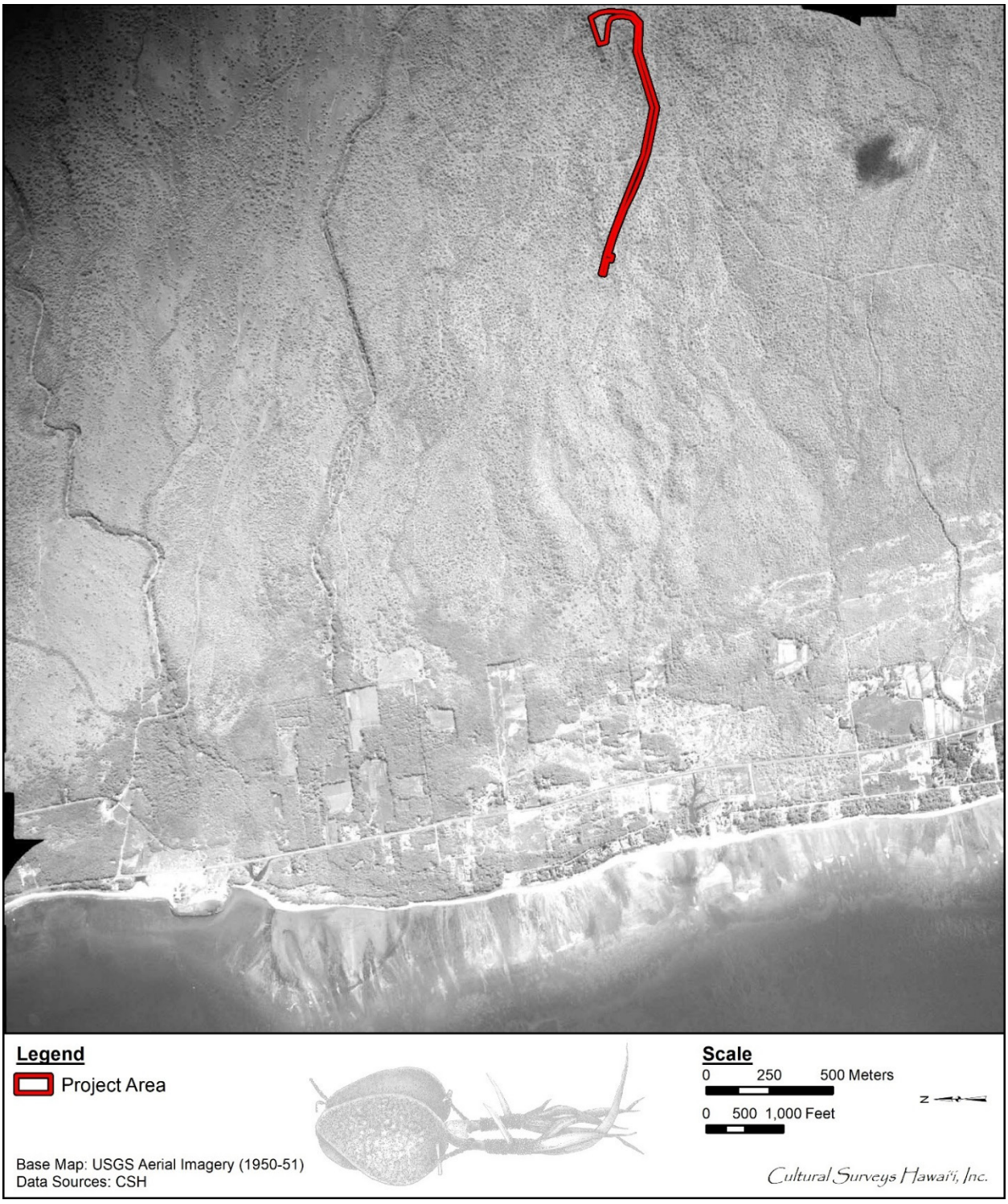


Figure 18. Aerial image showing the project area undeveloped in 1950-51; tracts of land makai from the project area appear to be in initial stages of development (U.S. Geological Survey 1950-51)

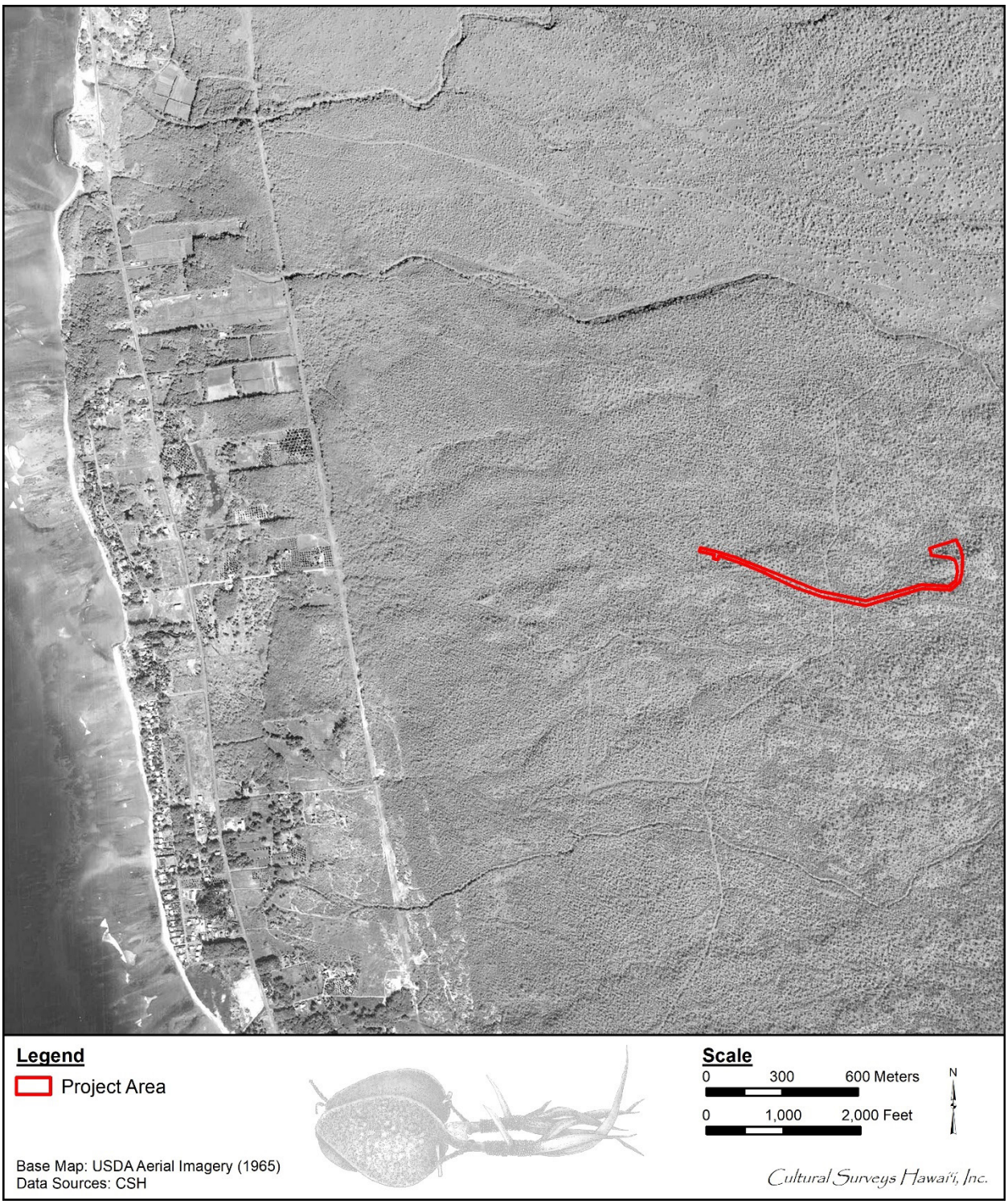


Figure 19. A 1965 aerial image showing the project area undeveloped and some development minor developments *makai*, along the coast (USDA 1965)

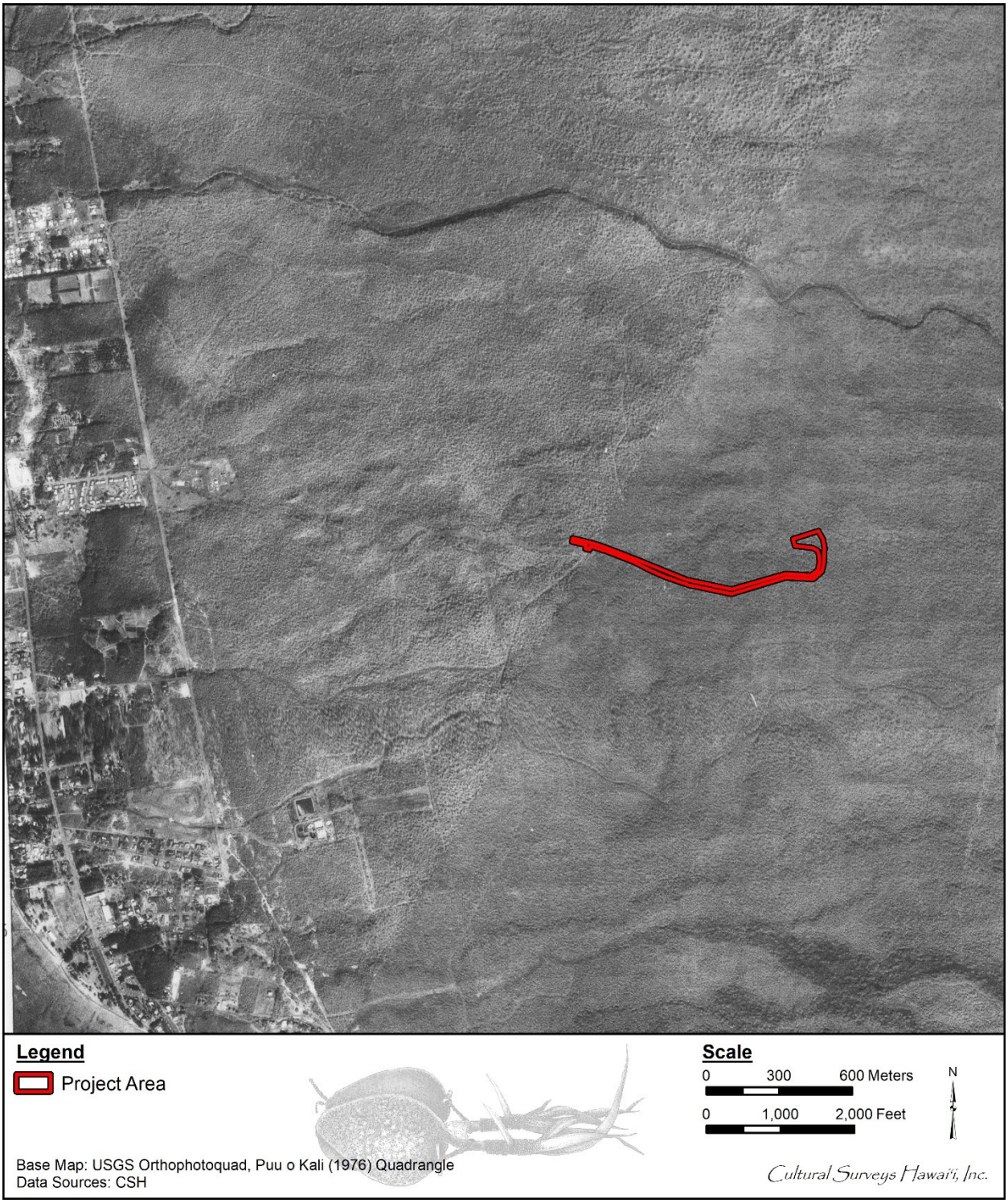


Figure 20. A 1976 aerial image showing the project area undeveloped, though with some development adjacent to its western border; coastal development has increased since the prior decade (U.S. Geological Survey 1976)

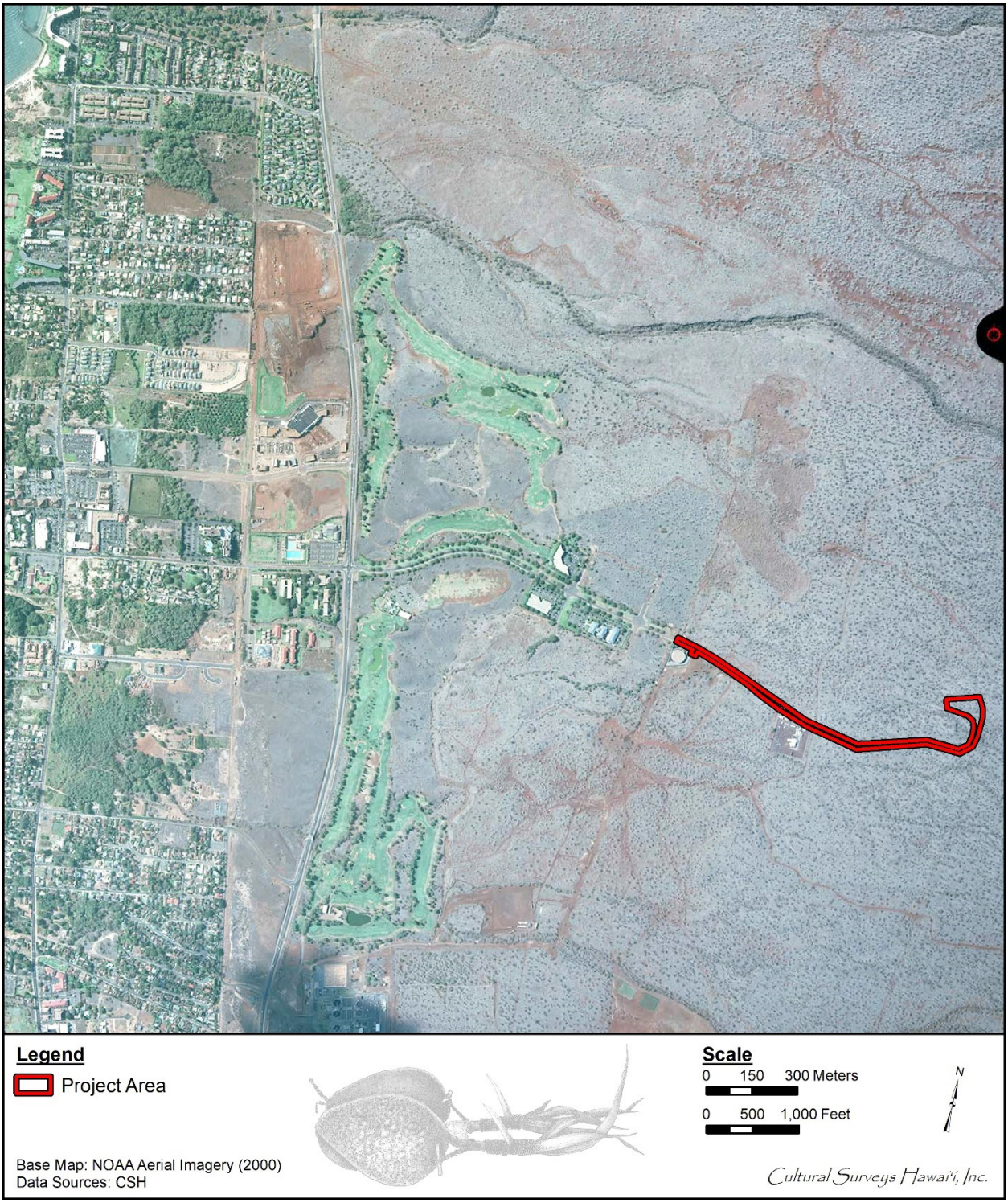


Figure 21. A 2000 aerial image showing paved roadways within the project area, some other developments of adjacent areas of Maui Research and Technology Park, and moderate to heavy developments along coastal areas (NOAA 2000)

3.2 **Previous Archaeological Research**

The earliest archaeological studies on the island of Maui were a part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area during these early studies.

Following the passage of the National Historic Preservation Act in 1966 and HRS Chapter 6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis. Since 1976, lands surrounding the current project area have been subject to a variety of archaeological studies, including reconnaissance, inventory surveys, and data recovery. Three of these prior studies have included at least a portion of the current project area. No historic properties have been previously identified within the current project area. Historic properties previously identified near the project area include pre-Contact and/or historic features utilized for ranching, agriculture and/or habitation. The following subsections and Table 2 summarize known archaeological studies that have been conducted within the project area and vicinity. Locations of these studies and previously identified historic properties area depicted on Figure 22 and Figure 23, respectively.

3.2.1 Cox (1976)

On 20 and 29 January 1976, Archaeological Research Center Hawaii, Inc. conducted a surface survey of the then proposed Pi‘ilani Highway right-of-way; subsequent testing and salvage excavations were carried out on 17 April 1976 (Cox 1976). The study area transects a portion of the current project area. Six historic properties were identified; including an *ahu* interpreted as either a boundary marker or possible monument burial (SIHP # 50-50-09-0219); an alignment of unknown function (SIHP # -0220); two historic house complexes (SIHP #s -0221 and -0222), a pair of low, C-shaped shelter walls (SIHP # -0223), and a temporary dwelling cave with an associated fire pit (SIHP # -0224). None of these historic properties were identified in the current project area vicinity so are not depicted on Figure 23.

3.2.2 Cordy (1977)

Between 18 and 22 July 1977, the Environmental Resources Section of the U.S. Corps of Engineers, Pacific Ocean Division conducted the fieldwork component of an archaeological reconnaissance survey and literature search for coastal sections of nine gulches and a 200-feet wide transect along 6.5 miles of the Pi‘ilani Highway corridor for the Kihei Flood Control Project (Cordy 1977). The flood control project area transected seven *ahupua‘a*, including Waiohuli Ahupua‘a and a portion of the current project area. Thirty-eight historic properties were identified; four of these historic properties, SIHP #s 50-50-10-1706, -1707, -1710, and 1712, were located within the current project area vicinity (see Figure 23).

SIHP # -1710, a likely ranch-related, high-walled enclosure, was identified “on sandy soil and against a high out-crop” a few meters away from the southern boundary of the project area at the western extent of Lipoa Parkway (Cordy 1977:36). SIHP # -1706, a mound and wall, and SIHP # -1707, a low enclosure, were documented less than 75 m and approximately 150 m south of SIHP

-1710, respectively. SIHP # -1712 is a low rectangular enclosure that was identified approximately 600 m south of the current project area. Cordy (1977:58) interpreted SIHP #s -1707,

Table 2. Previous archaeological studies conducted in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-50-10)
Cox (1976)	Surface survey, testing, and salvage excavations	Pi‘ilani Highway, including a portion of the project area	Identified six historic properties, though none within the current project area vicinity (i.e., not depicted on Figure 23)
Cordy (1977)	Archaeological reconnaissance and literature search	Included a segment of Pi‘ilani Highway containing a portion of the project area	Identified 38 historic properties, but only four in the immediate vicinity of the project area: SIHP #s -1706, mound and wall; -1707, low enclosure; -1710, high-walled enclosure; and -1712, low enclosure; SIHP #s -1707, -1710, and -1712 were interpreted as pre-Contact temporary housing; SIHP # -1706 function is unknown
Miura (1982)	Archaeological reconnaissance	Approximately 190 acres in Kihei; TMK: [2] 2-2-002:042por	Identified nine historic properties, two of which were in the immediate vicinity of the current project area: Site 9, a loosely stacked alignment, and Site 1, an L-shaped wall and a C-shape, later designated as SIHP #s -2476 and -2523, respectively (Donham 1990ab)
Kennedy (1986)	Preliminary reconnaissance	Area for a proposed golf course at TMK: [2] 2-2-002; included the entire current project area	No historic properties identified
Donham (1990b)	AIS	Pi‘ilani Residential Community; TMK: [2] 2-002:042por	Identified 12 historic properties within the project area vicinity: SIHP # -1709, a low agricultural enclosure previously identified by Cordy (1977) as a temporary habitation feature consisting of two low enclosures; and SIHP #s -2513 -2523, agricultural and/or habitation features

Reference	Type of Study	Location	Results (SIHP # 50-50-10)
Donham (1990a)	Archaeological data recovery	Pi‘ilani Residential Community; SIHP # 50-50-10-2475	Interpreted SIHP # -2475 as an agricultural small stone alignment terrace complex
Fredericksen et al. (1993)	AIS and data recovery	Lokelani Intermediate School	Identified SIHP # -3193, pre-Contact rock shelter
Fredericksen and Fredericksen (1995)	AIS	Pi‘ilani Highway	Identified SIHP # -3529, rock shelter (likely pre-Contact) beyond the project area vicinity (i.e., not depicted on Figure 23).
Hammatt and Shideler (2000)	AIS	Approximately 5 acres for a proposed algae farm; TMK [2] 2-2-002:042por.	No historic properties identified.
Kikiloi et al. (2000)	AIS	20 acres for a proposed algae farm; TMK [2] 2-2-002:042por.	No historic properties identified.
McDermott (2001)	AIS	Proposed area for Pi‘ilani Mauka Detention Basin No 1.; TMK: [2] 2-2-024:014por.	Identified SIHP #s 50-50-09-5072 -5078, traditional Hawaiian temporary habitation and/or marker features
Dega (2008)	AIS	[2] 2-24:012 por., 014., por., 16 por., 17 por., and por. 54	Identified 5 historic properties; SIHP -6239, -6240, -6587, all post-contact; and -6241, -6588 traditional precontact

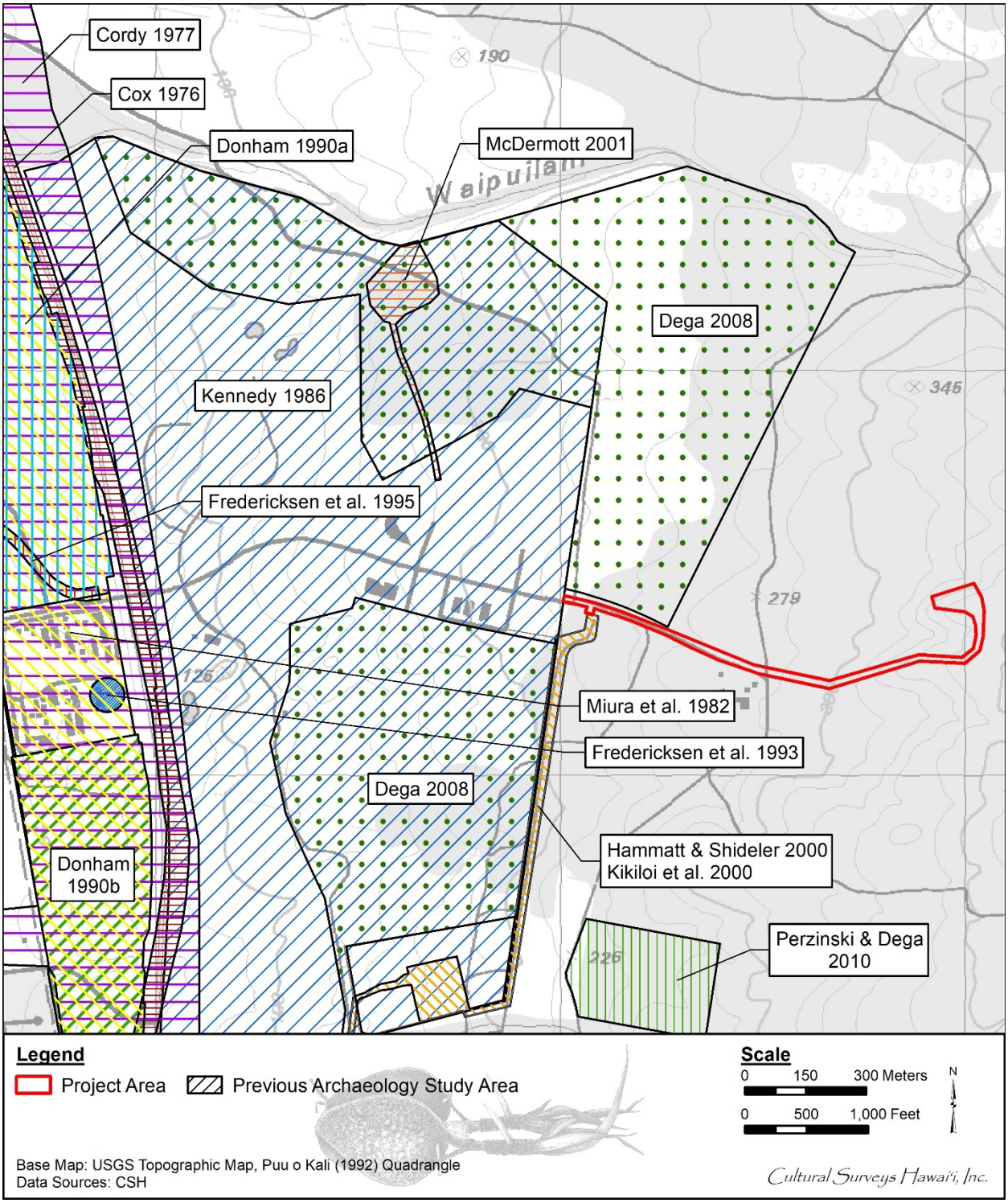


Figure 22. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing previous archaeological studies conducted within the project area and immediate vicinity (U.S. Geological Survey 1992)

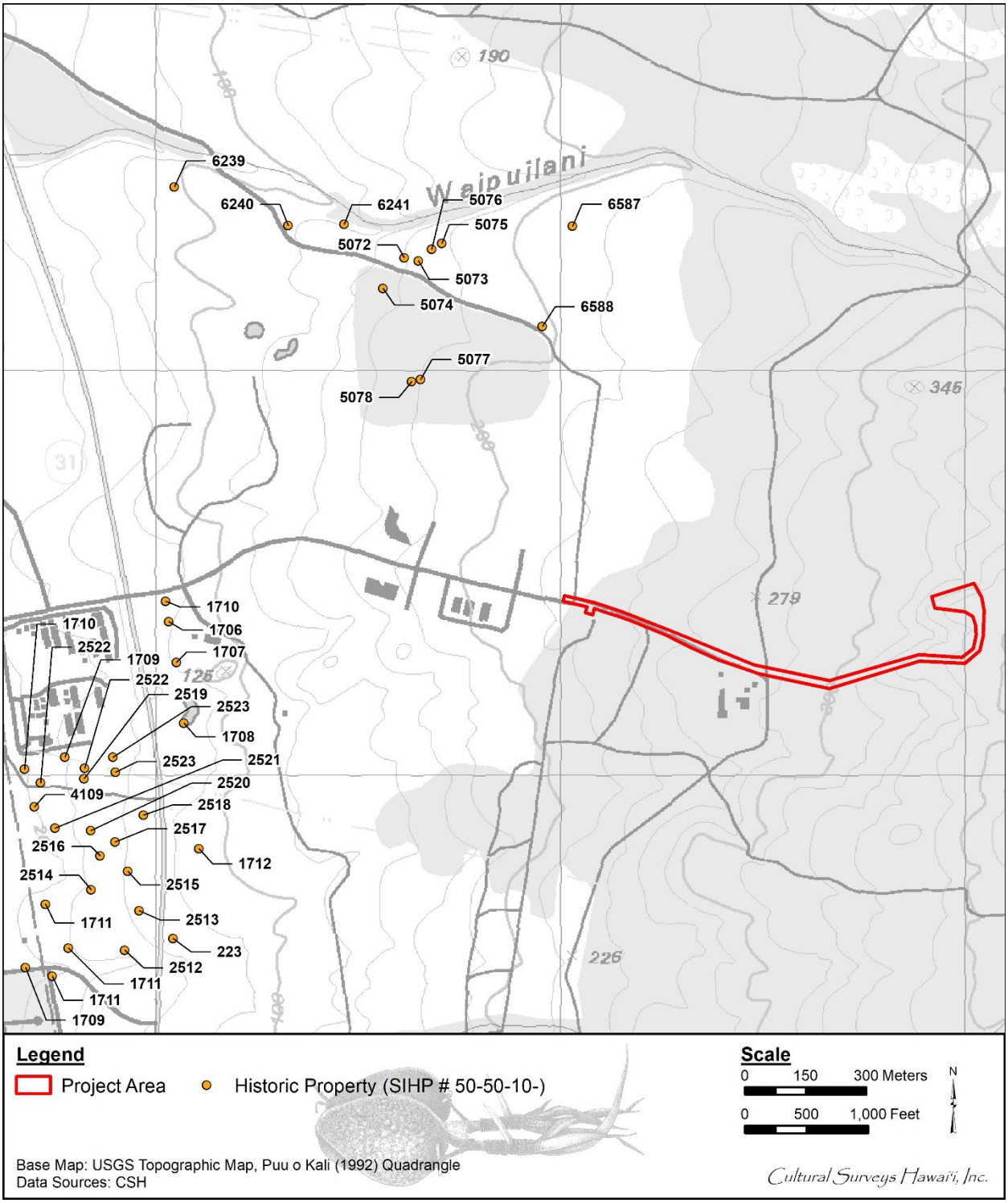


Figure 23. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing historic properties previously identified within the project area vicinity (U.S. Geological Survey 1992)

-1710, and -1712 as pre-Contact temporary housing sites, while the function of SIHP # -1706 was listed as unknown. Regarding SIHP # -1706, Cordy (1977:59) notes that the mound is “associated with a wall and is adjacent to a temporary house [SIHP # -1707]…” and it does not “have features characteristic of burials… Agricultural functions have been suggested for similar mounds…, but it has been difficult to prove this point. In a barren zone, where agriculture is largely unexpected…, some unknown function seems likely.”

Cordy (1977:60) provides a “barren zone utilization” hypothesis, which suggests that the temporary housing sites were “rest stops along transportation routes leading to inland portions of the ahupua‘a,” and SIHP # -1706 would also have been associated with such a trail system. However, no other evidence of trails was identified during the reconnaissance.

3.2.3 Miura (1982)

From 5 to 7 June 1982, Environmental Impact Study Corp (EISC) conducted an archaeological reconnaissance of approximately 190 acres comprising a portion of TMK: [2] 2-2-002:042 (Miura 1982) extending *makai* from the current project area’s western extent. While a total nine historic properties were identified during the study, only two were documented in the immediate vicinity of the current project area. Miura (1982) identified these two historic properties as Site 9 and Site 1, which were later designated as SIHP #s -2476 and -2523, respectively (Donham 1990ab). SIHP # -2476 represents a loosely stacked alignment approximately 70 m northwest of the western end of the project area, and SIHP # -2523 consists of two features, an L-shaped wall, and a C-shaped alignment, located within 300 m south of the western extent of the project area (see Figure 23). SIHP # -2523 was also later documented by Paul H. Rosendahl, Ph.D., Inc. (PHRI) in 1990 (Donham 1990b), though a few meters south of where Miura (1982) recorded it. Both locations are plotted on Figure 23 to represent this discrepancy.

3.2.4 Kennedy (1986)

In February 1986, Archaeological Consultants of Hawaii, Inc. completed a preliminary reconnaissance of a proposed golf course at TMK: [2] 2-2-002 (Kennedy 1986), which included all of the current project area. The study was conducted on foot and in a four-wheel-drive vehicle, with a greater focus on areas near Waipuilani Gulch, which was dry at the time. Visibility was high during the reconnaissance due to arid conditions and sparse vegetation. No historic properties were identified. Kennedy (1986) concluded that encountering historic properties during development would be unlikely; as such, no further archaeological work was recommended.

3.2.5 Donham (1990b)

On 6 and 7 November 1989, PHRI completed the pedestrian survey portion of an archaeological inventory survey of the Phase II Pi‘ilani Residential Community project area at TMK: [2] 2-002:042por. (Donham 1990b). From 28 through 30 December 1989 and 2 through 6 January 1990, PHRI conducted subsequent testing and site recording. Sixteen historic properties were identified, which included three historic properties (SIHP #s 1709-1711) previously identified by the U.S. Corps of Engineers, Pacific Ocean Division (Cordy 1977) and 13 newly identified historic properties (SIHP #s -2512 through -2524). Twelve of the historic properties (SIHP #s -1709 and -2513 through -2523) documented by Donham (1990b) were located in the current project area vicinity, south of the Lipoa Parkway/ Pi‘ilani Highway intersection (see Figure 23).

Seven of these 12 historic properties were interpreted as agricultural sites: SIHP #s -1709 and -2513, low enclosures; -2515, modified outcrop; -2518, complex with two terraces, one rock pile, and one alignment; -2519, terrace; -2520, complex with three terraces and one rock pile; and -2523, complex with two C-shapes. Three of the historic properties were identified as habitation features: SIHP # -2514, platform and SIHP #s -2517 and -2521, midden scatters. A mix of agricultural and habitational function was determined for the remaining two historic properties: SIHP # -2516, complex of two enclosures (one for agriculture; one for temporary habitation), and SIHP # -2522, a complex with a box C-shape and a terrace.

Donham (1990a:8) describes the most common observed terraces as "stepped soil flats defined by aligned boulders and cobbles." While an agricultural function is interpreted for these terraces and other features, the study does not indicate any specific type of agriculture. Donham (1990a:12) also notes that C-shapes are often associated with World War II features; however, due to the condition of the C-shapes identified during this study, these shapes "cannot be readily associated with modern military construction."

Some discrepancies exist regarding SIHP #s -1709 and -1710, two historic properties that Donham (1990a) located, which were previously identified by Cordy (1977). SIHP # -1709 was previously identified by Cordy (1977) as two low enclosures that functioned as temporary habitation features in an area south and beyond the current project area vicinity. However, Donham (1990a) documented the location of SIHP # -1709 approximately 300 m southwest of the project area and identified it as one low agricultural enclosure. SIHP # -1709 is plotted on Figure 23 in the location recorded by Donham (1990a). The position of SIHP # -1710 on Figure 23 reflects the point where Cordy (1977) recorded it, since Donham (1990a) identified this historic property further southwest and beyond the immediate project area vicinity. Cordy (1977) and Donham (1990a) both identified the historic property as a high-walled enclosure; however, Cordy (1977) suggested that SIHP # -1710 was associated with ranching, while Donham (1990a) interpreted it as an agricultural and temporary habitation feature.

3.2.6 Donham (1990a)

On 2 and 5 January 1990, PHRI conducted archaeological data recovery at SIHP # -2475, an agricultural complex of small stone alignments (Donham 1990a), located approximately 75 m northwest of the northwest corner of the current project area (see Figure 23). SIHP # -2475 was previously identified as consisting of two cairns (Features A and B) during an archaeological inventory survey conducted by PHRI in May 1989 for the Phase I Pi‘ilani Residential Community project area. The report for this study has not been made available to CSH. Donham (1990a) report that limited subsurface investigations occurred in 1989, including the disassembly of a cairn (Feature A), under which potential evidence of a subsurface feature, possibly a burial, was encountered, prompting a recommendation for additional data recovery and a provisional preservation. The 1990 data recovery investigation resulted in the surface observation of stone alignments interpreted as "the eroded remains of a terrace complex," and the previously identified cairns (Features A and B) were determined to be "artificial terraces that were subsequently built up with surface rocks during the clearing of adjacent soil flats," which "may also have functioned as planting mounds" Donham (1990a:6). A small piece of waterworn coral and a utilized basalt

flake were observed at shallow depths below Feature A. No significant subsurface cultural deposits were encountered. Further archaeological work was not recommended.

3.2.7 Fredericksen et al. (1993)

In July and August 1993, Xamanek Researches conducted an archaeological inventory survey and data recovery for Lokelani Intermediate School at proposed on-campus sites for a shower and locker room building and a playcourt (Fredericksen et al. 1993). One historic property was identified: SIHP # 50-50-10-3193, a pre-Contact rock shelter with associated midden and artifacts, including, various species of shell, coral files, adze fragments, a possible hammerstone, and more than 100 volcanic glass flakes. In addition, a human molar, incisor, canine, and phalange were identified. Regarding these human remains, Fredericksen et al. (1993:7) note that "each was found in a different horizontal and/or vertical location, which suggests casual deposition rather than intentional burial." Artifact analysis combined with radiocarbon dating indicates that SIHP # -3193 is a late pre-Contact used for temporary habitation. Approximately 75 percent of the rock shelter floor was excavated; therefore, Xamanek Researches determined that the site was no longer significant and would not yield additional information. However, archaeological monitoring was recommended due to the possibility of a sealed lava tube being present.

3.2.8 Fredericksen and Fredericksen (1995)

In May 1994, Xamanek Researches conducted an archaeological inventory survey along the 150-ft wide proposed corridor for Road C, a road connecting South Kihei Road to Pi‘ilani Highway (Fredericksen and Fredericksen 1995). One historic property was identified: SIHP # -3529, a low overhang rock shelter with associated midden and artifacts, including coral tools, fish bone tools, basalt flakes, and volcanic glass flakes. Based on the types of artifacts recovered and data collected from previous archaeological studies that identified nearby, similar rock shelters, SIHP # - 3529 is likely a pre-Contact temporary habitation site. Fredericksen and Fredericksen (1995:19) note that DLNR accepted a data recovery plan for SIHP # -3529 in June 1994, and a data recovery project was underway during the drafting of the archaeological inventory survey report. A report documenting the data recovery findings has not been made available to CSH. SIHP # -3529 was identified beyond the current project area's immediate vicinity (i.e., not depicted on Figure 23).

3.2.9 Hammatt and Shideler (2000)

On 31 January 2000, CSH conducted an archaeological inventory survey of approximately five acres for a proposed algae farm site at TMK [2] 2-2-002:042por. (Hammatt and Shideler 2000). Fieldwork consisted of a 100 percent coverage pedestrian survey, which included an access road that borders a southern portion of the eastern end of the current project area (see Figure 22). Along the corridor of this access road, evidence of recent bulldozing was observed, and electric and utility lines were previously buried down the center of the road. Within the remaining portion of the surveyed area, the land had been altered for telephone lines and post 1950s' ranching activities; evidence of these alterations included graded roads and bulldozer scarring on exposed bedrock surfaces. Several cattle carcasses and bovine excrement were also observed, indicating contemporary ranching land-use. No historic properties were identified. Further archaeological work was not recommended for the study area; however, an additional archaeological survey was recommended for the adjacent lands proposed for expansion of the algae farm.

3.2.10 Kikiloi et al. (2000)

On 26 July 2000, CSH completed an archaeological inventory survey for the expanded 20-acre algae farm site at TMK: [2] 2-002:042 por. (Kikiloi et al. 2000). This survey was a subsequent study to the archaeological inventory survey conducted by CSH in January 2000 (Hammatt and Shideler 2000). The same as with the earlier study, the northern extent of this study area borders a portion of the eastern end of the current project area (see Figure 22). Kikiloi et al. (2000) note that the area had been altered by heavy machinery, likely within the 50 years prior to the survey. Bulldozer push-piles and excavations for utility installation, cleared roadways, and decaying cattle were observed during the study. No historic properties were identified, and no additional archaeological work was recommended.

3.2.11 McDermott (2001)

From 13 February through 2 March 2001, CSH conducted an archaeological inventory survey of the proposed Pi‘ilani Mauka Detention Basin No. 1 project area at TMK: [2] 2-2-024:014por. (McDermott 2001). Fieldwork included a 100 percent coverage pedestrian survey and controlled excavation within selected features. Seven historic properties were identified: SIHP #s 50-50-09-5072 through -5078. These historic properties were located within approximately 400 m to 800 m, north of the current project area (see Figure 23) and are briefly described as follows: SIHP # - 5072, modified outcrop enclosure and stacked stone cairn; -5073, rectangular enclosure; -5074, U-shaped enclosure and two stacked stone cairns; -5075, C-shaped enclosure and stacked stone cairn; -5076, complex that includes a modified knoll with terraces, enclosures, stacked stone cairns, and stone linear alignments; -5077, two low stacked stone mounds, one circular, single stone alignment, and an enclosure; and -5078, stacked stone cairn. SIHP #s -5072 through -5077 were interpreted as temporary habitation sites, while SIHP # -5078, along with the other identified stone cairns, were identified as markers. All of these historic properties were interpreted as traditional Hawaiian features. SIHP #s -5072 through -5074 were identified within the study area; no further work was recommended for these historic properties. SIHP #s -5075 through -5078 were identified just outside the study area’s boundaries; therefore, an archaeological inventory survey was recommended to further investigate these historic properties.

3.2.12 Dega (2008)

The field work of this project was conducted by Scientific Consultant Services (SCS), Inc., in three phases over time: the first phase was from September 16-20 and September 23-25 2016; second phase was from November 19 and December 5-6, 2006; and the third phase was from September 18 through 20, 2008. The project areas were on tax map keys (TMKs) [2] 2-24:012 por., 014., por., 16 por., 17 por., and por. 54. Field work included 100 percent coverage pedestrian survey and controlled excavation within selected features. Five historic properties were identified: SIHP #s 50-50-10-6239, -6240, -6241, -6587, and -6588. The northern portion of this project area is abutting the northeast portion of the current project area, and the southern portion is approximately 20-100 meters from the southern portion of the project area. Four out of the five historic properties were more than 600 m from the project area. SIHP # -6588 is approximately 600 m north of the current project area (Figure 23). SIHP #s -6239 (modified outcrop), -6240 (modified outcrop) and 6587 (L-shape wall) are single feature sites and post-contact era. SIHP # -6241 is a linear rock wall and traditional pre-contact boundary wall, and SIHP # -6588 is a complex

of three rock mounds (traditional markers) pre-contact locators. No further work was recommended for Sites -6239, -6240, -6587, and -6588. However, SCS encouraged the informal preservation of Site -6241 (boundary wall) by placing orange construction fencing around the boundary wall during construction near the site. Following completion of the AIS, it was determined via survey that Site -6241 was located on Adjacent land to the north.

Section 4 Results of Fieldwork

CSH completed a reconnaissance-level pedestrian inspection of the entire project area in order to identify the types and locations of potential historic properties. Ground visibility was excellent due to active vegetation maintenance within the MRTP and dry conditions outside of the MRTP footprint. The pedestrian inspection covered 100% of the entire project area. The vegetation predominately included monkey pod trees (Albizia), *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), and exotic grasses.

No previously identified historic properties have been recorded within the project area as the area has not been previously surveyed. During the field inspection, CSH identified two small, stacked stone C-shaped enclosures (CSH 1) located on the top of a high point or knoll within the project area (Figure 24 and Figure 25). These small structures appear to be constructed on basalt bedrock with no discernable interior or external soil deposits. The construction style of these C-shaped enclosures is expedient single-course stacking that may have provided a small amount of temporary cover for a single individual. Based on all available information, these C-shaped structures do not appear to be traditional or pre-Contact in origin. CSH believes that these structures are most likely modern hunting blinds, but may also have been constructed during the WWII Era as part of military training exercises that occurred throughout South Maui. There are no artifacts or other material within or in the vicinity of these structures that could provide a temporal association to indicate that the structures are more than 50 years old.

In addition to CSH 1, the LRFI documented a modern built environment associated with the MRTP and surrounding uses that included asphalt-paved roadways within the project area and a wooden pedestrian bridge and private water tank outside of the project areas, but within close proximity. Documentation included photographs of these modern structures (Figure 26 through Figure 28). The modern wooden pedestrian bridge was identified over a natural drainage near the water tank on the south side of Lipoa Street (see Figure 27 and Figure 28).

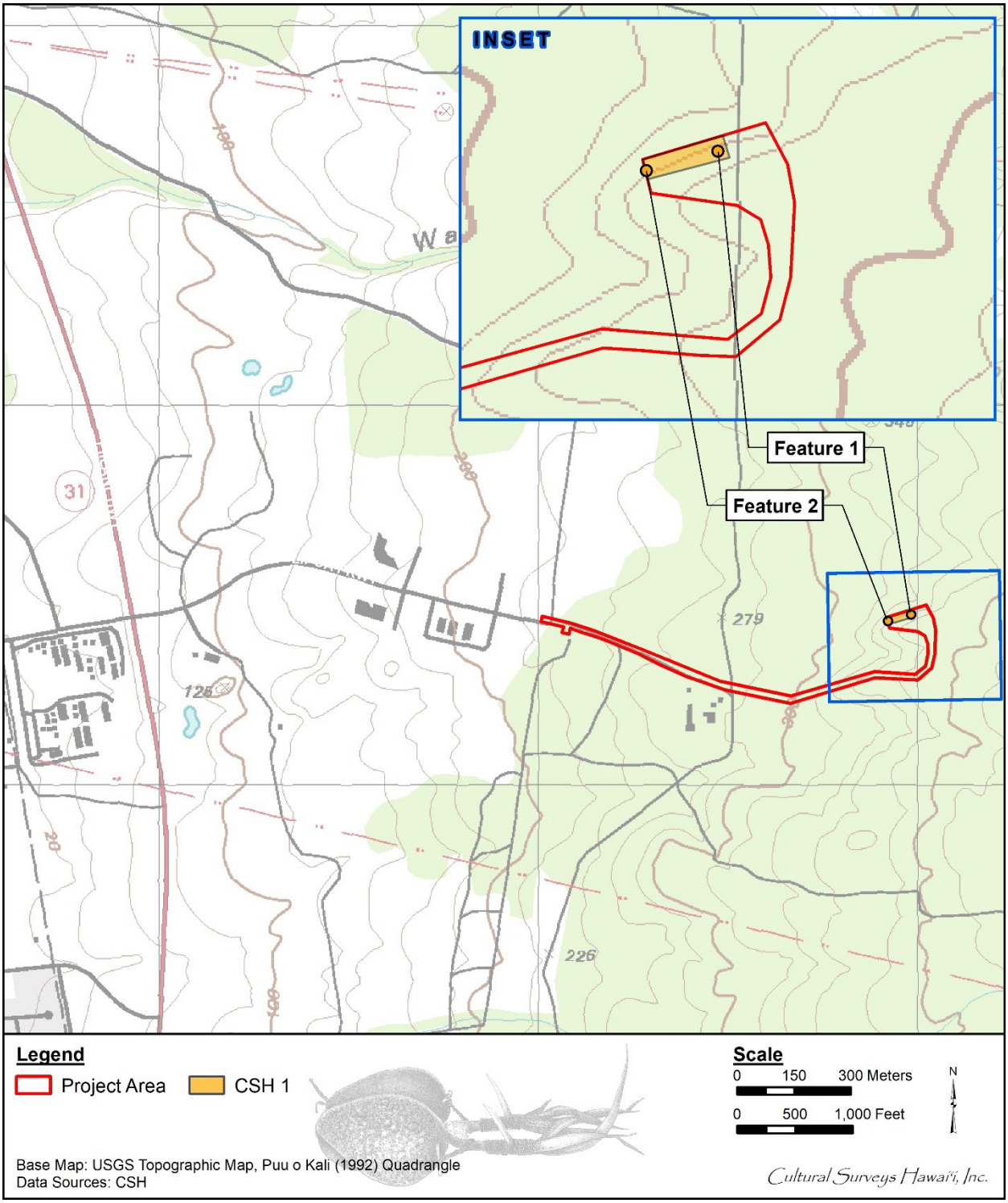


Figure 24. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of CSH 1 within the project area (U.S. Geological Survey 1992)

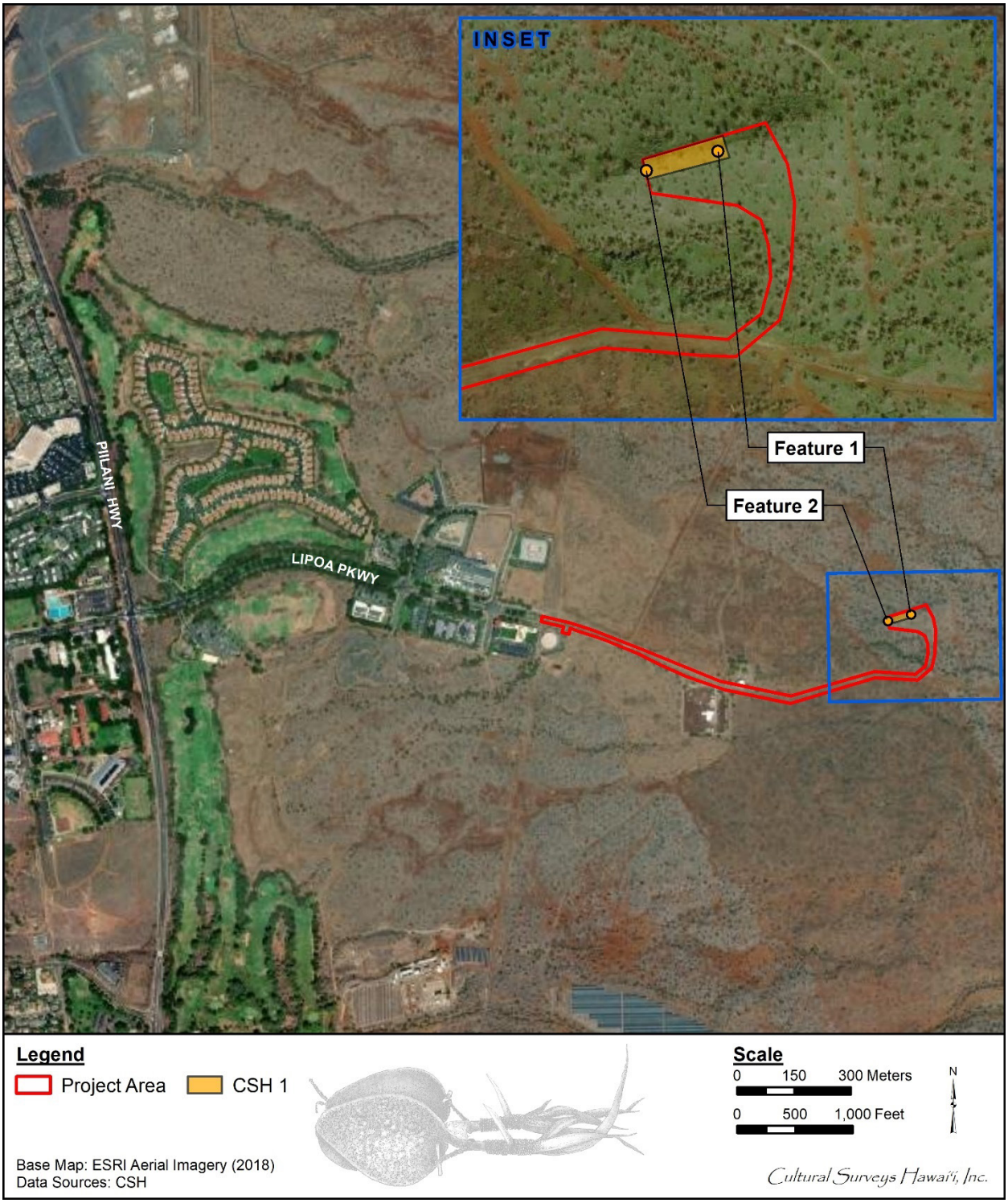


Figure 25. Aerial photograph showing location of CSH 1 within the project area (Esri 2018; Resource Mapping Hawai‘i 2017)



Figure 26. General view of the western end of the project area showing the asphalt-paved roadway, view to the east



Figure 27. General view of the modern wooden bridge within the western portion of the project area, view to the south



Figure 28. General view of the water tank adjacent to the western end of the project area, view to the northeast

Section 5 Site Description

5.1 CSH 1

FORMAL TYPE:	Complex
FUNCTION:	Temporary habitation
NUMBER OF FEATURES:	1
AGE:	Undetermined (Likely modern or WWII Era)
TEST EXCAVATIONS:	None
TAX MAP KEY:	[2] 2-2-002:050; 2-2-002:084
LAND JURISDICTION:	Haleakala Ranching Company

CSH 1 is a complex consisting of two C-Shaped enclosures that are designated as Feature 1 and Feature 2. CSH 1 is located in the eastern portion of the project area within the proposed footprint of the new water tank site (see Figure 24 and Figure 25). The site is located on the top of a high point or knoll of bedrock with open views of the surrounding area.

CSH 1 Feature 1 is a C-shaped enclosure constructed of stacked basalt boulders and cobbles that is located approximately 50.0 m east of CSH 1 Feature 2 (Figure 29) The enclosure is 1.70 m by 1.20 m with an average height of 0.55 m.

CSH 1 Feature 2 is a C-shaped enclosure constructed of stacked basalt boulders and cobbles that is located approximately 50.0 m west of CSH 1 Feature 1 (Figure 30). The enclosure is 1.20 m by 0.95 m with an average height of 0.65 m.

The two structures of CSH 1 appear to be constructed on basalt bedrock with no discernable interior or external soil deposits. The construction style of these C-shaped enclosures is expedient single-course stacking that may have provided a small amount of temporary cover for a single individual. Based on all available information, these C-shaped structures do not appear to be traditional or pre-Contact in origin. CSH believes that these structures are most likely modern hunting blinds but may also have been constructed during the WWII Era as part of military training exercises that occurred throughout South Maui. As such, the function of CSH 1 is interpreted as temporary habitation. There are no artifacts or other material within or in the vicinity of these structures that could provide a temporal association to indicate that the structures are more than 50 years old.

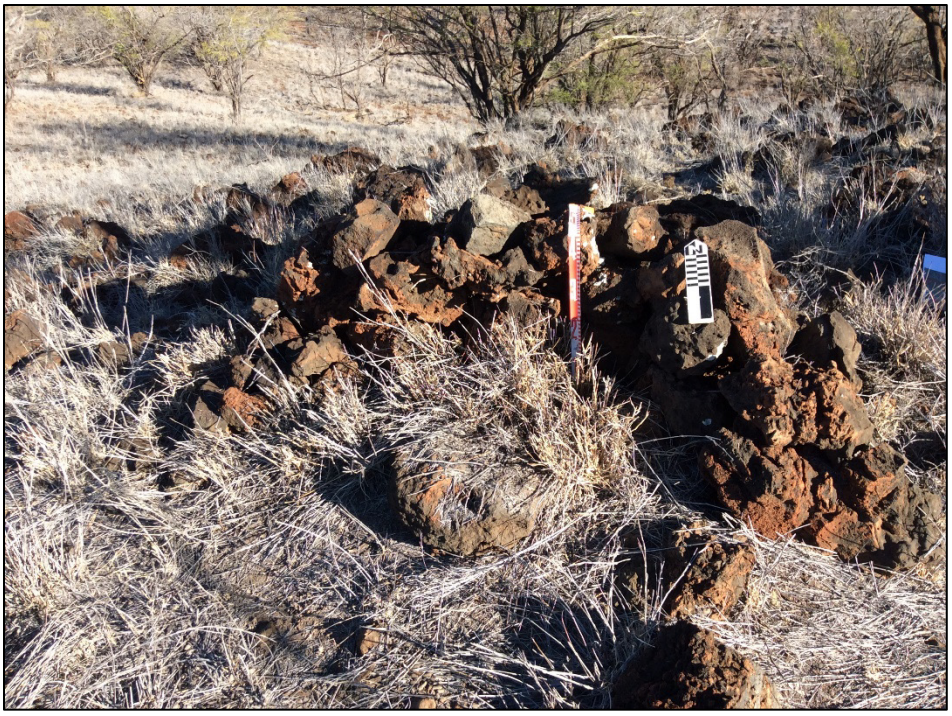


Figure 29. CSH 1 Feature 1 (C-shaped enclosure), view to north

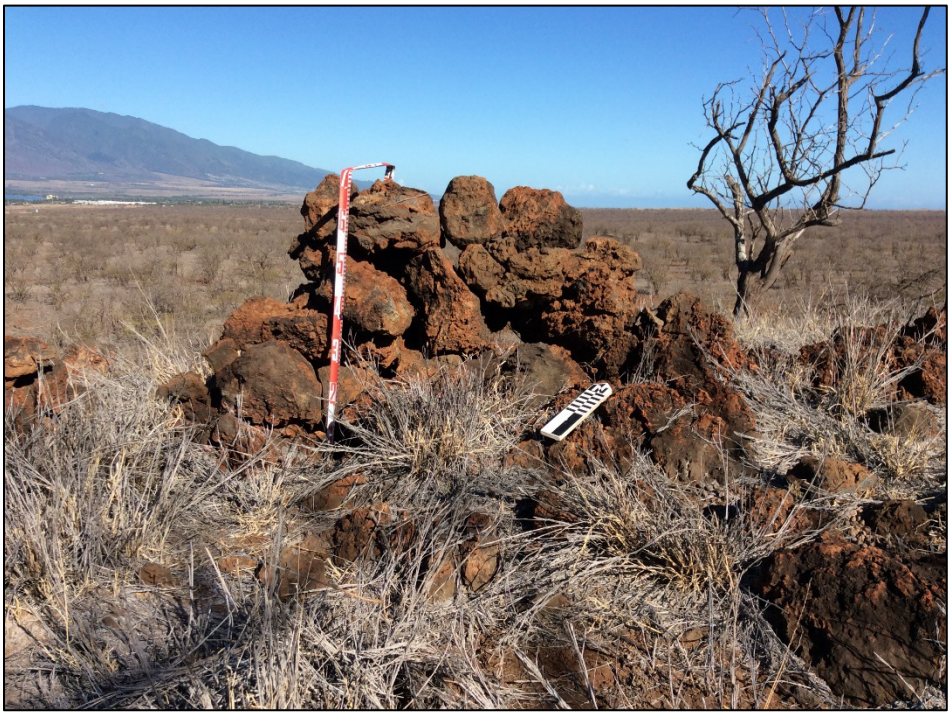


Figure 30. CSH 1 Feature 2 (C-shaped enclosure), view to northwest

Section 6 Summary and Recommendations

6.1 Summary

Traditional background research included a review of place names, legendary accounts, and documentation of pre-Contact land use within Waiohuli Ahupua‘a within the traditional *moku* of Kula and the modern district of Makawao. The project area is the lower midland portion of Waiohuli, Ahupua‘a and Kula Moku, a region with limited rainfall due to the rain shadow of Haleakalā. Traditional land-use in Kula Moku was known for potato cultivation. Meanings of place names, together with the environmental data, suggest that the lands of and surrounding coastal Kīhei were dry and sparse in an agricultural sense but rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along the coastline.

Historic background research presented a regional perspective of the early Western accounts recorded in Kīhei. It was one of the locations visited by Captain George Vancouver. A monument at Mai Poina ‘Oe Ia‘u Beach Park in Kīhei commemorates Vancouver’s on-shore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to Upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships. In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered in Lahaina, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "[f]rom the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]." The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs, particularly, the long-lasting Irish potato.

Previous archaeological research has included 12 archaeological studies conducted in the vicinity of the current project area. These studies have identified 33 historic properties in the area that represent both precontact and post-contact features, including mounds, walls, enclosures, modified outcrops, alignments, and rock shelters.

CSH completed a pedestrian inspection of the entire project area in order to identify the types and locations of potential historic properties. Ground visibility was excellent due to active vegetation maintenance within the MRTP and dry conditions outside of the MRTP footprint. No previously identified historic properties have been recorded within the project area. During the field inspection, CSH identified two small, stacked stone C-shaped enclosures (CSH 1) located on the top of a high point or knoll within the project area. These small structures appear to be constructed on basalt bedrock with no discernable interior or external soil deposits. The construction style of these C-shaped enclosures is expedient single-course stacking that may have provided a small amount of temporary cover for a single individual. Based on all available information, these C-shaped structures do not appear to be traditional or pre-Contact in origin. CSH believes that these structures are most likely modern hunting blinds, but may also have been constructed during the WWII Era as part of military training exercises that occurred throughout South Maui. There are no artifacts or other material within or in the vicinity of these structures that could provide a temporal association to indicate that the structures are more than 50 years old.

6.2 **Recommendations**

Consultation with the SHPD is recommended in order to determine historic preservation requirements for this project. A field inspection of the project area has identified two small, stacked stone C-shaped enclosures (CSH 1) that are interpreted by CSH as either being modern hunting blinds or WWII Era military training structures. No soil deposits or material cultural were identified at CSH 1 to provide additional temporal context or indication that the structures are more than 50 years old. CSH recommends no further work for CSH 1. Additionally, based on a review of the natural and historic background of the project area, combined with a review of previous archaeological studies in the vicinity, subsurface historic properties are unlikely to exist within the shallow soil deposits present within the project area. Based on the foregoing, archaeological monitoring of project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties.

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APPENDIX D.

STATE HISTORIC PRESERVATION DIVISION LETTER

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

LAURA H.E. KAAKUA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII | KA MOKUʻĀINA ʻO HAWAIʻI
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA ʻOIHANA KUMUWAIWAI ʻĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

March 30, 2023

IN REPLY REFER TO:
Project No.: 2022PR01264
Doc. No.: 2303NM04
Archaeology

Jordan Molina, Director
County of Maui
Department of Public Works
200 S. High Street
Kalana O Maui Bldg., 4th Fl
Wailuku, HI 96793
c/o Lance Nakamura
Email: lance.nakamura@co.maui.hi.us

Dear Jordan Molina:

SUBJECT: **Chapter 6E-42 Historic Preservation Review**
County of Maui Permit Application G2022-00228
Maui Research & Technology Park Tank Site and Access Road
Archaeological Literature Review and Field Inspection Report
Waiohuli Ahupuaʻa, Kula District, Island of Maui
TMK: (2)-2-2-002:084 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject permit application for the proposed Maui Research and Technology Park Tank Site and Access Road Project. SHPD previously reviewed the project and requested an archaeological literature review and field inspection (LRFI) report (Project No. 2022PR01264, Doc. No. 2212IK02). SHPD received the LRFI report titled *Draft Archaeological Literature Review and Field Inspection Report for the Maui Research and Technology Park Water Storage Tank and Access Road Project, Waiohuli Ahupuaʻa*, *Makawao District, Maui Island TMKs: [2] 2-2-002:084 (por.), [2] 2-2-2-002:086 (por), and [2] 2-2-024:026 (por.)* (Yucha et al., December 2022) on January 9, 2023.

Cultural Surveys Hawaiʻi, Inc. (CSH) produced the subject LRFI report. The field inspection included a reconnaissance-level pedestrian survey of the project area. Yucha et al. (December 2022) identifies two small, stacked stone C-shaped structures interpreted to be modern hunting blinds or WWII era military training structures and recommends no further archaeological documentation.

Andrew McCallister (SHPD Maui Archaeologist IV) conducted a site visit to the current project area on February 16, 2023, along with the applicant's archaeological consultant (Trevor Yucha, CSH). SHPD staff inspected the two small, stacked stone C-shaped structures, and confirmed them to be modern hunting blinds. No historic properties were observed within the project area.

Based on the information provided, SHPD's determination is "**No historic properties affected**" for the current project. Pursuant to HAR §13-284-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The HRS 6E historic preservation review process is ended. The permit issuance process may proceed.

Although the LRFI does not fulfill the requirements of an archaeological inventory survey as specified in HAR §13-276-5, it serves to facilitate project planning and supports the historic preservation review process. **Please submit** two hard copies of the document along with a text-searchable PDF copy of the document and a copy of this letter to the SHPD Kapolei office, Attention SHPD Library. Additionally, please upload a text-searchable PDF copy of the report to HICRIS Project No. 2022PR01264 using the Project Supplement option and send a PDF copy to lehua.k.soares@hawaii.gov.

Please annotate on the construction plans: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

Please contact Andrew McCallister, Maui Archaeologist IV, at andrew.mccallister@hawaii.gov for any matters regarding archaeological resources or this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
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APPENDIX E.

CULTURAL IMPACT ASSESSMENT

Cultural Impact Assessment for the 2.0 Million-Gallon (MG) Water Storage Tank Project, Waiohuli Ahupua‘a, Kula District, Maui TMKs: (2) 2-2-002:084 (por.) and 086 (por.)

Prepared for
County of Maui,
Department of Water Supply

Prepared by
Tehani Baculpo, B.A.,
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Cultural Surveys Hawai‘i, Inc.
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(Job Code: WAIOHULI 14)

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Management Summary

Reference	Cultural Impact Assessment for the 2.0 Million-Gallon (MG) Water Storage Tank Project, Waiohuli Ahupua‘a, Kula District, Maui, TMKs: (2) 2-2-002:084 (por.) and 086 (por.) (Baculpo and Hammatt 2026)
Date	March 2026
Project Number(s)	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: WAIOHULI 14
Agencies	State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP); County of Maui, Department of Water Supply
Land Jurisdiction	Private; Haleakala Ranch Company (Parcel 84); Lipoa Investments, LLC (Parcel 86)
Project Location	The tank site and its associated infrastructure and access road will be located in the Waiohuli Ahupua‘a, Makawao (Kula) District, Maui Island, on TMKs: (2) 2-2-002:084 (por.) and 086 (por.). The project area extends from the eastern end of Lipoa Parkway above Līpoa (formerly the Maui Research and Technology Park) and encompasses the water tank site and access road.
Project Description	The County of Maui, Department of Water Supply proposes the installation of a new 2.0 MG water storage tank that will be part of the County of Maui’s potable water system. The project includes construction of the new water storage tank, its appurtenances, supporting utility connections, as well as roadway access improvements. Drainage improvements will be provided to manage stormwater runoff and will include a drainage basin and riprap-lined swales. Access to the water tank will be provided from Lipoa Parkway via a paved access road. The tank site is currently privately owned by Haleakala Ranch Company but will be subdivided and dedicated to the County of Maui.
Project Acreage	The project area is approximately 7 acres (2.83 hectares).
Document Purpose and Regulatory Context	This cultural impact assessment (CIA) supports compliance of the 2.0 MG Water Storage Tank Project with: • *Ka Pa‘akai O Ka‘aina v. Land Use Commission* (94 Hawai‘i 31), in which the Hawai‘i Supreme Court established a three-part analytical framework to assist the state and counties in fulfilling their constitutional obligation to preserve and protect traditional and customary practices (TCP refers to “traditional and customary practices”) exercised by Native Hawaiians, to the extent feasible; • the mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Revised Statutes (HRS),

	and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups; and • the State of Hawai‘i’s environmental review process under HRS §343, which requires consideration of the proposed project’s potential effects on cultural practices and cultural features to “promote responsible decision making” (HRS §343); This CIA contains information gathered from archival research and consultation, compiled to “analyze the impact of a proposed action on cultural practices and features associated with the project area” (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR §13-275-6 and §13-284-6). This project also includes a Ka Pa‘akai Analysis (KPA) study. In *Ka Pa‘akai v. Land Use Commission*, 94 Hawai‘i (2000) the Court held the following analysis must also be conducted: • The identity and scope of valued cultural, historical, or natural resources in the petition area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the petition area; • the extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and • the feasible action, if any, to be taken by the state to reasonably protect Native Hawaiian Rights if they are found to exist.
Results of Background Research	Background research for the proposed project yielded the following information: 1. The project area is located within the *ahupua‘a* (traditional land division) of Waiohuli and the *moku* (district) of Kula, approximately 2.0 km (1.2 miles) from the southern coastline and on the leeward slope of Haleakalā. 2. Meanings of place names, together with the environmental data, suggest the lands of and surrounding coastal Kīhei were dry and barren in an agricultural sense but rich in marine resources. Previous research on pre-Contact occupation in Kula District

	(Kolb et al. 1997) has suggested most permanent habitations were in the uplands with a smaller permanent population located along the coastline. 3. Several sayings refer to the lack of coastal or seafaring knowledge, which made the people of Kula appear ignorant. These sayings were rooted in the fact that Kula people lived far from the sea and were not familiar with coastal lifeways. These sayings about the seafaring ignorance of Kula people, however, are tempered by sayings of admiration for their skill and perseverance at working the land. Kula was famous for its upland *‘uala* (sweet potato; *Ipomoea batatas*) “plantations” (Handy et al. 1991:511) and the aforementioned sayings about Kula attest to that fact. 4. The combination of good soil developed in volcanic ash, cool temperatures and frequent cloud cover that would lower evapo-transpiration and bring moisture as fog drip, and rainfall distributed fairly evenly throughout the year would also have allowed for dryland cultivation up to 3,000 feet (ft) amsl (Handy et al. 1991:276) for Hawaiians living in the uplands of Kula on a permanent basis. 5. In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lahaina, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that “[f]rom the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei].” 6. After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area (between 2000 and 5000 ft amsl) of highest potato production and was known as “the potato district.” 7. Donham (1992:5) notes the inundation of land clearing and cultivation associated with the Gold Rush resulted in “deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common.” 8. Potato production prospered in Kula from 1830 through 1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6–7). 9. The project area is within Land Grant 9325:1. Tax Map Key (TMK): (2) 2-2-002 indicates Land Grant 9325:1 consists of over 2,600 acres under ownership of Haleakala Ranch, which was likely granted this parcel in the late 1800s or early 1900s.

	10. The shift in the economics of coastal areas to upland ranching was also discussed by E.S. Craighill Handy, who noted large sections of "Crown Lands" which had not been claimed as *kuleana* (family homestead property) during the Mahele (1848 and later) were given by the Kingdom to various ranchers. The *kiawe* (*Prosopis pallida*) tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains were soon covered in *kiawe* forests (Handy and Handy 1972:510-511). 11. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui's arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936). 12. While World War I had little impact on Maui, World War II brought with it a significant military presence. United States (U.S.) Marines resided and trained at Camp Maui in Kokomo, and held training maneuvers on Kaho‘olawe and at Ma‘alaea Bay, including amphibious landing training along beaches and other exercises carried out in *kiawe* groves east of the bay (Allen 1950; Speakman 1978). 13. The Kīhei shoreline served as an invaluable training ground for amphibious warfare in the Pacific during World War II. Of all the Navy training in the Hawaiian Islands, probably the most rigid and intense was that of the Combat Demolition Training Station at Kama‘ole, Maui, where, after the autumn of 1943, 40 teams of 100 men each were prepared for reconnaissance and demolition work (Allen 1950:191). 14. Beginning in the 1960s, development of the coastal Kīhei area shifted from sugar plantation and related railroad operations to vacation condominium development. Kīhei underwent rapid residential and commercial development beginning in the 1970s. Clark (1980:49) notes the groundwork for this development was established in the late 1950s when investors began purchasing coastal property. 15. No historic properties have been previously identified within the current project area. Historic properties previously identified near the project area include traditional Hawaiian temporary habitation and/or marker features. 16. Although various cultural studies were conducted within Waiohuli Ahupua‘a, only two are located within close proximity to the project area. Cultural practices and resources identified by

	these reports include the interment of *iwi kūpuna* (ancestral remains), the gathering of marine resources, agricultural resources and practices, *mo‘olelo* (stories), and *wahi pana* (storied places).
Results of Community Consultation	CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 37 individuals or groups; five responded and one of these *kama‘āina* (native born) met with CSH for more in-depth interview(s). Consultation was received from: 1. Dr. Scott Fisher, Chair of the Maui/Lāna‘i Island Burial Council (MLIBC), Director of ‘Āina Stewardship for the Hawai‘i Land Trust (HILT), and a *kama‘āina*
Identification of Cultural Practices	Consultation identified the following cultural, historical, and natural resources where cultural practices (including traditional and customary Native Hawaiian rights) are being exercised in Waiohuli Ahupua‘a: 1. Agricultural practices (*‘uala haole* [the white potato; *Solanum tuberosum*] and *kalo* [*Colocasia esculenta*]; animal husbandry) 2. Freshwater resources (Waipu‘ilani and Waimahaihai Gulch; Lā‘ie Wetlands) 3. Marine resources and practices (fishponds) 4. *Wahi pana* and *mo‘olelo* 5. Cultural and historic sites Based on the results of community consultation and background research conducted as part of this CIA and KPA, CSH has identified the following cultural resources and practices within the broader landscape of Waiohuli Ahupua‘a: 1. Agricultural practices 2. Freshwater resources 3. Marine resources and practices (fishing, gathering, and aquaculture) 4. *Wahi pana* and *mo‘olelo* 5. Burials No ongoing cultural practices were identified within the project area during background research and community consultation. The proposed water tank is located approximately 2 miles from the shoreline, where ongoing cultural practices, such as the gathering of marine resources, occur along the Kīhei coast.

Identification of Impacts to Cultural Practices	No impacts to ongoing cultural practices were identified within the project area during background research and community consultation for this CIA and KPA. Consultation identified the following concern related to the environment and the broader community: 1. Dr. Fisher expressed his concern about the potential for sedimentation from ground disturbing activities impacting the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai Gulch. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water. a. The proposed water tank is located approximately 1.6 miles from Lā‘ie Wetland, 0.5 miles from Waipu‘ilani Gulch, and 0.7 miles from Waimahaihai Gulch.
Mitigation Possibilities Identified During Background Research and Consultation	The results of community consultation, underscored by background research conducted for this CIA and KPA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups: 1. Dr. Fisher highly recommended using appropriate and proper means and techniques to reduce sedimentation entering these gulches and wetlands. 2. Dr. Fisher also recommended a monitor during any ground disturbance activities to prepare for the possibility of encountering cultural sites, including *iwi kūpuna*. a. A literature review and field inspection (LRFI) was conducted by CSH for the proposed project in 2022 and stated “archaeological monitoring of project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties” (Yucha et al. 2022:53). SHPD also conducted a site visit for the proposed project and determined “No historic properties affected” and no historic properties were observed within the project area (Appendix B). 3. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the State Historic Preservation Division (SHPD) will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of

	human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended. 4. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.
Ka Pa‘akai Analysis	Based on information gathered from cultural and historical background, and community consultation for this project, traditional Hawaiian activity in this area of Waiohuli was focused along the coast or in the uplands of this *ahupua‘a*. No cultural, historical, or natural resources were identified within the project area. At present, there is no documentation or testimony indicating traditional or customary Native Hawaiian rights are currently being exercised “for subsistence, cultural and religious purposes and possessed by *ahupua‘a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (Hawai‘i State Constitution, Article XII, Section 7) within the specific project area. While no cultural resources, practices, or beliefs were identified as currently existing within the project area, Waiohuli Ahupua‘a maintains a rich cultural history in the exercise of traditional or customary Native Hawaiian rights within the project *ahupua‘a*. The only concern is the potential of sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water. Dr. Fisher highly recommended using appropriate and proper means and techniques to reduce sedimentation into these gulches and wetlands. The project will comply with the county’s “Rules for the Design of Storm Water Treatment Best Management Practices.” In accordance with the rules, the project area runoff will receive the required mitigation and treatment to maintain water quality. Temporary erosion controls will also be installed to minimize pollution during and after construction. As it relates to stormwater and water quality, the proposed project will not have an adverse effect on adjacent or downstream properties. Dr. Fisher also recommended a monitor during any ground disturbance activities. Based on an LRFI study conducted by CSH in 2022 (Yucha et al. 2022), CSH identified two small, stacked stone C-shaped

	enclosures (CSH 1) interpreted by CSH as either being modern hunting blinds or World War II-era military training structures. CSH recommended no further work for CSH 1 and stated archaeological monitoring of project construction is not warranted as "project-related ground disturbance is unlikely to impact subsurface historic properties" (Yucha et al. 2022:53). SHPD conducted a site visit for the project area in 2023 and confirmed CSH 1 to be modern hunting blinds and confirmed there are no historic properties within the project area. SHPD determined "No historic properties affected" for the current project (Appendix B).

Table of Contents

Management Summary ..... **i**

Section 1 Introduction **1**

1.1 Project Description 1
1.2 Regulatory Context 1
1.3 Document Purpose 5
1.4 Scope of Work 5
1.5 Natural Environment 6
1.5.1 *Nā Lepo* (Soils) 6
1.5.2 *Nā Ua* (Rains) 8
1.5.3 *Nā Makani* (Winds) 12
1.5.4 *Nā Kahawai* (Streams and Freshwater) 12
1.5.5 *Ka Lihikai a me Ka Moana* (the Coast and Ocean) 13
1.6 Built Environment 13

Section 2 Methods **14**

2.1 Archival Research 14
2.2 Consultation 14
2.2.1 Community Outreach, Interview, and Transcription Methods 14

Section 3 Traditional Background **16**

3.1 *Nā ka‘ao a me Nā Mo‘olelo* (Legends and Stories) 16
3.1.1 Kula 17
3.1.2 Makawao 19
3.2 *Nā Wahi Pana* (Storied Places) 21
3.2.1 Settlement and Subsistence 23
3.2.2 *Nā Loko I’a* (Fishponds) 24
3.3 *Nā ‘Ōlelo No‘eau* (Proverbs) 26
3.3.1 Makawao 26
3.3.2 Kula 27
3.4 *Nā Mele* (Songs) 29
3.4.1 Haleakalā Hula 30
3.4.2 Kīhei 30
3.4.3 Malu I Ke Ao 32

Section 4 Archaeological and Historical Narrative **34**

4.1 Political Conflicts 34
4.2 Early Historic Period 34
4.3 The Māhele and the Kuleana Act 37
4.4 Late 1800s through Early 1900s 38
4.4.1 Sugar Cultivation 44
4.4.2 Railway Operations 45
4.4.3 Water Source Development 46
4.5 Mid- to Late- 1900s 47
4.6 Contemporary Land Use 48

Section 5 Previous Archaeological Research **54**

5.1 Overview 54
5.2 Kennedy 1986 55
5.3 Hammatt and Shideler 2000 55
5.4 Kikiloi et al. (2000) 55
5.5 McDermott (2001) 58
5.6 Dega (2008) 58
5.7 Madeus et al. (2021) 58
5.8 Yucha et al. (2022) 58
5.9 Discussion of Historic Properties within the Project Area Vicinity 59

Section 6 Community Outreach 60

6.1 Introduction 60
6.2 Previous Cultural Research within the Project Area Vicinity 60
6.2.1 Tau‘ā and Kapahulehua 2010 60
6.2.2 Dagher 2022 62
6.3 Community Outreach Letter 62
6.4 Community Outreach Table 65
6.5 Dr. Scott Fisher Interview Summary 71
6.6 Summary of Community Outreach 73

Section 7 Cultural Practices and Resources 77

7.1 Agricultural Practices 77
7.2 Freshwater Resources 78
7.3 Marine Resources and Gathering Practices 78
7.4 *Mo‘olelo* and *Wahi Pana* 78
7.5 Burials 78

Section 8 Ka Pa‘akai Analysis 79

8.1 Overview 79
8.2 Archaeological Resources 80
8.3 Burials 80
8.4 Faunal Resources 80
8.5 Earth Resources 80
8.6 Plant Resources 81
8.7 Trails 81
8.8 *Nā Wahi Pana* 81
8.9 Valued Cultural, Historical, or Natural Resources in the Project Area 81
8.10 The Extent to which Traditional and Customary Native Hawaiian Resources will be Affected by the Proposed Action 82
8.11 Feasible Action, if any, to be Taken to Reasonably Protect Native Hawaiian Rights 82

Section 9 Summary and Recommendations 83

9.1 Results of Background Research 83
9.2 Results of Community Consultation 84
9.3 Identification of Cultural Practices 85
9.4 Identification of Impacts to Cultural Practices 85
9.5 Mitigation Possibilities Identified During Background Research and Consultation 86

Section 10 References Cited 87
Appendix A Community Outreach Letter 96
Appendix B SHPD Correspondence 101

List of Figures

Figure 1. Portion of the 2017 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area 2
Figure 2. Tax Map Key (TMK) (2) 2-2-002 showing the current project area (Hawai‘i TMK Service 2025)....3
Figure 3. Aerial photograph showing the project area (ESRI 2020) 4
Figure 4. Overlay of *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001)....7
Figure 5. Ko‘ie‘ie Fishpond ruins as viewed from the shore, near foormer site of Kalepolepo (James 2002:73) 25
Figure 6. Shoreline extent of Ko‘ie‘ie Fishpond ruins in proximity to condominium development (Wikimedia 2008)....25
Figure 7. The Koa House at Kalepolepo built by John Halstead ca. 1849 (Wilcox 1921:66).....36
Figure 8. Artist rendition of Kilolani Church, also known as Trinity By the Sea (Skolleborg 1993:65); the church was reputedly burned ca. 1893 and further destroyed by a storm in 1900; congregations began attending the church ruins in the late 1970s; open-air services are still held at the ruins today (Trinity Church By-the-Sea 2020)...36
Figure 9. Portion of Dodge (1885) map showing the project area within Crown Lands.....39
Figure 10. Portion of the 1992 Puu o Kali USGS quadrangle showing the project area almost entirely within Land Grant 9325:1....40
Figure 11. Portion of a Wall (1929) map of Maui showing Waiakoa Homesteads and a segment of HC&S (Hawaiian Commercial & Sugar Company) railroad north of the project area....41
Figure 12. Portion of a 1933 USGS topographic map of Maui showing the project area south of Waiokoa Homesteads, north of Kama‘ole Homesteads, and within and surrounded by grazing lots....42
Figure 13. Portion of 1954 Puu o Kali USGS topographic quadrangle showing Hawaiian homesteads along coastal areas north (Waiokoa), west (Waiohuli-Keokea Beach), and south (Kama‘ole) of the project area....43
Figure 14. KPC locomotive Haleakala transporting cane from Kīhei fields to the mill at Pu‘unēnē, ca. 1905 (Condé and Best 1973:231)....45
Figure 15. KPC locomotive servicing HC&S mill as Hawaii Commercial & Sugar No. 4 (Condé and Best 1973:231) 46
Figure 16. Aerial image showing the project area undeveloped in 1950-1951; tracts of land *makai* from the project area appear to be in initial stages of development (USGS 1950-1951)....49
Figure 17. A 1965 aerial image showing the project area undeveloped and some minor developments *makai*, along the coast (USDA 1965)....50
Figure 18. A 1976 aerial image showing the project area undeveloped, though with some development adjacent to its western border; coastal development has increased since the prior decade (USGS 1976)....51

Figure 19. A 2000 aerial image showing paved roadways within the project area, some other developments of adjacent areas of Līpoa, and moderate to heavy developments along coastal areas (NOAA 2000) 52
Figure 20. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing previous archaeological studies conducted within the project area and immediate vicinity 56
Figure 21. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing historic properties previously identified within the project area vicinity 57
Figure 22. Previous cultural studies within project area vicinity 61
Figure 23. Portion of 1992 Monbeck topography map showing the different plantation camps, gulches, and *pu‘u* in Kīhei 75
Figure 24. A portion of the 1924 Monbeck and Murphy topography map showing the other half of Waiohuli Ahupua‘a 76

List of Tables

Table 1. Kīhei *wahi pana* and other place names near the project area 21
Table 2. Previous archaeological studies conducted in the vicinity of the project area 54
Table 3. Summary of community consultation efforts 65

Section 1 Introduction

1.1 Project Description

At the request of the County of Maui, Department of Water Supply, Cultural Surveys Hawai‘i, Inc. (CSH) is conducting a cultural impact assessment (CIA) and Ka Pa‘akai Analysis (KPA) for a proposed 2.0 million-gallon (MG) water storage tank that will be a part of the County of Maui Department of Water Supply system. The tank site and its associated infrastructure and access road will be located in the Waiohuli Ahupua‘a, Makawao (Kula) District, Maui Island, on TMKs: (2) 2-2-002:084 (por.) and 086 (por.). The project area extends from the eastern end of Lipoa Parkway above Līpoa (formerly the Maui Research & Technology Park) and encompasses the water tank site and access road. The project area is depicted on U.S. Geological Survey (USGS) map (Figure 1), tax map plat (Figure 2), and a 2020 aerial photograph (Figure 3).

The County of Maui, Department of Water Supply proposes the installation of a new 2.0-MG water storage tank that will be part of the County of Maui's potable water system. The project includes construction of the new water storage tank, its appurtenances, and supporting utility connections, as well as roadway access improvements. Drainage improvements will be provided to manage stormwater runoff and will include a drainage basin and riprap-lined swales. Access to the water tank will be provided from Lipoa Parkway via a paved access road.

The 1.45-acre (0.18-hectares) tank site is currently privately owned by Haleakala Ranch Company but will be subdivided and dedicated to the County of Maui. The project area comprises approximately 7 acres (2.83 hectares).

1.2 Regulatory Context

This CIA supports compliance of the 2.0 MG Water Storage Tank Project with:

- *Ka Pa‘akai O Ka‘aina v. Land Use Commission* (94 Hawai‘i 31), in which the Hawai‘i Supreme Court established a three-part analytical framework to assist the state and counties in fulfilling their constitutional obligation to preserve and protect traditional and customary practices (TCP refers to "traditional and customary practices") exercised by Native Hawaiians, to the extent feasible;
- the mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Revised Statutes (HRS), and Hawai‘i Administrative Rules (HAR) and other Hawai‘i State laws requiring government agencies to promote and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups; and
- the State of Hawai‘i's environmental review process under HRS §343, which requires consideration of the proposed project's potential effects on cultural practices and cultural features to "promote responsible decision making" (HRS §343).

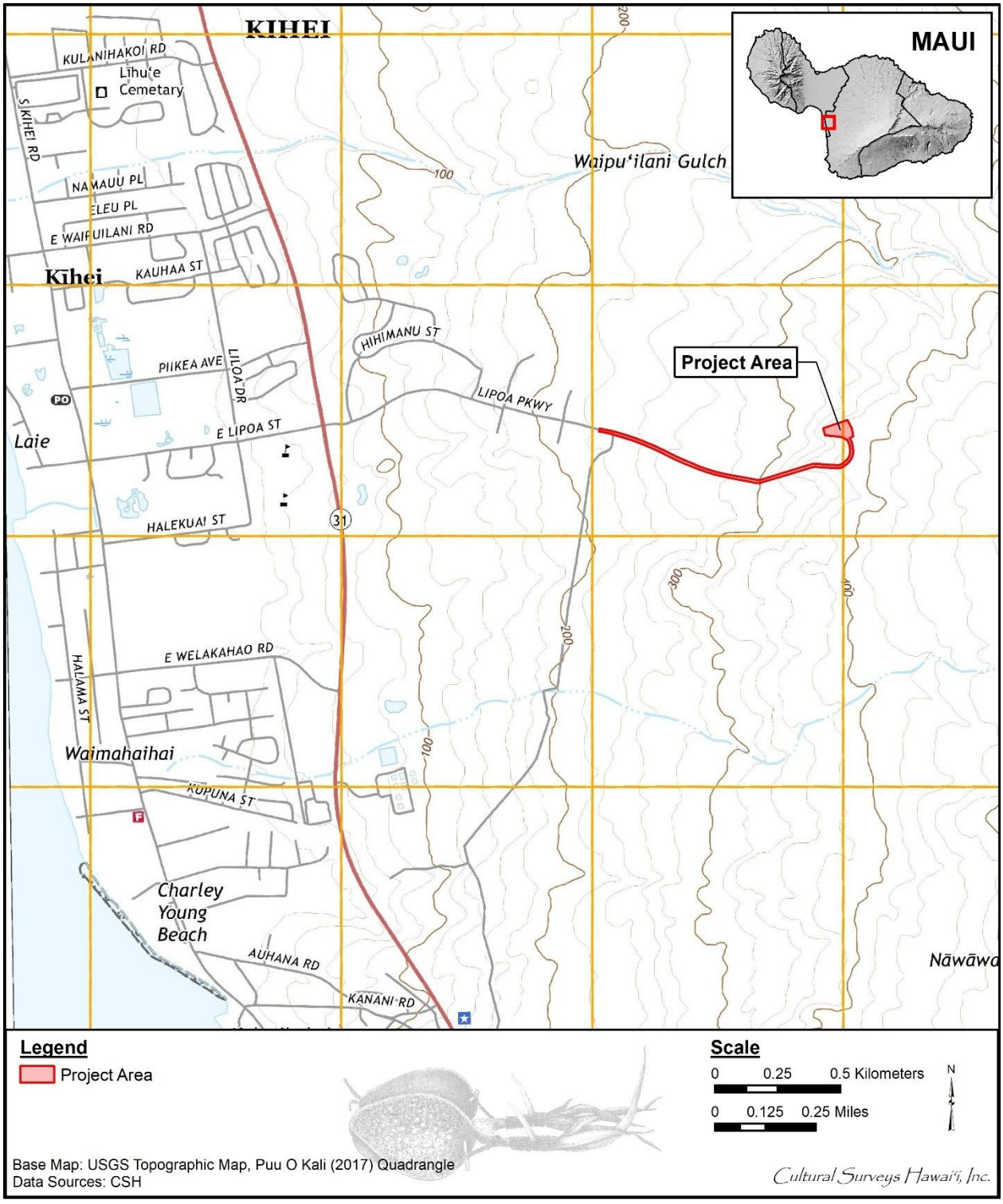


Figure 1. Portion of the 2017 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area

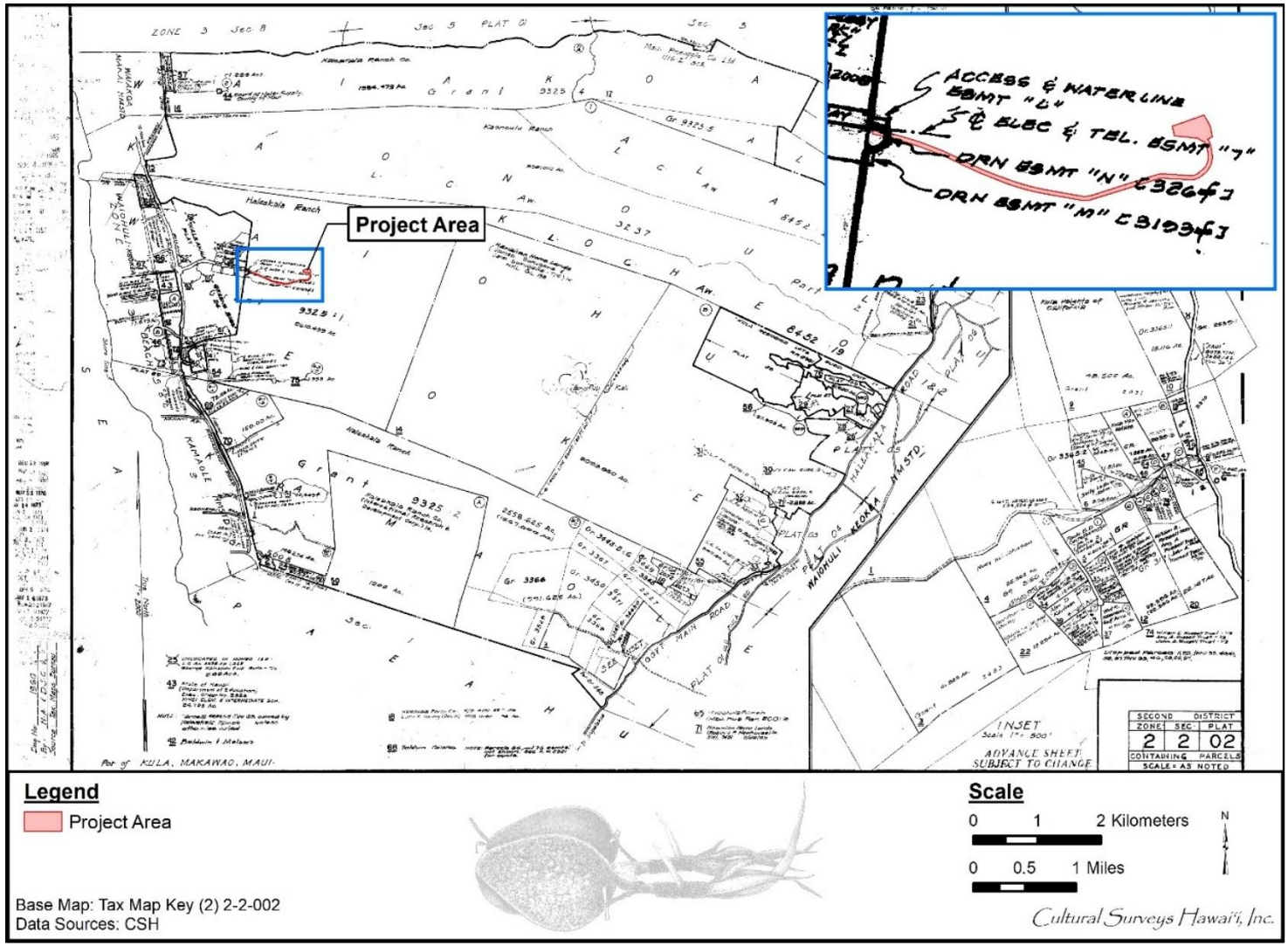


Figure 2. Tax Map Key (TMK) (2) 2-2-002 showing the current project area (Hawai‘i TMK Service 2025)

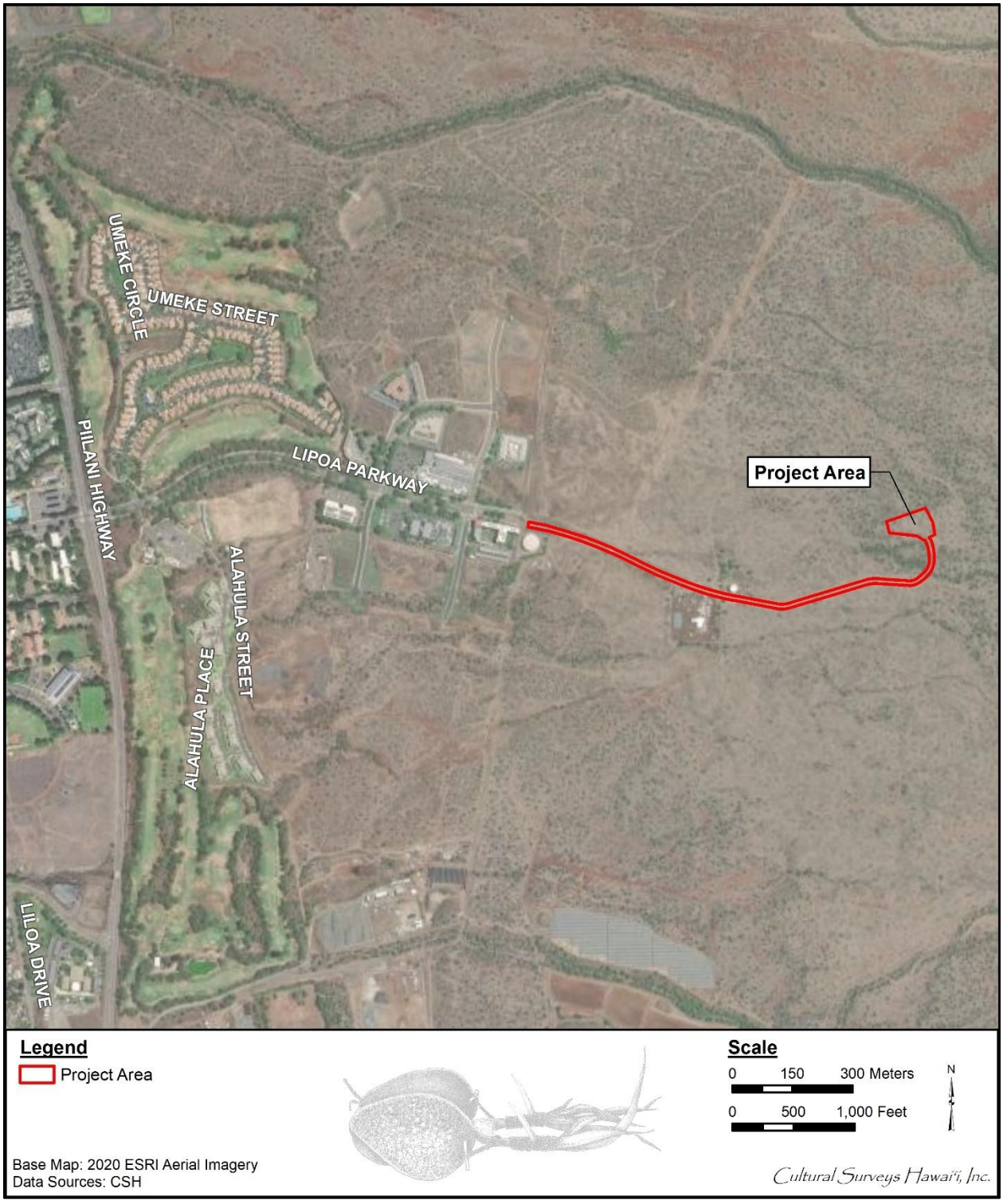


Figure 3. Aerial photograph showing the project area (ESRI 2020)

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled to "analyze the impact of a proposed action on cultural practices and features associated with the project area" (Environmental Council 1997). Cultural practices and cultural features may include traditional cultural properties (TCPs), designated significant historic properties under State of Hawai‘i significance Criterion e, pursuant to HAR §13-275-6 and §13-284-6. Significance Criterion e refers to historic properties that "have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group's history and cultural identity" (HAR §13-275-6 and §13-284-6).

This project also includes a Ka Pa‘akai Analysis study. In *Ka Pa‘akai O Ka ‘Aina v. Land Use Commission*, 94 Hawai‘i (2000), the Hawai‘i Supreme Court

> [...] articulated an analytical framework to assist state agencies in balancing the State‘s obligation to protect traditional and customary practices against private property (as well as competing public) interests, by requiring specific findings and conclusions about:
>
> 1. the identity and scope of 'valued cultural, historical, or natural resources' in the relevant area, including the extent to which traditional and customary native Hawaiian rights are exercised in relevant area;
> 2. the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and
> 3. the feasible action, if any, to be taken by the [agency] to reasonably protect native Hawaiian rights if they are found to exist. [*Ka Pa‘akai O Ka ‘Aina v. Land Use Comm'n*, 94 Hawai‘i 31, 35, 47 and 52–53, 7 P.3d 1068, 1072, 1084 and 1089–90 (2000)]

1.4 Scope of Work

This CIA includes the following in its scope of work:

1. Examination of cultural and historical resources, including Land Commission documents, historic maps, and previous research reports, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal, and other resources or agricultural pursuits as may be indicated in the historic record.
2. Review of previous archaeological work at and near the subject parcel that may be relevant to reconstructions of traditional land use activities; and to the identification and description of cultural resources, practices, and beliefs associated with the parcel.
3. Consultation and interviews with knowledgeable parties regarding cultural and natural resources and practices at or near the parcel; present and past uses of the parcel; and/or other practices, uses, or traditions associated with the parcel and environs.

4. Preparation of a report that summarizes the results of these research activities and provides recommendations based on findings.

1.5 Natural Environment

The project area is located within the *ahupua‘a* (traditional land division) of Waiohuli and the *moku* (district) of Kula, approximately 2.0 km (1.2 miles) from the southern coastline and on the leeward slope of Haleakalā. This region is in an area of scarce freshwater resources resulting from the rain shadow effect of Haleakalā. The nearest stream gulch is Waipu‘ilani Gulch at approximately 0.8 km (0.5 miles) to the north.

In 2014, the average annual air temperature for the project area was between 21.45°C (70.61°F) in February and 25.46°C (77.83°F) in August, with an average annual air temperature of 23.51°C (74.32°F) (Giambelluca et al. 2014). According to the University of Hawai‘i 2011 *Online Rainfall Atlas of Hawaii,* the vicinity of the project area received a mean annual rainfall of 294.2 mm (11.6 inches) between 1978 and 2007 (Giambelluca et al. 2013). The mean monthly rainfall varied between 3.0 mm (0.2 inches) in July and 70.1 mm (2.8 inches) in January.

The soils, topography, and rainfall pattern would have once sustained a dry shrubland and grassland environment (Pratt and Gon 1998:122). Prior to human modification, the grass and shrubland biota may have included *pili* (Heteropogon contortus) grasslands and *‘a‘ali‘i* (Dodonaea variabilis), dry cliff vegetation, small patches of *ma‘o* or Hawaiian cotton (*Gossypium tomentosum*), and *‘ākoko* (Chamaesyce sp.) (Pratt and Gon 1998:127–128). The natural landscape of the project area has been more recently described as a Hawaiian introduced perennial grassland (Giambelluca et al. 2014).

1.5.1 *Nā Lepo* (Soils)

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (2001) and soil survey data gathered by Foote et al. (1972), the project area’s soils consist of Waiakoa extremely stony silty clay loam, 3 to 25% slopes, eroded (WID2) and Keawakapu extremely stony silty clay loam, 3 to 25% slopes (KNXD) (Figure 4). The Waiakoa series consists of “gently sloping to moderately steep,” “well-drained” Maui uplands soils that “developed in material weathered from basic igneous rock” and contain an upper profile “influenced by volcanic ash” (Foote et al. 1972:126). WID2 soils are described as follows:

> This soil is similar to Waiakoa very stony silty clay loam, 3 to 7 percent slopes, except that it is eroded and stones cover 3 to 15 percent of the surface. In most areas about 50 percent of the surface layer has been removed by erosion. Runoff is medium, and the erosion hazard is severe. Included in mapping were small, steep areas. Also included were a few cinder cones.
>
> This soil is used for pasture and wildlife habitat. [Foote et al. 1972:127]

Keawakapu extremely stony silty clay loam, 3 to 25% slopes (KNXD) is described as follows:

> This soil is on low uplands. Included in mapping were small areas of Kamaole and Oanapuka soils.

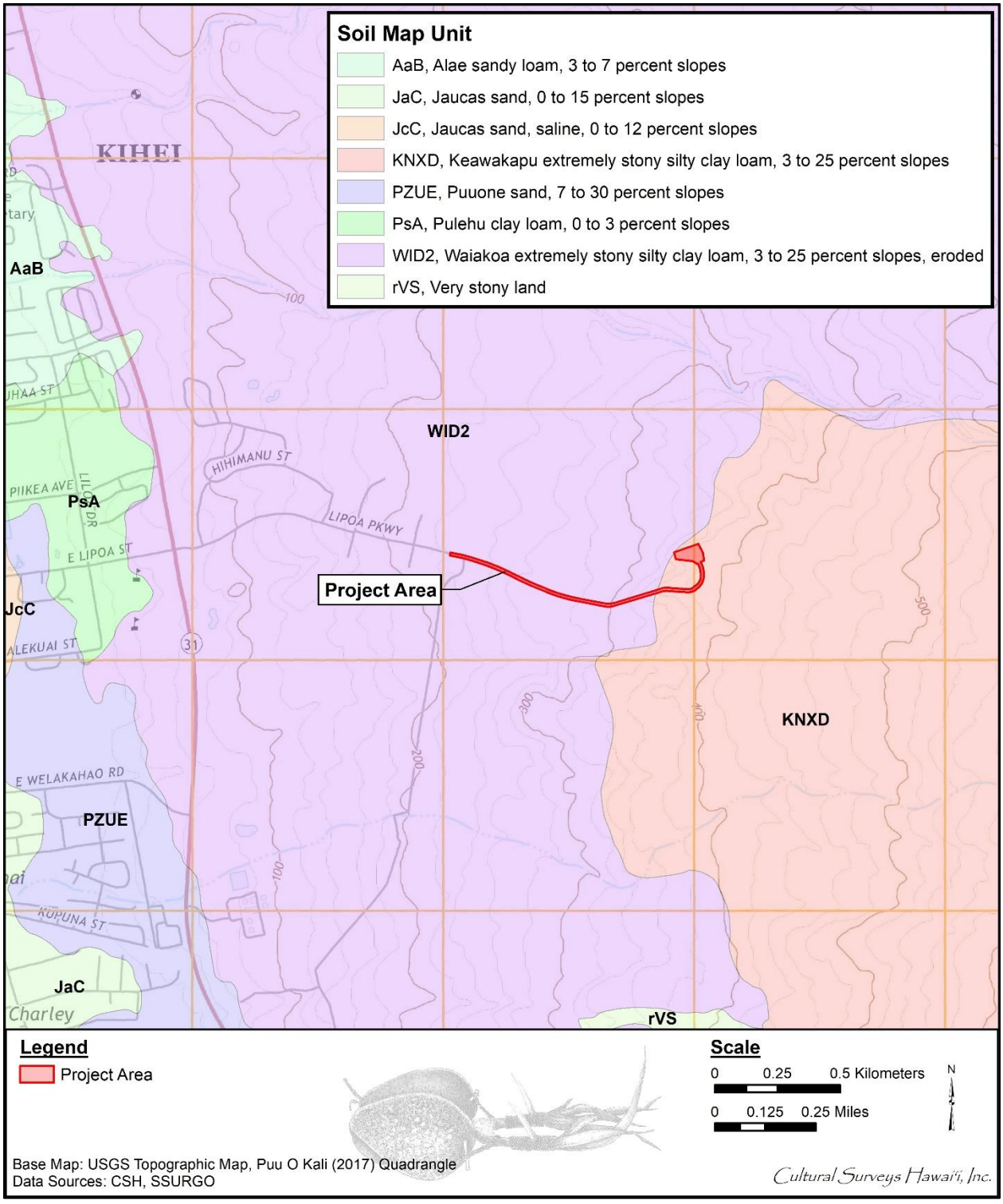


Figure 4. Overlay of *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001)

> In a representative profile the surface layer, about 2 inches thick, is dark reddish-brown extremely stony silt loam that has platy structure. The subsoil, about 16 includes thick, is dark reddish-brown silty clay loam and silty clay that has prismatic and subangular blocky structure. The substratum is fragmental Aa lava that has a little soil material in the voids. The soil is neutral in the surface layer and subsoil.
>
> Permeability is moderate. Runoff is slow to medium, and the erosion hazard is slight to moderate. [Foote et al. 1972:68]

1.5.2 *Nā Ua* (Rains)

Precipitation is a major component of the water cycle accountable for depositing fresh water on local flora. Pre-Contact *kānaka ʻōiwi* (Native Hawaiians) recognized two distinct annual seasons. The first, known as *kau* (period of time, especially summer) lasts typically from May to October and is a season marked by a high-sun period corresponding to warmer temperatures and steady trade winds. The second season, *hoʻoilo* (winter, rainy season) continues through the end of the year from November to April and is a much cooler period when trade winds are less frequent, and widespread storms and rainfall become more common. Typically, the maximum rainfall occurs in January and the minimum in June (Giambelluca et al. 1986:17).

It was a customary and necessary tradition to grant a name for each type of rain. Rains were named to show their action toward plants or the supposed effects on people or their possessions (Pukui and Elbert 1986:361). According to Akana and Gonzalez (2015):

> Our kupuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people. [Akana and Gonzalez 2015:XV]

David Malo, a Native Hawaiian historian, explains some general terms related to wind:

> […] There was the *kona*, a wind from the south, of great violence and of wide extent. It affected all sides of an island, east, west, north, and south, and continued for many days […] The *kona* wind often brings rain, though sometimes it is rainless. […] The *hoolua*, a wind that blows from the north, sometimes brings rain and sometimes is rainless […] The *hau* is a wind from the mountains, and they are thought to be the cause of it, because this wind invariably blows from the mountains outwards towards the circumference of the island. [Malo 1951:14]

Malo has supplied a foundation of names for winds, however, there is an abundance of names in various stories and chants. *The Wind Gourd of Laʻamaomao* tells the story of Pākaʻa and his son Kuāpākaʻa, descendants of the wind goddess Laʻamaomao. They control the winds of Hawaiʻi which are contained in a gourd and may be called forth by chanting their names.

Pāka‘a’s chant traces the winds of and surrounding the Makawao and Kula districts. Hau is a cold, frosty breeze and ‘Ūkiu is a chilly north wind (Nakuina 1992:138 and 140). Pāka‘a’s chant is listed below and recounts the various winds closely associated with the project area:

[…] Hina ka hau i ka uka o Kula,	[...] Hau descends from the uplands of Kula,
Ko laila makani no ia,	It’s the wind of that place,
Ke noke mai la i ke pili,	Searching the pili,
Ka makani o Kula o ka nau,	Nau is the wind of Kula,
Ulalena i Piiholo,	‘Ulalena is at Pi‘iholo,
Ukiu ko Makawao,	‘Ūkiu is of Makawao,
Ka ua Puukoa i Kokomo, […]	The Puukoa rain is at Kokomo, [...]
[Nakuina 1902:68]	[Nakuina 1992:63]

The collection of rain names compiled by Akana and Gonzalez were largely gathered from Hawaiian articles or stories taken printed in *Nūpepa Hawai‘i* (Hawaiian Newspapers).

1.5.2.1 Kula

1.5.2.1.1 Ka Ua Nāulu

The Nāulu rain, meaning “sudden shower,” is associated with Kula. The following excerpt is a *kanikau*, or lament, for L.L. Ua by Ua’s students and the Lahainaluna Seminary (Akana and Gonzalez 2015:192):

Ke ho‘i nei ka ‘uhane i ka malu niu o Lele

I ka malu kuawa o Wailuku

I ka ua Nāulu noe anu o Kula

I ka ua noe uahi moe i ke pili

I pili ‘ia ka ua me ka la

Ke anu ho‘i me ke ko'eko'e

The spirit is returning to the shade of the niu trees of Lele

To the shelter of Wailuku Valley

To the cold, misty Nāulu rain of Kula

To the smoky, misty rain that rests upon the pili grass

Joined are the rain and the su11

The cold and the chill

[Akana and Gonzalez 2015:192]

The next section comes from a *mele kālai‘āina,* political chant, for ‘Emalani kaleleonālani:

Ō mai ‘o ‘Emalani, ke ali‘i nona ia inoa

la ho‘onu‘anu‘a i uka, ka uahi o Kula

Ua hāli‘i ke kūmoena wai aka Nāulu

‘A‘ohe hana a ka ua ‘Ūkiu e la‘i nei

E ho‘okō ‘ia ana e ka ua ‘Ulalena

E ka ua kāhiko kukui o Liliko‘i ē, eia ‘oe ē

Emmalani responds, the chiefess for whom is the name

That conflagration in the uplands, the smoke of Kula

The watery mat of the Nāulu rain has been spread out

There's no action by the ‘Ūkiu rain, now peaceful

It shall be carried out by the golden-red rain ‘Ulalena

O rain that adorns the kukui trees of Liliko‘i, here you are, oh

[Akana and Gonzalez 2015:192]

1.5.2.2 Makawao

The following section describes different rains documented in the Makawao judicial district.

1.5.2.2.1 Ka Ua ‘Elehe‘i

The ‘Elehe‘i rain is closely associated with Makawao, Maui. The term *Kaua‘elehe‘iomakawao,* which translates to “The ‘Elehe‘i rain of Makawao,” comes from a list of names of *lua* (secret, hand-to-hand fighting techniques) (Akana and Gonzalez 2015:23).

1.5.2.2.2 Ka Ua Lēhei

The Lēhei rain is also associated with Makawao and comes from the *lua* stroke, *Kaualēheiomakawao*, which means “the Lēhei rain of Makawao” (Akana and Gonzalez 2015:146).

1.5.2.2.3 Ka Ua ‘Ūkiu/‘Ūkiukiu

The ‘Ūkiu or ‘Ūkiukius rain is associated with Makawao and is presented below as compiled by Akana and Gonzalez (2015):

> Ua ‘Ūkiu o Makawao – He ua li‘ili‘i me ka manai pū mai ke kuahiwi mai.
>
> *‘Ūkiu rain of Makawao – It is a fine rain with wind that blows down from the mountains.* [Akana and Gonzalez 2015:256]

The following section is taken from the *mo‘olelo* of *Hi‘iakaikapoliopele:*

> Ma muli o ko Kauakahiapaoa akamai i ka hula ame kona u‘i kanaka maika‘i nō ho‘i, ua lilo ‘o ia i mea hiala‘ai nui ‘ia e nā po‘e o ka ‘ao‘ao palupalu. A ma ka wā a ua po‘e nei o ia pō‘ai e ho‘olale aku ai i ka ua ‘Ūkiu o Makawao i mua o Kauakahiapaoa nei, ua hō‘ole maila ‘o ia.
>
> *With Kauakahiapaoa’s skill in hula and his fine manly form, he was much admired by the gentler sex. When those of that circle flocked to see him as the ‘Ūkiu rain presses against Makawao, he would rebuff them.* [Akana and Gonzalez 2015:256]

The next section was taken from a *mele kanikau* or lamentation that was written for Kamehameha IV, Alexander Liholiho:

Ku‘u hoa o ka malu kuawa o Wailuku

Mai ke Kā‘aha‘aha la‘i o Niua

‘O ia kula a kākou e haele ai

Pulu i ka ua ‘Ūkiu o Makawao ē

My dear companion of the shelter of Wailuku Valley

From the calm Kā‘aha‘aha wind of Niua

This plain where we would go

Soaked by the ‘Ūkiu rain of Makawao

[Akana and Gonzalez 2015:256]

The next section comes from a song titled “Malu i ke ao”:

‘Ohi ‘ē ka ‘i‘o o ka lā‘au

No Makawao nō ia

‘O ka ua ‘Ūkiukiu

‘Ohu‘ohu nō

E aho nō e komo mai

I ka malu ma ke ao

The heartwood has already been gathered

It is from Makawao

The ‘Ūkiukiu rain

Truly adore

The next section was taken from a *mele kanikau* or lamentation that was written for Kamehameha IV, Alexander Liholiho:

Ku‘u hoa o ka malu kuawa o Wailuku

Mai ke Kā‘aha‘aha la‘i o Niua

‘O ia kula a kākou e haele ai

Pulu i ka ua ‘Ūkiu o Makawao ē

My dear companion of the shelter of Wailuku Valley

From the calm Kā‘aha‘aha wind of Niua

This plain where we would go

Soaked by the ‘Ūkiu rain of Makawao

[Akana and Gonzalez 2015:256]

The following description of the ‘Ūkiukiu rain comes from a song titled “Malu i ke ao”:

‘Ohi ‘ē ka ‘i‘o o ka lā‘au

No Makawao nō ia

‘O ka ua ‘Ūkiukiu

‘Ohu‘ohu nō

E aho nō e komo mai

I ka malu ma ke ao

The heartwood has already been gathered

It is from Makawao

The ‘Ūkiukiu rain

Truly adore

[Akana and Gonzalez 2015:256]

1.5.3 *Nā Makani* (Winds)

Like rains, *makani* (wind) were named for various reasons such as describing the intensity or direction of the wind, relating the wind to a story, or even relating the wind to the landscape. David Malo explains some general terms related to wind:

> […] There was the *kona*, a wind from the south, of great violence and of wide extent. It affected all sides of an island, east, west, north, and south, and continued for many days […] The *kona* wind often brings rain, though sometimes it is rainless […] The *hoolua*, a wind that blows from the north, sometimes brings rain and sometimes is rainless […] The *hau* is a wind from the mountains, and they are thought to be the cause of it, because this wind invariably blows from the mountains outwards towards the circumference of the island. [Malo 1951:14]

A‘e loa is a term given to the prevailing northeasterly trade winds (Nakuina 1992:138) along with *A‘e* (Pukui and Elbert 1986:3), *Moa‘e*, and *Moa‘e Lehua* (Pukui and Elbert 1986:249).

1.5.4 *Nā Kahawai* (Streams and Freshwater)

The *moku* of Kula is “fundamentally arid and lacked perennial streams” (Kolb et al. 1997:25).

> While the older and more eroded geography of West Maui favors perennial stream flow and the formation of fertile coastal alluvial fans, the relatively newer and undissected slopes of East Maui generally lack perennial streams. The high permeability of the younger East Maui lavas inhibit the formation of perennial rain-fed streams and cause the few perennial streams found in Ko‘olau and Kipahulu to originate from springs at relatively low altitudes. The majority of East Maui streams are intermittent, and although some such as Manawainui Gulch in Kahikinui district

> or Waiohuli Gulch in Kula district are highly sculpted, they were formed by intermittent water run-off. [Kolb et al. 1997:4]

Waipu‘ilani Gulch is a non-perennial stream that flows through Waiohuli Ahupua‘a and empties into Mā‘alaea Bay. A portion of Waimahaihai Stream also flows through Waiohuli.

1.5.5 *Ka Lihikai a me Ka Moana* (the Coast and Ocean)

The location of Maui in the chain of Hawaiian Islands has it surrounded by four other islands. To the east is the island of Hawai‘i, south is Kaho‘olawe, southwest is Lana‘i, and O‘ahu is to the west. The short distance to the other islands allows ease of access to and from the island. The Pailolo (meaning lift and shift; Pukui et al. 1974:175) Channel separates Moloka‘i and Maui at a distance of 8 miles. The ‘Au‘au (meaning to bathe; Pukui et al. 1974:14) Channel is between Lana‘i and Maui at 8 miles apart; ‘Alalākeiki (meaning child’s wail; Pukui et al. 1974:9) separates Kaho‘olawe and Maui at 7 miles; and ‘Alenuihāhā (meaning great billows smashing; Pukui et al. 1974:10) separates Maui and Hawai‘i at 26 miles (Walker 1931:5).

1.6 Built Environment

The tank site, comprised of approximately 1.45 acres, is located about 3,000 feet (ft) east of the *mauka* (upland) end of Lipoa Parkway at an elevation of 387 ft above mean sea level (amsl). The tank site is currently undeveloped pastureland. Access to the water tank will utilize an existing access road, approximately 3,700 ft in length. A portion of this access road is currently paved and a portion is dirt. Other built infrastructure in the area includes an existing private and county water storage tanks located *makai* (seaward) of the project site and *mauka* of Lipoa Parkway.

The proposed project is located *mauka* of Līpoa (formerly Maui Research & Technology Park), an existing master-planned, mixed-use community. Currently, Līpoa is home to various commercial, medical, research and technology businesses and operations, as well as schools including the Kihei Charter School and Hawaii Technology Academy.

The surrounding built environment also includes a network of paved streets, sidewalks, and parking areas.

Existing residential communities along Lipoa Parkway are the Hokulani Golf Villas and Kaiaulu O Halelea.

Section 2 Methods

2.1 Archival Research

Research centers on Hawaiian activities including *ka‘ao* (legends), *wahi pana* (storied places), *‘ōlelo no‘eau* (proverbs), *oli* (chants), *mele* (songs), traditional *mo‘olelo* (stories), traditional subsistence and gathering methods, ritual and ceremonial practices, and more. Background research focuses on land transformation, development, and population changes beginning with the early post-Contact era to the present day.

Cultural documents, primary and secondary cultural and historical sources, historic maps, and photographs were reviewed for information pertaining to the study area. Research was primarily conducted at the CSH library. Other archives and libraries including the Hawai‘i State Archives, the Bishop Museum Archives, the University of Hawai‘i at Mānoa’s Hamilton Library, Ulukau, The Hawaiian Electronic Library (Ulukau 2014), the State Historic Preservation Division (SHPD) Library, the State of Hawai‘i Land Survey Division, the Hawaiian Historical Society, and the Hawaiian Mission Houses Historic Site and Archives are also repositories where CSH cultural researchers gather information. Information on Land Commission Awards (LCAs) were accessed via Waihona ‘Aina Corporation’s Māhele database (Waihona ‘Aina 2025), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of ‘Āina website (Ava Konohiki 2020).

2.2 Consultation

Throughout the course of this assessment, an effort was made to contact and consult with Native Hawaiian Organizations (NHO), agencies, and community members including descendants of the area, to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Waiohuli.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our in-house contact list from previous outreach efforts to facilitate the interview process. This list often includes *kupuna* (elders), *kama‘āina* (native born), cultural practitioners, lineal and cultural descendants, Native Hawaiian Organizations (NHOs; includes Hawaiian Civic Clubs and those listed on the Department of Interior’s NHO list), and community groups. We also contact agencies such as SHPD, OHA, and the appropriate Island Burial Council where the proposed project is located for their response to the project and to identify lineal and cultural descendants, individuals and/or NHO with cultural expertise and/or knowledge of the study area. CSH is also open to referrals and new contacts.

2.2.1.2 Talk Story Sessions

Prior to the interview, CSH cultural researchers explain the role of a CIA, how the consent process works, the project purpose, the intent of the study, and how their *‘ike* (insight) and *mana‘o* (opinion) will be used in the report. The interviewee is given an Authorization and Release Form to read and sign.

“Talk Story” sessions range from the formal (e.g., sit down and *kūkākūkā* [consultation, discussion] in participant’s choice of place over set interview questions) to the informal (e.g., hiking to cultural sites near the study area and asking questions based on findings during the field outing). In some cases, interviews are recorded and transcribed later.

CSH also conducts group interviews, which range in size. Group interviews usually begin with set, formal questions. As the group interview progresses, questions are based on interviewee’s answers. Group interviews are always transcribed and notes are taken. Recorded interviews assist the cultural researcher in 1) conveying accurate information for interview summaries, 2) reducing misinterpretation, and 3) providing missing details for *mo‘olelo*.

CSH seeks *kōkua* (assistance) and guidance in identifying past and current traditional cultural practices of the study area. Those aspects include general history of the *ahupua‘a*; past and present land use of the study area; knowledge of cultural sites (for example, *wahi pana*, archaeological sites, and burials); knowledge of traditional gathering practices (past and present) within the study area; cultural associations (*ka‘ao* and *mo‘olelo*); referrals; and any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the study area.

2.2.1.3 Interview Completion

After an interview, CSH cultural researchers transcribe and create an interview summary based on information provided by the interviewee. Cultural researchers give a copy of the transcription and interview summary to the interviewee for review and ask them to make any necessary edits. Once the interviewee has made those edits, we incorporate their *‘ike* and *mana‘o* into the report. When the draft report is submitted to the client, cultural researchers then prepare a finalized packet of the participant’s transcription, interview summary, and any photos taken during the interview. We also include a thank you card and honoraria. This is for the interviewee’s records.

It is important to CSH cultural researchers to cultivate and maintain community relationships. The CIA report may be completed, but CSH researchers continuously keep in touch with the community and interviewees throughout the year—such as checking in to say hello via email or by phone, volunteering with past interviewees on community service projects, and sending holiday cards to them and their *‘ohana* (family). CSH researchers feel this is an important component to building relationships and being part of an *‘ohana* and community.

“*I ulu no ka lālā i ke kumu*—the branches grow because of the trunk,” an *‘ōlelo no‘eau* (#1261) shared by Mary Kawena Pukui with the simple explanation: “Without our ancestors we would not be here” (Pukui 1983:137). As cultural researchers, we often lose our *kūpuna* but we do not lose their wisdom and words. We routinely check obituaries and gather information from other informants if we have lost our *kūpuna*. CSH makes it a point to reach out to the *‘ohana* of our fallen *kūpuna* and pay our respects including sending all past transcriptions, interview summaries, and photos for families to have on file for genealogical and historical reference.

Section 3 Traditional Background

The *moku o loko*, or *moku* as it is most commonly called, literally means “to cut across, divide, separate” (Lucas 1995:77). When used as a term of traditional land tenure, a *moku* is similar to a political district that can contain smaller divisions of land such as *‘okana, kalana, ahupua‘a, ‘ili,* and *mo‘o*. The division of Maui’s lands into several *moku* occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna* (priest), Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in 12 *moku* during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā‘anapali, and Lāhainā. By 1932, the 12 traditional *moku* had been consolidated into the four modern tax districts of Lahaina, Wailuku, Makawao, and Hana (Sterling 1998:4). The project area is located in the Kīhei area of South Maui, which is in Waiohulu Ahupua‘a within the traditional *moku* of Kula and the modern district of Makawao.

3.1 *Nā ka‘ao a me Nā Mo‘olelo* (Legends and Stories)

Hawaiian storytellers of old were greatly honored; they were a major source of entertainment, and their stories contained teachings while interweaving elements of Hawaiian lifestyles, genealogy, history, relationships, arts, and the natural environment (Pukui and Green 1995:IX). According to Pukui and Green (1995), storytelling is better heard rather than read for much becomes lost in the transfer from the spoken to the written word and *ka‘ao* are often full of *kaona* or “double meanings.”

Ka‘ao are defined by Pukui and Elbert as a “legend, tale [...], romance, [and/or], fiction” (Pukui and Elbert 1986:108). *Ka‘ao* may be thought of as oral literature or legends, often fictional or mythic in origin, and have been “consciously composed to tickle the fancy rather than to inform the mind as to supposed events” (Beckwith 1970:1). Conversely, Pukui and Elbert define *mo‘olelo* as a “story, tale, myth, history, [and/or] tradition” (Pukui and Elbert 1986:254). The *mo‘olelo* are generally traditional stories about the gods, historic figures or stories that cover historic events and locate the events with known places. *Mo‘olelo* are often intimately connected to a tangible place or space.

In differentiating *ka‘ao* and *mo‘olelo* it may be useful to think of *ka‘ao* as expressly delving into the *wao akua* (realm of the gods), discussing the exploits of *akua* (gods) in a primordial time. However, it is also necessary to note there are exceptions, and not all *ka‘ao* discuss gods of an ancient past. *Mo‘olelo* on the other hand, reference a host of characters from *ali‘i* (royalty), to *akua* and *kupua* (supernatural beings), to finally *maka‘āinana* (commoners), and discuss their varied and complex interactions within the *wao kānaka* (realm of man). Beckwith elaborates, “In reality, the distinction between ka‘ao as fiction and mo‘olelo as fact cannot be pressed too closely. It is rather in the intention than in the fact” (Beckwith 1970:1). Thus, a so-called *mo‘olelo*, which may be enlivened by fantastic adventures of *kupua*, “nevertheless corresponds with the Hawaiian view of the relation between nature and man” (Beckwith 1970:1).

Both *ka‘ao* and *mo‘olelo* provide important insight into a specific geographical area, adding to a rich fabric of traditional knowledge. The preservation and passing on of these stories through oration remains a highly valued tradition. Additionally, oral traditions associated with the study

area communicate the intrinsic value and meaning of a place, specifically its meaning to both *kama‘āina* as well as others who also value that place.

The following section presents traditional accounts of ancient Hawaiians living in the vicinity of the 2.0 MG Water Storage Tank project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali‘i* (chief) and *maka‘āinana* (commoner). The *ka‘ao* in and around the project area shared below are some of the oldest Hawaiian stories that have survived. They still speak to the characteristics and environment of the area and its people.

3.1.1 Kula

A traditional reference to the Kula region was made in Blaisdell's story of the construction of the Kanahā Fish Ponds at Kahului, known then as the twin ponds of Kapiiohookalani, who was then the *mō‘ī* (King) of Maui (in the mid-1700s) (Sterling 1998:87). In this story, the O‘ahu princess Kahamaluihiikeaoihilani searched for her missing brother, Kanahā, whom she thought had joined the court of Kamehamehanui, a chief who had just recently succeeded Kapiiohookalani. Hoping to join Kamehamehanui at Hāna, Kahamaluihiikeaoihilani stopped at her husband Kauhiokalani's summer residence at Kula after learning that the king was en route to Kahului to finish the construction of the twin fishponds at the coastline of Kahului. At the site of the fishponds, the princess Kahamaluihiikeaoihilani revealed her royal bloodline to all the people. The King, seeing that the princess had a greater royal rank than himself, invited her to join him in christening the ponds. The O‘ahu princess then named the ponds. The *makai* pond was named Kanahā after her brother, and the *mauka* pond was named Mau‘oni, which was the secret name of the princess that she used when she travelled.

3.1.1.1 Legend of Halemano

It is briefly mentioned in this story that Halemano and his wife, Kamalalawalu, stopped in Kula, Maui during their journey. They were running away from Aikanaka, the king of O‘ahu, who was pursuing Kamalalawalu, however, after she continuously refused the king's request, Aikanaka declared war against them. The following excerpt mentions their stay in Kula:

> […] After they returned to Molokai and again set out for Maui, landing at Lele, this time to make their residence in Kaupo. From Lele they journeyed to Kula, then the Ulupalakua, and from there on down to Kaupo, where they decided to live. [Fornander 1918-1919:240]

3.1.1.2 Kaleleauluaka

This story is about a child named Kaopele who was born without breath in Waipio, Hawai‘i. His parents watched over Kaopele's body for several days before assuming the child to be dead and then placed him in a small cave in the face of the cliff. After six months, the parents heard the voice of their child calling to them:

> Let your love rest upon me,
>
> O my parents, who have thrust me forth,
>
> Who have left me in the cavernous cliff,
>
> Who have heartlessly placed me in the

> Cliff frequented by the tropic bird!
>
> O Waiaalaia, my mother!
>
> O Waimanu, my father!
>
> Come and take me!
>
> [Thrum 1907:74–75]

Kaopele's father then went to the place where they had left the child at the request of his wife and found Kaopele on a tree and took him home. Once again Kaopele lay without breath, appearing to be dead, and after six months he awoke once more. Kaopele explained the state he would be in for six months:

> This marvel that you see in me is a trance; when I pass into my deep sleep my spirit at once floats away in the upper air with the goddess, Poliahu. We are a numerous band of spirits, but I excel them in the distance of my flights. In one day I can compass this island of Hawaii, as well as Maui, Oahu, and Kauai, and return again. In my flights I have seen that Kauai is the richest of all the islands, for it is well supplied with food and fish, and it is abundantly watered. I intend to remain with you until I am grown; then I shall journey to Kauai and there spend the rest of my life. [Thrum 1907:76]

Kaopele briefly stayed in Kula, Maui while on his journey to Kaua‘i once he became an adult. Kula was his first stop on his journey before continuing to O‘ahu and eventually to Kaua‘i. The following excerpt describes when he left his parents and what occurred during his stay in Kula:

> They sealed their love for each other with tears and kisses, and he slept and was gone. He alighted at Kula, on Maui. There he engaged in cultivating food. When his crops were nearly ripe and ready to be eaten he again fell into his customary deep sleep, and when he awoke he found that the people of the land had eaten up al his crops. [Thrum 1907:76]

3.1.1.3 Legend of Kawaunuiaola

In Fornander's "Legend of Kawaunuiaola," a woman that lived in Kula, Maui, named Kawaunuiaola, became known as the wife of Hoeu. After they had lived together as husband and wife for many years, Hoeu left her and took another wife. Because of this, Kawaunuiaola was overcome with sorrow. She embarked on a strategy to make him come back to her by engaging in a conversation with herself at every mealtime. People passing by who heard this conversation believed Kawaunuiaola had found a new husband. When those who heard this conversation went on their way, they told others that Kawaunuiaola must have obtained a new husband. When this news was carried to Hoeu, he stood up and deserted the woman he was living with. He then returned to his wife at Kula. He asked his wife about the rumors that she had a new husband, but she only replied that she had been alone all this time. They made up and lived together as husband and wife. She was indeed cunning (Fornander 1916-1919:554).

3.1.2 Makawao

3.1.2.1 The Kukui Tree

Fornander (1916-1919) described the different uses of the Kukui tree and mentioned a famous *kukui* (*Aleurites moluccanus*) grove located in Makawao:

> NO KA ULU KUKUI o LILIKOI.
>
> O keia ulu kukui aia no ia ma Maui nei kahi i ulu ai, aia nae ma Makawao. O ka mea i kaulana ai o keia ulu kukui, no ka hele iiiau o na “Hi ilaila i ka manawa kahiko a hiki paha i keia nianawa, he wahi makaikai nui ia e na malihini. O kekahi, kahi no ia e kii ia ai o na liua kukui ai na na alii, nokaniea, o ko laila kukui he aia ame ka ono. O ia iho la na mea i loaa la'u.
>
> TRANSLATION:
>
> Concerning the grove of Lilikoi
>
> This kukui grove grows on the island of Maui, at Makawao. It was famous because the chiefs went there in the olden times, and perhaps even to this day: it was noted as a place often visited by strangers. It was also the place where were procured the kukui nuts for the chiefs, for the kernel of its nuts was fragrant and good to the taste. This is all I have learned. – John Moo
>
> [Fornander 1916-1919:674]

3.1.2.2 Kihapi‘ilani

Kihapi‘ilani was a king of Maui well known for building two roads: one was paved with smooth rocks from Kawaipapa to Kahalaoaka and another was a road of shells on Moloka‘i (Fornander 1916-1919:176). Two versions of the story of Kihapi‘ilani are discussed below, “Tradition of Kihapi‘ilani” by Thrum (1923:77–86) and “Legend of Kihapi‘ilani” by Fornander (1916-1919:176–181).

3.1.2.2.1 Tradition of Kihapi‘ilani

In Thrum’s (1923) version, Kihapi‘ilani lived with his wife at Makawao while hiding from his elder brother Lonoapii, who was the king of Maui at the time. Kihapi‘ilani is the youngest of four children of Kalamakua and Kelea. Originally, Kihapi‘ilani lived on O‘ahu with his mother’s brother. Eventually, while being treated terribly by his uncle, Kihapi‘ilani went in search of his father. This led him to arrive in Maui following his mother’s instructions:

> Go, you will find your father keeping the *awa kapu*, and no canoe will be allowed to land; if you reach Keawaiki at Lahaina, do not fear if the people attempt to resist your landing; your being afraid will end in the burning up of the canoe with fire. Land on the beach, let all the men remain on board the canoe in charge of her, but go yourself ashore to the large man sitting at the door of the house; he is your father, sit on his lap, and if he asks you whose boy you are, tell him you are his, I am Kihapiilani. If he places you at his left hand, that is your place; there is no land on that side; the right side is the place of lands. There will be two cups of *awa*, the one in his right hand represents your elder brother Lonoapii, the other yourself. He will drink first the cup in his right hand, then that in his left; then take pieces of potato

> in his right hand and left and eat them in the same succession; then a banana in each hand, eating them in the same order; after which he will eat fish a poi, then the *kapu* will be ended. If he offers you the cup and potato and banana which are in his right hand you will be the heir; if not, you have no inheritance. [Thrum 1923:78]

Kihapi‘ilani continuously tried to replace his elder brother to become the heir until his father’s death. Lonoapii became furious with Kihapi‘ilani’s attempt to replace him and began to isolate and reprimand him. This led to Kihapi‘ilani rebelling against Lonoapii multiple times and failing each time. Kihapi‘ilani ended up running away to different islands like Moloka‘i to rebel but eventually he returned to Maui. The following excerpt describes how Kihapi‘ilani ended up in Makawao:

> Setting forth they arrived at evening and went into the woods of East Maui where they were seen by some fishermen who reported them to the king on his arrival at Maui. The king sent Kalamea, his runner, after him. Kihapiilani, seeing the dust raised by Kalamea, said to his friend: ‘Here comes the swift man; he can go around Maui in a day.’ As he approached Kihapiilani said to his friend: ‘Cannot you pray for us?’ ‘Yes, I can,’ he replied. The prayer was said, and when ended the runner cut his foot with a sharp stone and fell down; he then bound up his foot with the vine of a convolvulus and went on limping, but Kihapiilani was enabled to keep out of his way. After two days his friend said: ‘You go to Kula and secrete yourself, and I will return to the king.’ He did so, and Kihapiilani with his wife went and lived at Makawao […] [Thrum 1923:80–81]

3.1.2.2.2 Legend of Kihapi‘ilani

In Fornander’s (1916-1919) version, when Lonoapii threw fish and brine into the face of Kihapi‘ilani, he left with his attendant to Kula, where he made his home:

> Noho pu iho la o Kihapiilani me kona kaikuaana me Lonoapii i Waihee, a mahope, lawe ia mai la elua ipu nehu maka me ke kai, a mua o ke alo o Lonoapii, haawi aku la o Lonoapii i na mea a pau loa a koe o Kihapiilani. Lalau aku o Kihapiilani i ka ipu, e nini mai ana o Lonoapii i ka nehu me ke kai paakai i na maka o Kihapiilani. Ku ae la o Kihapiilani hele me kona wahi kahu a noho i Kula, mahiai iho la ia, ewalu kihapai uala, hookah apana lau ua paa. [Fornander 1916-1919:177]
>
> **TRANSLATION:**
>
> Kihapiilani lived with his brother, Lonoapii, in Waihee. One day two calabashes of salted nehu were brought to Lonoapii, which he gave out to everyone except Kihapiilani. That being the only fish to be had, Kihapiilani reached over and took some out of the calabash. This action displeased Lonoapii so much that he took up the calabash and threw the fish and brine into the face of Kihapiilani. At this Kihapiilani rose up and went away from the place, accompanied only by his immediate attendant, until they came to Kula, where they made their home. They took to farming and planted eight large fields of potatoes, using but one load of tops to cover the whole area. [Fornander 1916-1919:176]

3.2 *Nā Wahi Pana* (Storied Places)

Wahi pana are legendary or storied places in a landscape. These legendary or storied places can be a variety of natural or human-constructed features. Oftentimes dating to the pre-Contact period, many but not all *wahi pana* are connected to particular *mo‘olelo*. Dr. Davianna McGregor outlines the types of natural and human-made structures that may constitute *wahi pana*:

> Natural places have mana or spiritual power, and are sacred because of the presence of the gods, the akua, and the ancestral guardian spirits, the ‘aumakua. Human-made structures for the Hawaiian religion and family religious practices are also sacred. These structures and places include temples, and shrines, or heiau, for war, peace, agriculture, fishing, healing, and the like; pu‘uhonua, places of refuge and sanctuaries for healing and rebirth; agricultural sites and sites of food production such as the lo‘i pond fields and terraces slopes, ‘auwai irrigation ditches, and the fishponds; and special function sites such as trails, salt pans, hōlua slides, quarries, petroglyphs, gaming sites, and canoe landings. [McGregor 1996:22]

As McGregor makes clear, *wahi pana* can refer to natural geographic locations such as streams, peaks, rock formations, ridges, offshore islands and reefs, or they can refer to Hawaiian land divisions such as *ahupua‘a* or *‘ili* (traditional land division smaller than an *ahupua‘a*), and man-made structures such as fishponds. In this way, the *wahi pana* of Kīhei tangibly link the *kama‘āina* of Waiohuli to their past. It is common for places and landscape features to have multiple names, some of which may only be known to certain *‘ohana* (family) or even certain individuals within an *‘ohana*, and many have been lost, forgotten or kept secret through time. Place names also convey *kaona* and *huna* (secret) information that may even have political or subversive undertones. Before the introduction of writing to the Hawaiian Islands, cultural information was exclusively preserved and perpetuated orally. Hawaiians gave names to literally everything in their environment, including individual garden plots and *‘auwai* (water courses), house sites, intangible phenomena such as meteorological and atmospheric effects, *pōhaku* (rock), *pūnāwai* (spring), and many others. According to Landgraf (1994:v), Hawaiian *wahi pana* “physically and poetically describes an area while revealing its historical or legendary significance.”

Table 1. Kīhei *wahi pana* and other place names near the project area

Place Name	Meaning/Translation (Pukui et al. 1974)
‘Alae	*Lit.,* “mudhen” (p.8); name of *ahupua‘a* north of the project area
Kale‘ia	*Lit.,* “the abundance”; possibly referring to resources available from the fishponds and offshore fishing grounds (p.76)
Kalepolepo	*Lit.,* “the dirt” (p.77); name of a fishpond approximately 2 km northwest of the project area
Kaluaihākōkō	*Lit*., “the pit (for) wrestling”; Hākōkō was the name of a chief (p.78)
Kama‘ole	*Lit*., “childless” (p.80); name of *ahupua‘a,* homesteads, and beach parks; neighboring *ahupua’a*

Place Name	Meaning/Translation (Pukui et al. 1974)
Ka‘ono‘ulu	*Lit*., “the desire (for) breadfruit”; name of a gulch and a 3,051-ft peak (p.86); also an *ahupua‘a* north and adjacent to Waiohuli Ahupua‘a
Keāhuaiwi	*Lit.,* “the bone pile” (p.101); the name of a gulch adjacent to and north of Waiakoa Gulch
Keālia	*Lit.,* “salt encrustation”; a pond near Kīhei and major salt pan location (Sterling 1998:95)
Kekuawaha‘ula‘ula	*Lit.,* “the red-mouth god” (p.107)
Kēōkea	*Lit*., “the white sand” (p.107); name of a village, park and homesteads; Kēōkea Ahupua‘a borders Waiohuli Ahupua‘a to the south
Kīhei	*Lit.,* “cape or cloak”; sandy point and boundary marker between Pūlehu Nui and Waikapu (Sterling 1998:255); commonly used place name for the South Maui area
Kīheipūko‘a	*Kīhei* literally translates as “cape or cloak” and *pūko‘a* literally translates as “coral head”; Kīheipūko‘a was a place near Keālia between Kalepolepo and Ma‘alaea (Sterling 1998:257)
Kōheo	*Lit.,* “to show off or to twirl” (p.115); an *ahupua‘a* north and adjacent to Waiohuli Ahupua‘a
Kō‘ie‘ie	*Lit.,* “a plaything for floating in the rapids”; ancient name of Kalepolepo (Sterling 1998:252)
Kula (*moku*)	*Lit.,* “plain”; always an arid region (Handy in Sterling 1998:242)
Lā‘ie	*Lit.,* “*‘ie* leaf”; coastal area (p.127–128) *makai* of the project area
Līpoa	“An edible brown seaweed with many branches and a unique aroma. A popular food which many people gather from the ocean” (Budnick 1991:99); name of the parkway comprising most of the project area and name of the street extending from the parkway to the ocean
Nāwāowaeo‘Alika	*Lit.,* “the feet of Alex or the feet of Arctic”; may be a new name (p.164)
Pūlehu Nui	*Lit.,* “large *pūlehu*” where *pūlehu* is literally translated as “broiled”; possibly in reference to abundant sweet potato cultivation in the uplands (p.193); name of an *ahupua‘a* north of the project area
Pu‘u o Kali	*Lit*., “hill of waiting”; quadrangle and 1,481-ft high hill; believed once a *mo‘o*, the wife of nearby Pu‘uhele; their child, Pu‘uoinaina (hill of wrath) was placed on Kaho‘olawe and later was a lover of Pele’s sweetheart, Lohi‘au (p.203)
Waiakoa	*Lit.,* “water (used) by warrior” (p.220); name of a gulch and an *ahupua‘a* north of the project area

Place Name	Meaning/Translation (Pukui et al. 1974)
Waimāha‘iha‘i	*Lit*., “broken water”; coastal area (p.225) southwest of the project area; name of a shallow, intermittent stream that appears to have once flowed just south of the project area
Waiohuli	*Lit*., “water of change” (p.226); name of the *ahupua‘a* containing the project area, a gulch approximately 0.8 km north of the project area, and a village/ homesteads upland from the project area
Waipu‘ilani	*Lit*., “waterspout” (p.227); name of gulch nearest and north of the project area

3.2.1 Settlement and Subsistence

The project area is the lower midland portion of Waiohuli Ahupua‘a and Kula Moku, a region where water is scarce due to the rain shadow of Haleakalā. Traditional land use in Kula Moku was known for potato cultivation:

> Kula was always an arid region throughout its long low seashore, vast stony *kula* [pasture] lands, and broad uplands. On the coast, where fishing was good, and the lower westward slopes of Haleakala, a considerable population existed, fishing and raising occasional crops of potatoes along the coast, and cultivating large crops of potatoes inland, especially in the central and northeastern section including Keokea, Waiohuli, Koheo, Kaonoulu, and Waiakoa, where rainfall drawn round the northwest slopes of Haleakala increases toward Makawao. [Handy 1940:161]

Coastal Kīhei also shows a few vestiges of lifestyles and subsistence activities of the *maka‘āinana* that lived there as well as the works of powerful *ali‘i*. Keālia Pond has been known as a source of high-quality salt from the pans in its immediate vicinity. Van James (2002:71) describes Keālia as follows :

> It is also the name and site of a former fishpond. Little is known about the ancient history of Keālia fishpond, but judging from its size, it must have been an important producer of fish stock, particularly *awa* (milkfish) and *‘ama‘ama* (mullet). Ditches and sluice gates were built at least 400 years ago to let these and other nearshore fish into the pond. A *ko‘a* (fishing shrine) or possible *heiau* (pre-Christian place of worship) platform stands near the site. [James 2002:71]

Given its location on the leeward shores of the central isthmus of Maui, and its regular access to the freshwater runoff emanating from Waikapū Stream to the north and Kolaloa Stream to the southeast, the area had access to many resources (salt, fish, irrigation, etc.) valued and utilized by the population. This wetland environment also attracts many species of waterfowl in the winter months when water levels in the pond rise with seasonal flooding. These would have also served as a potential source of nourishment for subsistence communities in the region (James 2002:72).

Meanings of place names, together with the environmental data, suggest the lands of and surrounding coastal Kīhei were dry and barren in an agricultural sense but rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested that most permanent habitations were in the uplands with a smaller permanent population located along

the coastline. While a reconstruction of the coastal archaeological landscape of Kula Moku underscores the importance of the uplands as a focus of agriculture and habitation, Hawaiian traditions and the presence of four fishponds are evidence that the coastal environs were also a focus of settlement and marine resource collection. However, the relative scarcity of recorded coastal place names may be an indication of a smaller population that was widely spread across the leeward coast.

3.2.2 *Nā Loko I’a* (Fishponds)

Further testament of resource gathering in the area comes from neighboring Kō‘ie‘ie Fishpond (Figure 5), which can still be seen along the Kīhei coastline in ruins (Figure 6). This fishpond was once part of a broader distribution of these types of structures along the coast:

> In ancient times at least three or four *kuapā* (walled) fishponds were built along the Kīhei (‘cloak’) coastline. With the exception of Ko‘ie‘ie pond, the names of the other ponds have been lost, and little is known about any of their histories. In such cases it was said that *menehune* constructed them. [James 2002:73]
>
> It [Kō‘ie‘ie] is a small pond of three acres. At low tide, another fishpond ruin can be seen just south of Kō‘ie‘ie Fishpond, and still further south along the coast is yet another nameless ancient pond wall. [James 2002:74]

The associations of these fishponds to the *menehune* (legendary race of small who worked at night and built things such as fishponds), placing their times of construction in deep antiquity, suggest this site may have been in use in very early times. What is known regarding the fishponds here is that they had been rebuilt several times prior to and during the first days of Western Contact:

> It is here at Kalepolepo that Kamehameha I is said to have beached his canoes for battle against Central Maui. The beaches were black with his fleet, and the Waikapū Stream that empties into nearby Keālia Pond was declared *kapu.* Later, Kamehameha, who noticed Kō‘ie‘ie to be in disrepair, had the fishpond rebuilt. It is recorded that chief ‘Umilīloa, in the mid-1500s, also had the pond walls rebuilt. [James 2002:73–74]

Based on its history of rehabilitation from conquering Hawai‘i Island chiefs, the fishpond at Kō‘ie‘ie is believed to have been “a royal pond always stocked with the best fish” (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period in which Kihawahine, the family *‘aumakua* (guardian spirit) of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha’s sons at Kalepolepo in 1815 (James 2002:74).



Figure 5. Ko‘ie‘ie Fishpond ruins as viewed from the shore, near foormer site of Kalepolepo (James 2002:73)



Figure 6. Shoreline extent of Ko‘ie‘ie Fishpond ruins in proximity to condominium development (Wikimedia 2008)

3.3 *Nā ‘Ōlelo No‘eau* (Proverbs)

Hawaiian knowledge was shared by way of oral histories. Indeed, one's *leo* (voice) is oftentimes presented as *ho‘okupu* ("a tribute or gift" given to convey appreciation, to strengthen bonds, and to show honor and respect); the high valuation of the spoken word underscores the importance of the oral tradition (in this case, Hawaiian sayings or expressions), and its ability to impart traditional Hawaiian "aesthetic, historic, and educational values" (Pukui 1983:vii). Thus, in many ways these expressions may be understood as inspiring growth within reader or between speaker and listener:

> They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai‘i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai‘i, they bring us closer to the everyday thoughts and lives of the Hawaiians who created them. Taken together, the sayings offer a basis for an understanding of the essence and origins of traditional Hawaiian values. The sayings may be categorized, in Western terms, as proverbs, aphorisms, didactic adages, jokes, riddles, epithets, lines from chants, etc., and they present a variety of literary techniques such as metaphor, analogy, allegory, personification, irony, pun, and repetition. It is worth noting, however, that the sayings were spoken, and that their meanings and purposes should not be assessed by the Western concepts of literary types and techniques. [Pukui 1983:vii]

Simply, *‘ōlelo no‘eau* may be understood as proverbs. The Webster dictionary notes it as "a phrase which is often repeated; especially, a sentence which briefly and forcibly expresses some practical truth, or the result of experience and observation." It is a pithy or short form of folk wisdom. Pukui equates proverbs as a treasury of Hawaiian expressions (Pukui 1995:xii). Oftentimes within these Hawaiian expressions or proverbs are references to places. This section draws from the collection of author and historian Mary Kawena Pukui and her knowledge of Hawaiian proverbs describing *‘āina* (land), chiefs, plants, and places relative to the larger Makawao Moku.

3.3.1 Makawao

3.3.1.1 *‘Ōlelo No‘eau* #298

The following *‘ōlelo no‘eau* is a boast from a native of Makawao, Maui:

E hu‘e mai ‘oe i ke koai‘e o Makawao!

Try uprooting the koai‘e tree of Makawao!

I defy you to tackle a lad of Makawao!

A boast from a native of Makawao, Maui [Pukui 1983:37]

3.3.1.2 *‘Ōlelo No‘eau* #1602

The following *‘ōlelo no‘eau* describes the rain of Makawao:

Ka ua ‘Ūkiu o Makawao.

The ‘Ūkiu rain of Makawao.

Refers to Makawao, Maui [Pukui 1983:173]

3.3.1.3 *‘Ōlelo No‘eau* #1705

The following *‘ōlelo no‘eau* describes a native of Makawao who is not afraid of being wet:

Keiki holoholo kuāua o Makawao.

The lad of Makawao who goes about in the rain.

Said of a native of that place who is not afraid of being wet [Pukui 1983:184]

3.3.1.4 *‘Ōlelo No‘eau* #2355

The following *‘ōlelo no‘eau* refers to a famous diving pool in Makawao:

O ‘Alelele ke kawa kaulana o Makawao.

‘Alelele, the famous diving pool of Makawao.

Refers to Makawao, Maui [Pukui 1983:257]

3.3.1.5 *‘Ōlelo No‘eau* #2869

The following *‘ōlelo no‘eau* describes a famed *kukui* grove in Makawao, Maui:

Ulu kukui o Liliko‘i.

Kukui grove of Liliko‘i.

This kukui grove, in Makawao, Maui, was much visited by travelers, for it was a favorite spot of the chiefs. The nuts gathered from the trees produced a fragrant, tasty relish. [Pukui 1983:314]

3.3.2 Kula

3.3.2.1 *‘Ōlelo No‘eau* #1911

The following *‘ōlelo no‘eau* refers to a Kula chiefess:

Kula unahi pikapika he‘e

Kula people, scalers of the sucker of the tentacles of the octopus.

Said in fun of the people of Kula, Maui. A Kula chiefess who lived inland did not know what the suckers on an octopus were and tried to scale them as one scales a fish. [Pukui 1983:205]

3.3.2.2 *‘Ōlelo No‘eau* #270

The following *‘ōlelo no‘eau* is a saying of the people of Kula:

O Kula i ka hoe hewa.

Kula of the ignorant canoe paddlers.

Said of Kula, Maui whose people did not know how to paddle canoes because they were uplanders. [Pukui 1983:270]

3.3.2.3 *‘Ōlelo No‘eau* #2238

The following *‘ōlelo no‘eau* is an expression of admiration for the people of Kula, Maui:

> *Nā keiki uneune māmane o Kula.*
>
> The lads of Kula, who tug and pull the *māmane* up by the roots.
>
> An expression of admiration for the people of Kula, Maui, who accomplish whatever they set out to do. *Māmane* (*Sophora chrysophylla*) was used for making the wooden digging sticks, the most important tool of potato farmers [Pukui 1983:245]

3.3.2.4 *‘Ōlelo No‘eau* #2447

The following *‘ōlelo no‘eau* refers to a young man from Kula and a young woman from Ke‘anae who were attracted to one another:

> *O ka wai kau no ia o Ke‘anae; o ka ‘ūlei ho‘owali‘uwala ia o Kula.*
>
> It is the pool on the height of Ke‘anae; it is the *‘ūlei* digging stick for the potato [patch] of Kula.
>
> A handsome young man of Kula and a beautiful young woman of Ke‘anae, on Maui, were attracted to each other. She boasted of her own womanly perfection by referring to her body as the pool on the heights of Ke‘anae. Not to be outdone, he looked down at himself and boasted of his manhood as the digging stick of Kula.
>
> [Pukui 1983:267]

Several sayings refer to the lack of coastal or seafaring knowledge, which made the people of Kula appear ignorant. These sayings were rooted in the fact that Kula people lived far from the sea and were not familiar with coastal lifeways. While the most common structure of the *ahupua‘a* system encompassed lands from *mauka* to *makai*, several *ahupua‘a* within Kula Moku were cut off from the ocean by Wailuku Moku.

These sayings about the seafaring ignorance of Kula people, however, are tempered by sayings of admiration for their skill and perseverance at working the land. Kula was famous for its upland *‘uala* (sweet potato) “plantations” (Handy et al. 1991:511) and the above sayings about Kula attest to that fact. The combination of good soil developed in volcanic ash, cool temperatures, and frequent cloud cover that would lower evapo-transpiration and bring moisture as fog drip, and rainfall distributed fairly evenly throughout the year would also have allowed for dryland cultivation up to 3,000 ft amsl (Handy et al. 1991:276) for Hawaiians living in the uplands of Kula on a permanent basis.

Some traditional Hawaiian sayings note the environmental characteristics of Kula with multiple references to smoke.

3.3.2.5 *‘Ōlelo No‘eau* #2170

> *Moe kokolo ka uahi o Kula, he Hau.*
>
> The smoke of Kula traveled low and swift, borne by the Hau wind.
>
> [Pukui 1983:236]

3.3.2.6 *‘Ōlelo No‘eau* #1824

Kokolo ka uahi o Kula, he Kēhau.

The smoke of Kula creeps along when the Kēhau breeze blows.

[Pukui 1983:197]

These references likely indicate that burning the land before planting new sweet potato patches was a common method of cultivation during the pre-Contact or traditional time period. While Handy et al. (1991) contend the cultivation of dryland taro was rare in the upland regions, Walker (1931) indicated that "Dryland taro required no special terrace for its cultivation, so there is nothing to indicate where it was grown formerly, but the natives say it was cultivated on the Kula side of Haleakala" (Walker 1931:72).

3.4 *Nā Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song.

> Words and word combinations were studied to see whether they were auspicious or not. There were always two things to consider the literal meaning and the *kaona*, or 'inner meaning.' The inner meaning was sometimes so veiled that only the people to whom the chant belonged understood it, and sometimes so obvious that anyone who knew the figurative speech of old Hawai‘i could see it very plainly. There are but two meanings: the literal and the *kaona*, or inner meaning. The literal is like the body and the inner meaning is like the spirit of the poem. [Pukui 1949:247]

> The Hawaiians were lovers of poetry and keen observers of nature. Every phase of nature was noted and expressions of this love and observation woven into poems of praise, of satire, of resentment, of love and of celebration for any occasion that might arise. The ancient poets carefully selected men worthy of carrying on their art. These young men were taught the old *meles* and the technique of fashioning new ones. [Pukui 1949:247]

There are few late nineteenth, twentieth, and twenty-first century *mele* that concern or mention Kīhei and the greater Makawao Moku. These particular *mele* may also be classified as *mele wahi pana* (songs for legendary or historic places). *Mele wahi pana* such as those presented here may or may not be accompanied by *hula* (dance) or *hula wahi pana* (dance for legendary or historic places). As the Hula Preservation Society notes,

> Hula Wahi Pana comprise a large class of dances that honor places of such emotional, spiritual, historical, or cultural significance that chants were composed for them. Only the composers of the chants could know the deepest meanings, as they would be reflections of their feelings and experiences […] Since the subjects of Wahi Pana compositions are extremely varied, their implementation through hula are as well. Coupled with the differences from one hula style and tradition to the next, Hula Wahi Pana can be exceptionally diverse. They can be done sitting or standing, with limited body movement or wide free movement; with or without the use of implements or instruments; with the dancers themselves chanting and/or playing an implement or being accompanied by the *ho‘opa‘a* [drummer and *hula*

chanter (memorizer)]. Beyond the particular hula tradition, what ultimately determines the manner in which a Hula Wahi Pana is performed are the specific place involved, why it is significant, the story being shared about it, and its importance in the composer's view. [Hula Preservation Society 2014]

3.4.1 Haleakalā Hula

The following *mele* was composed by Alice Nāmakelua in 1941 for the Maui float in the Kamehameha Day parade. It mentions the rain of Makawao, the ʻŪkiu rain.

Kuahiwi nani ʻoe Haleakalā	You are a beautiful mountain, Haleakalā
Kaulana hoʻi ʻoe kū kilakila	You are famous and stand majestically
ʻO Makawao ia ua kaulana	At Makawao, this rain is well known
I kāohi ia iho o ka lāʻau	It falls gently on the trees
He ʻŪkiu e ka ua o ka ʻāina	ʻŪkiu is the name of the rain of this land
Me ka makani aheahe ʻoluʻolu	Here the wind is soft and cool
E aho no ʻoe a e komo mai	You should come in
A e hoʻolaʻi ka malu o kea o	Relax in the shade of the clouds
Puana ka inoa i lohe ʻia	Tell the name so that it can be heard
Kuahiwi nani ʻoe Haleakalā	You are a beautiful mountain, Haleakalā
	[Huapala n.d.a]

3.4.2 Kīhei

There are two *mele* that are both titled "Kīhei" and describe the beauty of Kīhei. The first *mele* is written by Kai Davis and translated by Kanani Kamai:

Kaulana mai nei i kou inoa la	Your name is famous
Ka nani aʻo Kīhei	The beauty of Kīhei
Ka nani hoʻokipa me ke aloha la	The loving and beautiful hospitality

I ka olu a‘o Kīhei	In the comfort of Kīhei
Eia au ke noho aku nei la	Here I reside
Ka nani a‘o Kīhei	In the beauty of Kīhei
Ma Kīhei aku nei nō wau la	I was just in Kīhei
‘Ike ‘ia a‘o Waiakoa	Waiakoa is seen
Nānea i ka olu a‘o ia kaha la	Relaxing in the comfort of that place
Ka nani a‘o Kīhei	The beauty of Kīhei
Ke kai nehe mai i ka ‘ae one la	The ocean that nestles on the sandy beach
Ka nani a‘o Kīhei	The beauty of Kīhei
Ha‘ina ka puana me ke aloha la	Let it be told with love
Ka nani a‘o Kīhei	The beauty of Kīhei
Ka‘ena a‘e no wau o ka oi la	I boast of
Ka nani a‘o Kīhei	The beauty of Kīhei
	[Huapala n.d.b]

The other *mele* was written by Frank Kawaikapuokalani Hewett:

Aloha a‘e au iā Kīhei	My love goes out to Kīhei
Pumehana kāua, ho‘oipo nei	Where we loved warmly
Ma ka lihilihi ‘oe o Kīhei	At the edge of Kīhei
Aneane hiki ‘oe kou ,ale,ale	Soon you‘ll reach where you desire to be
Ho‘okomo kāua iā Kīhei	We now enter Kīhei
Ne‘ene‘e aku au, pili me ‘oe	And I move closer to you
‘Alawa iho ‘oe iā Kīhei	As you glance down at Kīhei

I ka nani kamaha‘o kāhela nei	See the wondrous beauty spread out before you
Ha‘ina ke aloha iā Kīhei	Told is the love for Kīhei
Pumehana kāua ho‘oipo nei	Where we loved warmly
	[Huapala n.d.c]

3.4.3 Malu I Ke Ao

The following *mele* is written by Reverend Samuel Kapu to gather his congregation and as an invitation for others to attend his church, the "Shelter of Light." There are many references of different places within Makawao *moku*.

‘Ohi e ka ‘i‘o o ka lā‘au,	Picked is the tree mushroom
No Makawao no ia,	It is indeed from Makawao
Me ka ua ‘Ukiukiu	With the ‘Ukiukiu rain
Anuanu ‘ino (‘ohu‘ohu no),	Cold indeed (adorning indeed)
E aho no e komo mai	One had better come in
I ka Malu o Ke Ao.	Under the Shelter of Light
Hui:	Chorus:
Malu i Ke Ao	Shelter of Light
Ke ahí o Wailuku,	The fires of Wailuku,
Kepaniwai a‘o ‘Iao	The damed water of ‘Iao
Nani Moloka‘i Nui A Hina,	Beautiful is Moloka‘i Nui A Hina,
Hape hape un ia,	Happy, happy New Year,
Hui ‘oli‘oli no	Come together in joyful rejoicing,
I ka Malu o Ke Ao,	Under the Shelter of Light
Hana ua lani ha‘aha‘a	Hana of the low rains
Na pali o Ko‘olau	Cliff of the Ko‘olau
Nā pōhaku o o auahi	Stones of auahi

Wela i ka lā	Heated by the sun
E aho no e komo a‘e	It is better to come inside
I ka Malu o Ke Ao	In the Shelter of Light
	[Huapala n.d.d]

Section 4 Archaeological and Historical Narrative

4.1 Political Conflicts

Kīhei lands were also a site of conflict between the Hawai‘i Island chief Kalani‘ōpu‘u and Maui Island chief Kahekili and this is perhaps the historic origin for such place names as “Waiakoa” and “Keāhuaiwi.” The earliest account concerning Kīhei and Hawaiian politics is given by Samuel Kamakau (1961:70) during the time of Alapa‘i and Kekaulike:

> Alapa‘i sailed from Kohala on Hawai‘i [...] But when he landed at Mokulau in Kaupō (Maui) and heard that Ke-kau-like was dying, he gave up all thought of war and wished only to meet Ke-kau-like and his (half) sister Ke-ku‘i-apo-iwa-nui [...] He landed at Kīheipukoa with all his chiefs and fighting men [...]While he was at Kīhei, Alapa‘i heard that the ruling chief of Oahu was making war upon Molokai. Most of the chiefs of Molokai [...] were of Hawai‘i [...] Alapa‘i's sympathy was aroused, for these were his own brothers and children (relatives), and he made ready to go to their help on Molokai. [Kamakau 1961:70]

Other accounts involve the continuing conflict between Kahekili of Maui Island and Kalani‘ōpu‘u of Hawai‘i Island during the late eighteenth century. Following a lost battle at Kaupō in 1775, Kalani‘ōpu‘u dedicated several war *heiau* on Hawai‘i Island to aid in the defeat of Kahekili. Upon hearing this news, Kahekili sent for the *kahuna* (priest) Kaleopu‘upu‘u who directed construction of the *heiau* of Kaluli and Pu‘uohala on the north side of Wailuku. When Kaluli Heiau was completed, Kaleopu‘upu‘ said to Kahekili, “This is the house of your god; open the sluice gate that the fish may enter” (Kamakau 1961:85).

In 1776, the army of Kalani‘ōpu‘u landed at Keoneo‘o‘io, with their war canoes extending to Makena at Honua‘ula,and proceeded to ravage the countryside. Kalani‘ōpu‘u landed with additional forces at Kīhepuko‘a at Kealia to Kapa‘ahu, 800 strong and eager to drink the waters of Wailuku:

> Across the plains of Pu‘u‘ainako (Can-trash-hill) and Kama‘oma‘o shone the feather cloaks of the soldiers […] Ka-hekili was at Kalanihale just below Kihahale and above the plateau of Ka‘ilipoe at Pohakuaokahi […] Kaleopu‘upu‘u [said] to Kahekili, ‘The fish have entered the sluice; draw in the net.’ [Kamakau 1961:85]

The forces of Kahekili descended upon and destroyed the soldiers of Kalani‘ōpu‘u, slaying the Alapa (elite soldiers of Kalani‘ōpu‘u) on the Sand Hills at the southeast of Kalua. Only two men escaped to Kīheipuko‘a to tell Kalani‘ōpu‘u the news of their defeat. After a second day of warfare, Kalani‘ōpu‘u sued for peace and was granted such by Kahekili and his messengers at Kīheipuko‘a (Kamakau 1961:88–89).

4.2 Early Historic Period

Kīhei was one of the locations visited by Captain George Vancouver. A monument at Mai Poina ‘Oe Ia‘u Beach Park in Kīhei commemorates Vancouver’s onshore expedition in 1792, when he first met the ruling chief Kahekili. With its sheltered coastline and easy access to Upcountry resources over a vast slope, Kīhei would continue to be a common stop for visiting ships. 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 traditionally 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. Kuykendall (1938:313) notes the following about 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. [Kuykendall 1938:313]

Kuykendall’s observation likely captures the demographic pattern at the Kalepolepo entrepot, a hub of early historic activity for Kīhei and eventually all of Kula Moku, located approximately 2 km northwest of the current project area (Kolb et al. 1997:69). The development of Kalepolepo as an entrepot and a focus of Christian life in the 1840s and 1850s likely increased the population in the immediate vicinity above the pre-Contact population figures, contrary to the island-wide trend of depopulation. That the population and areal extent of the Kalepolepo community reached its zenith during the mid-1800s, appears to be supported by Kolb et al. (1997:68):

> The ancient village of Kalepolepo was relatively small, and was built around an economy primarily based upon the exploitation of ocean resources--primarily the excellent fishing grounds as well as three large fishponds. However, as the number of visiting ships increased, Kalepolepo soon became an important provisioning area. By 1850 we know that the economic opportunities were attracting a number of European entrepreneurs. [Kolb et al. 1997:68]

In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lahaina, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that “[f]rom the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei].” The introduction of whaling to the Maui community brought with it an increased demand for foodstuffs, particularly, the long-lasting Irish potato.

After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area (between 2000 and 5000 ft amsl) of highest potato production and was known as “the potato district.” During this time, sugar cultivation and ranching were established in the Kula region. According to Helen Wong Smith, sugar was present prior to 1846, with six sugar producers operating on the slopes of Haleakalā, and ranching occurred in the area prior to the 1840s (Brown and Haun 1989:C-7 and C-6). Much of the produce, sugar, and livestock moved down the Kalepolepo and Kekuawaha‘ula‘ula trails to the landing at Kalepolepo. Donham (1992:5) notes the flood of land clearing and cultivation associated with the Gold Rush resulted in “deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common.”

Around 1849, John Halstead built the Koa House at Kalepolepo in Kīhei (Figure 7). The building, part store and part residence, thrived on both the trade of the whaling industry and the then booming potato industry. During the Gold Rush years, the store became “an emporium for



Figure 7. The Koa House at Kalepolepo built by John Halstead ca. 1849 (Wilcox 1921:66)

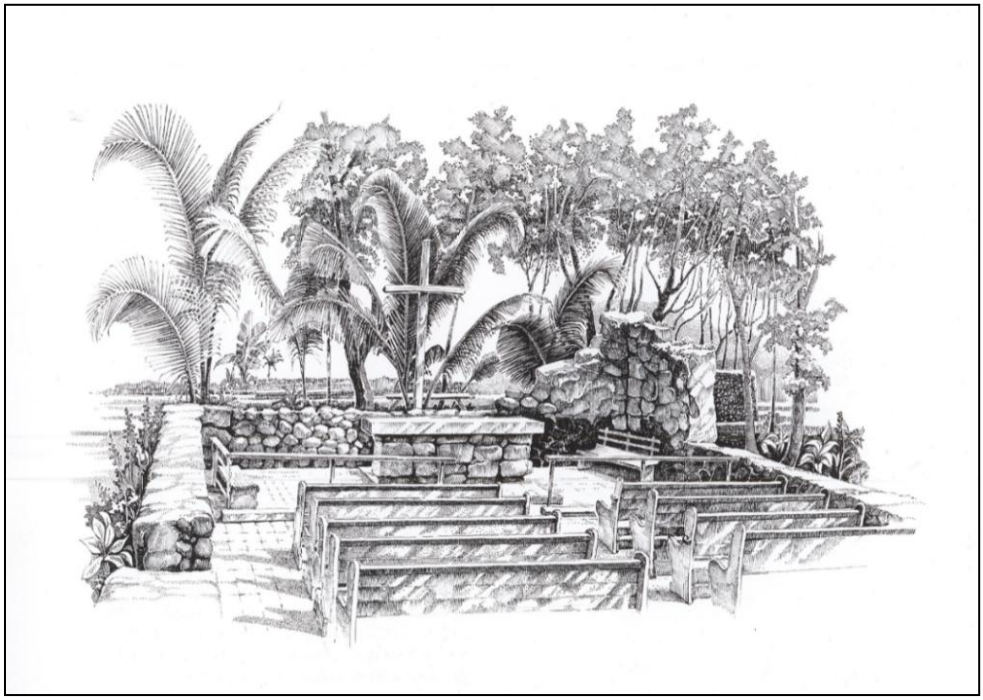


Figure 8. Artist rendition of Kilolani Church, also known as Trinity By the Sea (Skolleborg 1993:65); the church was reputedly burned ca. 1893 and further destroyed by a storm in 1900; congregations began attending the church ruins in the late 1970s; open-air services are still held at the ruins today (Trinity Church By-the-Sea 2020)

Irish potatoes” and served as a gathering place for the whaling sailors (Burgett and Spear 1995:6). David Malo created a counter to the boisterous whaling crowd by constructing the Kilolani Church at Kalepolepo around 1852 (see Figure 8).

Potato production prospered in Kula from 1830 through 1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6–7). Halstead ran his store until 1876, closing shop when the potato industry diminished (Janion 1977:25–31).

4.3 The Māhele and the Kuleana Act

Initiated by the Organic Acts of 1845 and 1846, the most significant change in land-use patterns and land allocation came with the Mahele of 1848 and the privatization of land in Hawai‘i. This action hastened the shift of the Hawaiian economy from subsistence-based to market-based. During the Mahele, all lands in the Kingdom of Hawai‘i were divided among *mō‘ī* (king), *ali‘i* (chiefs), *konohiki* (resident overseers of an *ahupua‘a*), and *maka‘āinana* (tenants of the land), which allowed the land to pass into the Western land tenure model of private ownership. On 8 March 1848, Kauikeaouli (Kamehameha III) further divided his personal holdings into lands he would retain as private holdings and parcels he would give to the government. This act paved the way for government land sales to foreigners (Chinen 1958).

Native Hawaiians who wanted to claim lands on which they lived were required to present testimony before the Board of Commissioners to Quiet Land Titles. Upon acceptance of a claim the Board granted a Land Commission Award (LCA) to the individual. The awardee was then required to pay in cash an amount equal to one-third of the total land value or to pay this commutation fee in unused land. Following this payment, a Royal Patent gave full title of ownership to the tenant (Chinen 1958:8–14). In this way, the government of Hawai‘i offered land for sale to both Native Hawaiians and foreigners. Such lands were referred to as Royal Patent Grants or as Grants.

On 19 October 1849, the Hawaiian Privy Council adopted resolutions to protect the rights of Native tenants, the *maka‘āinana*. The Kuleana Act of 1850 confirmed these rights. Under this act, the claimant was required to produce two witnesses who knew the claimant and boundaries of the land, knew that the claimant had lived on the land for a minimum of two years, and knew that no one had challenged the claim. The land also had to be surveyed. Native tenants or naturalized foreigners who could prove occupancy on the parcels before 1845 could be awarded lands they occupied or that they cultivated as *kuleana* (land holding of a tenant or *hoa‘āina* residing in the *ahupua‘a*) awards. No commutation fee was necessary to apply for a Royal Patent for a *kuleana* award, as the commutation fee had presumably already been paid by *ali‘i*/*konohiki* who had been awarded the entire *ahupua‘a*, or an *‘ili* in which the native tenant claimed his own small parcels (Chinen 1958:29–30).

Despite the effort to allocate lands to the *maka‘āinana*, the *ali‘i* control of the majority of lands persevered and much of these lands were ultimately obtained by foreigners for commercial agriculture and ranching enterprises. In many cases, land sales to foreigners were vast and often encompassed large portions of the *ahupua‘a* in which they were located. Additionally, while *kuleana* awards were granted to native tenants in fee simple and free of commutation at Honua‘ula, payment to the government surveyors and Land Commission to cover costs to survey the lots also

became a factor in decisions to keep or abandon claims. According to Alexander (1890:119), between 1850 and 1860, nearly all desirable government lands were sold.

An 1885 Hawaii Territorial Government Survey map shows the current project area within Crown Lands (Figure 9), which the king divided into large land grants. The project area is within Land Grant 9325:1 (Figure 10). The TMK: (2) 2-2-002 indicates Land Grant 9325:1 consists of over 2,600 acres under ownership of Haleakala Ranch (see Figure 2), which was likely granted this parcel in the late 1800s or early 1900s.

4.4 Late 1800s through Early 1900s

By the time John Halstead closed shop in 1876, the boom years of Kalepolepo had passed. By 1880, the government survey of the Kula area showed the demarcation of only a few LCAs, and those who had received awards had replaced them with grants. Lower Kula consisted primarily of pastureland for ranching (Wong Smith in Donham 1992:B-6). Kennedy (1992:9) notes that at this time *kiawe* (*Prosopis pallida*) was imported to feed cattle and provide wood.

Regarding the settlement at Kalepolepo and the impact of the changes associated with the conversion to ranching on the general area known as Kīhei, Clark (1980:48) comments,

> Halstead finally closed his store in 1876, as demands for his goods had steadily decreased, and moved to Ulupalakua […] By this time the once thriving Hawaiian village at Kalepolepo had been almost totally abandoned as well. The slopes of Haleakala had gradually become denuded of their forests and torrential rains had caused heavy soil runoffs into the Kalepolepo shoreline. Cattle had trampled down the brush and grassy fields, causing sand dunes to drift and fill up the pond. Clouds of dust filled the air instead of cooling winds. Except for a handful of fishing families, Kalepolepo [and likely the Kīhei area in general] was deserted. [Clark 1980:48]

In 1920, the U.S. Congress passed the Hawaiian Homes Commission Act to administer and manage some 200,000 acres of land that belonged to the government of the Kingdom of Hawai‘i or that were recognized as Crown lands. Agricultural homesteads were to be leased to Native Hawaiians with leasehold terms generally lasting 99 years at one dollar a year. The following year, the program began attracting people to Moloka‘i where Kalaniana‘ole Colony was the first homestead established under the Hawaiian Homestead Act of 1920 (Keesing 1936). By 1929, the program had expanded, and Waiakoa Homesteads had been established north of the project area (Figure 11). By 1933, Kama‘ole Homesteads were present southwest of the project area (Figure 12). A 1954 map shows additional homesteads, Waiohuli-Keokea Beach Homesteads, spanning across lands west of the project area (Figure 13). The Hawaiian Homes Commission encouraged agricultural pursuits, raising livestock, and ranching on homestead lands.

The shift in the economics of coastal areas to ranching was also discussed by E.S. Craighill Handy, who noted that large sections of “Crown Lands” which had not been claimed as *kuleana* [family homestead property] during the Mahele (1848 and later) were given by the Kingdom to various ranchers. The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains were soon covered in *kiawe* forests (Handy and Handy 1972:510–511). In this manner, upland agricultural pursuits gradually gave way to ranching activities. A 1933 map shows the project area and surrounding lands labeled as grazing lots (see Figure 12).

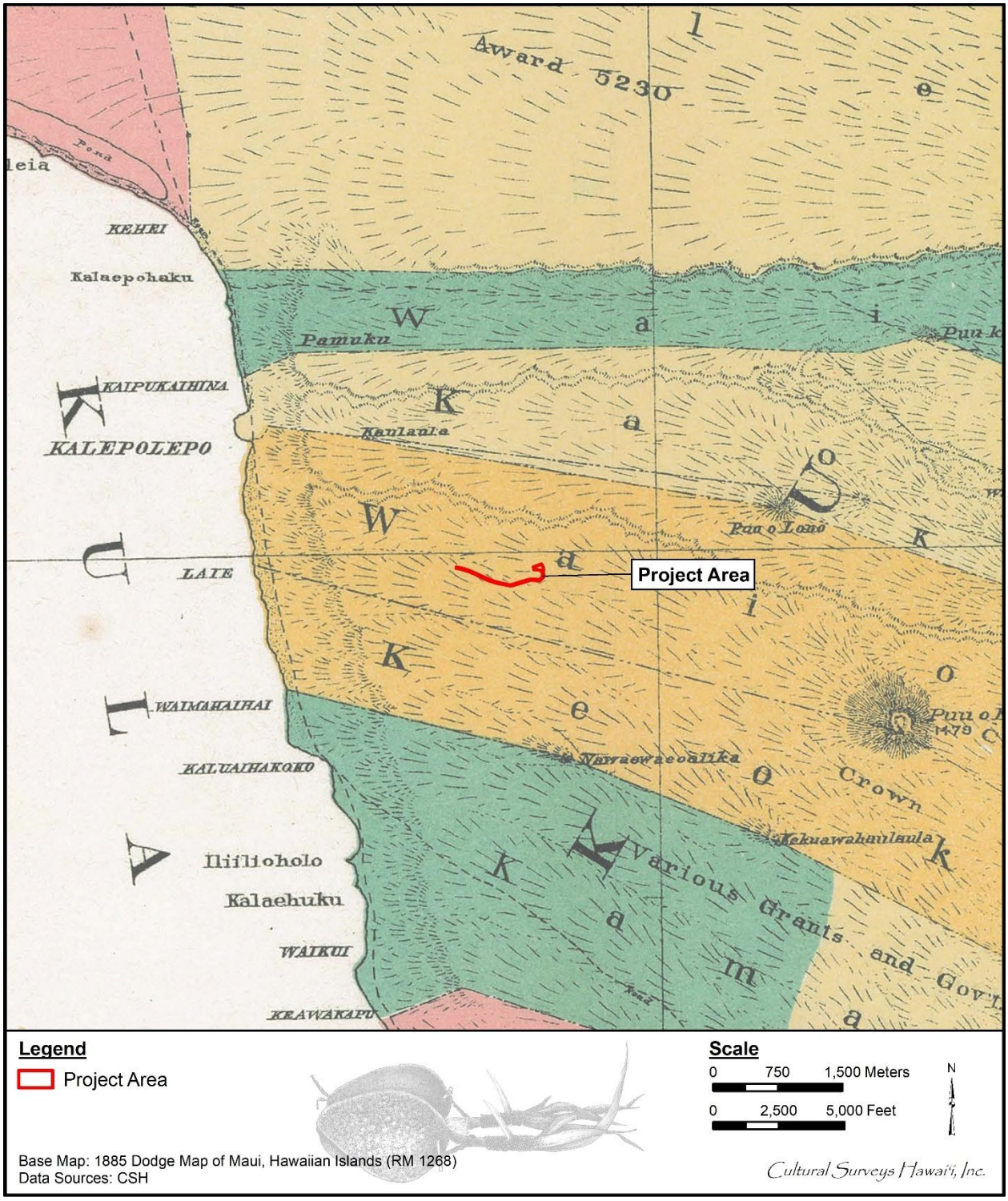


Figure 9. Portion of Dodge (1885) map showing the project area within Crown Lands

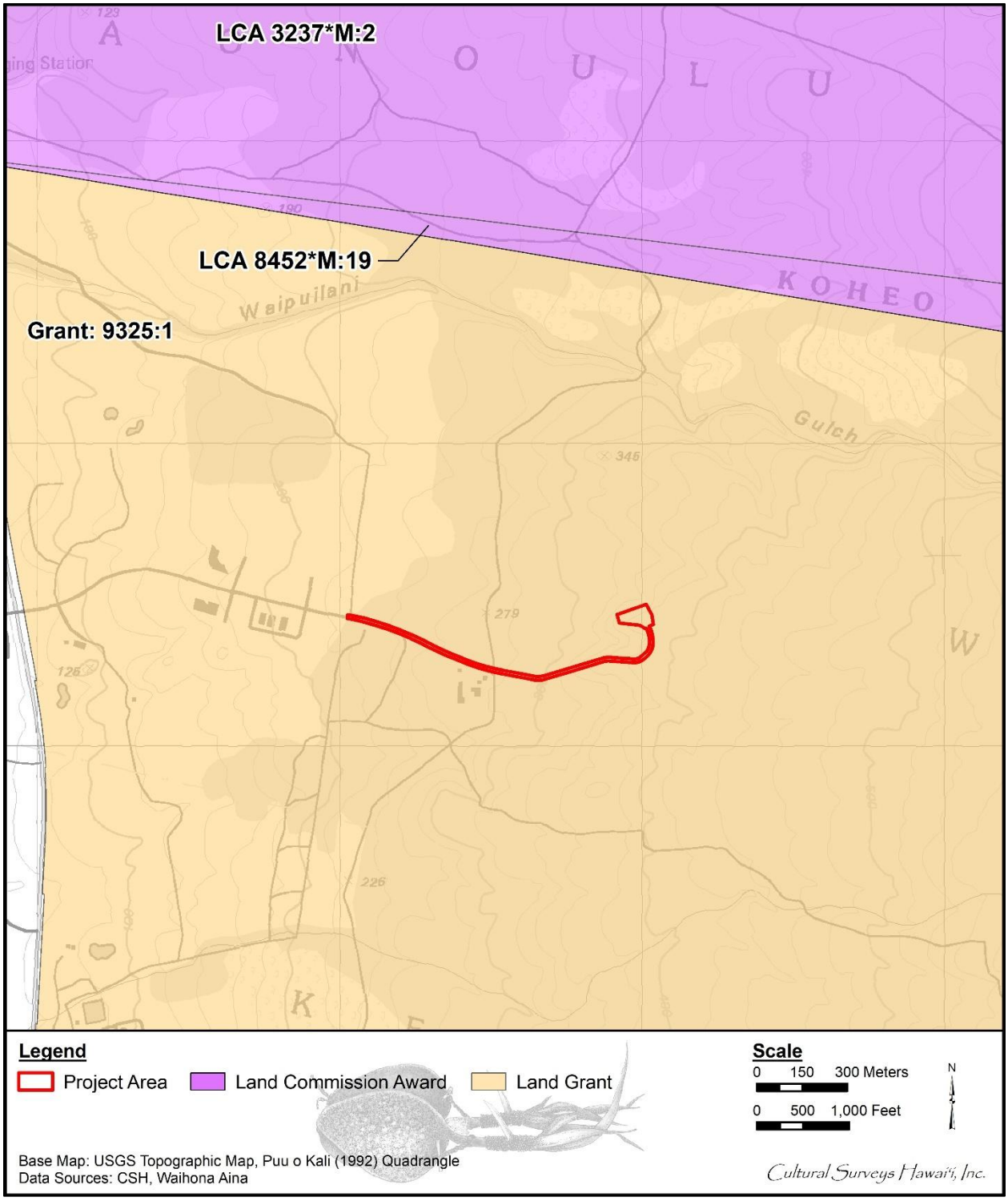


Figure 10. Portion of the 1992 Puu o Kali USGS quadrangle showing the project area almost entirely within Land Grant 9325:1

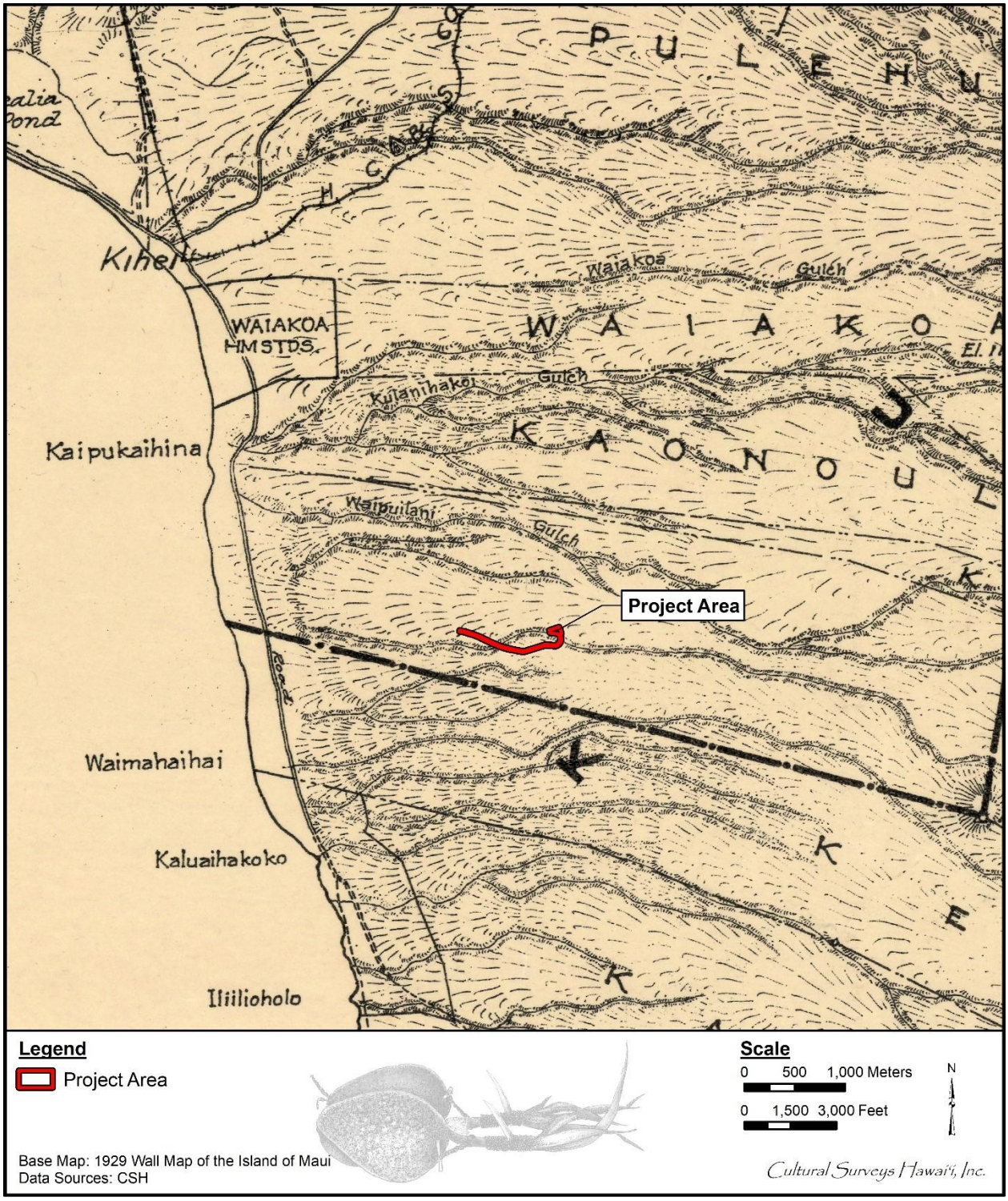


Figure 11. Portion of a Wall (1929) map of Maui showing Waiakoa Homesteads and a segment of HC&S (Hawaiian Commercial & Sugar Company) railroad north of the project area

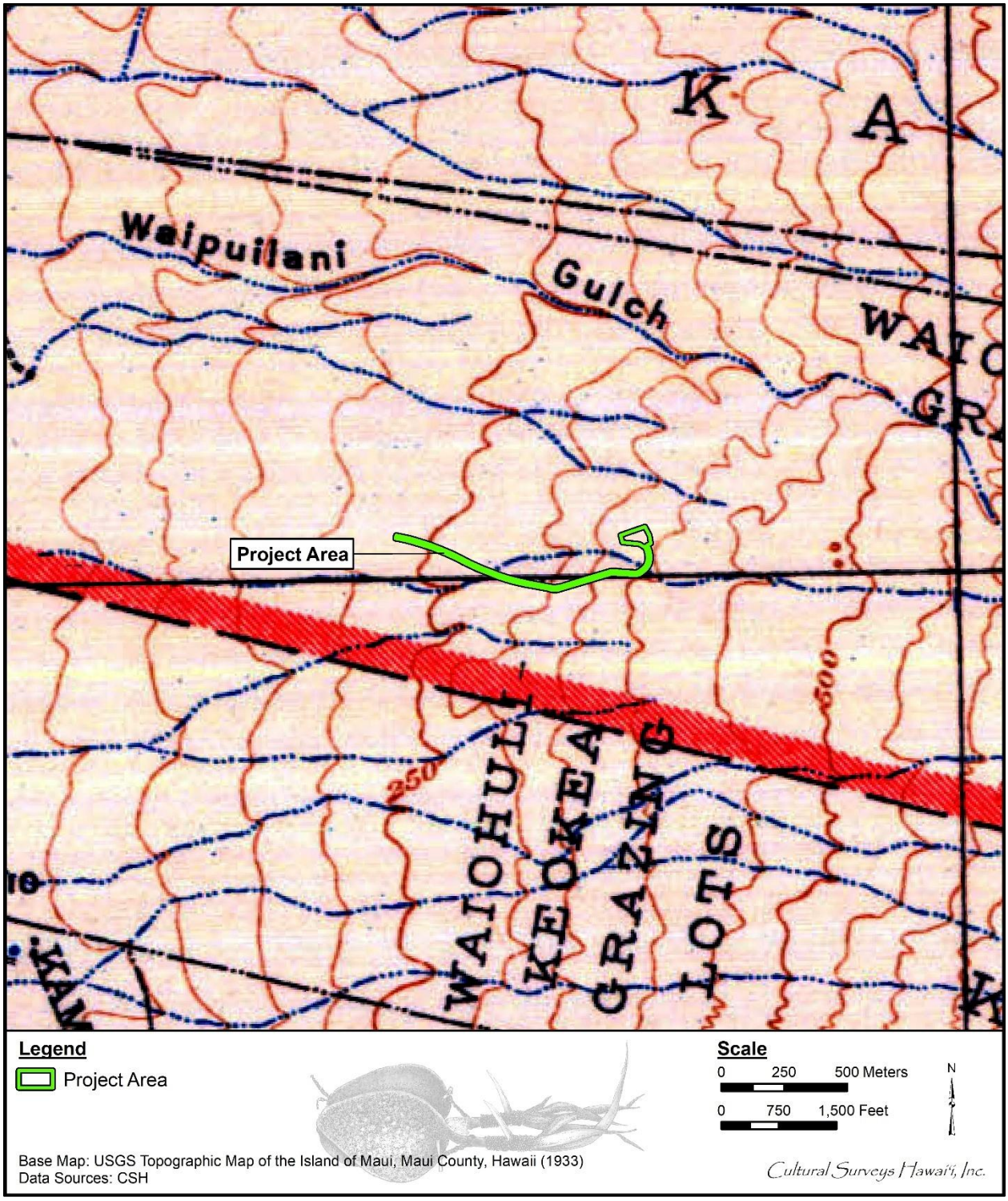


Figure 12. Portion of a 1933 USGS topographic map of Maui showing the project area south of Waiokoa Homesteads, north of Kama‘ole Homesteads, and within and surrounded by grazing lots

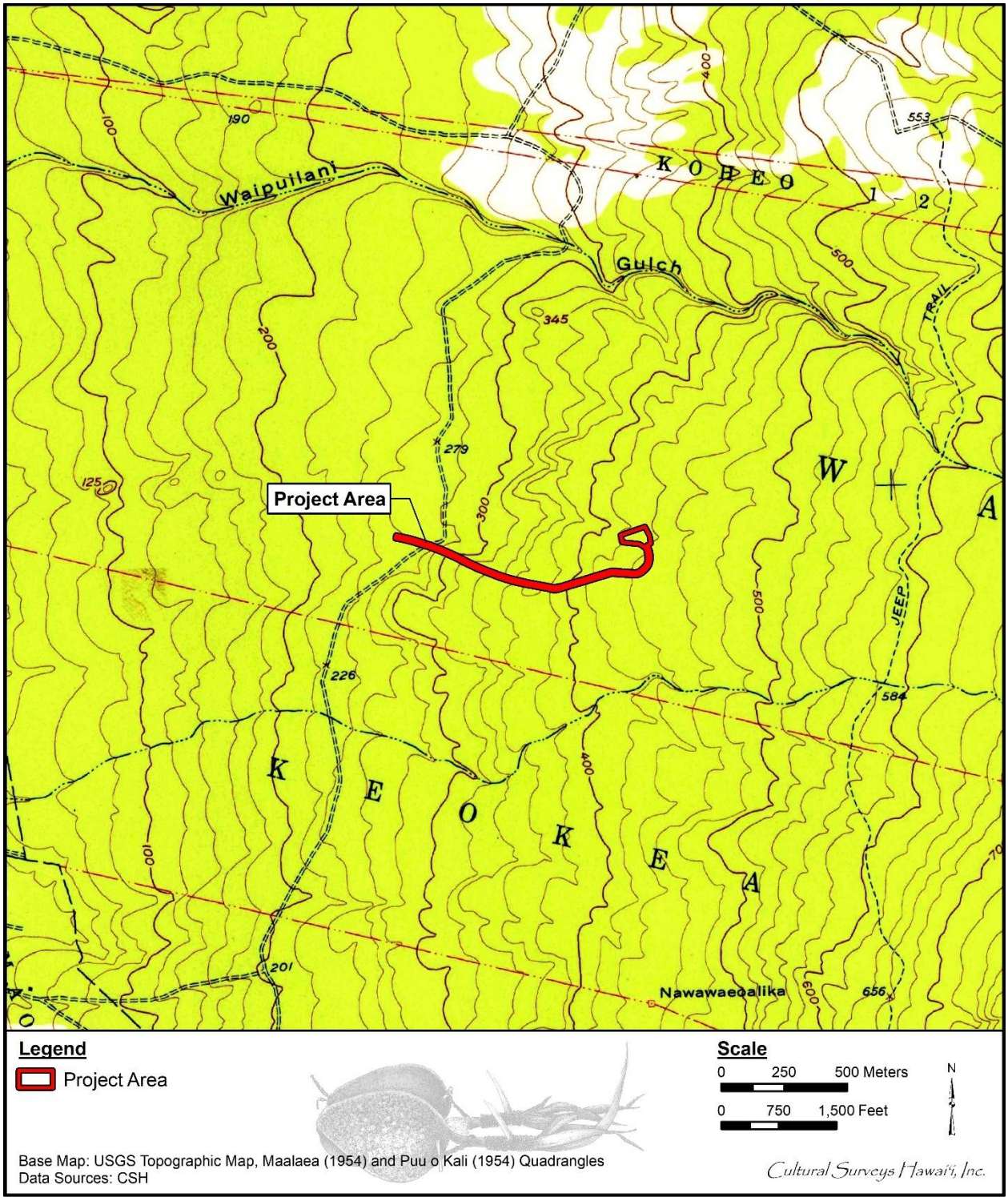


Figure 13. Portion of 1954 Puu o Kali USGS topographic quadrangle showing Hawaiian homesteads along coastal areas north (Waiokoa), west (Waiohuli-Keokea Beach), and south (Kama‘ole) of the project area

4.4.1 Sugar Cultivation

Demand for locally produced agriculture dropped with the closure of the entrepot at Kalepolepo. However, sugar would soon fill the void, and in late 1898, Kīhei Plantation Company, Ltd (KPC) was organized with a capitalization of 60,000 shares at $50 par value. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui's arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).

The history of Kīhei Plantation Company begins with the annexation of the Hawaiian Islands by the United States in 1898. Sugar prices were rising due to the outbreak of war between the United States and Spain over the colonies in Cuba, Puerto Rico, and the Philippines. Henry P. Baldwin, of the Maui plantation of Hawaiian Commercial & Sugar Company (HC&S), entered into a partnership with O‘ahu businessman Benjamin F. Dillingham to convert Lorrin A. Thurston's landholdings in Kīhei into a sugar enterprise (Dean 1950:62).

Up to that time, sugar cultivation within the central isthmus of Maui was centered around the main towns of Wailuku and Kahului. Water tunneled from springs in the West Maui Mountains flowed through ditches in Wailuku to irrigate fields as far away as Mā‘alaea. Water from the windward rain belt of Kailua ran through a network of ditches from East Maui to Pā‘ia, to irrigate fields in Pu‘unēnē (Wilcox 1996).

The McCandless Brothers drilled a successful Maui-Type well (U.S. Geological Survey Well 14 / Hawaiian Commercial & Sugar Well K1) in 1899. It was located just inland from the coast in North Kīhei, between Keālia Pond and the Waiakoa Homestead Lands. This well was drilled vertically to approximately 60 ft through the Honomanū basalts, and tunneled laterally over 1,500 ft in order to skim 10 million gallons of fresh irrigation water per day from sources beneath the Kīhei plains (McCandless 1936).

The plantation company in Kīhei built bridges to span streams and gulches flowing through the company fields. The plantation had planned the construction of a mill in North Kīhei and ordered a plant to be built. It was decided that the new HC&S mill under construction at Pu‘unēnē would have more than enough capacity to mill all the cane from the Kīhei fields. The order for the mill was transferred to the ‘Ōla‘a Sugar Company on Hawai‘i in exchange for a supply of steel rails for new railway requirements at Pu‘unēnē. A large-scale Kona storm hit the plantation on 15 November 1900 and caused immense damage to both Kīhei and the HC&S fields in Pu‘unēnē. Bridges were knocked out, buildings were flattened, and washouts filled irrigation ditches with silt. Repairs were effected immediately, with the new HC&S mill at Pu‘unēnē commencing operations 29 January 1902 (Dean 1950).

Kihei Plantation Company had the McCandless Brothers drill two or three additional Maui-Type wells on the north side of reservoir K2 at the discharge end of the existing pipeline of Well 14. The plantation in Kīhei failed in 1908 before the well site was fully developed. It would have been named the HC&S K2 well and would have included a large pumping station (Stearns and Macdonald 1942).

4.4.2 Railway Operations

Kihei Plantation Company planned to construct a railway to move their cane. The sugar agency of William Dimond & Company placed an order for a locomotive from the Baldwin Locomotive Works in Philadelphia. The order was placed April 1899, and the plantation locomotive Haleakala was built and sent on to Maui (Condé and Best 1973).

By March 1900, the first annual report of the Kihei Sugar Company stated, “It was our intention to complete the main [rail]road only as far as Camp #2, or for about 2 miles, but as the development of Camp #3 required pushing on of the road one and a half miles further, this has been done, having been completed the 15th of February” (Condé and Best 1973:230). An additional six miles of track connected the Kīhei wharf to the various well pumping stations, and north to meet up with HC&S track (Condé and Best 1973). Establishing the railroad at Kīhei made possible harvesting and transporting over 2,000 tons of sugar in a single year (Figure 14) (Dean 1950).

The laying of the railroad and the cultivation of the sugarcane was performed primarily by Japanese field labor. Kīhei’s plantation Camp #1 was set up inland of the Kīhei wharf and mooring pier. Two stables and a plantation store were located at Camp #1. Hospital services were provided by HC&S in Puʻunēnē. Kihei Camp #3 was located 2 ½ miles north of Kihei Camp 1 at Kolaloa Gulch, along the North Kīhei line of the HC&S railroad (Shoemaker 1907).

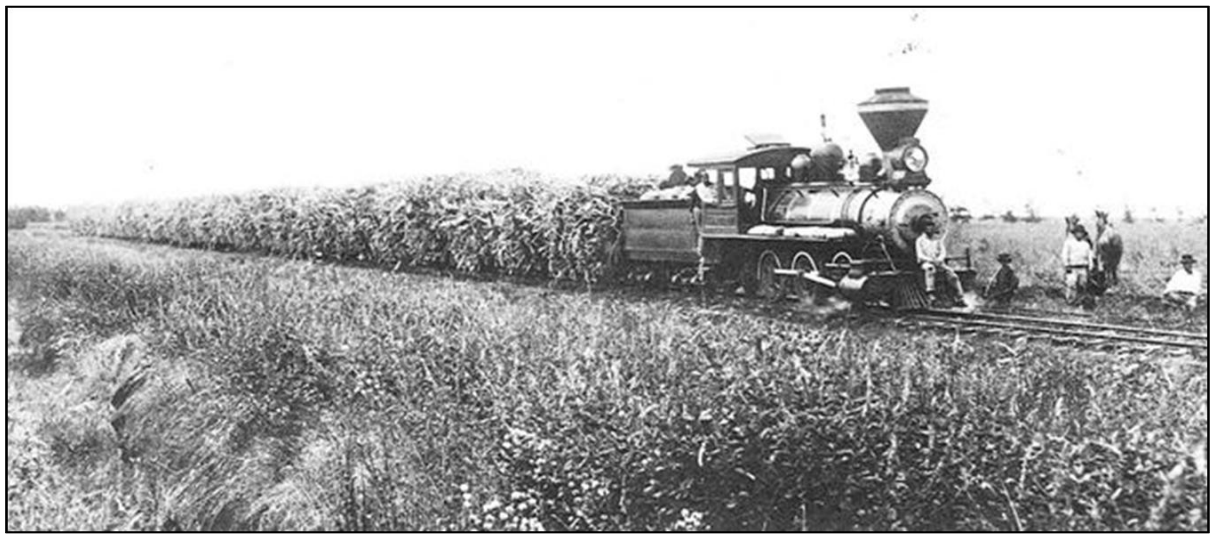


Figure 14. KPC locomotive Haleakala transporting cane from Kīhei fields to the mill at Puʻunēnē, ca. 1905 (Condé and Best 1973:231)

When the plantation was forced to close in 1908 due to diminished returns and underdeveloped water sourcing, the entirety of the company’s rolling stock was absorbed by a subsidiary of HC&S. This included a Baldwin 10-ton locomotive, two large flat cars, and approximately 235 cane cars. After this merger, the rolling stock of the KPC was absorbed into the larger system that connected Kahului and Kīhei to plantations further east of the central isthmus. After acquiring the locomotive, the name was changed from Haleakala to Hawaiian Commercial & Sugar #4, becoming renamed again in 1910 as Kihei (Figure 15) (Condé and Best 1973:230–231). A portion of HC&S railroad into Kīhei is depicted on 1929 and 1933 maps of Maui (see Figure 11 and Figure 12).

4.4.3 Water Source Development

The Lowrie Ditch project, named for former HC&S manager William J. Lowrie, brought an additional source of water to the Kīhei plains. His plan was to begin the ditch at the Pāpa‘a‘ea Reservoir, at the 1,000 ft elevation, and maintain a 4-ft drop per mile following the ditch’s initial plunge from the Kailua reservoir. Steep mountain gulches were traversed using the force of the constant weight of water flowing in a series of siphons. Halehaku Gulch, at 250 ft deep, and Māliko Gulch, at over 350 ft deep, were both crossed by giant siphons fabricated of three-eighths-inch iron, and set in place by Japanese laborers. At a weir located above Pā‘ia, the allocation of water began. The first tenth of the water flow in Lowrie Ditch was divided out to Pā‘ia Plantation (an 11/20ths share) and Haikū Plantation (a 9/20ths share). The distance traveled, from Kailua to the plantation’s Kīhei boundary, was 21.9 miles (Thrum 1900).

More water was required from wells and the East Maui watershed. The manager for Kihei Plantation Company, W.F. Pogue, asked the management of HC&S for an even larger allocation of water for the Kīhei lands. In 1901, Samuel T. Alexander ordered the construction of a new ditch, tapping the water sources from Nāhiku to Honomanū. Kihei Plantation Company would receive 2/9ths of the capacity from the enterprise (Dean 1950).



Figure 15. KPC locomotive servicing HC&S mill as Hawaii Commercial & Sugar No. 4 (Condé and Best 1973:231)

The Kihei Plantation Company failed to live up to the expectations of its promoters with an inadequate water supply as the key difficulty. With the waters of the Ko‘olau Ditch flowing to the Kīhei fields, production appeared to have hit its peak. Although 5,609 tons of sugar was delivered in 1903, high costs required a change of managers in Kīhei, and a reduction of the HC&S milling charge to $7 per ton. The incoming HC&S manager, Frank Fowler Baldwin, determined the best course of action was to buy out the company for $375,000 (Condé and Best 1973).

In 1908, the lands of Kihei Plantation Company were divided up between five new major business entities of HC&S: Kailua Plantation Company (994 acres); Kalialinui Plantation

Company (923 acres); Kula Plantation Company (996 acres); Makawao Plantation Company (982 acres); and Pulehu Plantation Company (978 acres), which acquired the remaining acreage not included in the railroad right-of-way. Water rights reverted to HC&S, and were reapportioned among the new plantations (Dean 1950). The best fields continued to be cultivated, while other plantation sugar lands became cattle pasture (Cox 1976:14–15). Sugar was never grown within the current project area or its immediate surroundings. Sugar operations continued in North Kīhei until ca. 1968, when HC&S leased lands to a corn research farm.

4.5 Mid- to Late- 1900s

While World War I had little impact on Maui, World War II brought with it a significant military presence. United States (U.S.) Marines resided and trained at Camp Maui in Kokomo, and held training maneuvers on Kaho‘olawe and at Ma‘alaea Bay, including amphibious landing training along beaches and other exercises carried out in *kiawe* groves east of the bay (Allen 1950; Speakman 1978). U.S. Navy presence on Maui included the Combat Demolition Training Station at Kama‘ole and two naval air stations, one at Pu‘unēnē and the other at Kahului (Allen 1950). The training station at Kama‘ole was responsible for research work at Kīhei as early as 1940.

The Kīhei shoreline served as an invaluable training ground for amphibious warfare in the Pacific during World War II. Of all the Navy training in the Hawaiian Islands, probably the most rigid and intense was that of the Combat Demolition Training Station at Kama‘ole, Maui, where, after the autumn of 1943, 40 teams of 100 men each were prepared for reconnaissance and demolition work (Allen 1950:191). As early as May 1942, servicemen from the 108th Infantry Regimental Combat Team of the 27th Infantry Division guarded the south Maui beach areas (Love 1949:19). Structures that remain from the World War II garrison forces include intact reinforced concrete pillbox positions, one of which is located at the beach adjacent to the Hale Hui Kai Condominium on Keawakapu Beach and another at the seaward edge of Ulua Beach in Wailea.

Statehood in 1959 resulted in the adoption of new civic plans for South Maui. Beginning in the 1960s, development of the coastal Kīhei area shifted from sugar plantation and related railroad operations to vacation condominium development. Kihei underwent rapid residential and commercial development beginning in the 1970s. Clark (1980:49) notes the groundwork for this development was established in the late 1950s when investors began purchasing coastal property. However, the construction boom of high-rise apartments, hotels, and condominiums and corresponding shopping centers, restaurants, and real estate offices did not occur until the 1970s. Along with the condominiums and “classy” hotels (Maui's “hallmark”) came the construction of millionaire homes in the dry hills overlooking Kīhei and the view beyond of Kaho‘olawe and Moloka‘i (Speakman 1984:188). Speakman (1984:188–189) comments on the congestion and overcrowding that resulted from this development:

> It was partially blamed on the fact that Kihei was owned by many proprietors or speculators, each with individual plans uncoordinated with general planning, and partly on the failure of the County planners to hold the line against the runaway development. Kihei became the model for the wrong way to go about expansion [Speakman 1984:188–189]

Between 1970 and 1996 vacation rental units increased from 2,641 to 17,442. The leeward coasts, including Kīhei, became popular tourist destinations (Juvik 1998:14). Groundbreaking for

Pi‘ilani Highway, which constitutes a portion of the current project area, occurred in October 1979 (*Honolulu Advertiser* 1979). This bypass highway was constructed to ease the congested Kīhei traffic which resulted from commercial and residential development and expansion of the tourist industry. A series of aerial images shows development of areas within and surrounding the project area from 1950 until the year 2000 (Figure 16 through Figure 19).

As discussed by Wong Smith, agriculture and cattle raising continued to be important activities in the Kula area throughout the twentieth century (Brown and Haun 1989:C-7). TMK: (2) 2-2-002 shows the following landholders: Haleakala Ranch Company, Kaonoulu Ranch Company, Ltd., Maui [Land and] Pineapple Company, Ltd., the State of Hawai‘i, and Hawaiian Homes Lands (see Figure 2). While Haleakala Ranch Company and Kaonoulu Ranch Company, Ltd., appear to own large portions of this TMK, Ulupalakua Ranch, Inc., is another significant ranching enterprise in the Kula area. During the 1970s, Kula produced the majority of Hawa‘i’s locally grown produce; livestock ranches comprised most of the remaining land use. At present, non-residential areas are still in use as centers of agricultural production, particularly in the “potato district” of Kula (Donham 1992:5). Haleakala, Ulupalakua, and Kaonoulu Ranches are also still in operation. Lands surrounding the project area were still being utilized as grazing grounds for cattle in the year 2000 (Kikiloi et al. 2000).

4.6 Contemporary Land Use

The Waiohuli area of South Kīhei has experienced steady development in more contemporary years as population has grown and transportation, housing, recreation, and infrastructure have expanded to support such growth. Developments *makai* of the project are and in the vicinity of Līpoa Parkway include Līpoa (formerly Maui Research & Technology Park), Maui Nui Golf Club, Hokulani Golf Villas, and the Kaiāulu O Halele‘a affordable housing complex.

Also in the vicinity is the Kīhei Wastewater Reclamation Facility (WWRF) which is located near Pi‘ilani Highway, about 1 mile from Līpoa Parkway. The facility was originally built in 1965 and expanded in 1998 to accommodate growth in South Maui (U.S. EPA 2010). The WWRF treats wastewater from homes, hotels, and businesses in Kīhei and Wailea. It produces recycled water used for irrigation, including irrigation for the nearby Maui Nui Golf Club, Līpoa, and Hokulani Golf Villas.

The Maui Nui Golf Club, located next to the intersection of Līpoa Parkway and Pi‘ilani Highway, originally opened in the 1990s as the “Elleair Maui Golf Club” and was later named “Maui Nui Golf Club.”

Līpoa is a mixed-use development dating back to the 1980s with “local private and public sector leaders intent on economic diversificiation and job creation” (Maui Rearch & Teachnology Park 2011a; Tanji 1986). The first businesses and building opened in 1992 (Tanji 1992).

Hokulani Golf Villas is a residential community built next to the Maui Nui Golf Club. Constructed in the early 2010s, the development includes approximately 152 detached condominium homes (Hawai‘i Real Estate Search 2023).

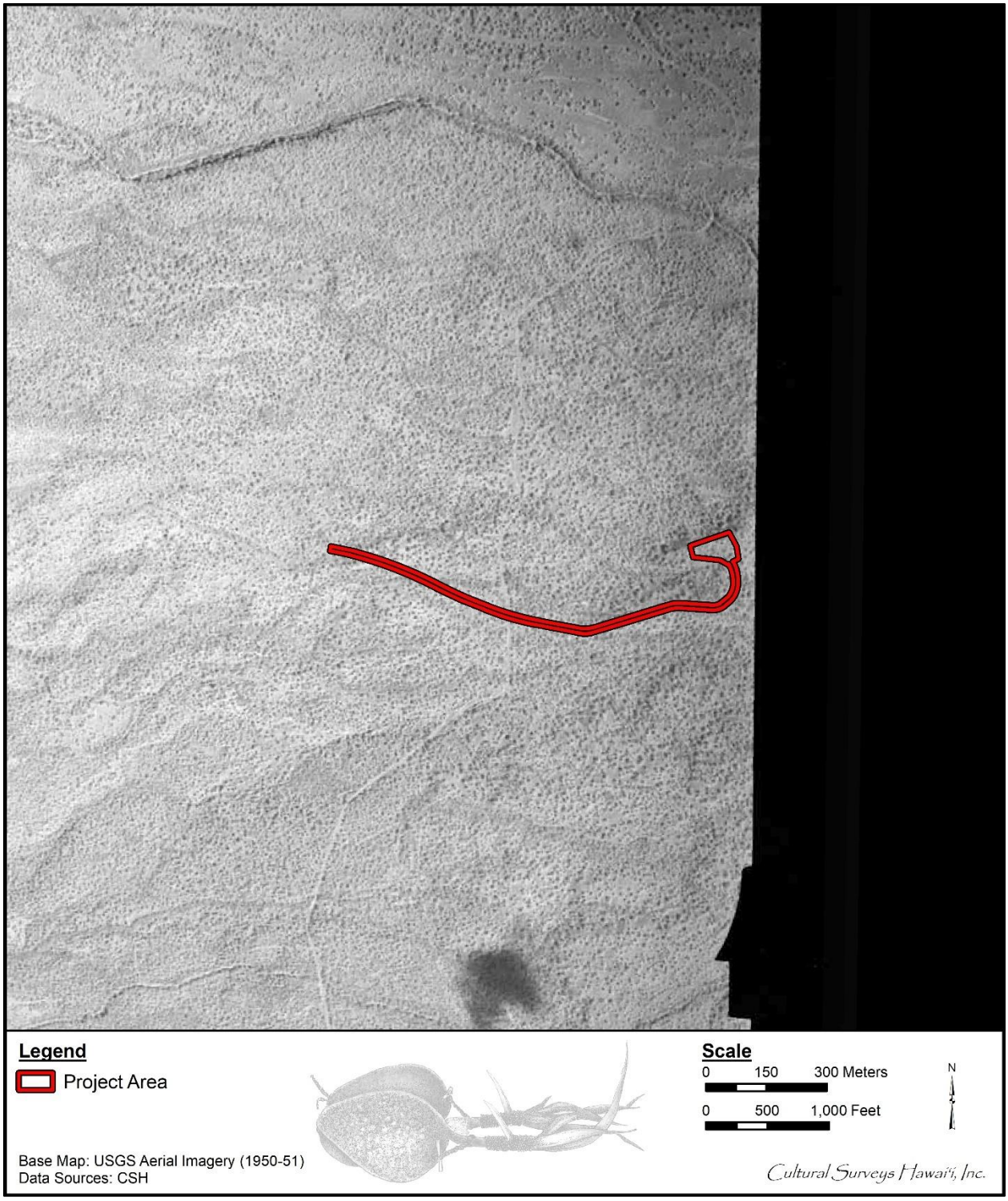


Figure 16. Aerial image showing the project area undeveloped in 1950-1951; tracts of land *makai* from the project area appear to be in initial stages of development (USGS 1950-1951)

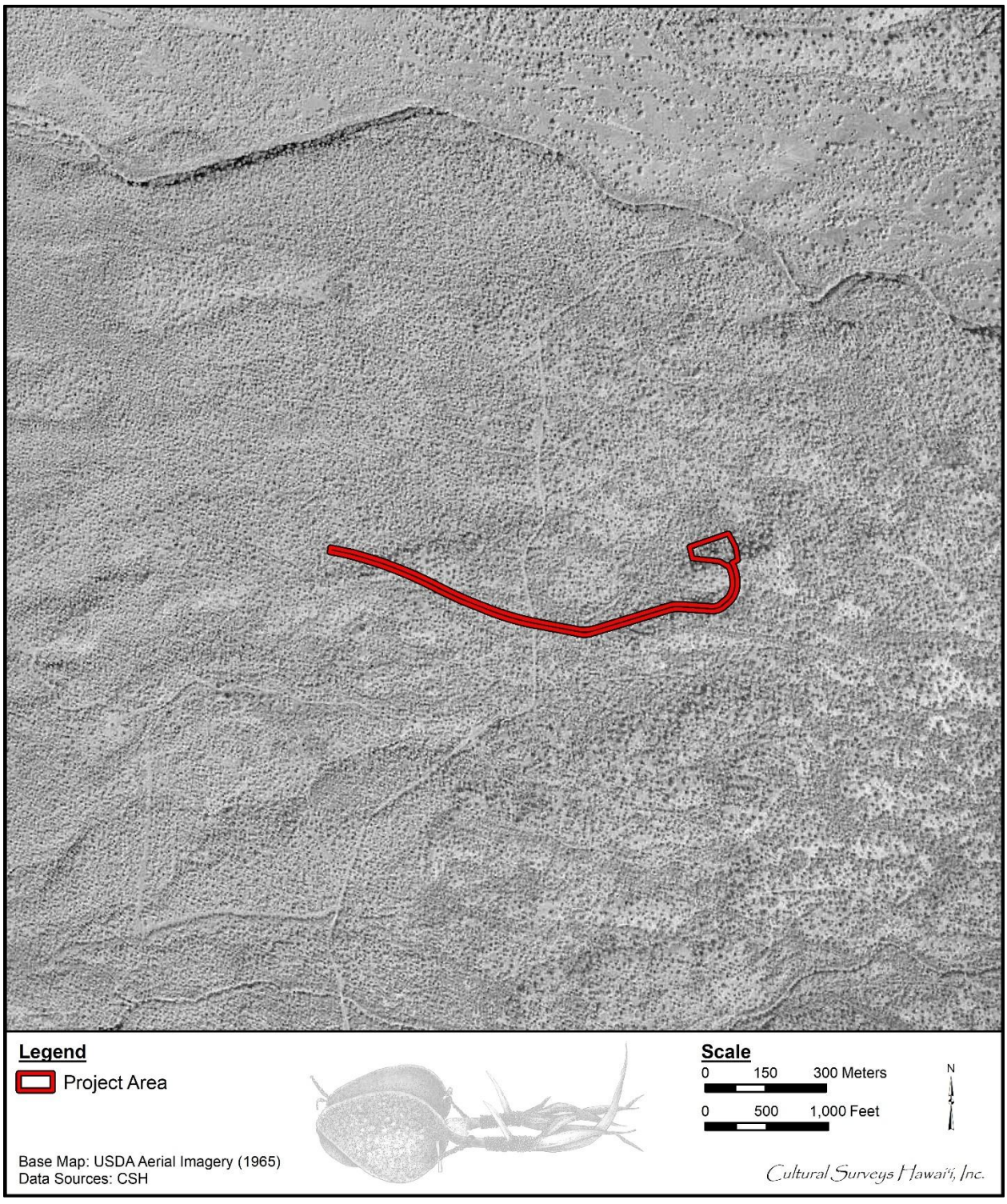


Figure 17. A 1965 aerial image showing the project area undeveloped and some minor developments *makai*, along the coast (USDA 1965)

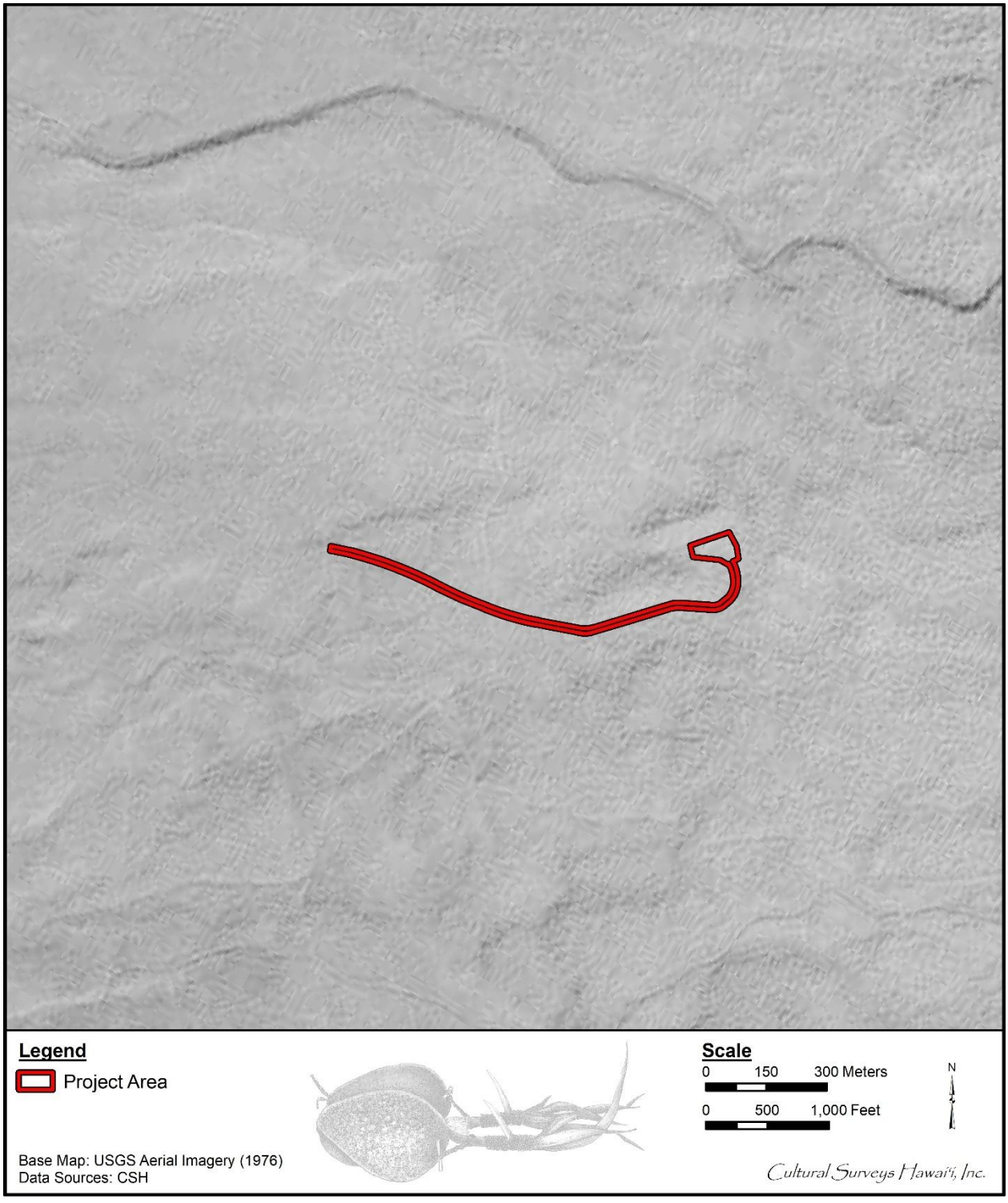


Figure 18. A 1976 aerial image showing the project area undeveloped, though with some development adjacent to its western border; coastal development has increased since the prior decade (USGS 1976)

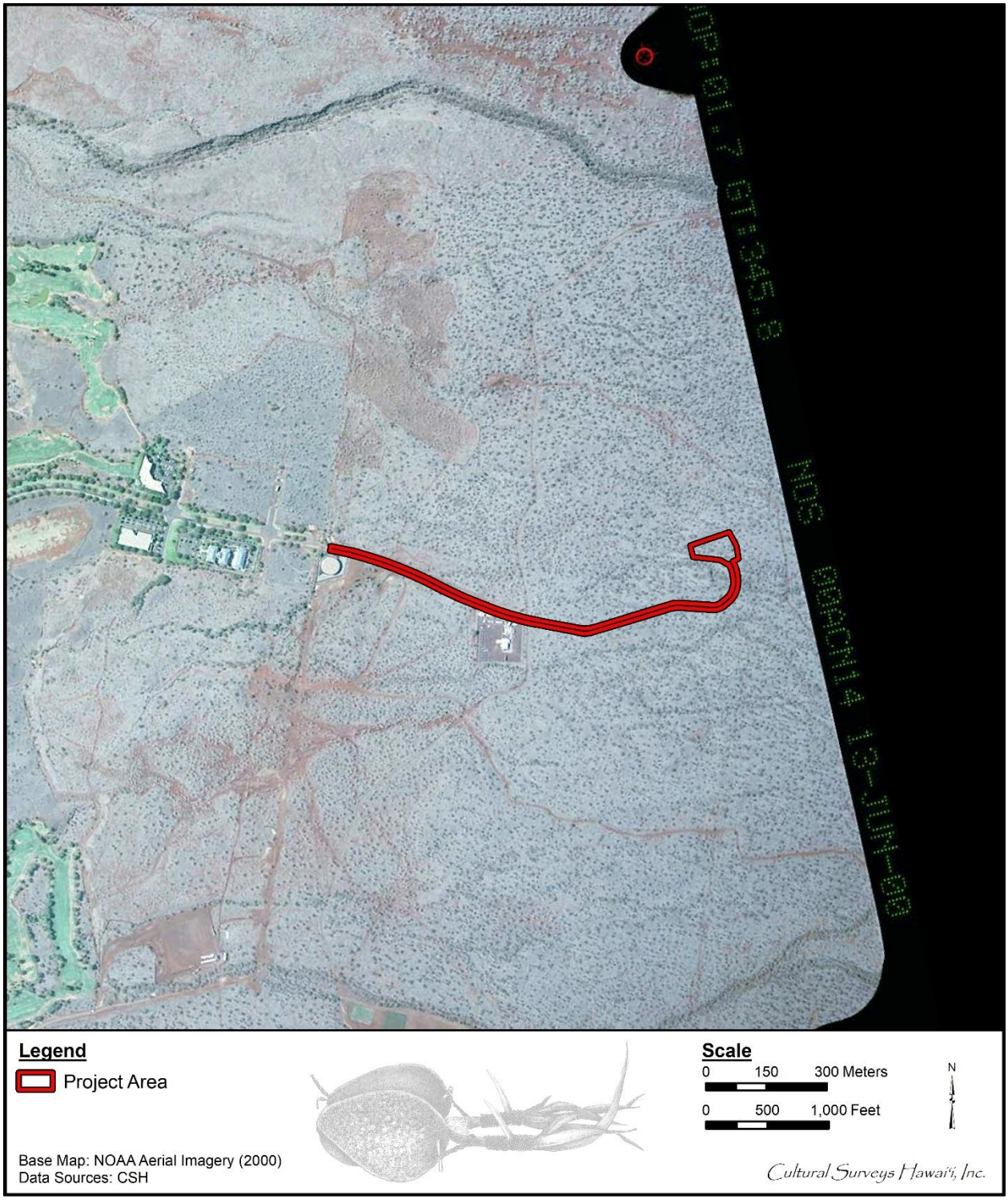


Figure 19. A 2000 aerial image showing paved roadways within the project area, some other developments of adjacent areas of Līpoa, and moderate to heavy developments along coastal areas (NOAA 2000)

Kaiāulu O Halele‘a is an affordable housing development located near the Maui Nui Golf Club. The project opened around 2022 and includes about 120 rental units for Maui residents with income restrictions (Goodfellow Bros. 2022). The development was built to help address Maui‘s housing shortage and includes family-sized apartments and community gathering spaces.

The area around Līpoa Parkway in Waiohuli has developed gradually as infrastructure, recreation, and housing expanded. The Kīhei WWRF provided essential wastewater treatment for the region, while the Maui Nui Golf Course added recreational space. Later housing projects such as Hokulani Golf Villas and Kaiāulu O Halele‘a reflect the continuing growth of residential communities in South Maui.

Section 5 Previous Archaeological Research

5.1 Overview

The earliest archaeological studies on the island of Maui were a part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies tended to focus on the generation of descriptive lists of large-scale architecture or traditional ceremonial *heiau* sites. No *heiau* or other archaeological sites were documented in the immediate vicinity of the current project area during these early studies.

Following the passage of the National Historic Preservation Act in 1966 and HRS §6E, which established the Historic Preservation Program in 1976, archaeological studies occurred as a condition of development on a more frequent basis. Since 1976, lands surrounding the current project area have been subject to a variety of archaeological studies, including reconnaissance, archaeological inventory surveys (AIS), and data recovery. No historic properties have been previously identified within the current project area. Historic properties previously identified near the project area include traditional Hawaiian temporary habitation and/or marker features. The following subsections and Table 2 summarize known archaeological studies conducted within the project area and vicinity. Locations of these studies and previously identified historic properties are depicted on Figure 20 and Figure 21, respectively.

Table 2. Previous archaeological studies conducted in the vicinity of the project area

Reference	Type of Study	Location	Results (SIHP # 50-50-10)
Kennedy 1986	Preliminary reconnaissance	Area for a proposed golf course at TMK: (2) 2-2-002; included entire current project area	No historic properties identified
Hammatt and Shideler 2000	AIS	Approximately 5 acres for proposed algae farm; TMK: (2) 2-2-002:042 por.	No historic properties identified
Kikiloi et al. 2000	AIS	20 acres for proposed algae farm; TMK: (2) 2-2-002:042 por.	No historic properties identified
McDermott 2001	AIS	Proposed area for Pi‘ilani Mauka Detention Basin No. 1; TMK: (2) 2-2-024:014 por.	Identified SIHP #s 50-50-09-05072 —05078, traditional Hawaiian temporary habitation and/or marker features

Reference	Type of Study	Location	Results (SIHP # 50-50-10)
Dega 2008	AIS	TMKs: (2) 2-2-024:012 por., 014., por., 016 por., 017 por., and 054 por.	Identified 5 historic properties; SIHP #s -06239, -06240, -06587, all post-Contact; and -06241, -06588 traditional pre-Contact
Madeus et al. 2021	AIS (recorded as archaeological assessment)	TMK: (2) 2-2-024:015	No historic properties or cultural resources identified

5.2 Kennedy 1986

In February 1986, Archaeological Consultants of Hawaii, Inc. (ACH) completed a preliminary reconnaissance of a proposed golf course at TMK: (2) 2-2-002 (Kennedy 1986), which included all of the current project area. The study was conducted on foot and in a four-wheel-drive vehicle, with a greater focus on areas near Waipuilani Gulch, which was dry at the time. Visibility was high during the reconnaissance due to arid conditions and sparse vegetation. No historic properties were identified. Kennedy (1986) concluded that encountering historic properties during development would be unlikely; as such, no further archaeological work was recommended.

5.3 Hammatt and Shideler 2000

On 31 January 2000, CSH conducted an AIS of approximately 5 acres for a proposed algae farm site at TMK: (2) 2-2-002:042 por. (Hammatt and Shideler 2000). Fieldwork consisted of a 100% coverage pedestrian survey, which included an access road that borders the southern portion of the eastern end of the current project area (see Figure 20). Evidence of recent bulldozing was observed along the corridor of this access road, and electric and utility lines were previously buried down the center of the road. Within the remaining portion of the surveyed area, the land had been altered for telephone lines and post-1950s ranching activities. Evidence of these alterations included graded roads and bulldozer scarring on exposed bedrock surfaces. The presence of several cattle carcasses and bovine excrement indicated contemporary ranching land use. No historic properties were identified. Further archaeological work was not recommended for the study area; however, an additional AIS was recommended for the adjacent lands proposed for expansion of the algae farm.

5.4 Kikiloi et al. (2000)

On 26 July 2000, CSH completed an AIS for the expanded 20-acre algae farm site at TMK: (2) 2-002:042 por. (Kikiloi et al. 2000). This survey was supplemental to the AIS conducted by CSH in January 2000 (Hammatt and Shideler 2000). As with the earlier study, the northern extent of this study area borders a portion of the eastern end of the current project area. Kikiloi et al. (2000) noted the area had been altered by heavy machinery, likely within the 50 years prior to the survey. Bulldozer push-piles and excavations for utility installation, cleared roadways, and decaying cattle

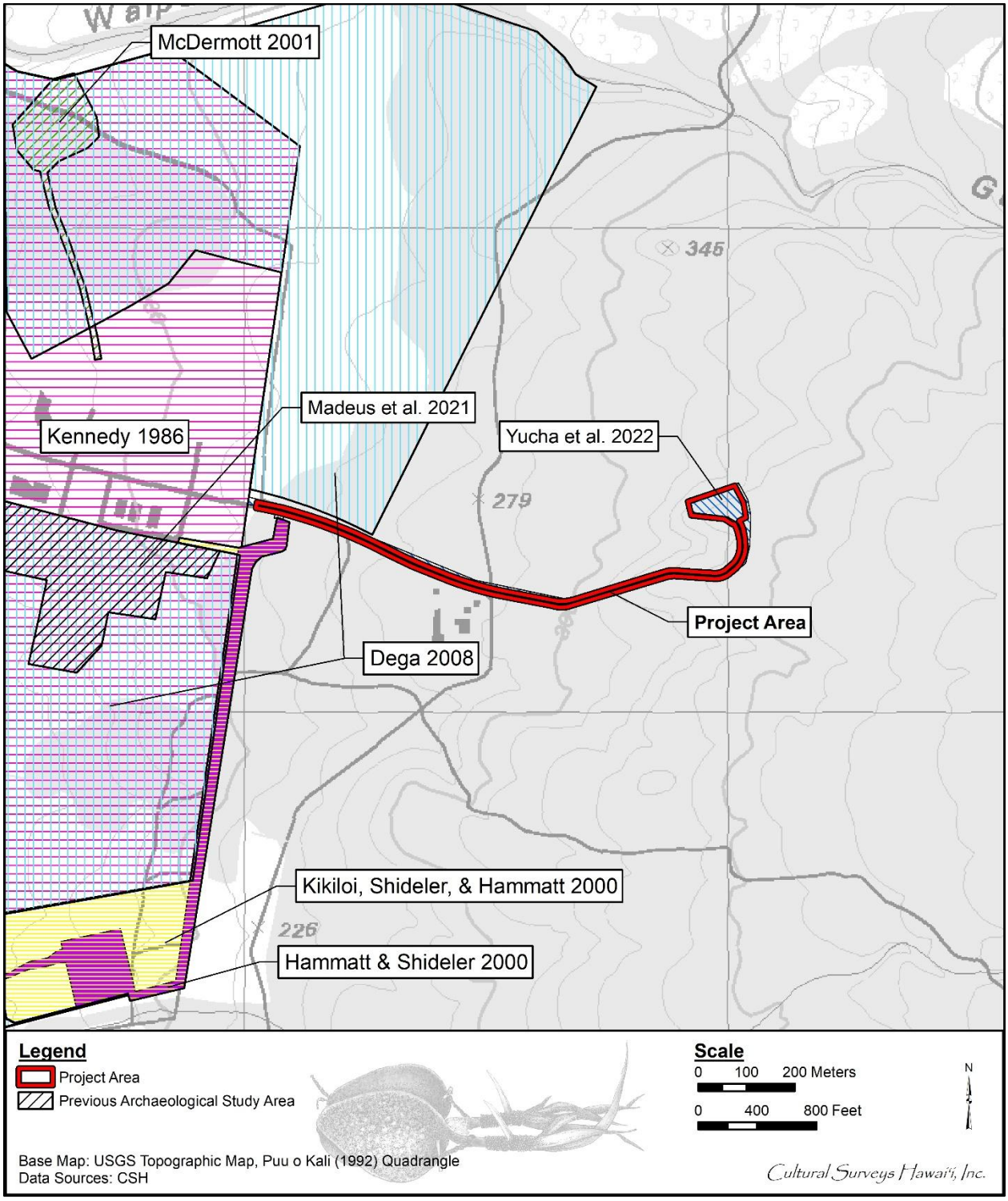


Figure 20. Portion of the 1992 Puu o Kali USGS topographic quadrangle showing previous archaeological studies conducted within the project area and immediate vicinity

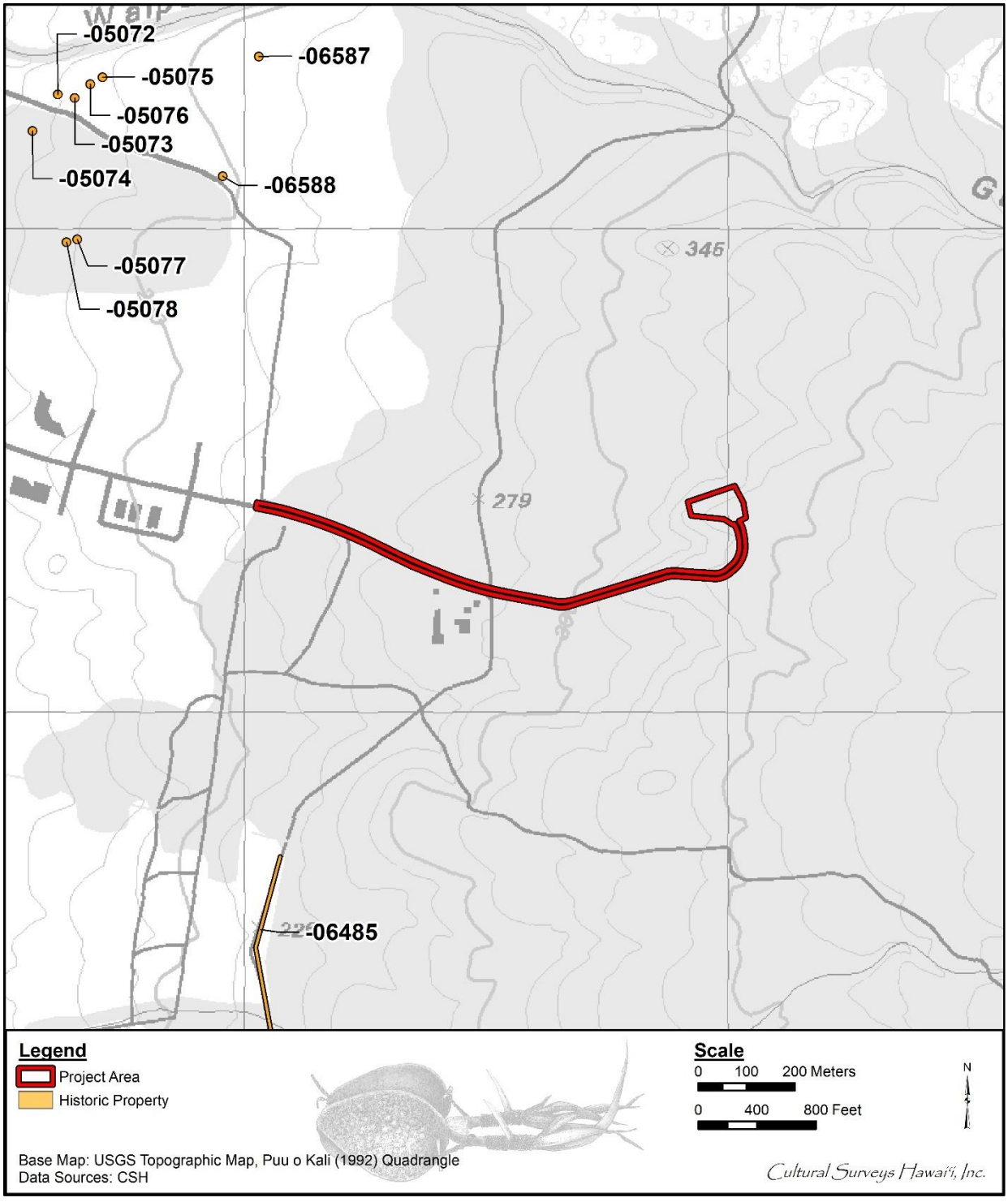


Figure 21. Portion of the 1992 Puu o Kali USGS 7.5-minute topographic quadrangle showing historic properties previously identified within the project area vicinity

were observed during the study. No historic properties were identified, and no additional archaeological work was recommended.

5.5 McDermott (2001)

From 13 February through 2 March 2001, CSH conducted an AIS of the proposed Pi‘ilani Mauka Detention Basin No. 1 Project at TMK: (2) 2-2-024:014 por. (McDermott 2001). Fieldwork included a 100% pedestrian survey and controlled excavation within select features. Seven historic properties were identified: SIHP #s 50-50-10-05072, a modified outcrop enclosure and stacked stone cairn; -05073, a rectangular enclosure; -05074, a U-shaped enclosure and two stacked stone cairns; -05075, a C-shaped enclosure and stacked stone cairn; -05076, a complex that includes a modified knoll with terraces, enclosures, stacked stone cairns, and stone linear alignments; -05077, two low stacked stone mounds, one circular, single stone alignment, and an enclosure; and -05078, a stacked stone cairn.

SIHP #s -05072 through -05077 were interpreted as temporary habitation sites, while SIHP # -05078, along with the other identified stone cairns, were identified as markers. All of these historic properties were interpreted as traditional Hawaiian features. No further work was recommended for SIHP #s -05072 through -05074. SIHP #s -05075 through -05078 were identified just outside the project area boundaries; therefore, an AIS was recommended for further investigation of these historic properties.

5.6 Dega (2008)

In 2006 and 2008, Scientific Consultant Services, Inc. (SCS) conducted an AIS of multiple undeveloped land parcels (TMKs: [2] 2-2-24:012 por., 014., por., 016 por., 017 por., and 054 por.) totaling over 338 acres in Waiohuli and Keokea Ahupua‘a for the MRTP Master Plan Update (Dega 2008). Fieldwork included a 100% pedestrian survey and controlled excavation within selected features. Five historic properties were identified: SIHP #s -06239 and -06240 are post-Contact modified outcrops; SIHP # -06241 is a linear rock wall and traditional pre-Contact boundary wall; SIHP # -06587 is a post-Contact L-shaped wall; and SIHP # -06588 is a complex of three pre-Contact rock mounds (traditional markers). No further work was recommended for SIHP #s -06239, -06240, -06587, or -06588. However, SCS recommended the landowner informally preserve the entirety of SIHP # -06241 (boundary wall) and orange construction fencing was installed around the undocumented rock shelters below Waipuilani Gulch during construction near the site.

5.7 Madeus et al. (2021)

In 2021, CSH conducted an AIS (lack of finds deemed an archaeological assessment) for the Secure Integration Support Laboratory project, located west of the current project area. No historic properties or cultural resources were identified within this project or adjacent to this project area.

5.8 Yucha et al. (2022)

In 2022, CSH conducted a literature review and field inspection (LRFI) for the current project. Two small, stacked stone C-shaped enclosures (CSH 1) were identified on the top of a high point or knoll within the project area. CSH described the site in the following:

> These small structures appear to be constructed on basalt bedrock with no discernable interior or external soil deposits. The construction style of the C-shaped enclosures is expedient single-course stacking that may have provided a small amount of temporary cover for a single individual. Based on all available information, these C-shaped structures do not appear to be traditional or pre-Contact in origin. CSH believes that these structures are most likely modern hunting blinds, but may also have been constructed during the WWII Era as part of military training exercises that occurred throughout South Maui. There are no artifacts or other material within or in the vicinity of these structures that could provide a temporal association to indicate that the structures are more than 50 years old. [Yucha et al. 2022:52]

CSH recommended consultation with SHPD, no further work for CSH 1, and stated that archaeological monitoring or project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties (Yucha et al. 2022:53). In 2023, SHPD conducted a site visit for the current project and confirmed CSH 1 to be modern hunting blinds and no historic properties were observed within the project area. SHPD determined “No historic properties affected” (Appendix B).

5.9 Discussion of Historic Properties within the Project Area Vicinity

As a result of the LRFI, as well as the consultation and site visit with SHPD, no historic properties were observed within the project area. SHPD further determined “No historic properties affected” for the project. (Appendix B).

Beyond the current project area and outside the current project parcels, there are approximately ten historic properties located in the surrounding vicinity. The majority of these historic properties are located to the northwest of the current project area (SIHP #s -05072 through -05078, -06578, and -06588). SIHP #s -05072 through -05078 consist of traditional Hawaiian temporary habitation and/or marker features. SIHP # -06578 is a post-Contact era L-shaped wall, while SIHP # -06588 is a complex of three pre-Contract rock mounds, possible traditional markers. No further work was recommended for any of these sites. SIHP # -06485 is located to the south of the current project area and consists of transportation features and a rock cairn used as a marker or reference point. This site is also associated with the post-Contact era (Fredericksen and Madeus 2009:1).

Section 6 Community Outreach

6.1 Introduction

Throughout the course of this assessment, an effort was made to contact and consult with NHO, agencies, and community members including descendants of the area, to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Waiohuli. CSH initiated its outreach effort in August 2025 through letters, emails, and/or telephone calls and concluded consultation in October 2025.

6.2 Previous Cultural Research within the Project Area Vicinity

A review of previous cultural impact assessments has been conducted for the project area. An effort was made to locate community members with ties to Waiohuli Ahupua‘a who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes. Although various cultural studies were conducted within Waiohuli Ahupua‘a, only two are located within close proximity to the project area. Cultural practices and resources identified by these reports include the interment of *iwi kūpuna*, the gathering of marine resources, agricultural resources and practices, *mo‘olelo*, and *wahi pana*. These studies are shown on Figure 22 and summarized below.

6.2.1 Tau‘ā and Kapahulehua 2010

In 2010, Hana Pono, LLC conducted a CIA for the Maui Research & Technology Park, now known as Līpoa. This study consists of the current project area and surrounding area (see Figure 22). Eleven individuals participated in consultation for this study. Informants have identified the following cultural practices: the gathering of marine resources, *wahi pana*, and *mo‘olelo*.

Regarding the gathering of marine resources, informants have mentioned the following marine resources: *akule* (*Trachurops crumenophthalmus*), squid, *limu* (seaweed), *weke* (goatfish), *pananu‘u* (Starye parrotfish; *Calotomus carolinus*), clams, *manini uhu* (*Acanthurus triostegus*), *moi* (*Polydactylus sexfilis*), *menpachi* (*Myripristis*), *kupipi* (*Abudefduf sordidus*), *moano* (*Parupeneus multifasciatus*), and *pōpa‘a* (*Cirrhitus pinnulatus*). Mr. Douglas Wayne “Butch” Akina mentioned he would catch fish by throwing net and the best time to catch *akule* was during the summer, since they spawn during the winter (Tau‘ā and Kapahulehua 2010:42). Other fishing methods mentioned by informants include spearfishing and diving. One informant, Ms. Paula Kalanikau, did mention the different varieties of *limu*: *limu kohu* (*Asparagopsis taxiformis*), *līpoa* (*Dictypteris plagiogramma*), *waiwae‘iole* (*Codium edule*), *ogo* (*Gracilaria parvispora*), and *‘ele‘ele* (*Enteromorpha prolifera*).

Regarding *wahi pana* and *mo‘olelo*, Mr. Papa Chang mentioned *heiau* and fishponds in the area. He recalled a fishpond located between “Dickson Island” or “Pikanela” and Erdman‘s road that had *weke, pananu‘u,* and clams. Some informants have also mentioned *‘uhane* (spirit) stories.

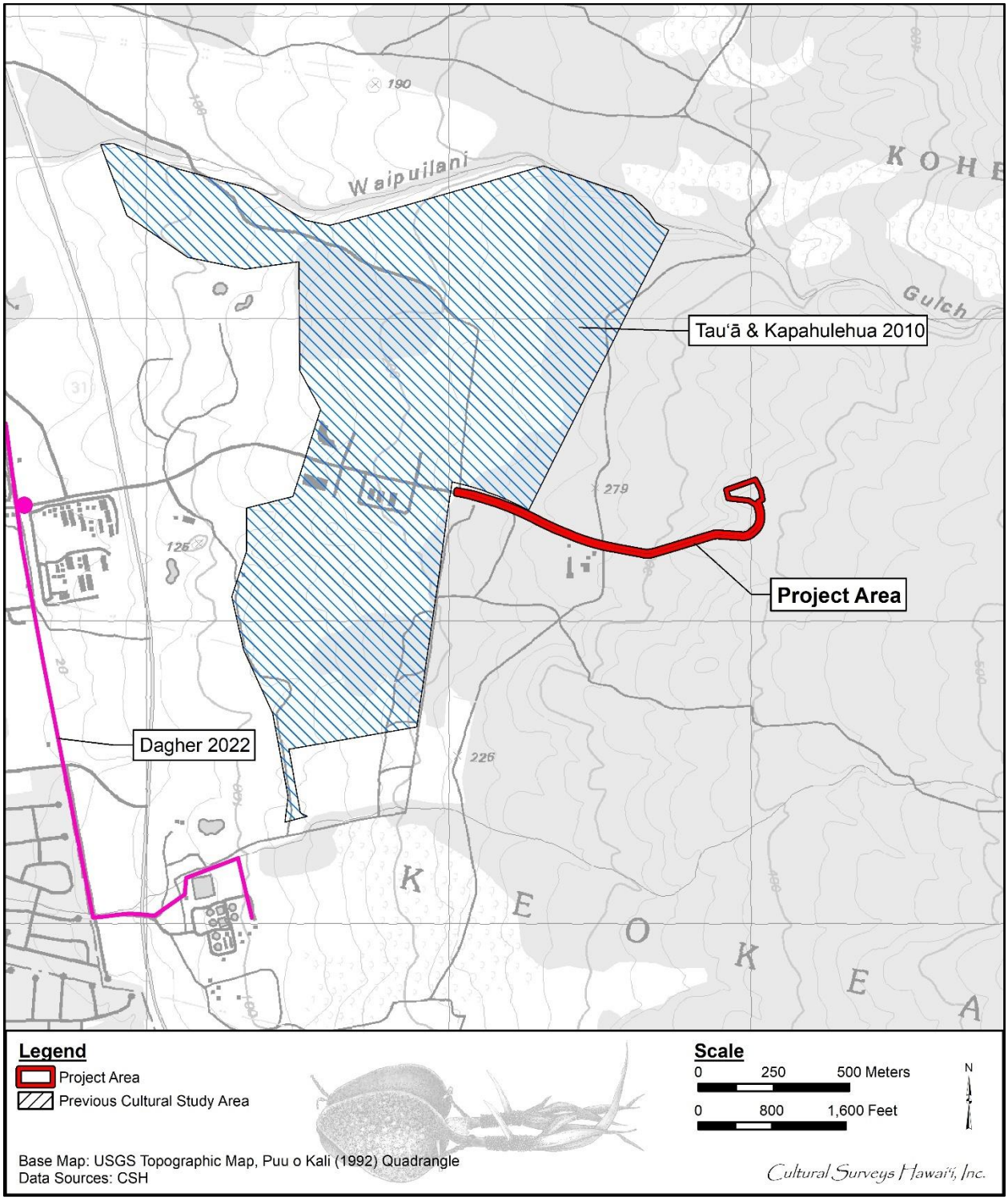


Figure 22. Previous cultural studies within project area vicinity

6.2.2 Dagher 2022

In 2010, SCS conducted a CIA for the proposed North Kīhei Mauka Transmission Line project. This study is located *makai* of the current project area, along Liloa Drive and South Khei Road. Five individuals participated in consultation for this study; two provided written testimonies and three participated in interviews. Cultural resources and practices identified by this study include burials, the gathering of marine and freshwater resources, and agricultural practices.

Regarding burials, the sand dunes were one of the most common traditional places that Native Hawaiians would bury their dead. Based on previous archaeological research done for this study, there have been numerous sand burials along the Kīhei coast.

Regarding marine resources, the primary methods of procuring marine resources include fishing, gathering, and aquaculture (i.e., fishponds) (Dagher 2022:55). These are ongoing practices throughout Kīhei and South Maui. Marine resources gathered in these areas include shellfish and seaweed, as well as reef and deep sea fish. Dagher (2022:55) further described the types of shellfish found, which included *‘opihi makaliauli* (*Cellana excarata*) and *pipipi* (*Nerita picea*). The methods of eating these shellfish are mentioned in the following:

> ‘Opihi, which can be found clinging to rocks along the coastline, were traditionally eaten raw with salt or limu added for additional flavoring, or boiled in a bowl with hot stones. Pipipi can be fond on rocks in tide pools and was a traditional food that, was eaten raw. Limu is described by Pukui and Elbert (1986:207) as ‘a general name for all kinds of plants living under water, both fresh and salt.’ According to Buck (1957:73), there were many varieties of limu that were eaten, traditionally. One particular type of limu, limu kohu, can be prepared, and used in small quantities, as a relish. [Dagher 2022:55]

6.3 Community Outreach Letter

Letters along with maps and aerial photographs (Appendix A) of the project area were mailed with the following text:

> *Aloha mai kāua*,
>
> With this letter, Cultural Surveys Hawai‘i (CSH) humbly requests your *mana‘o* and *‘ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within Waiohuli Ahupua‘a.
>
> Consultation with traditional cultural practitioners, *kūpuna*, *kama‘āina*, and Hawai‘i’s diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai‘i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai‘i’s children of their history for generations to come.
>
> **Project Description**
>
> At the request of the County of Maui, Department of Water Supply and Lipoa Investments, LLC, CSH is conducting a cultural impact assessment (CIA) and Ka Pa‘akai Analysis for a proposed 2.0 million gallon (MG) water storage tank that

will be a part of the County of Maui Department of Water Supply system. The tank site and its associated infrastructure and access road will be located in the Waiohuli Ahupua‘a, Kula District, Maui Island, on TMKs: (2) 2-2-002:084 (por.) and 2-2-002:086 (por.). The project area extends from the eastern end of Lipoa Parkway above Līpoa (formerly the Maui Research and Technology Park) and encompasses the water tank site and access road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1) and a 2018 aerial photograph (Figure 2).

The tank site is currently privately owned by Haleakala Ranch Company, but will be subdivided and dedicated to the County of Maui. The project area comprises of approximately 6.59 acres (2.67 hectares). The project involves the installation of a new water storage tank and associated utility connections.

Purpose of this Study

The purpose of a CIA is to gather information on Hawai‘i’s cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and Waiohuli Ahupua‘a. The purpose of a Ka Pa‘akai Analysis outreach is to 1) identify and scope valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area; 2) identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action; and 3) identify any feasible action, if any, to be taken to reasonably protect traditional and customary Native Hawaiian rights, if they are found to exist, either currently or possibly in the past. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts by the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout Waiohuli Ahupua‘a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Waiohuli Ahupua‘a
- Your specific traditional cultural practice and its connection to the proposed project area and Waiohuli Ahupua‘a
- The different natural resources associated with your specific traditional cultural practice

- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Waiohuli Ahupua‘a
- Referrals to other *kūpuna*, *kama‘āīna*, and traditional cultural practitioners knowledgeable about the proposed project area and Waiohuli Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Waiohuli Ahupua‘a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Waiohuli Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Waiohuli Ahupua‘a

Consultation Information

Consultation is an important and deeply valued part of the CIA and the environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area, and part of the public record. The CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP) (https://planning.hawaii.gov/erp) and at the State Historic Preservation Division Library (https://dlnr.hawaii.gov/shpd/about/research-resources-library).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana‘o* and *‘ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together; talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms. Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Waiohuli Ahupua‘a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage of your written statement on request.

6.4 Community Outreach Table

Community consultation outreach was initiated in August 2025. In most cases, two or three attempts were made to contact individuals, organizations, and agencies. Community outreach letters were sent to 37 individuals or groups. The results of the community consultation process are presented in Table 3.

Table 3. Summary of community consultation efforts

Name	Affiliation	Notes
Ampong, Foster	*Kama‘āina*	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Artates, Perry	President, Waiohuli Hawaiian Homesteaders	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Bailey, Timothy	Kula Mauka Representative, ‘Aha Moku o Maui	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Bisgard, Bill	Former engineer, Hawaiian Commercial and Sugar Company (HC&S)	Letter and figures sent via USPS on 8 August 2025 Mail returned Second round letter and figures sent via email on 8 September 2025 Second round letter and figures sent via USPS on 22 September 2025
Buland, Holly	Assistant Director, Alexander & Baldwin Sugar Museum	Letter and figures sent via email on 1 August 2025 Ms. Buland responded on 12 August 2025 with maps: *Attached are the only items the Sugar Museum has on your subject. But, I may be way off and these don’t even cover the area...* CSH responded on 14 August 2025: *Mahalo Holly! No worries, combined these maps show the project area or at least the ahupua’a the project area is located in. Are you okay with CSH including these maps in our report?* Ms. Buland responded on 15 August 2025: *Yes, they are from UH Manoa’s evols site, and I believe are public record.* CSH responded on 18 August 2025: *Perfect, mahalo Holly!*
Chang, Kevin	Executive Director, Kua‘Āina Ulu ‘Auamo (KUA)	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025

Name	Affiliation	Notes
Chevalier, David	President, Waiohuli Mana Foundation	Letter and figures sent via USPS on 8 August 2025 Second round letter and figures sent via USPS on 22 September 2025
Conley-Kapoi, Andree-Michelle	Makawao Representative, Maui County Cultural Resources Commission	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Cypher, Mahealani	*Kama‘āina*	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Enomoto, Kekoa	Waiohuli Native Hawaiian Homesteader; *Kahuna Kakalaleo* (chanter of prayer); Director, Pā‘upena CDC	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Faulkner, Kiersten	Executive Director, Historic Hawai‘i Foundation	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Fisher, Scott	MLIBC – Chief Conservation Officer, Hawaiian Islands Land Trust (HILT)	Letter and figures sent via email on 1 August 2025 Dr. Fisher responded same day: *Mahalo for your message. Yes, I am happy to meet with you to discuss this project. Just let me know when it is a convenient time to meet, and we can set something up.* CSH responded on 5 August 2025: *Perfect! Would you be free any time next week?* Dr. Fisher responded same day: *Would it work to meet after 2:00 PM on Monday the 11th, or at 11:00 AM on Tuesday the 12th?* CSH responded on 6 August 2025: *11 AM on Tuesday the 12th works for me! Does Microsoft Teams work for you?* Dr. Fisher responded same day: *Mahalo Tehani! I look forward to it.* Interview via Microsoft Teams on 12 August 2025 CSH sent interview summary on 25 September 2025 Dr. Fisher responded same day: *Mahalo for sharing this. It looks good, and I only have two minor changes. The first is the botanical name of*

Name	Affiliation	Notes
		the ‘uala haole. In the narrative it is listed as Ipomoea batata, which is the sweet potato. The ‘uala haole is Solanum tuberosum. *The other change is the southern cape of South America, which is Cape Horn (it is listed as the Cape of Good Hope in the narrative).* *Finally, I’m on Hawai’i Island at the moment, and couldn’t see the place name you were wondering about on my phone. Could you let me know which one it is?* CSH sent revised interview summary on 26 September 2025 Dr. Fisher responded same day: *Ok, thanks for the clarification. It is Pu’u o Kali that was a former military impact area.* CSH sent authorization form same day
Freeland, Denby	*Kapa* Artist	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Greig, Tanya-Lee	*Kama‘āina*	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Holt-Padilla, Hokulani	*Kumu Hula*, Pā‘ū o Hi‘iaka/Cultural Specialist	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kalanikau, Vernon	*Kula Kama‘āina*; Conservation Planning Committee, Maui County Council	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kalili, Dre	President, Association of Hawaiian Civic Clubs (AHCC)	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kama, Natalie A.	President, Keokea Hawaiian Homes Farmers Association	Letter and figures sent via USPS on 8 August 2025 Second round letter and figures sent via USPS on 22 September 2025
Kamakaala, Shae	Director of ‘Āina Protection & General Counsel, Hawai‘i Land Trust	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025

Name	Affiliation	Notes
	Kamehameha School‘s Maui Resource Center	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kanahele, Daniel	Honua‘ula Moku, ‘Aha Moku o Maui	Letter and figures sent via USPS on 8 August 2025 Second round letter and figures sent via USPS on 22 September 2025
Kapu, Ke‘eaumoku	CEO, Aha Moku o Maui Inc.	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025 Mr. Kapu responded same day: *Aloha Tehani and mahalo for reaching out. I forwarded this to the Moku island representative of this area his name is cody Nemet*. CSH responded same day: *Appreciate it, mahalo! Looking forward to hearing from you Cody.*
Kapu, Kekai	Member of the Board of Directors, Waiohuli Hawaiian Homestead	Letter and figures sent via email on 8 September 2025
Kapu, Uilani	Treasurer Na Aikane O Maui	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kelly, Walter J.	Vice President, Protect Keopuka Ohana	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Kuloloio, Manuel	Cultural Descendant	Letter and figures sent via USPS on 8 August 2025 Second round letter and figures sent via USPS on 22 September 2025
Lake-Farm, Sissy	Executive Director, Maui Museum/ Kumu Hula, Nā Hanona Kūlike ‘o Pi‘ilani	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Lee, Ka‘onohi	Honua‘ula Moku, ‘Aha Moku o Maui	Letter and figures sent via email on 1 August 2025 Ms. Lee responded same day: *I appreciate your email.* *I would like to participate, however, I humbly ask that additional map(s) be included in the packet you mail out. I would like to see the Ahupua‘a Map (Mauka to*

Name	Affiliation	Notes
		Makai) for Waiohuli with the project area designated on that map. What I am looking for are the streams and gulches that are in the vicinity of the project area as well as what is above the project area. Additionally, it would be helpful to see who the property owners are surrounding the project area. I'm thinking one of the property owners might be Haleakala Ranch or Pacific Rim? CSH responded on 6 August 2025: *Of course! I will get back to you as soon as possible with those maps. Regarding property owners of the project area, they are Haleakala Ranch Company and Lipoa Investments, LLC. I will make sure to have a map that shows surrounding property owners as well.* *If I don't get back to you fast enough and you have more information or questions, please don't hesitate to reach out to me.* Ms. Lee responded same day: *Mahalo a nui Tehani for your response. Look forward to seeing any maps you share.* CSH sent requested maps on 22 August 2025: *Please see the attached maps that you‘ve requested. I have included a map that shows the entire ahupua‘a with the project area shown, streams and gulches in the vicinity of the project area, and property owners in the vicinity.* CSH sent a follow-up email on 8 September 2025 Ms. Lee responded on 11 September 2025: *Yes, I'm still interested.* *I'm on the continent but should be able to get on my laptop tomorrow.* CSH responded same day: *Perfect! Just let me know what platform and time works best for you. We typically do interviews remotely via Zoom or Microsoft Teams but am more than happy to use any platform you prefer.*
MacDonald, Kainoa	Secretary, Association of Hawaiians for Homestead Lands	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025

Name	Affiliation	Notes
Maunupau, Ku‘uleinani	CEO, Native Hawaiian Philanthropy	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Molitau, Kapono‘ai	Director, Department of ‘Ōiwi Resources	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Naauao, Brian Kaniela Nau‘ole	*Kama‘āina*	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Nakahashi, Ikaika	Cultural Historian, SHPD	Letter and figures sent via email on 1 August 2025 Mr. Nakahashi responded on 6 August 2025: *Mahalo for contacting SHPD regarding the Cultural Impact Assessment (CIA) and Ka Pa‘akai Analysis for the proposed 2.0 million gallon (MG) water storage tank Project in the ahupua‘a of Waiohuli, in the district of Kula, on Maui.* *I recommend that your organization utilize the media (e.g., OHA’s Ka Wai Ola, local newspapers, etc.) to solicit additional information for this CIA and Ka Pa‘akai Analysis.* *I recommend that your organization consult with native tenants, Native Hawaiian Organizations, Native Hawaiian cultural practitioners, lineal descendants, and community stakeholders who currently live or previously lived in the ahupua‘a where the project is located on Maui for information about the cultural resources and cultural practices for this CIA.* *Here is contact information for people to include for consultation for the island, moku, and ahupua‘a in which the project is located in the U.S. Department of the Interior Native Hawaiian Organization Notification List:* *https://www.doi.gov/sites/default/files/documents/2025-04/nhol-complete-list-final-web.pdf* *Please let me know if there's anything else I can help with.* CSH responded on 7 August 2025: *Mahalo nui Ikaika! We will ensure to do as you’ve recommended.*
Nekaifes, Maraea K.	Nekaifes Ohana	Letter and figures sent via USPS on 8 August 2025 Second round letter and figures sent via USPS on 22 September 2025

Name	Affiliation	Notes
Nemet, Cody	Interim Kula Makai Representative, ‘Aha Moku o Maui	Letter and figures sent via email on 1 August 2025 Mr. Kapu forwarded letter and figures to Mr. Nemet on 8 September 2025
Norman, Carolyn Keala	‘Ohana Keaweamahi	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Oshiro, Basil	Kula Makai Representative, ‘Aha Moku o Maui	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Purdy, Malia	Executive Director, Hui No Ke Ola Pono	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
	Waiohuli Hawaiian Homestead Association	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025
Yap, Emma	Chair of the Board, Pā‘upena Community Development Corporation	Letter and figures sent via email on 1 August 2025 Second round letter and figures sent via email on 8 September 2025

6.5 Dr. Scott Fisher Interview Summary

On 12 August 2025, CSH conducted an interview with Dr. Scott Fisher via Microsoft Teams regarding the proposed 2.0 MG water storage tank project. Dr. Scott Fisher is the Chair of the Maui/Lāna‘i Island Burial Council (MLIBC) and has been with the MLIBC for 15 years. He is currently the Director of ‘Āina Stewardship for the Hawai‘i Land Trust (HILT) and has been with HILT for the past 21 years. He has a background in ecological restoration, paleoecology, earth and ocean science, and sustainable agriculture. Additionally, he is a *kama‘āina* of Maui and owns a 4-acre farm in Waikapū, between Honoapi‘ilani Highway and Kuihelani Highway, where he primarily grows *‘ulu* (breadfruit; *Artocarpus altilis*). Other crops include coconut (*Cocos nucifera*) and *liliko‘i* (passion fruit; *Passiflora edulis forma flavicarpa*). Dr. Fisher is also a lifelong resident of ‘Ōma‘opio Ahupua‘a, born and raised there and he currently resides in this *ahupua‘a*.

Dr. Fisher recalled that he last visited the project area vicinity in 2022, along Haleakalā Ranch Road where they were planning to do the solar array. He was surprised about the number of features that were found in that area. These sites consisted of house sites, animal pens, and terraces.

Regarding prior land use, Dr. Fisher mentioned the presence of the military and ranching. He stated that Pu‘u o Kali was used as a main impact target site. He further described how the Marine Corps heavily used the area and it’s possible to find military-related remnants. Military activities primarily occurred north and west of the general area.

Dr. Fisher also discussed the Kula Field System. He mentioned that the Kula Field System ranges from ‘Ā‘āpue‘o Ahupua‘a, *mauka*, and all the way to Waiohuli Ahupua‘a. There are not

many studies done on the Kula Field System and so we are unsure of the actual extent of the field system.

The Kula Field System was heavily modified and developed between the fifteenth and sixteenth centuries. Dr. Fisher assumed it was substantially modified for the traditional cultivation of *‘uala haole* (the white potato; *Solanum tuberosum*). However, during the ‘Ōiwi Wale (this term comes from the phrase “*ka ā ‘ōiwi wale*,” meaning “the time that is exclusively native,” and refers to the era prior to the arrival of foreigners) period (pre-1778), Dr. Fisher is unsure whether the people abandoned the field system. He theorizes the field system may have been abandoned and then brought back in the 1840s because of the possibility of growing crops for the California market or perhaps the field system just needed more clearance. He further stated this area was largely cleared and expanded during the California Gold Rush of 1849. The land was cleared for *‘uala haole* production to feed workers of the California Gold Rush because it was easier and more cost effective to ship food items from Hawai‘i to California than to bring them around the Cape of South America, Cape Horn.

Dr. Fisher also mentioned *kalo* may have possibly been cultivated in the project area vicinity. Other cultural practices that occur in the project area vicinity include animal husbandry and the gathering of marine resources. Dr. Fisher shared that animal husbandry was the main practice in this area and since there is relatively easy access to the coast, there is both ongoing and past marine resources and practices.

Dr. Fisher discussed the Lā‘ie Wetlands, located directly *makai* of the project area, near south Kīhei Road. Although these wetlands are located in the neighboring Kēōkea Ahupua‘a, they are near the border between Kēōkea and Waiohuli Ahupua‘a. According to Save The Wetlands (2025), the wetlands sit in Kēōkea Gulch and flow into the sea at Kawililipoa Beach. Dr. Fisher mentioned he is currently doing a study on these wetlands that is yet to be published. He mentioned uranium thorium dating, or coral dating, from material gathered at the bottom of Kēōkea Gulch dated it to 3,800 years ago. He further stated the area in general is prone to flooding.

Dr. Fisher also mentioned there are fishponds located along the coast in the general area but he does not think the proposed project will impact these fishponds. Near the boundary between Waiohuli and Ka‘ono‘ulu Ahupua‘a, there is Kō‘ie‘ie Fishpond. Based on its history of rehabilitation from conquering Hawai‘i Island chiefs, the fishpond at Kō‘ie‘ie is believed to have been “a royal pond always stocked with the best fish” (James 2002:74). Further associations between Hawaiian royalty and Kō‘ie‘ie Fishpond are also exemplified by a story from the early historic period in which Kihawahine, the family *‘aumakua* of the Kamehameha line of chiefs, appeared at Kō‘ie‘ie Fishpond in saffron-yellow robes following the death of one of Kamehameha’s sons at Kalepolepo in 1815 (James 2002:74). Kō‘ie‘ie fishpond is also said to have been built by the *menehune*.

CSH brought up how Waipu‘ilani Gulch is located north of the project area, close to the boundary between Waiohuli and Kōheo Ahupua‘a. Waipu‘ilani Gulch is culturally significant because of Waiohuli Kai Fishpond, which is located at the end of this gulch, and the multiple settlements that were once located along this gulch. Waipu‘ilani Gulch is a non-perennial stream that flows through Waiohuli Ahupua‘a and empties into Mā‘alaea Bay.

Dr. Fisher is primarily concerned about the potential for sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water. Dr. Fisher emphasized protecting the shoreline and the reef. He highly recommended using appropriate and proper means and techniques to reduce sedimentation into these gulches and wetlands. The Kula series soil moves easily and road construction can exacerbate sedimentation.

Dr. Fisher also recommended a monitor during any ground disturbance activities for the possibility of encountering cultural sites, including *iwi kūpuna*. He mentioned that during his time on the burial council, there has been only one instance of *iwi kūpuna* found in the general area of the project area. However, he was unaware of any that were inadvertently found specifically in the project area.

6.6 Summary of Community Outreach

Thirty-seven individuals and groups were contacted for the proposed project and five responded. Of the five responses, one individual provided maps, another participated in an in-depth interview, two provided recommendations, and another requested more information and had an interest in participating. Cultural practices and resources identified by consultants include the following: *wahi pana*, agricultural practices, animal husbandry, the gathering of marine resources, *loko i‘a*, and freshwater resources. Concerns expressed by consultants include the potential of sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, resulting in sedimentary discharge into the near shore water, as well as the possibility of encountering cultural sites, including *iwi kūpuna*. Recommendations included using appropriate and proper means and techniques to reduce sedimentation into nearby gulches and wetlands, as well as a monitor during any ground disturbance activities for the possibility of encountering cultural sites.

Mr. Ke‘eaumoku Kapu, the CEO of ‘Aha Moku o Maui, Inc., forwarded the consultation letter to the proposed project area *moku* representative, Cody Nemet, on 8 September 2025. Mr. Ikaika Nakahashi responded on 6 August 2025 and recommended utilizing the media to solicit additional information for the proposed CIA and KPA as well as to consult with native tenants, NHOs, Native Hawaiian cultural practitioners, lineal descendants, and community stakeholders who currently live or previously lived in the *ahupua‘a*.

Ms. Ka‘onohi Lee, the Honua‘ula Moku representative for ‘Aha Moku o Maui, Inc., expressed interest in participating and requested more information regarding project dtails on 1 August 2025. CSH provided information and maps that were requested on 22 August 2025. CSH did not hear back from Ms. Lee by the deadline.

Ms. Holly Buland, the Assistant Director for Alexander & Baldwin Sugar Museum, sent two maps of the project area vicinity via email on 12 August 2025. Ms. Buland sent a portion of the 1992 R.R. Monbeck topography map showing the different plantation camps, gulches, and *pu’u* (hills) in Kīhei. Although this map is just outside of where the current project area is located, this map does show the lack of sugar plantations in Waiohuli Ahupua‘a (Figure 23). Ms. Buland also provided the 1924 R.R. Monbeck and T.F. Murphy topography map of the Ulupalakua quadrangle,

which shows the other half of Waiohuli Ahupua‘a, where the current project area is located (Figure 24).

Regarding *wahi pana*, Dr. Fisher discussed the Lā‘ie Wetlands, which is located approximately 1.6 miles from the proposed water tank. According to Save the Wetlands (2025), the Lā‘ie Wetlands are named for Lā‘ieloheloheikawai, the mother of Kalā‘aiheana, who, after death, became deified as the *mo‘o* goddess, Kihawahine. Dr Fisher also mentioned the various fishponds located along the Kīhei coast, including Kō‘ie‘ie Fishpond, which is located approximately 2.3 miles from the proposed water tank.

Regarding historical and cultural sites, Dr. Fisher mentioned there were various features found in the project area vicinity, which included house sites, animal pens, and terraces. He also shared that there are various miltary-related remnants located in areas such as Pu‘u o Kali, which was a main impact target site used by the military.

Regarding agricultural practices, Dr. Fisher mentioned the proposed project is located in the Kula Field System. He went on to state that the Kula Field System was modified for the traditional cultivation of *‘uala haole* to feed workers of the California Gold Rush because it was easier and more cost effective to ship food items from Hawai‘i to California than to bring them around the Cape of South America, Cape Horn. Dr. Fisher also mentioned *kalo* may have possibly been cultivated in the project area vicinity.

Regarding freshwater resources, Dr. Fisher brought up Waipu‘ilani Gulch, located approximately 0.5 miles north of the project area and close to the boundary between Waiohuli and Kōheo Ahupua‘a. At the end of this gulch is Waiohuli Kai Fishpond and various settlements were once located along this gulch.

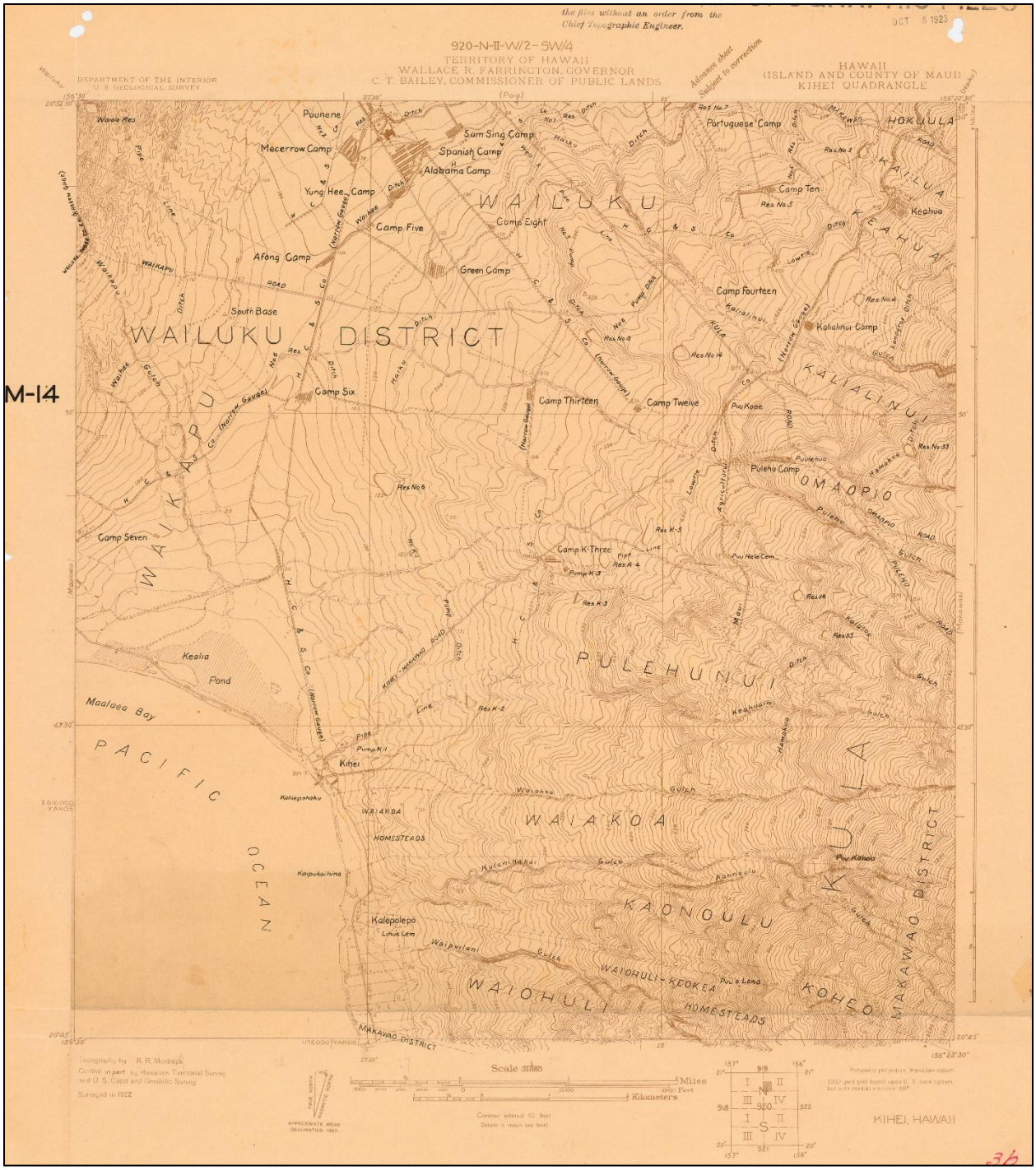


Figure 23. Portion of 1992 Monbeck topography map showing the different plantation camps, gulches, and *pu‘u* in Kīhei



Figure 24. A portion of the 1924 Monbeck and Murphy topography map showing the other half of Waiohuli Ahupua‘a

Section 7 Cultural Practices and Resources

Timothy R. Pauketat succinctly describes the importance of traditions, especially in regard to the active manifestation of one's culture or aspects thereof. According to Pauketat,

> People have always had traditions, practiced traditions, resisted traditions, or created traditions […] Power, plurality, and human agency are all a part of how traditions come about. Traditions do not simply exist without people and their struggles involved every step of the way. [Pauketat 2001:1]

It is understood that traditional practices are developed within the group, in this case, within the Hawaiian culture. These traditions are meant to mark or represent aspects of Hawaiian culture that have been practiced since ancient times. As with most human constructs, traditions are evolving and prone to change, resulting from multiple influences including modernization as well as other cultures. It is well known that within Hawai‘i, a "broader 'local' multicultural perspective exists" (Kawelu 2015:3). While this "local" multicultural mix is deservedly celebrated, it must be noted that it often comes into contact with "traditional Hawaiian culture." This contact among cultures and traditions has undoubtedly resulted in numerous cultural entanglements. These cultural entanglements have prompted questions regarding the legitimacy of newly evolved traditional practices. The influences of "local" culture are well noted throughout this section and understood to represent survival or "the active sense of presence, the continuance of native stories, not a mere reaction, or a survivable name. Native survivance stories are renunciations of dominance, tragedy and victimry" (Vizenor 1999:vii). Acknowledgement of these "local" influences helps to inform nuanced understandings of entanglement and of a "living [Hawaiian] contemporary culture" (Kawelu 2015:3). This section strives to articulate traditional Hawaiian cultural practices practiced within the *ahupua‘a* in ancient times, and the aspects of these traditional practices that continue to be practiced today; however, this section also challenges "tropes of authenticity" (Cipolla 2013) and acknowledges the multicultural influences and entanglements that may "change" or "create" a tradition.

This section integrates information from Sections 1–6 in examining cultural resources and practices identified within or in proximity of the project area in the broader context of the encompassing Waiohuli landscape.

7.1 Agricultural Practices

Regarding agricultural practices, Dr. Fisher mentioned the proposed project is located in the Kula Field System. He went on to state that the Kula Field System was modified for the traditional cultivation of *‘uala haole* to feed workers of the California Gold Rush because it was easier and more cost effective to ship food items from Hawai‘i to California than to bring them around the Cape of South America, Cape Horn. Based on *‘ōlelo no‘eau* research, there are references indicating that burning the land before planting new sweet potato patches was a common method of cultivation during the pre-Contact or traditional time period.

Dr. Fisher also mentioned *kalo* may have possibly been cultivated in the project area vicinity. Walker (1931:72) indicated "Dryland taro required no special terrace for its cultivation, so there is nothing to indicate where it was grown formerly, but the natives say it was cultivated on the Kula side of Haleakala."

7.2 Freshwater Resources

Regarding freshwater resources, Dr. Fisher brought up Waipu‘ilani Gulch, located north of the project area and close to the boundary between Waiohuli and Kōheo Ahupua‘a. At the end of this gulch is Waiohuli Kai Fishpond and various settlements were once located along this gulch. Waipu‘ilani Gulch is a non-perennial stream that flows through Waiohuli Ahupua‘a and empties into Mā‘alaea Bay. A portion of Waimahaihai Stream also flows through Waiohuli.

7.3 Marine Resources and Gathering Practices

The primary methods of procuring marine resources included fishing, gathering, and aquaculture (Dagher 2022:55). Previous consultants mentioned the following resources: *akule*, squid, *limu*, *‘opihi makaliauli, pipipi*, *weke*, *pananuu*, clams, *manini uhu*, *moi, menpachi, kupipi, moana,* and *popa‘a*. The following varieties of *limu* were gathered: *limu kohu, līpoa, waiwae‘iole, ogo,* and *‘ele‘ele*. Gathering practices included throwing net, spearfishing, and diving. Dagher (2022:55) mentioned that *‘opihi* were traditionally eaten raw with salt or *limu* added, or boiled in a bowl with hot stones. Dagher (2022) goes on to state that *pipipi* was also eaten raw.

Regarding aquaculture, Dr. Fisher mentioned various fishponds located along the Kīhei coast, including Kō‘ie‘ie Fishpond. Kō‘ie‘ie Fishpond is a 3-acre *kuapā* (gated) fishpond believed to have been a royal pond always stocked with the best fish (James 2002:74).

7.4 *Mo‘olelo* and *Wahi Pana*

Regarding *wahi pana*, Dr. Fisher discussed the Lā‘ie Wetlands, which according to Save the Wetlands (2025), are named for Lā‘ieloheloheikawai, the mother of Kalā‘aiheana, who, after death, became deified as the *mo‘o* goddess, Kihawahine.

Mr. Papa Chang mentioned *heiau* and fishponds in the area. He recalled a fishpond located between “Dickson Island” or “Pikanela” and Erdman‘s road that had *weke, pananuu,* and clams. Some informants have also mentioned *‘uhane* stories (Tau‘ā and Kapahulehua 2010:42).

7.5 Burials

Regarding burials, the sand dunes were one of the most common traditional places that Native Hawaiians would bury their dead. Based on previous archaeological research done for this study, there have been numerous sand burials along the Kīhei coast.

Section 8 Ka Pa‘akai Analysis

8.1 Overview

In *Ka Pa‘akai v. Land Use Commission*, 94 Hawai‘i (2000) the Court held the following analysis must also be conducted:

1. The identitiy and scope of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;
2. The extent to which those resources—including traditional and cusotmary Native Hawaiian rights—will be affected or impaired by the proposed action; and
3. The feasible action, if any, to be taken by the LUC to reasonably protect Native Hawaiian Rights if they are found to exist.

Based on information gathered from cultural and historical background, and community consultation for this project, traditional Hawaiian activity in this area of Waiohuli was focused along the coast or in the uplands of this *ahupua‘a*. No cultural, historical, or natural resources were idntified within the project area.

At present, there is no documentation or testimony indicating traditional or customary Native Hawaiian rights are currently being exercised “for subsistence, cultural and religious purposes and possessed by *ahupua‘a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778” (Hawai‘i State Constitution, Article XII, Section 7) within the specific project area. While no cultural resources, practices, or beliefs were identified as currently existing within the project area, Waiohuli Ahupua‘a maintains a rich cultural history in the exercise of traditional or customary Native Hawaiian rights within the project *ahupua‘a*.

The only concern is the potential of sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water. Dr. Fisher highly recommended using appropriate and proper means and techniques to reduce sedimentation into these gulches and wetlands.

The project will comply with the county’s “Rules for the Design of Storm Water Treatment Best Management Practices.” In accordance with the rules, the project area runoff will receive the required mitigation and treatment to maintain water quality. Temporary erosion controls will also be installed to minimize pollution during and after construction. As it relates to stormwater and water quality, the proposed project will not have an adverse effect on adjacent or downstream properties.

Dr. Fisher also recommended a monitor during any ground disturbance activities. Based on an LRFI study conducted by CSH in 2022 (Yucha et al. 2022), consultation and site visit with SHPD, SHPD determined “No historic properties affected” for the current project (Appendix B).

8.2 Archaeological Resources

An LRFI study was conducted for the current project in 2022 by CSH (Yucha et al. 2022). CSH identified two small, stacked stone C-shaped enclosures (CSH 1) which were confirmed by SHPD to be modern hunting blinds. SHPD further confirmed “No historic properties were observed within the project area” and determined “No historic properties affected” for the current project (Appendix B).

Historic properties previously identified outside of the project area include traditional Hawaiian temporary habitation and/or marker features. During consultation, Dr. Fisher mentioned he visited the project area vicinity in 2022 for a solar array project and they identified various historic sites which included house sites, animal pens, and terraces.

8.3 Burials

Based on previous archaeological research, there are no burials located within the current project area and its immediate vicinity. However, based on background research and community consultation, traditionally sand dunes were common areas to bury their dead. The Kīhei coast, located approximaely 2 miles from the proposed water tank, is known to have numerous sand burials.

8.4 Faunal Resources

No faunal resources within the project area have been documented.

During community consultation, Dr. Fisher mentioned the Lā‘ie Wetlands are located *makai* of the current project area. These wetlands are an important habitat for native species, especially several species of endangered Hawaiian waterbirds (Save the Wetlands 2025). There are four fishponds located along the coast of Kīhei: Kō‘ie‘ie, Waiohuli Kai, Kēōkea Kai, and Kulamoemalia. The Lā‘ie *muliwai* (mouth of a river or stream) flows into the Kulamoemalia Fishpond. Waipu‘ilani Gulch is located north of the current project area, close to the boundary between Waiohuli and Kōheo Ahupua‘a.Waiohuli Kai Fishpond is located at the mouth of this gulch. Dr. Fisher also mentioned Kō‘ie‘ie Fishpond, located near the boundary between Waiohuli and Ka‘ono‘ulu. The fishpond at Kō‘ie‘ie is believed to have been “a royal pond always stocked with the best fish” (James 2002:74). Kō‘ie‘ie fishpond is also said to have been built by the *menehune*.

The Kīhei coast is known for its abundance of marine resources. Previous informants have mentioned the following resources found along the coast: *akule*, squid, *limu*, *‘opihi makaliauli, pipipi*, *weke*, *pananu‘u*, clams, *manini uhu*, *moi, menpachi, kupipi, moana,* and *pōpa‘a*. Previous informants have also mentioned the following varieties of *limu* that have been gathered in the area: *limu kohu, līpoa, waiwae‘iole, ogo,* and *‘ele‘ele*.

8.5 Earth Resources

No traditional use of the stones (or soft sediments) within the project area has been documented.

8.6 Plant Resources

The project area consists of perrenial grasslands and prior to human modification, may have consisted of *pili* grasslands and *‘a‘ali‘i*, dry cliff vegetation, small patches of *ma‘o* or Hawaiian cotton, and *‘ākoko* (Pratt and Gon 1998:127–128). Based on background research and community consultation, *‘uala haole* and *kalo* may have been traditionally cultivated in the project area vicinity. Dr. Fisher explains that the proposed project is located within the Kula Field System, which was modified for the traditional cultivation of *‘uala haole* to feed workers of the California Gold Rush because it was easier and more cost effective to ship food items from Hawai‘i to California than to bring them around the Cape of South America, Cape Horn.

8.7 Trails

No trails were documented within the project area.

8.8 *Nā Wahi Pana*

Based on community consultation, as mentioned previously, Dr. Fisher has shared information on fishponds (Kō‘ie‘ie, Kulamoimalia, and Waiohuli Kai), the Lā‘ie Wetlands, Waipu‘ilani Gulch, and Pu‘u o Kali. He mentioned the nearby gulch, Waipu‘ilani Gulch is culturally significant as a result of Waiohuli Kai Fishpond, which is located at the mouth of this gulch. There also used to be various settlements located along this gulch. Regarding the Lā‘ie Wetlands, according to Save the Wetlands (2025), the Lā‘ie Wetlands are named for Lā‘ieloheloheikawai, the mother of Kalā‘aiheana, who, after death, became deified as the *mo‘o* goddess, Kihawahine.

Regarding Pu‘u o Kali, Dr. Fisher mentioned it was used as a main impact target site. According to Pukui et al. (1974:203), Pu‘u o Kali translates as “hill of waiting” and was a *mo‘o* and wife of the nearby Pu‘u Hele. They had a child named Pu‘u o Inaina that was placed on Kaho‘olawe and was a lover of Pele‘s sweetheart, Lohi‘au.

8.9 Valued Cultural, Historical, or Natural Resources in the Project Area

Based on background research conducted for this project, including cultural and historical data and community consultation, the vicinity of the project area has a long and rich history of Native Hawaiian use and modification. Two small, stacked stone C-shaped enclosures (CSH 1) were identified by CSH in 2022 during an LRFI study of the project area (Yucha et al. 2022). SHPD determined CSH 1 to be modern hunting blinds (Appendix B). To the north of the project area is Waipu‘ilani Gulch, located approximately 0.5 miles from the proposed water tank, and *makai* of the project area is the Lā‘ie Wetlands, located approximately 1.6 miles from the proposed water tank. There are also various fishponds, wetlands, and burials located along the coast, far enough from where the current project area is located that they will not be impacted by the proposed project..

8.10 The Extent to which Traditional and Customary Native Hawaiian Resources will be Affected by the Proposed Action

During community consultation, Dr. Fisher expressed concern regarding the potential of sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water. The proposed water tank is located approximately 1.6 miles from Lā‘ie Wetland, 0.5 miles from Waipu‘ilani Gulch, and 0.7 miles from Waimahaihai Gulch. Dr. Fisher emphasized protecting the shoreline and the reef. The shoreline is located approximately 2 miles from the proposed water tank.

Dr. Fisher also mentioned he visited the project area vicinity in 2022, and came across various sites, including house sites, animal pens, and terraces. Other historic sites in the project area vicinity consisted of traditional Hawaiian temporary habitation and/or marker features. Based on the LRFI conducted within the project area in 2022, consultation with and site visit by SHPD, “No historic properties were observed within the project area” and SHPD further determined “No historic properties affected” for the project.

8.11 Feasible Action, if any, to be Taken to Reasonably Protect Native Hawaiian Rights

During community consultation, Dr. Fisher highly recommended using appropriate and proper means and techniques to reduce sedimentation into these gulches and wetlands. The proposed drainage design for the project will manage runoff such that the proposed development will not result in additional stormwater runoff for the 50-year, 1-hour design storm. The project will comply with the county’s “Rules for the Design of Storm Water Treatment Best Management Practices.” In accordance with the rules, the project area runoff will receive the required mitigation and treatment to maintain water quality.

Temporary erosion controls will also be installed to minimize pollution during and after construction. As it relates to stormwater and water quality, the proposed project will not have an adverse effect on adjacent or downstream properties.

Dr. Fisher also recommended a monitor during any ground disturbance activities for the possibility of encountering cultural sites, including *iwi kūpuna*. Based on the results of the LRFI, archaeological montioring is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties (Yucha et al. 2022:53). SHPD also conducted a site visit to the current project area on 16 February 2023, confirming CSH 1 to be modern hunting blinds and determined “No historic properties affected” as no historic properties were observed within the project area (Appendix B).

Section 9 Summary and Recommendations

CSH undertook this CIA and KPA at the request of the County of Maui, Department of Water Supply. The research broadly covered the *ahupua‘a* of Waiohuli.

9.1 Results of Background Research

Background research for this project yielded the following information (presented in approximate chronological order):

1. The project area is located within the *ahupua‘a* of Waiohuli and the *moku* of Kula, approximately 2 miles from the southern coastline and on the leeward slope of Haleakalā.
2. Meanings of place names, together with the environmental data, suggest the lands of and surrounding coastal Kīhei were dry and barren in an agricultural sense but rich in marine resources. Previous research on pre-Contact occupation in Kula District (Kolb et al. 1997) has suggested most permanent habitations were in the uplands with a smaller permanent population located along the coastline.
3. Several sayings refer to the lack of coastal or seafaring knowledge, which made the people of Kula appear ignorant. These sayings were rooted in the fact that Kula people lived far from the sea and were not familiar with coastal lifeways. These sayings about the seafaring ignorance of Kula people, however, are tempered by sayings of admiration for their skill and perseverance at working the land. Kula was famous for its upland *‘uala* "plantations" (Handy et al. 1991:511) and the above sayings about Kula attest to that fact.
4. The combination of good soil developed in volcanic ash, cool temperatures, and frequent cloud cover that would lower evapo-transpiration and bring moisture as fog drip, and rainfall distributed fairly evenly throughout the year would also have allowed for dryland cultivation up to 3,000 ft amsl (Handy et al. 1991:276) for Hawaiians living in the uplands of Kula on a permanent basis.
5. In 1820, the whaling industry was introduced in Hawai‘i. Although the whaling trade centered on Lahaina, mainly affecting the Kula/Kīhei area through agricultural demands, Clark (1980:47) notes that "[f]rom the 1840s to the 1860s a small whaling station was maintained at Kalepolepo [Kīhei]."
6. After 1830, dryland agriculture in the old Kula District expanded with a focus on Irish potato cultivation. The California Gold Rush of 1849 further intensified the demand as a California-Hawai‘i potato trade began to flourish. Kula became the area (between 2000 and 5000 ft amsl) of highest potato production and was known as "the potato district."
7. Donham (1992:5) notes the flod of land clearing and cultivation associated with the Gold Rush resulted in "deforestation [which] adversely affect[ed] the amount of rainfall in the district, and periods of drought became more common."
8. Potato production prospered in Kula from 1830 through 1850 until successful potato cultivation and production in California and Oregon resulted in a decline in the Hawai‘i trade (Burgett and Spear 1995:6–7).

9. The project area is within Land Grant 9325:1. TMK: (2) 2-2-002 indicates Land Grant 9325:1 consists of over 2,600 acres under ownership to Haleakala Ranch, which was likely granted this parcel in the late 1800s or early 1900s.
10. The shift in the economics of coastal areas to ranching was also discussed by E.S. Craighill Handy, who noted large sections of “Crown Lands” which had not been claimed as *kuleana* [family homestead property] during the Mahele (1848 and later) were given by the Kingdom to various ranchers. The *kiawe* tree was imported and cultivated around 1840 as a source of cattle feed, and the low plains were soon covered in *kiawe* forests (Handy and Handy 1972:510–511).
11. Water was the most critical component in the decision to locate sugar cultivation along the leeward shores of Maui’s arid coastline. The discovery of an ample supply of irrigation water early in 1898 led to the drilling of a large, successful well, but the supply of water was limited (Stearns and Macdonald 1942). Over the next four years, two ditches were developed to supplement the water needs of the 4,873 acres of sugar under cultivation at Kīhei (Gilmore 1936).
12. While World War I had little impact on Maui, World War II brought with it a significant military presence. U.S. Marines resided and trained at Camp Maui in Kokomo, and held training maneuvers on Kaho‘olawe and at Ma‘alaea Bay, including amphibious landing training along beaches and other exercises carried out in *kiawe* groves east of the bay (Allen 1950; Speakman 1978).
13. The Kīhei shoreline served as an invaluable training ground for amphibious warfare in the Pacific during World War II. Of all the Navy training in the Hawaiian Islands, probably the most rigid and intense was that of the Combat Demolition Training Station at Kama‘ole, Maui, where, after the autumn of 1943, 40 teams of 100 men each were prepared for reconnaissance and demolition work (Allen 1950:191).
14. Beginning in the 1960s, development of the coastal Kīhei area shifted from sugar plantation and related railroad operations to vacation condominium development. Kīhei underwent a rapid residential and commercial development beginning in the 1970s. Clark (1980:49) notes the groundwork for this development was established in the late 1950s when investors began purchasing coastal property.
15. Yucha et al. (2022) identified two small, stacked C-shaped enclosures within the project area (CSH 1) confirmed by SHPD to be modern hunting blinds and determined “No historic properties affected” for the current project area. Historic properties previously identified near the project area include traditional Hawaiian temporary habitation and/or marker features.
16. Although various cultural studies were conducted within Waiohuli Ahupua‘a, only two are located within close proximity to the project area. Cultural practices and resources identified by these reports include the interment of *iwi kūpuna*, the gathering of marine resources, agricultural resources and practices, *mo‘olelo*, and *wahi pana*.

9.2 Results of Community Consultation

CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 37 individuals or groups;

five responded and one of these *kama‘āina* and/or *kūpuna* met with CSH for more in-depth interview(s). Consultation was received from:

1. Dr. Scott Fisher, Chair of the Maui/Lāna‘i Island Burial Council (MLIBC), Director of ‘Āina Stewardship for the Hawai‘i Land Trust (HILT), and a *kama‘āina*

9.3 Identification of Cultural Practices

Consultation identified the following cultural, historical, and natural resources where cultural practices (including traditional and customary Native Hawaiian rights) are being exercised in Waiohuli Ahupua‘a:

1. Agricultural practices (*‘uala haole* and *kalo*; animal husbandry)
2. Freshwater resources
3. Marine resources and practices
4. *Wahi pana* and *mo‘olelo*
5. Cultural and historic sites

Based on the results of community consultation and background research conducted as part of this CIA and KPA, CSH has identified the following cultural resources and practices within the broader landscape of Waiohuli Ahupua‘a:

1. Agricultural practices
2. Freshwater resources
3. Marine resources and practices (fishing, gathering, and aquaculture)
4. *Wahi pana* and *mo‘olelo*
5. Burials

No ongoing cultural practices were identified within the project area during background research and community consultation. The proposed water tank is located approximately 2 miles from the shoreline, where ongoing cultural practices, such as the gathering of marine resources, occur along the Kīhei coast.

9.4 Identification of Impacts to Cultural Practices

No impacts to ongoing cultural practices were identified within the project area during background research and community consultation for this CIA and KPA. Consultation identified the following concern related to the environment and the broader community:

1. Dr. Fisher expressed his concern about the potential for sedimentation from ground disturbing activities that could impact the Lā‘ie Wetland and nearby gulches that flow into the ocean, Waipu‘ilani and Waimahaihai. Both gulches feed into the wetlands resulting in sedimentary discharge into the near shore water.
    a. The proposed water tank is located approximately 1.6 miles from Lā‘ie Wetland, 0.5 miles from Waipu‘ilani Gulch, and 0.7 miles from Waimahaihai Gulch.

9.5 Mitigation Possibilities Identified During Background Research and Consultation

The results of community consultation, underscored by background research conducted for this CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups:

1. Dr. Fisher highly recommended using appropriate and proper means and techniques to reduce sedimentation into these gulches and wetlands.
    a. The project will comply with the county's "Rules for the Design of Storm Water Treatment Best Management Practices." In accordance with the rules, the project area runoff will receive the required mitigation and treatment to maintain water quality. Temporary erosion controls will also be installed to minimize pollution during and after construction. As it relates to stormwater and water quality, the proposed project will not have an adverse effect on adjacent or downstream properties.
2. Dr. Fisher also recommended a monitor during any ground disturbance activities for the possibility of encountering cultural sites, including *iwi kūpuna*.
    a. An LRFI was conducted by CSH for the proposed project in 2022 and stated "archaeological monitoring of project construction is not warranted as project-related ground disturbance is unlikely to impact subsurface historic properties" (Yucha et al. 2022:53). SHPD also conducted a site visit for the proposed project and determined "No historic properties affected" as CSH 1 was confirmed to be modern hunting blinds and no historic properties were observed within the project area (Appendix B).
3. Project construction workers and all other personnel involved in the construction and related activities of the project should be informed of the possibility of inadvertent cultural finds, including human remains. In the event that any potential historic properties are identified during construction activities, all activities will cease and the SHPD will be notified pursuant to HAR §13-280-3. In the event that *iwi kūpuna* (ancestral remains) are identified, all earth moving activities in the area will stop, the area will be cordoned off, and the SHPD and Police Department will be notified pursuant to HAR §13-300-40. In addition, in the event of an inadvertent discovery of human remains, the completion of a burial treatment plan, in compliance with HAR §13-300 and HRS §6E-43, is recommended.
4. In the event that *iwi kūpuna* and/or cultural finds are encountered during construction, project proponents should consult with cultural and lineal descendants of the area to develop a reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

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Appendix A Community Outreach Letter

CULTURAL SURVEYS HAWAI'I
ARCHAEOLOGICAL, CULTURAL, AND HISTORICAL DOCUMENTATION SERVICES - SINCE 1982

P.O. Box 1114 Kailua, Hawai'i 96734 Ph: (808) 262-9972 Fax: (808) 262-4950

Aloha mai kāua,

With this letter, Cultural Surveys Hawai'i (CSH) humbly requests your *mana'o* and *'ike* (experience, insights, and perspectives) regarding past and ongoing cultural, practices, beliefs, and resources within Waiohuli Ahupua'a.

Consultation with traditional cultural practitioners, *kūpuna*, *kama'āina*, and Hawai'i's diverse ethnic communities is an important and deeply valued part of our work and the environmental review process for proposed projects in Hawai'i. Your contributions will revitalize and keep alive knowledge of cultural practices, storied places, and life experiences that will remind Hawai'i's children of their history for generations to come.

Project Description

At the request of the County of Maui, Department of Water Supply and Lipoa Investments, LLC, CSH is conducting a cultural impact assessment (CIA) and Ka Pa'akai Analysis for a proposed 2.0 million gallon (MG) water storage tank that will be a part of the County of Maui Department of Water Supply system. The tank site and its associated infrastructure and access road will be located in the Waiohuli Ahupua'a, Kula District, Maui Island, on TMKs: (2) 2-2-002:084 (por.) and 2-2-002:086 (por.). The project area extends from the eastern end of Lipoa Parkway above Līpoa (formerly the Maui Research and Technology Park) and encompasses the water tank site and access road. The project area is depicted on a portion of the 1992 Puu o Kali U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle (Figure 1) and a 2018 aerial photograph (Figure 2).

The tank site is currently privately owned by Haleakala Ranch Company, but will be subdivided and dedicated to the County of Maui. The project area comprises of approximately 6.59 acres (2.67 hectares). The project involves the installation of a new water storage tank and associated utility connections.

Purpose of this Study

The purpose of a CIA is to gather information on Hawai'i's cultural resources, practices, or beliefs that have occurred or still occur within the proposed project area and Waiohuli Ahupua'a. The purpose of a Ka Pa'akai Analysis outreach is to 1) identify and scope valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area; 2) identify the extent to which those resources, including traditional and customary Native Hawaiian rights, will be affected or impaired by the proposed action; and 3) identify any feasible action, if any, to be taken to reasonably protect traditional and customary Native Hawaiian rights, if they are found to exist, either currently or possibly in the past. This is accomplished through consultation and background research using previously written documents, studies, and interviews. This information is used to assess potential impacts by the proposed project to the specific identified resources, practices, and beliefs in the project area and throughout Waiohuli Ahupua'a. As a traditional cultural practitioner and holder of long-term knowledge, your insight, input, and perspective provide a valuable

WAIOHULI 14 - CIA for the 2.0 MG Water Storage Tank Project

contribution to the assessment of potential effects of this project and an understanding of how to protect these resources and practices.

Insights focused on the following topics in the project area (shown on the attached Figure 1 and Figure 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Waiohuli Ahupua‘a
- Your specific traditional cultural practice and its connection to the proposed project area and Waiohuli Ahupua‘a
- The different natural resources associated with your specific traditional cultural practice
- Legends, stories, or chants associated with your specific traditional cultural practices and their relationships to the proposed project area and Waiohuli Ahupua‘a
- Referrals to other *kūpuna*, *kama‘āīna*, and traditional cultural practitioners knowledgeable about the proposed project area and Waiohuli Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on your ongoing traditional cultural practices and natural resources within the proposed project area and Waiohuli Ahupua‘a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Waiohuli Ahupua‘a
- Your comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and Waiohuli Ahupua‘a

Consultation Information

Consultation is an important and deeply valued part of the CIA and the environmental review process. Your contributions will revitalize and keep alive our combined knowledge of past and ongoing cultural practices, historic places, and experiences, reminding our children of their history generation after generation.

With your agreement to participate in this study, your contributions will become part of the comprehensive understanding of traditions of the area, and part of the public record. The CIA will be available for future access through the State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP) (https://planning.hawaii.gov/erp) and at the State Historic Preservation Division Library (https://dlnr.hawaii.gov/shpd/about/research-resources-library).

As a part of this process, your knowledge may be used to inform future CIAs and other heritage studies of cultural practices and resources that need protection from impacts of proposed future projects. If you engage in consultation, and the *mana‘o* and *‘ike* you provide appears in the study, we would like to recognize your contribution by including your name. If you prefer not to allow your name to be included, your information can be attributed to an anonymous source.

The consultation interview structure and format are flexible. We will accommodate your preference on how to get together; talk story, over the phone, by email correspondence, remotely via Zoom, MS Teams, Google Chat or other remote meeting platforms. Your knowledge of the resources and potential effect of the project on traditional practices in the project area and Waiohuli

WAIOHULI 14 - CIA for the 2.0 MG Water Storage Tank Project

Ahupua'a focusing on the topics in the bullet points above can also be submitted in a written statement. CSH will provide return postage of your written statement on request.

CSH is happy to provide a list of topics for discussion, a more structured questionnaire of interview questions, or any other assistance that might be helpful. If you have questions regarding consultation, or are interested in participating in this study, please contact Tehani Baculpo by email at tbaculpo@culturalsurveys.com or by phone at (808) 965-6478.

Mahalo nui loa,

Tehani Baculpo

CSH Cultural Researcher

WAIOHULI 14 - CIA for the 2.0 MG Water Storage Tank & Associated Infrastructure Project

Page 4

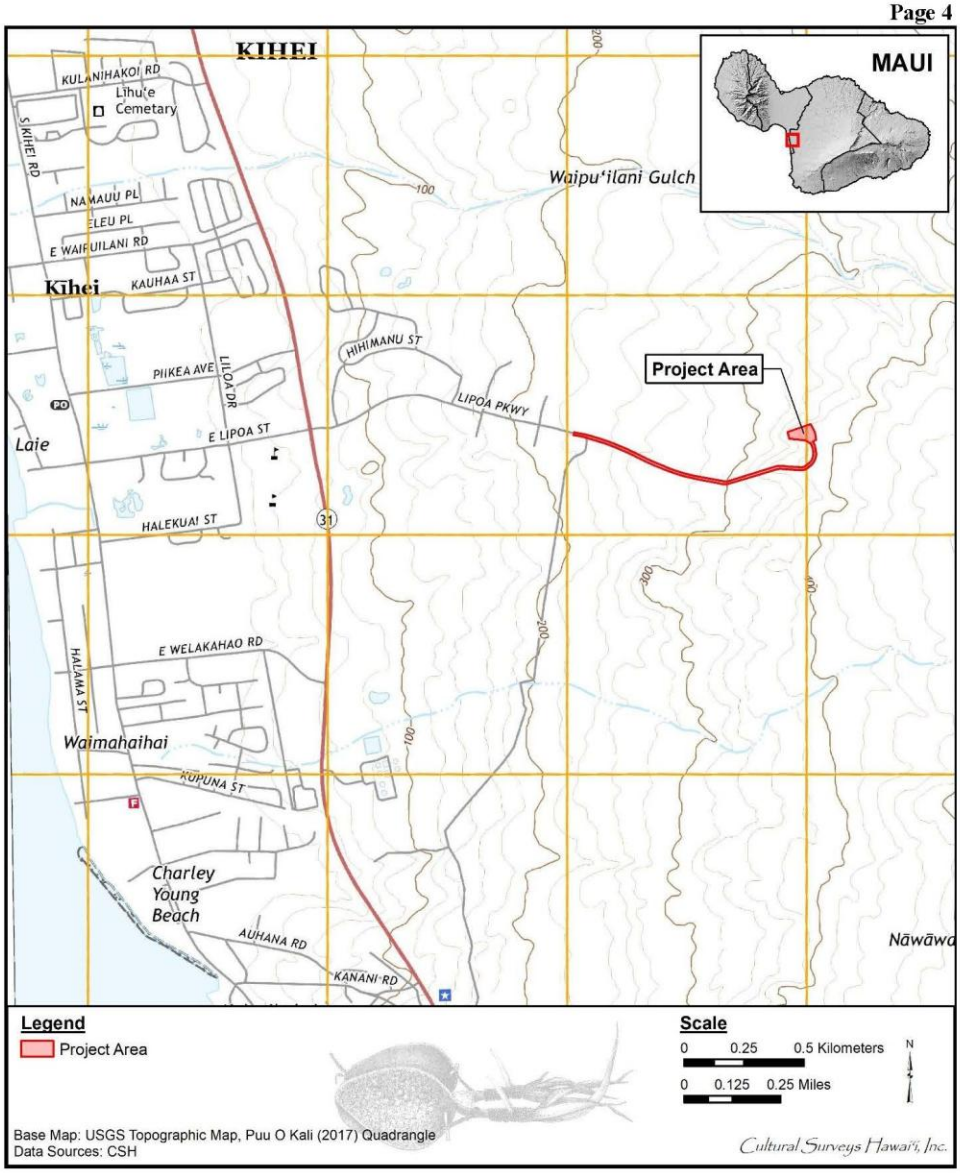


Figure 1. Portion of the 2017 Puu o Kali USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 2017)

WAIOHULI 14 - CIA for the 2.0 MG Water Storage Tank Project

Page 5

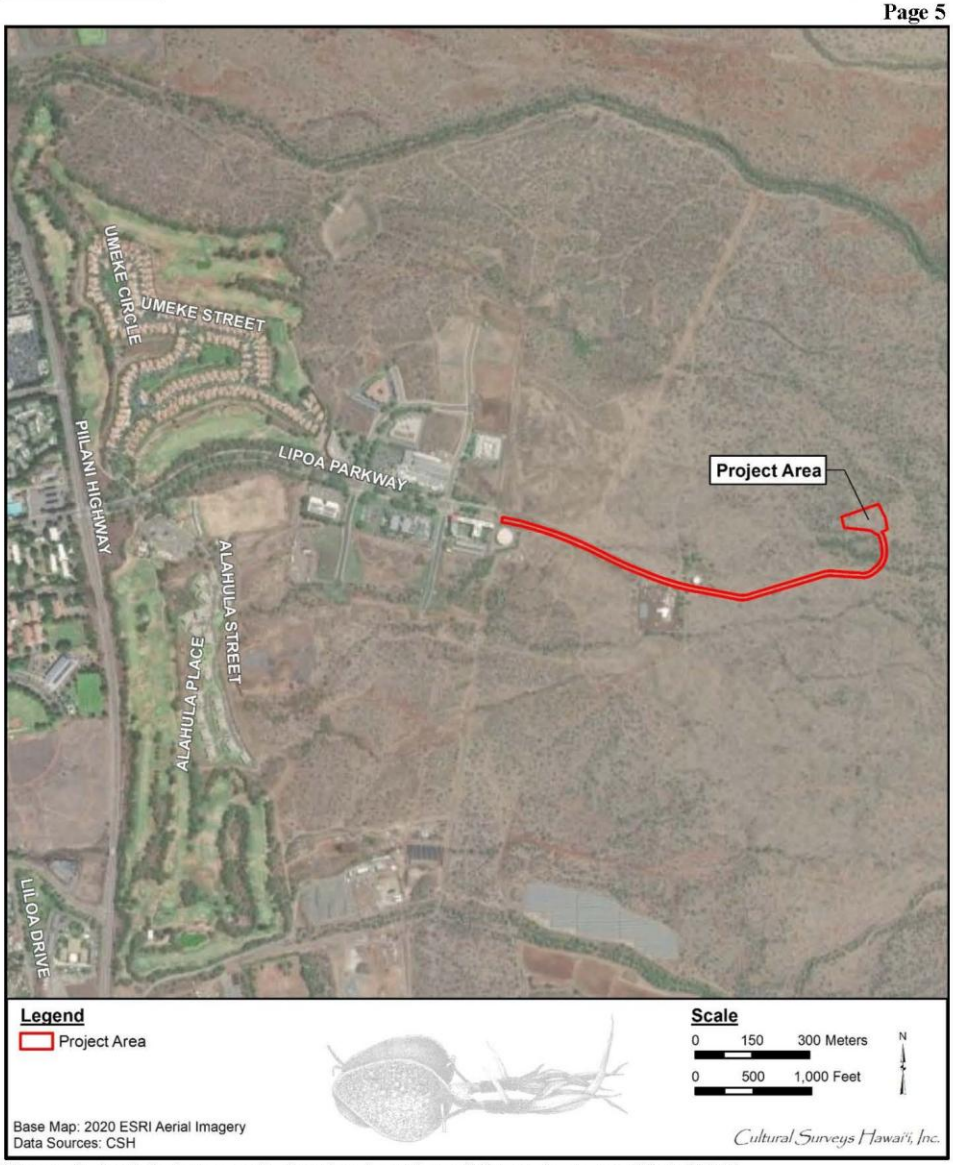


Figure 2. Aerial photograph showing location of the project area (Esri 2020)

Appendix B SHPD Correspondence

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

DAWN N.S. CHANG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

LAURA H.E. KAAKUA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII | KA MOKU'ĀINA 'O HAWAI'I
DEPARTMENT OF LAND AND NATURAL RESOURCES
KA 'OIHANA KUMUWAIWAI 'ĀINA

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

March 30, 2023

IN REPLY REFER TO:
Project No.: 2022PR01264
Doc. No.: 2303NM04
Archaeology

Jordan Molina, Director
County of Maui
Department of Public Works
200 S. High Street
Kalana O Maui Bldg., 4th Fl
Wailuku, HI 96793
c/o Lance Nakamura
Email: lance.nakamura@co.maui.hi.us

Dear Jordan Molina:

SUBJECT: **Chapter 6E-42 Historic Preservation Review**
County of Maui Permit Application G2022-00228
Maui Research & Technology Park Tank Site and Access Road
Archaeological Literature Review and Field Inspection Report
Waiohuli Ahupua'a, Kula District, Island of Maui
TMK: (2)-2-2-002:084 por.

This letter provides the State Historic Preservation Division's (SHPD's) review of the subject permit application for the proposed Maui Research and Technology Park Tank Site and Access Road Project. SHPD previously reviewed the project and requested an archaeological literature review and field inspection (LRFI) report (Project No. 2022PR01264, Doc. No. 2212IK02). SHPD received the LRFI report titled *Draft Archaeological Literature Review and Field Inspection Report for the Maui Research and Technology Park Water Storage Tank and Access Road Project, Waiohuli Ahupua'a, Makawao District, Maui Island TMKs: [2] 2-2-002:084 (por.), [2] 2-2-2-002:086 (por), and [2] 2-2-024:026 (por.)* (Yucha et al., December 2022) on January 9, 2023.

Cultural Surveys Hawai'i, Inc. (CSH) produced the subject LRFI report. The field inspection included a reconnaissance-level pedestrian survey of the project area. Yucha et al. (December 2022) identifies two small, stacked stone C-shaped structures interpreted to be modern hunting blinds or WWII era military training structures and recommends no further archaeological documentation.

Andrew McCallister (SHPD Maui Archaeologist IV) conducted a site visit to the current project area on February 16, 2023, along with the applicant's archaeological consultant (Trevor Yucha, CSH). SHPD staff inspected the two small, stacked stone C-shaped structures, and confirmed them to be modern hunting blinds. No historic properties were observed within the project area.

Based on the information provided, SHPD's determination is "**No historic properties affected**" for the current project. Pursuant to HAR §13-284-7(e), when the SHPD agrees that the action will not affect any significant historic properties, this is the SHPD's written concurrence and historic preservation review ends. The HRS 6E historic preservation review process is ended. The permit issuance process may proceed.

Jordan Molina
03/30/2023
pg. 2

Although the LRFI does not fulfill the requirements of an archaeological inventory survey as specified in HAR §13-276-5, it serves to facilitate project planning and supports the historic preservation review process. **Please submit** two hard copies of the document along with a text-searchable PDF copy of the document and a copy of this letter to the SHPD Kapolei office, Attention SHPD Library. Additionally, please upload a text-searchable PDF copy of the report to HICRIS Project No. 2022PR01264 using the Project Supplement option and send a PDF copy to lehua.k.soares@hawaii.gov.

Please annotate on the construction plans: In the unlikely event that subsurface historic resources, including human skeletal remains, structural remains, cultural deposits, artifacts, sand deposits, or sink holes are identified during the demolition and/or construction work, cease work in the immediate vicinity of the find, protect the find from additional disturbance, and contact the State Historic Preservation Division, at (808) 652-1510.

Please contact Andrew McCallister, Maui Archaeologist IV, at andrew.mccallister@hawaii.gov for any matters regarding archaeological resources or this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: County of Maui, dsa.engineering@mauicounty.gov
Janet Six, County of Maui, janet.six@co.maui.hi.us
Erin Mukai, Pacific Rim Land, Inc., erinm@pacificrimland.com
Trevor Yucha, CSH, tyucha@culturalsurveys.com

APPENDIX F.

DRAINAGE REPORT

DRAINAGE REPORT -
2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAI'I
TMK: (2) 2-2-002: 084

February 9, 2026

Prepared for:

County of Maui,
Department of Water Supply
200 South High Street, Suite #5
Wailuku, HI 96793

Prepared by:

Austin, Tsutsumi & Associates, Inc.
Civil Engineers • Surveyors
501 Sumner Street, Suite 521
Honolulu, Hawai'i 96817
Telephone: (808) 533-3646
E-mail: atamaui@atahawaii.com
Honolulu • Wailuku, Hawai'i

DRAINAGE REPORT -
2.0 MG WATER STORAGE TANK

Kihei, Maui, Hawai'i

TMK: (2) 2-2-002: 084

Prepared for:

COUNTY OF MAUI,

DEPARTMENT OF WATER SUPPLY

200 South High Street, Suite #5

Wailuku, Maui, HI 96793

Prepared by:

Austin, Tsutsumi & Associates, Inc.

Civil Engineers • Surveyors

Honolulu • Wailuku, Hawaii

TABLE OF CONTENTS

I. INTRODUCTION 1

II. PROPOSED PROJECT 1

III. EXISTING CONDITIONS 2-3

IV. PROPOSED IMPROVEMENTS

A. SITE WORK 3

B. GRADING 3

C. DRAINAGE 3-4

D. STORMWATER QUALITY 5

E. EROSION CONTROL 6

V. CONCLUSION 6

REFERENCES 7

EXHIBITS

1. GENERAL SITE PLAN

2. 2.0 MG STORAGE TANK SITE PLAN

3. 2.0 MG STORAGE TANK GRADING PLAN

4. 2.0 MG STORAGE TANK EROSION CONTROL PLAN, DETAILS, AND NOTES

5. 2.0 MG STORAGE TANK DRAINAGE AREA MAP – PRE-DEVELOPMENT

6. 2.0 MG STORAGE TANK FLOOD ZONE MAP

7. OVERALL DRAINAGE AREA MAP

8. 2.0 MG STORAGE TANK DRAINAGE AREA MAP – POST-DEVELOPMENT

APPENDICES

A01. EXISTING HYDROLOGY CALCULATIONS

A02. PROPOSED HYDROLOGY CALCULATIONS

A03. EXISTING RUNOFF COEFFICIENTS

A04. PROPOSED RUNOFF COEFFICIENTS

A05. EXISTING TC CALCULATIONS

A06. PROPOSED TC CALCULATIONS

A07. TR-55 CN WORKSHEET FOR DA E-8 AND P-8

A08. TR-55 TC WORKSHEET FOR DA E-8 AND P-8

A09. E-8 AND P-8 RUNOFF HYDROGRAPHS FOR 50 AND 100-YR STORMS

A10. BASIN STAGE-STORAGE CALCULATIONS

A11. PRECIPITATION FREQUENCY DATA SERVER – INTENSITY

A12. PRECIPITATION FREQUENCY DATA SERVER – DEPTH FOR E-8 AND P-8

A13. WATER QUALITY CALCULATIONS 1

A14. WATER QUALITY CALCULATIONS 2

A15. WATER QUALITY CALCULATIONS 3

A16. MAUI WATER QUALITY FORM B

A17. MAUI WATER QUALITY BMP MAINTENANCE CHECKLISTS

DRAINAGE REPORT -
2.0 MG WATER STORAGE TANK

I. INTRODUCTION

The purpose of this report is to provide an analysis and review of the proposed drainage improvements related to the 2.0 Million Gallon (MG) Water Storage Tank Project east of Maui Research Technological Park (MRTP). This report evaluates the proposed drainage improvements for compliance with the County of Maui Drainage Standards.

II. PROPOSED PROJECT

The 2.0 MG Water Storage Tank Project is located east of MRTP in Kihei, Maui, Hawaii with Tax Map Key (TMK) number: (2) 2-2-002: 084. The site is located within an undeveloped lot owned by Haleakala Ranch Company. The project is dedicated to the County of Maui, Department of Water Supply (DWS). See Exhibit 1 for the General Site Plan.

The proposed project will involve construction of a new 2.0 million gallon (MG) water storage tank within a 1.45-acre tank site with an access road, drainage basin, rip-rap swales, and waterlines. The project will also involve installation of two 16-inch tank inlet and outlet waterlines approximately 3,700 feet in length. The access for the project will be from Lipoa Parkway along an existing road approximately 3,700 feet in length, 1,500 feet of which is currently paved. The 2,200-foot length of the existing dirt access road will be paved as part of this project. Site work will include the construction of the new 2.0 MG tank, drainage basin, rip-rap swales, and access road, and the installation of the waterlines. The graded area of the tank site is approximately 1.33 acres, and the graded area along the access road is approximately 2.07 acres, for a total graded area of approximately 3.4 acres. The total disturbed area including clearing, grubbing, grading, and work area is approximately 7.35 acres. See Exhibits 2, 3 and 4 for the tank site plan, grading plan and erosion control plan.

III. EXISTING CONDITIONS

The project site currently houses a dirt access road to the project site and consists mainly of wild grass and Kiawe trees. The site slopes downward in an east to west direction with an average slope of 9 percent. Onsite elevations range from 376 to 398 feet mean sea level (MSL). See Exhibit 5 for the pre-development drainage area map.

The Kihei area is warm and sunny throughout most of the year with average temperatures varying from a low of 63 degrees in the winter to a high of 88 degrees Fahrenheit in the summer. The Haleakala mountains occasionally block prevailing tradewinds coming from the northeast that occur mainly through the dry season months of April through September. Stronger winds are produced during the rainy season months of October through March. These stronger southerly winds are known as “Kona winds.” Average annual rainfall amounts to approximately 12.6 inches, with most of the rainfall occurring in the winter months.

The soil classification found on the project site is classified as Waiakoa, extremely stony silty clay loam (WID2) and Keawakapu extremely stony silty clay loam (KNXD). WID2 soil occurs in ash fields from volcanic ash or residuum weathered from basalt. Type WID2 soil is described as well-drained, and runoff is high. KNXD soil occurs in ash fields, mountain slopes, and lava flows. Type KNXD soil is described as well-drained, and runoff is medium. Soils classifications and descriptions are taken from the United States Department of Agriculture Soil Conservation Services publication entitled, Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii, dated 1972.

The proposed project site is located in Zone X, characterized as an area of minimal flooding, specifically areas determined to be outside the 0.2 percent annual chance floodplain. Flood zone classification is based on the Flood Insurance Rate Map (FIRM) number 150003 0586G, effective November 4, 2015, as prepared by the Federal Emergency Management Agency. Flood Map 15003 0587, located to the east, is an unpublished map panel. See Exhibit 6 for the Flood Zone Map.

Existing stormwater runoff generated from the site flows in a westerly direction toward the existing MRTP subdivision, either as sheet flows or within two unnamed dry gulches. Runoff is collected within an existing retention basin east of the MRTP subdivision, where it typically infiltrates. In larger storms, runoff would continue toward

Piilani Highway, where there is a 54-inch culvert on the north side of the Piilani Village Shopping Center. Makai of the highway, runoff continues through various storm drain systems before the stormwater outlets to Waipuilani Mauka Wetland, which is North of Piikea Avenue. There are currently no drainage structures crossing under S. Kihei Road from the wetland area. Runoff from this wetland overflows to S. Kihei Road and eventually spreads to the makai of the road and ultimately discharges to the ocean at the Veterans of Foreign Wars (VFW) Post 3850. See Exhibit 7 for the overall drainage map.

The total pre-development flow from the area of study, which includes onsite areas and contributing offsite areas, is calculated to be approximately 229.48 cubic feet per second (cfs) based on a 50-year, 1-hour storm interval. Refer to Exhibit 5 and Appendix A for runoff calculations.

IV. PROPOSED IMPROVEMENTS

A. SITE WORK

Site work includes excavation and embankment of the site, the construction of a new 2.0 MG water storage tank and drainage basin, the reconstruction of the access roadway, and installation of inflow and outflow waterlines to the tank. Refer to Exhibit 1 for the General Site Plan.

B. GRADING

The area of grading and disturbance for the project will be approximately 7.35 acres. The proposed earthwork quantities are 10,540 cubic yards (cy) of cut and 1,290 cy of fill, for a net volume of 9,250 cy of excavated material. The site will be graded to facilitate development and to collect and route runoff to the onsite detention basin.

C. DRAINAGE

The onsite proposed drainage system will include rip-rap ditches and a detention basin and will be designed to manage the 50-year, 1-hour storm recurrence interval, which is a Maui requirement for detention facilities. The post-development runoff from the area of study, which includes onsite areas and contributing offsite areas, is calculated to be approximately 231.43 cfs. Following

detention, the total runoff leaving the site is 228.22 cfs, a decrease of 1.26 cfs over existing conditions.

Runoff generated in DA P-1 will be collected in rip-rap ditches and, along with runoff from DA P-2, will empty into the new detention basin. The detention basin will collect a total of 3.21 cfs of runoff. The stormwater runoff that is retained within the detention basin will ultimately percolate into the ground. Stormwater runoff that is generated by a storm larger than the 50-year, 1-hour design storm will safely overflow through an overflow riser pipe and outlet drainline and continue downstream on its natural path via unnamed dry gulch “1”.

Runoff from DA P-3 flows west offsite toward the MRTP subdivision via dry gulch “1”. Runoff from DAs P-4 and P-5 flow to Swale S1 and a total of 1.56 cfs of runoff is directed offsite towards an unnamed dry gulch “2” north of the site.

Drainage Areas (DAs) P-6 and P-9 flow to Buffer Strips V1 and V2, respectively, draining 0.82 cfs of runoff offsite into dry gulch “1”. Runoff collected from DAs P-7 and P-8 will be released from the project area from the roadway ford located at Station 34+25 and continue downstream also toward dry gulch “1”. Runoff from DAs P-6 through P-9 will eventually flow towards the MRTP subdivision via dry gulch “1”.

All runoff from the project site will be directed toward the MRTP subdivision where the water will eventually be discharged to the Waipuilani Mauka Wetland, and potentially to the ocean near VFW Post 3850.

The drainage study did not include the makai section of the access road from Lipoa Parkway to Access Road Station 33+00. The proposed 12-foot access road will replace the existing access road and will not affect the drainage conditions onsite or downstream.

See Exhibit 8 for Proposed post-development drainage area map and Appendix A for runoff calculations and Basin Stage-Storage calculations.

D. STORMWATER QUALITY

As required by the County of Maui "Rules for the Design of Storm Water Treatment Best Management Practices," stormwater runoff from the project will receive treatment to maintain stormwater quality. The proposed stormwater management system will not just manage the 50-year, 1-hour peak storm flows, but will also provide treatment for the more common smaller storms, which are responsible for most of the annual runoff volume.

The project will incorporate the following stormwater Best Management Practices (BMPs) for runoff water quality:

Vegetated Filter Strip

Vegetated filter strips will provide filtration and collect sediment and debris.

Grassed Swales

Grass swales provide vegetative filtration and allow percolation into the underlying soil. Grass swales also work to slow down runoff, helping to mimic the natural conditions.

Dry Extended Detention Pond

Dry extended detention ponds provide treatment through extended detention of the water quality volume. The extended detention allows for the settling of fine particles and pollutants that are associated with those particles.

An appropriate maintenance plan will be developed for each BMP which will require accumulated debris and sediments to be removed during regularly scheduled maintenance and disposed at a County approved disposal site.

The preliminary Maui County Form B (Site Specific BMP Plan) and the applicable standard BMP maintenance checklists are included in the appendix of this report. The checklists specify the requirements for removing accumulated sediments and debris, maintaining vegetation, and performing regular inspections so that the water quality BMPs operate effectively into the future. Refer to Appendix A for the water quality calculations and maintenance checklists.

E. EROSION CONTROL

Temporary erosion control measures will be incorporated during construction to minimize soil loss and erosion hazards. Best Management Practices may include silt fences and filter socks. Periodic water spraying of loose soils will be implemented to minimize air-borne dirt particles from reaching adjacent properties.

V. CONCLUSION

The proposed drainage design for the 2.0 MG Water Storage Tank Project swill manage runoff such that the proposed development will not result in additional stormwater runoff for the 50-year, 1-hour design storm.

The project will comply with the County's "Rules for the Design of Storm Water Treatment Best Management Practices". In accordance with the rules, the project area runoff will receive the required mitigation and treatment to maintain water quality. Temporary erosion controls will also be installed to minimize pollution during and after construction. As it relates to stormwater and water quality, the proposed project will not have an adverse effect on adjacent or downstream properties.

REFERENCES:

1. Department of Public Works & Waste Management, County of Maui. (November 1995). *Rules for the Design of Storm Drainage Facilities in the County of Maui*, Title MC-15, Subtitle 01, Chapter 4.

2. Department of Public Works & Waste Management, County of Maui. (November 9, 2012). *Rules for the Design of Storm Water Treatment Best Management Practices*, Title MC-15, Subtitle 01, Chapter 111.

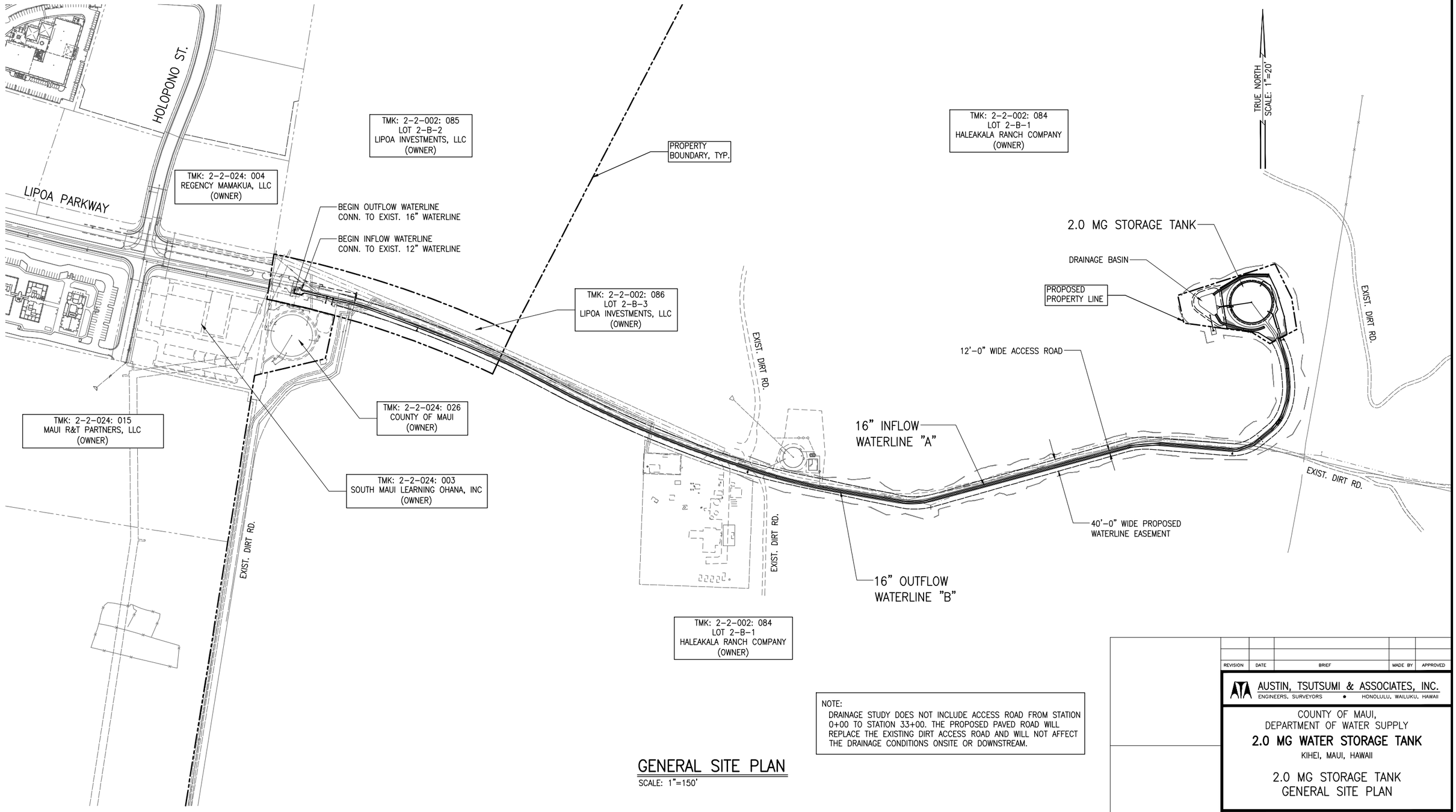
3. USDA, Soil Conservation Service in Cooperation with the University of Hawaii Agricultural Experiment Station. (August 1972). *Soil Survey of Island of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*.

4. Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Web Soil Survey. Available online at http://websoilsurvey.nrcs.usda.gov/.

5. Federal Emergency Management Agency. (November 4, 2015). *Flood and Insurance Rate Map, Maui County, Hawaii.* Map Number 1500030586G.

6. Giambelluca TW, Chen Q, Frazier AG, Price JP, Chen Y-L, Chu P-S, Eischeid J., and Delparte, D. 2011. The Rainfall Atlas of Hawai'i. Available online at http://rainfall.geography.hawaii.edu.

EXHIBITS



NOTE:
DRAINAGE STUDY DOES NOT INCLUDE ACCESS ROAD FROM STATION 0+00 TO STATION 33+00. THE PROPOSED PAVED ROAD WILL REPLACE THE EXISTING DIRT ACCESS ROAD AND WILL NOT AFFECT THE DRAINAGE CONDITIONS ONSITE OR DOWNSTREAM.

GENERAL SITE PLAN

SCALE: 1"=150'

REVISION	DATE	BRIEF	MADE BY	APPROVED

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
GENERAL SITE PLAN

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED DATE

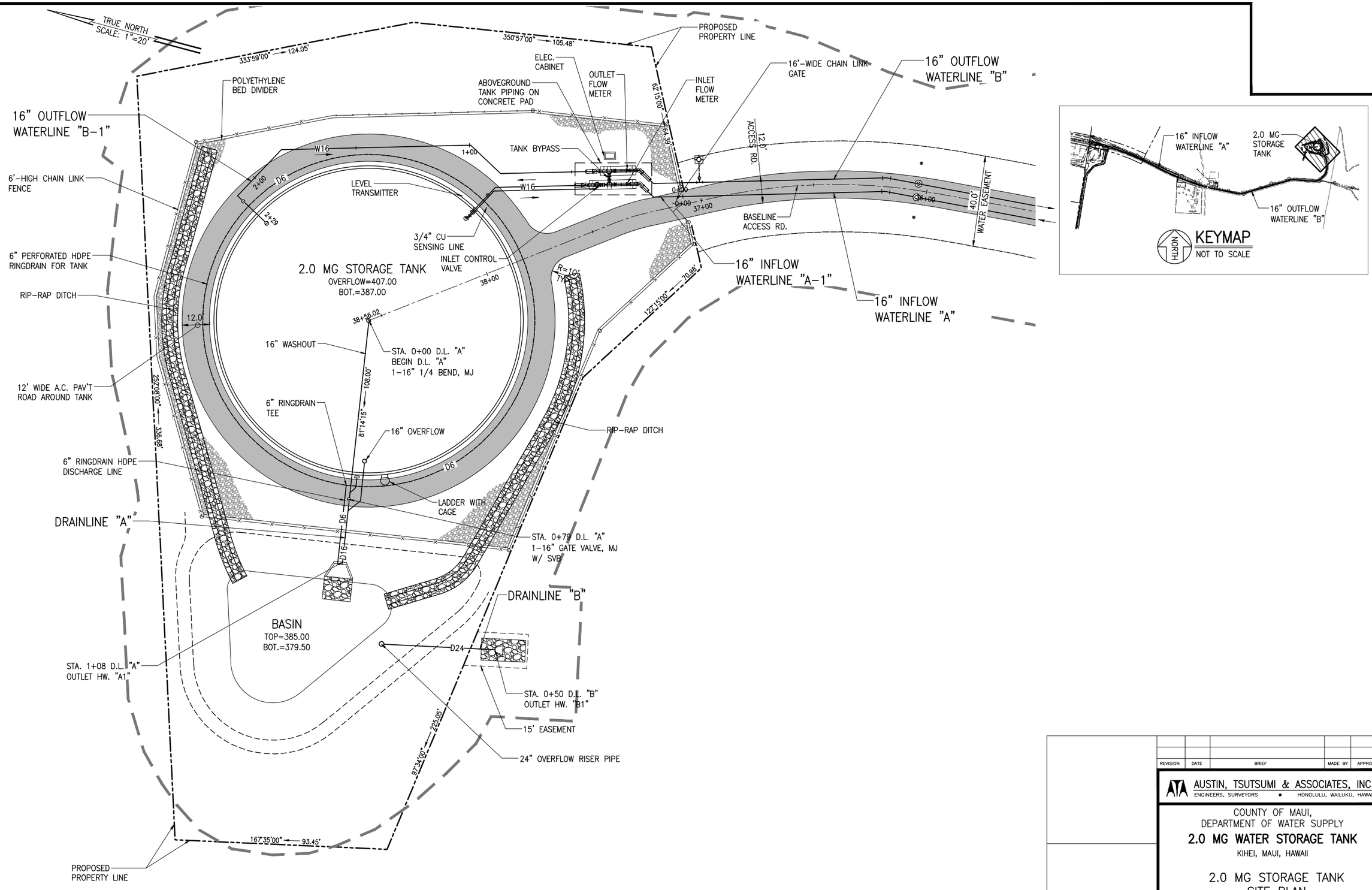
APPROVED DATE

DWG. NO. **EXH 1**

SHEET 1 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

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2.0 MG STORAGE TANK – SITE PLAN

SCALE: 1"=20'

REVISION	DATE	BRIEF	MADE BY	APPROVED

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ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
SITE PLAN

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED _____ DATE
APPROVED _____ DATE

DWG. NO. **EXH 2**
SHEET 2 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

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TRUE NORTH
SCALE: 1"=20'

A C-3|C-3 DIVERSION DITCH SLOPE AT 1.0% MIN

16" INFLOW WATERLINE "A-1"

16" OUTFLOW WATERLINE "B"

16" INFLOW WATERLINE "A"

BEGIN RIP-RAP DITCH
℄ INV.=385.50
TOP OF BANK=386.50

B C-3|C-3 RIP-RAP DITCH

16" OUTFLOW WATERLINE "B-1"

RIP-RAP DITCH @ MID. TANK
℄ INV.=384.90
TOP OF BANK=385.90

LIMITS OF GRADING

2.0 MG STORAGE TANK
OVERFLOW=407.00
BOT.=387.00

INLET

OUTLET

WASHOUT

16" DRAINLINE "A"

B1

B2

B3

16" OVERFLOW

BEGIN RIP-RAP DITCH
℄ INV.=385.00
TOP OF BANK=386.00

LIMITS OF DISTURBANCE

PROPOSED PROPERTY LINE

LIMITS OF GRADING

RIP-RAP DITCH AT BASIN INFLOW
℄ INV.=383.90
TOP OF BANK=384.90

RIP-RAP DITCH AT BASIN INFLOW
℄ INV.=384.00
TOP OF BANK=385.00

B C-3|C-3 7' WIDE RIP-RAP INFLOW DITCH, TYP.

7' WIDE RIP-RAP INFLOW DITCH

E C-3|C-20 OUTLET HEADWALL

FLARED END OUTLET A C-3|C-18

PROPOSED PROPERTY LINE

BASIN
TOP=385.00
BOT.=379.50

24" DRAINLINE "B"

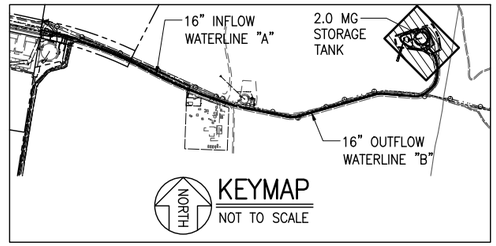
24" OVERFLOW RISER PIPE

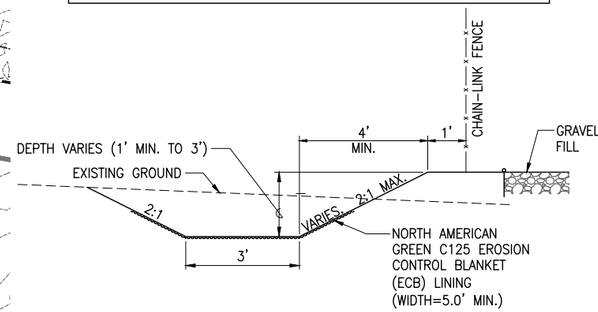
TOP OF BERM = 385

2.0 MG STORAGE TANK – GRADING PLAN
SCALE: 1"=20'

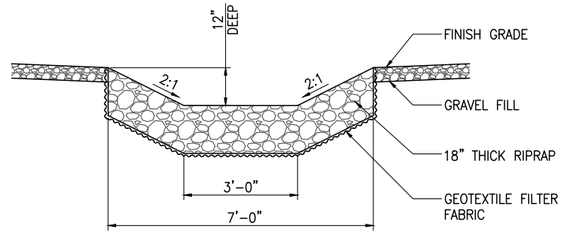
LEGEND

- LIMITS OF GRADING
- LIMITS OF DISTURBANCE
- B1 APPROXIMATE LOCATION OF BORING AND NUMBER (SEE DWG. C-15 FOR BORING LOGS)





TYPICAL SECTION DIVERSION DITCH A C-3|C-3
NOT TO SCALE



TYPICAL RIPRAP DITCH B C-3|C-3
NOT TO SCALE

EARTH WORK SUMMARY

	TANK SITE	ACCESS ROAD	TOTAL
GRADED AREA (ACRES)	1.33 ACRES	2.07 ACRES	3.40 ACRES
DISTURBED AREA (CLEARING, GRUBBING, GRADING, AND WORK AREA)	1.77 ACRES	5.58 ACRES	7.35 ACRES
TOTAL EXCAVATION	8,330 C.Y.	2,210 C.Y.	10,540 C.Y.
TOTAL EMBANKMENT	460 C.Y.	830 C.Y.	1,290 C.Y.
NET VOLUME	7,870 C.Y. (CUT)	1,380 C.Y. (CUT)	9,250 C.Y. (CUT)

REVISION	DATE	BRIEF	MADE BY	APPROVED

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ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY
2.0 MG WATER STORAGE TANK
KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
GRADING PLAN

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

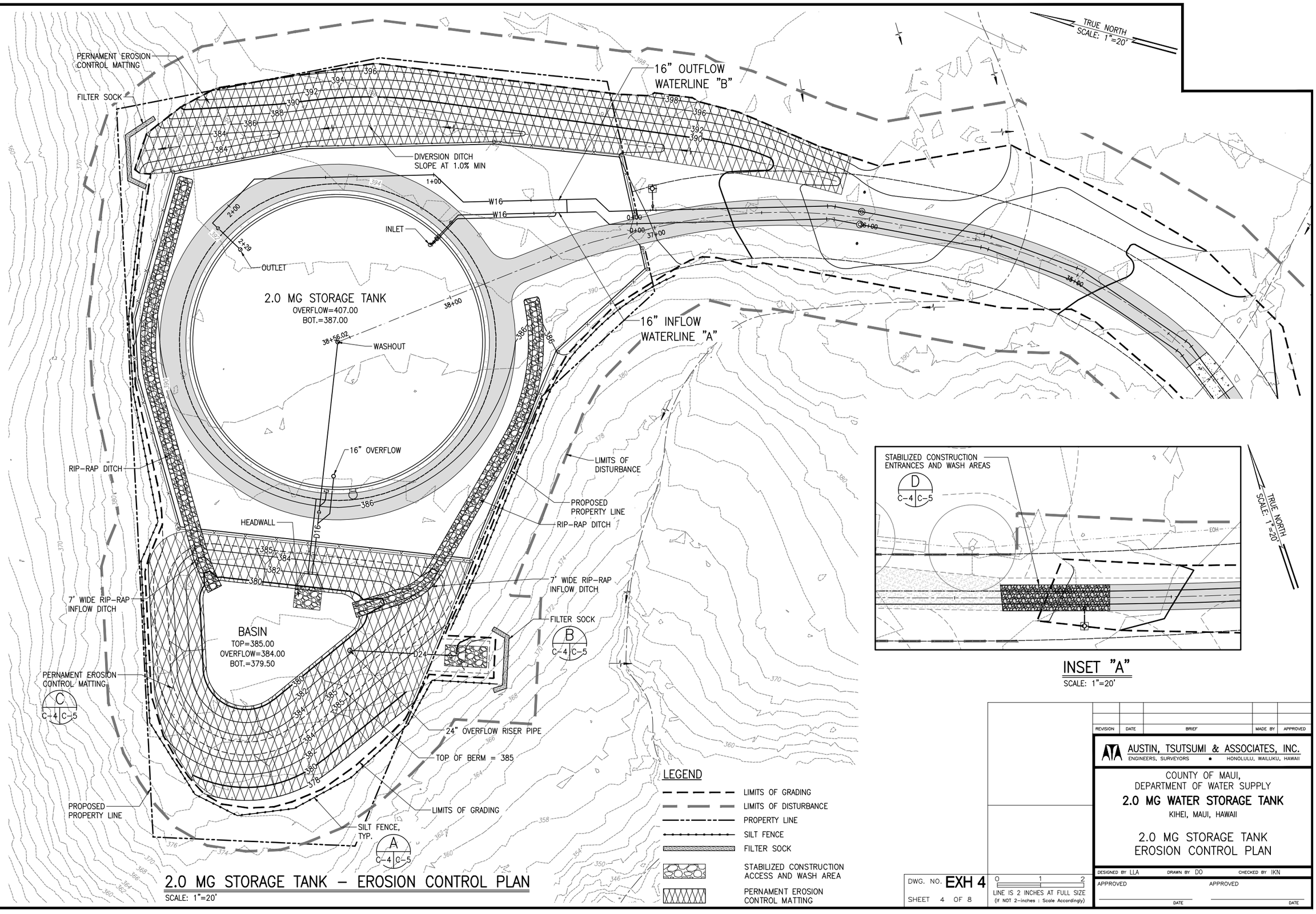
APPROVED DATE

APPROVED DATE

DWG. NO. **EXH 3**
SHEET 3 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

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2.0 MG STORAGE TANK – EROSION CONTROL PLAN

SCALE: 1"=20'

INSET "A"

SCALE: 1"=20'

REVISION	DATE	BRIEF	MADE BY	APPROVED

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ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
EROSION CONTROL PLAN

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED DATE

APPROVED DATE

DWG. NO. **EXH 4**

SHEET 4 OF 8

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(If NOT 2-inches : Scale Accordingly)

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TRUE NORTH
SCALE: 1"=60'

UNNAMED DRY GULCH "2"

UNNAMED DRY GULCH "1"

E-1
DRAINS OFFSITE
2.64 CFS

E-5
DRAINS OFFSITE
1.24 CFS

E-6
DRAINS OFFSITE
0.31 CFS

E-7
DRAINS OFFSITE
2.19 CFS

E-8
DRAINS OFFSITE
223.41 CFS

E-9
DRAINS OFFSITE
0.22 CFS

E-1

E-5

E-6

E-7

E-8

E-9

SEE EXHIBIT 7 FOR DRAINAGE AREA E-8.

THIS AREA NOT STUDIED. NEW 12' ROAD REPLACES EXISTING 12' ROAD.

REVISION	DATE	BRIEF	MADE BY	APPROVED

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COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
DRAINAGE AREA MAP
PRE-DEVELOPMENT

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED _____ DATE

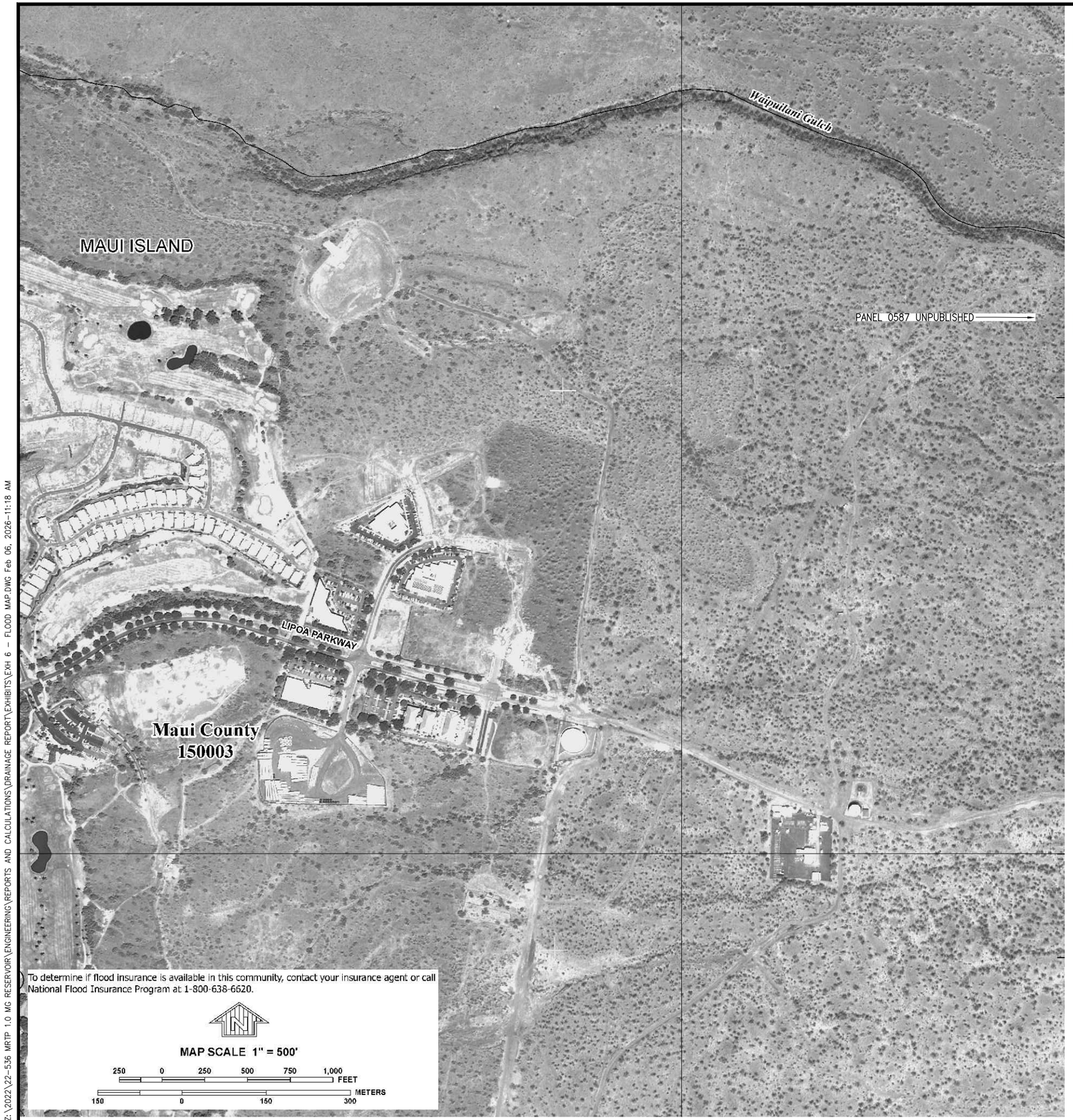
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SHEET 5 OF 8

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(If NOT 2-inches : Scale Accordingly)

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LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A No Base Flood Elevations determined.

ZONE AE Base Flood Elevations determined.

ZONE AH Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

ZONE AR Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.

ZONE A99 Areas to be protected from 1% annual chance flood event by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- 513 — Base Flood Elevation line and value; elevation in feet*
- (EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the LOCAL TIDAL DATUM

- A — A — Cross section line
- 23 — 23 — Transect line
- 97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere
- 4275000mE — 1000-meter Universal Transverse Mercator grid ticks, zone 4
- 6000000 FT — 5000-foot grid values: Hawaii State Plane coordinate system, Zone 2 (FIPSZONE = 5102), Transverse Mercator projection
- DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 — River Mile

MAP REPOSITORIES

County of Maui Planning Department, 2200 Main Street, Suite 315, Wailuku, Hawaii 96793
(Maps available for reference only, not for distribution.)

NOTE:
PANEL 0586 IS SHOWN HERE. PANEL 0587, LOCATED TO THE EAST, IS AN UNPUBLISHED MAP PANEL.

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0586G

FIRM

FLOOD INSURANCE RATE MAP

MAUI COUNTY, HAWAII

PANEL 586 OF 825

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
MAUI COUNTY	150003	0586	G

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
1500030586G

MAP REVISED
NOVEMBER 4, 2015
Federal Emergency Management Agency

REVISION	DATE	BRIEF	MADE BY	APPROVED

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY
2.0 MG WATER STORAGE TANK
KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
FLOOD ZONE MAP

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED DATE APPROVED DATE

DWG. NO. EXH 6
SHEET 6 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

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Waipuilani Mauka Wetlands

Approx. location of existing County drainage system

Approx. location where runoff enters existing County drainage system at culvert under Piilani Highway

Sheet flows into Pacific Ocean

MRTP

Discharge Point 2
Unnamed dry gulch "2"

Approximate MRTP Tank Site

Approximate location of dry gulch, typical (dashed blue line)

Lipoa Parkway

7,935,608 sf

North Holopono St

Discharge Point 1
Unnamed dry gulch "1"

Drainage Area E-8 & P-8
Area = 7,935,608 sf = 182.176 ac

Piilani Highway

WAIAKOA HOMESTEADS

ONOULU

WAIAKOA

KEOKEA

KAMAOLE

KAMAOLE HOMESTEADS

Kaipukaihina

Kalepolepo

Kulanihakoi Gulch

Puu Kahala

Naalae

Kaonoulu

Waiohuli

Puu o Kali

Nawawaeoalika

Kekuawahaulaula

Kihei Regional Park

Cove Park

Kaluaihakoko

Kamaole

Liilioholo

Keoneloa Park

Water Tank

Lihue Cem

PACIFIC OCEAN

TRUE NORTH
SCALE: NTS

REVISION	DATE	BRIEF	MADE BY	APPROVED

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

OVERALL DRAINAGE AREA MAP

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED DATE

APPROVED DATE

DWG. NO. EXH 7

SHEET 7 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

FN:\2022\22-536 MRTP 1.0 MG RESERVOIR\ENGINEERING\REPORTS AND CALCULATIONS\DRAINAGE REPORT\EXHIBITS\EXH 7 - DRAINAGE AREA B.DWG Feb 06, 2026-11:19 AM

TRUE NORTH
SCALE: 1"=60'

P-1 DRAINS TO BASIN 1 3.67 CFS	P-4 DRAINS TO SWALE 1 AND OFFSITE 0.56 CFS	P-7 DRAINS TO ROADWAY FORD AT 34+25 2.47 CFS
P-2 DRAINS TO BASIN 1 0.62 CFS	P-5 DRAINS TO SWALE 1 AND OFFSITE 1.40 CFS	P-8 DRAINS TO ROADWAY FORD AT 34+25 223.41 CFS
P-3 DRAINS OFFSITE 0.56 CFS	P-6 DRAINS TO BUFFER STRIP V1 AND OFFSITE 0.63 CFS	P-9 DRAINS TO BUFFER STRIP V1 AND OFFSITE 0.47 CFS

UNNAMED DRY GULCH "2"

DETENTION BASIN B1

P-1

P-2

P-3

P-4

P-5

P-6

P-7

P-8

P-9

VEGETATED SWALE S1

VEGETATED BUFFER STRIP V1 AT EDGE OF ROADWAY

VEGETATED BUFFER STRIP V2 AT EDGE OF ROADWAY

UNNAMED DRY GULCH "1"

DRAINAGE FORD @ ROADWAY STA. 34+25.

THIS AREA NOT STUDIED. NEW 12" ROAD REPLACES EXISTING 12" ROAD.

SEE EXHIBIT 7 FOR DRAINAGE AREA E-8.

REVISION	DATE	BRIEF	MADE BY	APPROVED

AUSTIN, TSUTSUMI & ASSOCIATES, INC.
ENGINEERS, SURVEYORS • HONOLULU, WAILUKU, HAWAII

COUNTY OF MAUI,
DEPARTMENT OF WATER SUPPLY

2.0 MG WATER STORAGE TANK

KIHEI, MAUI, HAWAII

2.0 MG STORAGE TANK
DRAINAGE AREA MAP
POST-DEVELOPMENT

DESIGNED BY LLA DRAWN BY DO CHECKED BY IKN

APPROVED _____ DATE

APPROVED _____ DATE

DWG. NO. EXH 8

SHEET 8 OF 8

0 1 2
LINE IS 2 INCHES AT FULL SIZE
(If NOT 2-inches : Scale Accordingly)

FN:\2022\22-536 MRTP 1.0 MG RESERVOIR\ENGINEERING\REPORTS AND CALCULATIONS\DRAINAGE REPORT\EXHIBITS\EXH 8 - MRTP TANK DRAINAGE AREAS - PROP.DWG Feb 06, 2026-11:19 AM

APPENDICES

RUNOFF SUMMARY
2.0 MG WATER STORAGE TANK
EXISTING CONDITIONS

			"A"	"C"		"I"	"Q"	"V"
Drainage Area Label	**Flows To**	**Area (sq. ft.)**	**Area (acres)**	**Runoff Coeff.**	**Tc (min)**	**50-Yr Rainfall Intensity (in/hr)**	**50-Yr Runoff Rate (cfs)**	**50-Yr 1-Hr Runoff Vol. (cf)**
E-1	Offsite	63,078	1.448	0.35	9.8	4.80	2.43	4,374
E-2	N/A	-	-	-	-	-	-	-
E-3	N/A	-	-	-	-	-	-	-
E-4	N/A	-	-	-	-	-	-	-
E-5	Offsite	30,808	0.707	0.35	11.1	4.60	1.14	2,052
E-6	Offsite	5,949	0.137	0.35	5.0	5.90	0.28	504
E-7	Offsite	49,610	1.139	0.38	10.8	4.65	2.01	3,618
E-8	Offsite	7,935,608	182.176	-	-	-	223.41	402,138
E-9	Offsite	4,407	0.101	0.35	5.5	5.80	0.21	378
			185.708				**229.48**	**413,064**

Notes:
1. 50-year design recurrence interval is used due to proposed detention basin.
2. Refer to Runoff Coefficient Calculations for determination of weighted runoff coefficients.
3. Refer to Time of Concentration Calculations for determination of Tc values.
4. Maui Plate 7 is used to get the 50-year, 1-hour rainfall (2.3 inches).
   Maui Plate 2 is then used to convert this to the design rainfall intensity for the duration equal to the Time of Concentration.
5. Runoff is determined using the Rational Method (Q = CIA) for all drainage areas except DA E-8. Runoff for E-8 is determined using the SCS Method. Refer to Hydrology Studio calculations.
6. The 1-hour runoff volume is determined assuming a triangular 1-hour runoff hydrograph with peak flow at time equal to Tc.

RUNOFF SUMMARY
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

			"A"	"C"		"I"	"Q"	"V"
Drainage Area Label	**Flows To**	**Area (sq. ft.)**	**Area (acres)**	**Runoff Coeff.**	**Tc (min)**	**50-Yr Rainfall Intensity (in/hr)**	**50-Yr Runoff Rate (cfs)**	**50-Yr 1-Hr Runoff Vol. (cf)**
P-1	Detention Basin B1	35,509	0.815	0.57	5.0	5.90	2.74*	4,932*
P-2	Detention Basin B1	9,848	0.226	0.35	5.0	5.90	0.47*	0,846*
P-3	Offsite	8,907	0.204	0.35	5.0	5.90	0.42	756
P-4	Swale S1 and Offsite	8,824	0.203	0.35	5.0	5.90	0.42	756
P-5	Swale S1 and Offsite	30,808	0.707	0.35	11.1	4.60	1.14	2,052
P-6	Buffer Strip V1 and Offsite	5,949	0.137	0.58	5.0	5.90	0.47	846
P-7	Roadway Ford @ 34+25	49,610	1.139	0.38	10.8	4.65	2.01	3,618
P-8	Roadway Ford @ 34+25	7,935,608	182.176	-	-	-	223.41	402,138
P-9	Buffer Strip V2 and Offsite	4,407	0.101	0.59	5.0	5.90	0.35	630
			185.708				**228.22**	**410,796**

Notes:
1. 50-year design recurrence interval is used due to proposed detention basin.
2. Refer to Runoff Coefficient Calculations for determination of weighted runoff coefficients.
3. Refer to Time of Concentration Calculations for determination of Tc values.
4. Maui Plate 7 is used to get the 50-year, 1-hour rainfall (2.3 inches). Maui Plate 2 is then used to convert this to the design rainfall intensity for the duration equal to the Time of Concentration.
5. Runoff is determined using the Rational Method (Q = CIA) for all drainage areas except DA P-8. Runoff for P-8 is determined using the SCS Method. Refer to Hydrology Studio calculations.
6. The 1-hour runoff volume is determined assuming a triangular 1-hour runoff hydrograph with peak flow at time equal to Tc.
7. * Runoff from Drainage Areas P-1 and P-2 is retained and does not contribute to runoff total.

RUNOFF COEFFICIENT CALCULATIONS
2.0 MG WATER STORAGE TANK
EXISTING CONDITIONS

Drainage Area Label	C= 0.95 Impervious Areas		C= 0.30 Gravel Areas		C= 0.35 Grass, Heavy/ Rocky Soil, Steep Slope		Total Area	Weighted Runoff C
	(sf)	(%)	(sf)	(%)	(sf)	(%)	(sf)	
E-1	0	0%	0	0%	63,078	100%	63,078	**0.35**
E-2	-	-	-	-	-	-	-	**-**
E-3	-	-	-	-	-	-	-	**-**
E-4	-	-	-	-	-	-	-	**-**
E-5	0	0%	0	0%	30,808	100%	30,808	**0.35**
E-6	0	0%	0	0%	5,949	100%	5,949	**0.35**
E-7	2,105	4%	0	0%	47,505	96%	49,610	**0.38**
E-8	-	-	-	-	-	-	-	**-**
E-9	0	0%	0	0%	4,407	100%	4,407	**0.35**

Notes:
1. Table 2 from the Maui Storm Drain Rules is referenced for determination of of runoff coefficients for different land uses.
2. Coverage areas were measured based on topographic survey.
3. Weighted runoff coefficient determined based on proportional areas.

RUNOFF COEFFICIENT CALCULATIONS
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

Drainage Area Label	C= 0.95 Impervious Areas		C= 0.30 Gravel Areas		C= 0.35 Grass, Heavy/ Rocky Soil, Steep Slope		Total Area	Weighted Runoff C
	(sf)	(%)	(sf)	(%)	(sf)	(%)	(sf)	
P-1	14,599	41%	20,909	59%	0	0%	35,509	**0.57**
P-2	0	0%	563	6%	9,284	94%	9,848	**0.35**
P-3	0	0%	0	0%	8,907	100%	8,907	**0.35**
P-4	0	0%	0	0%	8,824	100%	8,824	**0.35**
P-5	0	0%	0	0%	30,808	100%	30,808	**0.35**
P-6	2,305	39%	0	0%	3,644	61%	5,949	**0.58**
P-7	2,105	4%	0	0%	47,505	96%	49,610	**0.38**
P-8	-	-	-	-	-	-	-	**-**
P-9	1,744	40%	0	0%	2,663	60%	4,407	**0.59**

Notes:
1. Table 2 from the Maui Storm Drain Rules is referenced for determination of of runoff coefficients for different land uses.
2. Coverage areas were measured based on topographic survey and proposed plans.
3. Weighted runoff coefficient determined based on proportional areas.

TIME OF CONCENTRATION CALCULATIONS
2.0 MG WATER STORAGE TANK
EXISTING CONDITIONS

Drainage Area Label	Flows Segment	Flow Type	Length (ft)	Slope (%)	Surface Type	Velocity (fps)	Segment Tt (min)	Total Tc (min)
E-1	1	Sheet	100	4.8	Pr. Grass	0.2	8.0	
	2	Concentrated	270	5.9	Pr. Grass	2.5	1.8	
								9.8
E-2	-	-	-	-	-	-	-	-
E-3	-	-	-	-	-	-	-	-
E-4	-	-	-	-	-	-	-	-
E-5	1	Sheet	100	2.3	Pr. Grass	0.2	9.4	
	2	Concentrated	150	3.3	Pr. Grass	1.5	1.7	
								11.1
E-6	1	Sheet	35	5.0	Pr. Grass	0.1	5.0	**5.0**
E-7	1	Sheet	100	5.6	Pr. Grass	0.2	7.7	
	2	Concentrated	150	2.7	Pr. Grass	1.5	1.7	
	3	Channel	260	4.9	0.045	3.0	1.4	
								10.8
E-8	-	-	-	-	-	-	-	-
E-9	1	Sheet	40	5.0	Pr. Grass	0.1	5.5	**5.5**

Notes:
1. Plate 1 from the Maui Storm Drain Rules is used for the determination of Sheet Flow times.
2. Table 4 from the Maui Storm Drain Rules is used for the determination of Shallow Concentrated Flow velocities.
3. The Manning's Formula is used for the determination of channel flow velocities.
4. The minimum Time of Concentration used in runoff calculations is 5 minutes.

TIME OF CONCENTRATION CALCULATIONS
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

Drainage Area Label	Flows Segment	Flow Type	Length (ft)	Slope (%)	Surface Type	Velocity (fps)	Segment Tt (min)	Total Tc (min)
P-1	1	Sheet	70	2.0	Pave	1.0	1.2	
	2	Channel	230	0.8	0.035	1.4	2.7	
								3.9
P-2	1	Sheet	20	33.3	Pr. Grass	0.4	0.9	**0.9**
P-3	1	Sheet	25	33.3	Pr. Grass	0.4	1.1	-
	2	Sheet	30	16.0	Pr. Grass	0.3	1.5	
								2.6
P-4	1	Sheet	30	50.0	Pr. Grass	0.5	1.1	
	2	Channel	210	2.4	0.035	3.5	1.0	
								2.1
P-5	1	Sheet	100	2.3	Pr. Grass	0.2	9.4	
	2	Concentrated	150	3.3	Pr. Grass	1.5	1.7	
								11.1
P-6	1	Sheet	12	2.0	Pave	1.0	0.2	
	2	Sheet	20	5.0	Pr. Grass	0.2	2.2	
								2.4
P-7	1	Sheet	100	5.6	Pr. Grass	0.2	7.7	
	2	Concentrated	150	2.7	Pr. Grass	1.5	1.7	
	3	Channel	260	4.9	0.045	3.0	1.4	
								10.8
P-8	-	-	-	-	-	-	-	-
P-9	1	Sheet	12	2.0	Pave	1.0	0.2	**0.2**
	2	Sheet	20	5.0	Pr. Grass	0.2	2.2	
								2.4

Notes:
1. Plate 1 from the Maui Storm Drain Rules is used for the determination of Sheet Flow times.
2. Table 4 from the Maui Storm Drain Rules is used for the determination of Shallow Concentrated Flow velocities.
3. The Manning's Formula is used for the determination of channel flow velocities.
4. The minimum Time of Concentration used in runoff calculations is 5 minutes.

DRAINAGE AREA E-8 and P-8

Worksheet 2: Runoff curve number and runoff

Project	By	Date
2.0 MG Water Storage Tank	Austin, Tsutsumi & Assoc.	9/14/2023
Location	**Checked**	**Date**
Kihei, Maui, Hawaii	RE	9/14/2023

Check one: ☒ Present ☐ Developed

1. Runoff curve number

Soil name and hydrologic group (appendix A)	Cover description (cover type, treatment, and hydrologic condition; percent impervious; unconnected/connected impervious area ratio)	CN 1/ Table 2-2	CN 1/ Figure 2-3	CN 1/ Figure 2-4	Area ☒ acres ☐ mi² ☐ %	Product of CN x area
Keawakapu (KNXD), HSG C	Brush-Weed-Grass Mix, Good Cond.	65			182.2	11,843

1/ Use only one CN source per line

Totals ➡ 182.2 | 11,843

CN (weighted) = $\frac{\text{total product}}{\text{total area}} = \frac{11{,}843}{182.2} = 65.0$;

Use CN ➡ 65

2. Runoff

		Storm #1	Storm #2	Storm #3
Frequency	yr	50-Yr	100-Yr	
Rainfall, P (24-hour)	in	7.5	8.6	
Runoff, Q	in	See TR-20	See TR-20	

(Use P and CN with table 2-1, figure 2-1, or equations 2-3 and 2-4)

Reference: Technical Release 55 (TR-55) Urban Hydrology for Small Watersheds, Second Ed. (1986)

DRAINAGE AREA E-8 and P-8

Worksheet 3: Time of Concentration (T_c) or travel time (T_t)

Project	By	Date
2.0 MG Water Storage Tank	Austin, Tsutsumi & Assoc.	9/14/2023
Location	**Checked**	**Date**
Kihei, Maui, Hawaii	RE	9/14/2023

Check one: ☒ Present ☐ Developed

Check one: ☒ T_c ☐ T_t through subarea

Notes: Space for as many as two segments per flow type can be used for each worksheet.
Include a map, schematic, or description of flow segments.

Sheet flow (Applicable to Tc only)

	Segment ID	A to B	
1.	Surface description (table 3-1)	Grass, Dense	
2.	Manning's roughness coefficient, n (table 3-1)	0.240	
3.	Flow length, L (total L † 300 ft)*(see below) ft	100	
4.	Two-year 24-hour rainfall, P_2 in	3.0	
5.	Land slope, s ft/ft	0.0570	
6.	$T_t = \frac{0.007\ (nL)^{0.8}}{P_2^{0.5}\ s^{0.4}}$ Compute T_t hr	0.16 +	= 0.16

*For Item 3, Max. L=100'. Ref: NEH Part 630, Ch. 15, 630.1502.b (2010)

Shallow concentrated flow

	Segment ID	B to C	
7.	Surface description (paved or unpaved)	Woodlands**	
8.	Flow length, L ft	1,400	
9.	Watercourse slope, s ft/ft	0.0730	
10.	Average velocity, V (figure 3-1) ft/s	1.36**	
11.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	0.29 +	= 0.29

**For Items 7 and 10, Reference: NEH Part 630, Ch. 15, Table 15-3. (2010)

Channel flow

	Segment ID	C to D	D to E
12.	Cross sectional flow area, a ft^2	6.00	13.50
13.	Wetted perimeter, p_w ft	8.47	12.71
14.	Hydraulic radius, $r = \frac{a}{p_w}$ Compute r ft	0.71	1.06
15	Channel slope, s ft/ft	0.0480	0.0400
16.	Manning's roughness coefficient, n	0.045	0.045
17.	$V = \frac{1.49\ r^{2/3}\ s^{1/2}}{n}$ Compute V ft/s	5.75	6.88
18.	~~Flow~~ length, L ft	4,600	2,400
19.	$T_t = \frac{L}{3600\ V}$ Compute T_t hr	0.22 +	0.10 = 0.32
20.	Watershed or subarea T_c or T_t (add T_t in steps 6, 11, and 19) Hr		0.77

= 46 min.

Reference: Technical Release 55 (TR-55) Urban Hydrology for Small Watersheds, Second Ed. (1986)

Hydrograph Report

Project Name: MRTP 2.0 MG Storage Tank

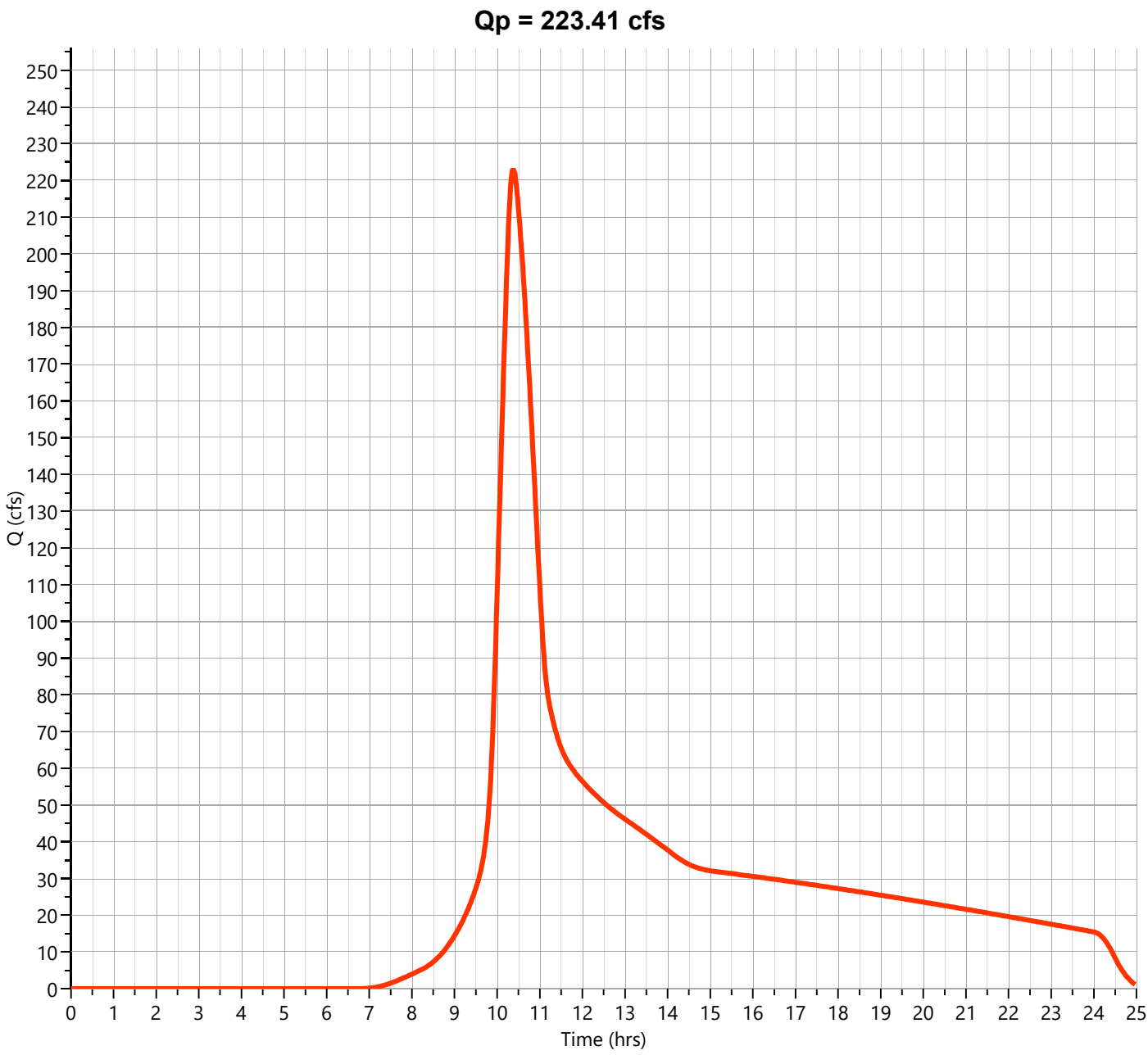
Hydrology Studio v 3.0.0.27

09-14-2023

E-8 and P-8

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 223.4 cfs
Storm Frequency	= 50-yr	Time to Peak	= 10.38 hrs
Time Interval	= 1 min	Runoff Volume	= 2,321,188 cuft
Drainage Area	= 182.2 ac	Curve Number	= 65
Tc Method	= User	Time of Conc. (Tc)	= 46.0 min
Total Rainfall	= 7.50 in	Design Storm	= Type I
Storm Duration	= 24 hrs	Shape Factor	= 484



Hydrograph Report

Project Name: MRTP 2.0 MG Storage Tank

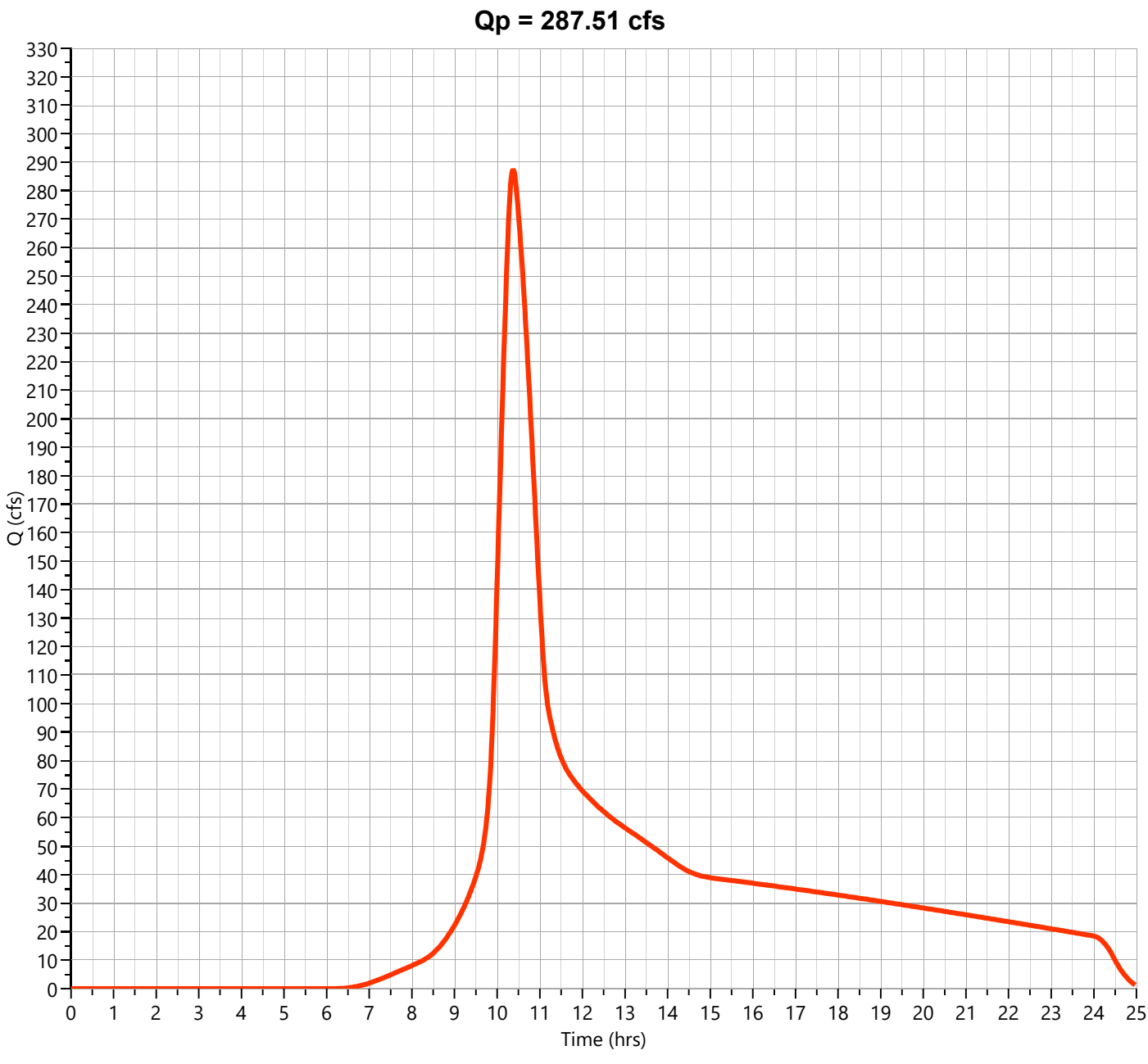
Hydrology Studio v 3.0.0.27

09-14-2023

E-8 and P-8

Hyd. No. 1

Hydrograph Type	= NRCS Runoff	Peak Flow	= 287.5 cfs
Storm Frequency	= 100-yr	Time to Peak	= 10.38 hrs
Time Interval	= 1 min	Runoff Volume	= 2,912,940 cuft
Drainage Area	= 182.2 ac	Curve Number	= 65
Tc Method	= User	Time of Conc. (Tc)	= 46.0 min
Total Rainfall	= 8.60 in	Design Storm	= Type I
Storm Duration	= 24 hrs	Shape Factor	= 484

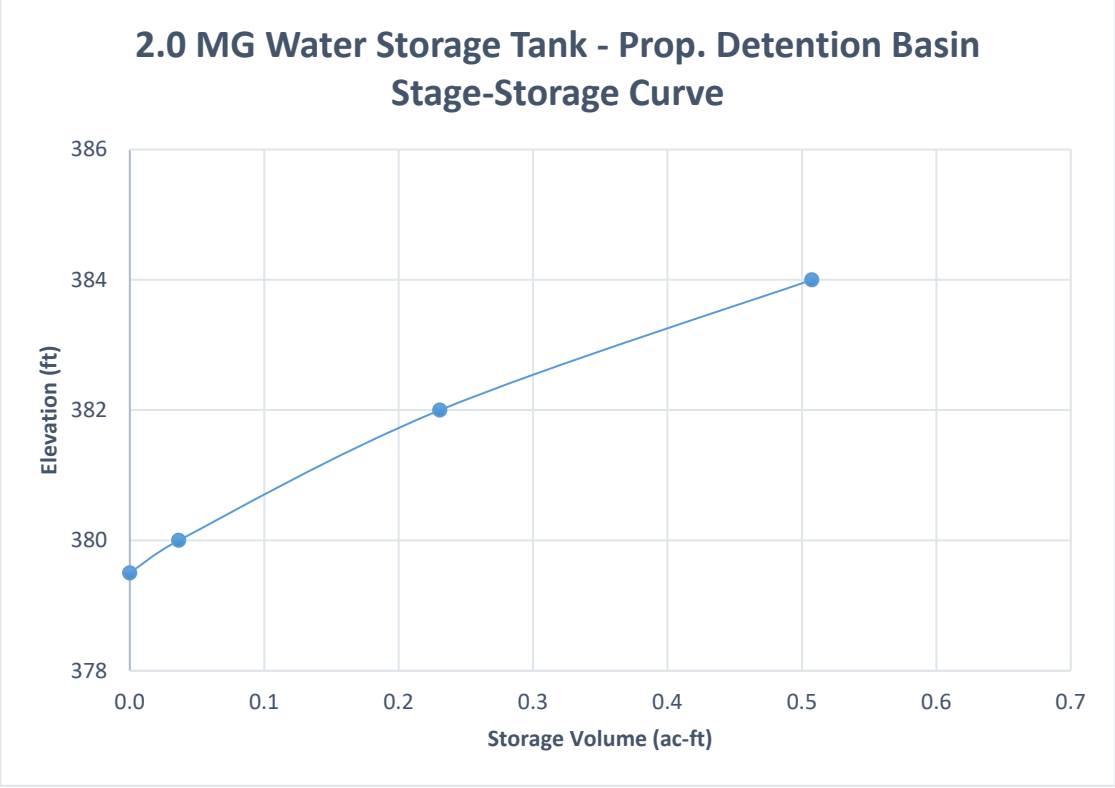


2.0 MG Water Storage Tank - Prop. Detention Basin

Stage-Storage Table

379.5	2,958	0	0	0
380	3,385	1,586	1,586	0.036
382	5,074	8,459	10,045	0.231
384	6,980	12,054	22,099	0.507

Notes:
1. Storage volume determined by Average Area method.
2. Storage Capacity at WQV Level (Elevation 381) = 5,022.5 cf = 0.133 ac-ft
3. Storage Capacity at Max. Fill w/ 1 ft Freeboard (Elevation 384.00) = 22,099 cf = 0.507 ac-ft



NOAA Atlas 14, Volume 4, Version 3
Location name: Kihei, Hawaii, USA*
Latitude: 20.7482°, Longitude: -156.4257°
Elevation: 401 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

S. Perica, D. Martin, B. Lin, T. Parzybok, D. Riley, M. Yekta, L. Hiner, L.-C. Chen, D. Brewer, F. Yan, K. Maitaria, C. Trypaluk, G. M. Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**2.58** (2.28-3.01)	**3.42** (2.95-4.03)	**4.63** (3.97-5.46)	**5.56** (4.74-6.60)	**6.86** (5.76-8.24)	**7.90** (6.53-9.59)	**8.98** (7.28-11.0)	**10.1** (8.02-12.6)	**11.6** (8.90-14.8)	**12.9** (9.56-16.7)
10-min	**1.91** (1.69-2.23)	**2.54** (2.19-2.99)	**3.43** (2.95-4.05)	**4.12** (3.51-4.90)	**5.09** (4.27-6.11)	**5.86** (4.84-7.11)	**6.65** (5.40-8.17)	**7.48** (5.94-9.32)	**8.62** (6.61-11.0)	**9.53** (7.09-12.4)
15-min	**1.60** (1.41-1.87)	**2.12** (1.83-2.50)	**2.87** (2.47-3.39)	**3.45** (2.94-4.10)	**4.26** (3.58-5.12)	**4.90** (4.05-5.95)	**5.57** (4.52-6.84)	**6.26** (4.97-7.80)	**7.22** (5.53-9.19)	**7.98** (5.94-10.3)
30-min	**1.13** (0.994-1.31)	**1.49** (1.29-1.76)	**2.02** (1.74-2.39)	**2.43** (2.07-2.88)	**3.00** (2.52-3.60)	**3.45** (2.85-4.19)	**3.92** (3.18-4.81)	**4.41** (3.50-5.49)	**5.08** (3.89-6.47)	**5.61** (4.18-7.28)
60-min	**0.743** (0.654-0.865)	**0.983** (0.849-1.16)	**1.33** (1.14-1.57)	**1.60** (1.36-1.90)	**1.97** (1.66-2.37)	**2.27** (1.88-2.76)	**2.58** (2.09-3.16)	**2.90** (2.30-3.61)	**3.34** (2.56-4.25)	**3.69** (2.75-4.79)
2-hr	**0.507** (0.447-0.587)	**0.677** (0.585-0.797)	**0.914** (0.784-1.08)	**1.10** (0.933-1.30)	**1.35** (1.13-1.62)	**1.54** (1.27-1.87)	**1.74** (1.41-2.14)	**1.95** (1.54-2.43)	**2.23** (1.70-2.84)	**2.45** (1.81-3.17)
3-hr	**0.373** (0.327-0.431)	**0.507** (0.437-0.597)	**0.689** (0.591-0.814)	**0.830** (0.704-0.984)	**1.02** (0.855-1.23)	**1.18** (0.965-1.42)	**1.33** (1.07-1.63)	**1.49** (1.17-1.85)	**1.70** (1.30-2.16)	**1.87** (1.38-2.42)
6-hr	**0.232** (0.203-0.270)	**0.316** (0.271-0.372)	**0.433** (0.370-0.512)	**0.525** (0.445-0.624)	**0.651** (0.543-0.781)	**0.750** (0.616-0.910)	**0.851** (0.685-1.04)	**0.956** (0.752-1.19)	**1.10** (0.833-1.40)	**1.21** (0.887-1.57)
12-hr	**0.143** (0.124-0.166)	**0.196** (0.168-0.230)	**0.272** (0.232-0.320)	**0.331** (0.280-0.392)	**0.415** (0.346-0.497)	**0.482** (0.395-0.583)	**0.551** (0.442-0.674)	**0.624** (0.489-0.774)	**0.725** (0.547-0.919)	**0.805** (0.587-1.04)
24-hr	**0.087** (0.076-0.101)	**0.121** (0.105-0.141)	**0.169** (0.146-0.197)	**0.208** (0.179-0.242)	**0.264** (0.224-0.308)	**0.309** (0.261-0.362)	**0.356** (0.298-0.419)	**0.406** (0.337-0.482)	**0.478** (0.389-0.572)	**0.536** (0.430-0.645)
2-day	**0.048** (0.042-0.055)	**0.068** (0.059-0.078)	**0.096** (0.083-0.110)	**0.118** (0.103-0.136)	**0.151** (0.130-0.174)	**0.177** (0.151-0.205)	**0.205** (0.173-0.239)	**0.235** (0.196-0.275)	**0.277** (0.228-0.327)	**0.311** (0.252-0.370)
3-day	**0.034** (0.030-0.039)	**0.048** (0.042-0.055)	**0.068** (0.059-0.078)	**0.084** (0.073-0.096)	**0.107** (0.092-0.123)	**0.125** (0.107-0.146)	**0.145** (0.123-0.169)	**0.166** (0.139-0.195)	**0.195** (0.161-0.231)	**0.219** (0.178-0.261)
4-day	**0.027** (0.023-0.031)	**0.038** (0.033-0.043)	**0.054** (0.047-0.062)	**0.067** (0.058-0.077)	**0.085** (0.073-0.098)	**0.100** (0.085-0.116)	**0.115** (0.098-0.134)	**0.132** (0.110-0.155)	**0.155** (0.127-0.183)	**0.173** (0.140-0.206)
7-day	**0.017** (0.015-0.019)	**0.024** (0.021-0.028)	**0.034** (0.030-0.039)	**0.043** (0.037-0.049)	**0.054** (0.047-0.063)	**0.063** (0.054-0.073)	**0.073** (0.062-0.085)	**0.083** (0.069-0.097)	**0.096** (0.079-0.114)	**0.107** (0.087-0.127)
10-day	**0.013** (0.011-0.015)	**0.018** (0.016-0.021)	**0.026** (0.023-0.030)	**0.032** (0.028-0.037)	**0.041** (0.035-0.047)	**0.047** (0.040-0.055)	**0.054** (0.046-0.063)	**0.061** (0.051-0.072)	**0.071** (0.058-0.084)	**0.078** (0.063-0.093)
20-day	**0.008** (0.007-0.009)	**0.011** (0.010-0.013)	**0.016** (0.014-0.018)	**0.019** (0.017-0.022)	**0.024** (0.021-0.028)	**0.028** (0.024-0.032)	**0.031** (0.027-0.037)	**0.035** (0.030-0.041)	**0.040** (0.033-0.048)	**0.044** (0.036-0.053)
30-day	**0.006** (0.005-0.007)	**0.008** (0.007-0.009)	**0.012** (0.010-0.013)	**0.014** (0.012-0.016)	**0.018** (0.015-0.021)	**0.020** (0.017-0.024)	**0.023** (0.020-0.027)	**0.026** (0.022-0.030)	**0.029** (0.024-0.035)	**0.032** (0.026-0.038)
45-day	**0.004** (0.004-0.005)	**0.006** (0.006-0.007)	**0.009** (0.008-0.011)	**0.011** (0.010-0.013)	**0.014** (0.012-0.016)	**0.016** (0.013-0.018)	**0.018** (0.015-0.021)	**0.020** (0.016-0.023)	**0.022** (0.018-0.026)	**0.024** (0.019-0.029)
60-day	**0.004** (0.003-0.004)	**0.005** (0.005-0.006)	**0.008** (0.007-0.009)	**0.009** (0.008-0.011)	**0.011** (0.010-0.013)	**0.013** (0.011-0.015)	**0.015** (0.012-0.017)	**0.016** (0.013-0.019)	**0.018** (0.015-0.021)	**0.019** (0.016-0.023)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

NOAA Atlas 14, Volume 4, Version 3
Location name: Kihei, Hawaii, USA*
Latitude: 20.7449°, Longitude: -156.4148°
Elevation: 551 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

S. Perica, D. Martin, B. Lin, T. Parzybok, D. Riley, M. Yekta, L. Hiner, L.-C. Chen, D. Brewer, F. Yan, K. Maitaria, C. Trypaluk, G. M. Bonnin

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**0.226** (0.200-0.264)	**0.297** (0.257-0.349)	**0.398** (0.343-0.470)	**0.476** (0.407-0.566)	**0.586** (0.493-0.703)	**0.671** (0.557-0.814)	**0.760** (0.619-0.932)	**0.851** (0.679-1.06)	**0.977** (0.752-1.24)	**1.08** (0.805-1.40)
10-min	**0.336** (0.296-0.391)	**0.440** (0.381-0.518)	**0.590** (0.509-0.697)	**0.706** (0.604-0.839)	**0.869** (0.731-1.04)	**0.995** (0.825-1.21)	**1.13** (0.918-1.38)	**1.26** (1.01-1.57)	**1.45** (1.12-1.84)	**1.60** (1.19-2.07)
15-min	**0.422** (0.372-0.491)	**0.552** (0.478-0.650)	**0.741** (0.639-0.875)	**0.887** (0.758-1.05)	**1.09** (0.918-1.31)	**1.25** (1.04-1.52)	**1.42** (1.15-1.74)	**1.58** (1.26-1.98)	**1.82** (1.40-2.32)	**2.00** (1.50-2.60)
30-min	**0.594** (0.524-0.692)	**0.777** (0.673-0.915)	**1.04** (0.899-1.23)	**1.25** (1.07-1.48)	**1.54** (1.29-1.84)	**1.76** (1.46-2.13)	**1.99** (1.62-2.44)	**2.23** (1.78-2.78)	**2.56** (1.97-3.26)	**2.82** (2.11-3.66)
60-min	**0.781** (0.689-0.910)	**1.02** (0.885-1.20)	**1.37** (1.18-1.62)	**1.64** (1.40-1.95)	**2.02** (1.70-2.42)	**2.32** (1.92-2.81)	**2.62** (2.13-3.22)	**2.94** (2.34-3.66)	**3.37** (2.59-4.29)	**3.71** (2.78-4.82)
2-hr	**1.06** (0.934-1.22)	**1.40** (1.21-1.65)	**1.88** (1.61-2.22)	**2.25** (1.92-2.67)	**2.75** (2.31-3.30)	**3.14** (2.60-3.81)	**3.53** (2.87-4.33)	**3.94** (3.13-4.90)	**4.48** (3.43-5.70)	**4.90** (3.64-6.36)
3-hr	**1.17** (1.02-1.35)	**1.57** (1.36-1.85)	**2.12** (1.83-2.51)	**2.55** (2.17-3.02)	**3.13** (2.62-3.75)	**3.58** (2.95-4.33)	**4.03** (3.27-4.94)	**4.50** (3.56-5.59)	**5.13** (3.92-6.52)	**5.61** (4.17-7.27)
6-hr	**1.44** (1.26-1.68)	**1.95** (1.67-2.29)	**2.65** (2.27-3.13)	**3.20** (2.72-3.80)	**3.95** (3.30-4.74)	**4.54** (3.73-5.50)	**5.13** (4.14-6.30)	**5.74** (4.53-7.15)	**6.57** (5.00-8.36)	**7.21** (5.31-9.34)
12-hr	**1.78** (1.55-2.07)	**2.42** (2.08-2.84)	**3.33** (2.85-3.92)	**4.05** (3.44-4.80)	**5.05** (4.22-6.05)	**5.84** (4.80-7.07)	**6.66** (5.37-8.15)	**7.52** (5.92-9.33)	**8.70** (6.59-11.0)	**9.62** (7.05-12.4)
24-hr	**2.16** (1.87-2.50)	**2.98** (2.57-3.45)	**4.13** (3.56-4.80)	**5.07** (4.35-5.90)	**6.38** (5.44-7.46)	**7.45** (6.30-8.74)	**8.56** (7.18-10.1)	**9.74** (8.09-11.5)	**11.4** (9.32-13.6)	**12.7** (10.3-15.3)
2-day	**2.38** (2.09-2.74)	**3.32** (2.91-3.82)	**4.68** (4.09-5.39)	**5.79** (5.03-6.68)	**7.36** (6.34-8.53)	**8.64** (7.38-10.1)	**9.99** (8.45-11.7)	**11.4** (9.57-13.5)	**13.5** (11.1-16.0)	**15.1** (12.2-18.1)
3-day	**2.52** (2.21-2.89)	**3.53** (3.10-4.05)	**4.98** (4.36-5.73)	**6.16** (5.36-7.10)	**7.84** (6.76-9.08)	**9.19** (7.86-10.7)	**10.6** (8.99-12.4)	**12.1** (10.2-14.3)	**14.3** (11.7-16.9)	**16.0** (12.9-19.0)
4-day	**2.66** (2.34-3.04)	**3.73** (3.28-4.28)	**5.28** (4.62-6.06)	**6.54** (5.69-7.52)	**8.31** (7.18-9.62)	**9.74** (8.34-11.3)	**11.2** (9.54-13.1)	**12.8** (10.8-15.1)	**15.0** (12.4-17.8)	**16.8** (13.6-20.0)
7-day	**3.00** (2.65-3.43)	**4.23** (3.72-4.84)	**5.98** (5.24-6.85)	**7.37** (6.43-8.46)	**9.32** (8.06-10.8)	**10.9** (9.32-12.6)	**12.5** (10.6-14.5)	**14.2** (11.9-16.6)	**16.5** (13.6-19.4)	**18.2** (14.8-21.7)
10-day	**3.24** (2.86-3.71)	**4.58** (4.03-5.24)	**6.46** (5.66-7.40)	**7.94** (6.92-9.12)	**10.0** (8.64-11.5)	**11.6** (9.96-13.5)	**13.3** (11.3-15.5)	**15.0** (12.6-17.6)	**17.3** (14.3-20.5)	**19.1** (15.5-22.7)
20-day	**3.99** (3.52-4.55)	**5.61** (4.95-6.41)	**7.84** (6.88-8.97)	**9.57** (8.36-11.0)	**11.9** (10.3-13.7)	**13.7** (11.8-15.9)	**15.5** (13.2-18.1)	**17.4** (14.6-20.3)	**19.8** (16.3-23.4)	**21.6** (17.6-25.7)
30-day	**4.50** (3.99-5.14)	**6.36** (5.60-7.27)	**8.86** (7.77-10.1)	**10.8** (9.40-12.4)	**13.3** (11.5-15.4)	**15.3** (13.1-17.7)	**17.2** (14.6-20.0)	**19.1** (16.0-22.4)	**21.6** (17.8-25.6)	**23.5** (19.1-28.0)
45-day	**5.46** (4.82-6.21)	**7.66** (6.76-8.76)	**10.6** (9.32-12.1)	**12.8** (11.2-14.7)	**15.7** (13.6-18.1)	**17.9** (15.3-20.7)	**20.0** (17.0-23.3)	**22.0** (18.5-25.9)	**24.7** (20.4-29.3)	**26.6** (21.6-31.8)
60-day	**6.12** (5.42-6.98)	**8.61** (7.59-9.84)	**11.9** (10.4-13.6)	**14.3** (12.5-16.4)	**17.4** (15.1-20.1)	**19.7** (16.9-22.8)	**21.9** (18.6-25.6)	**24.1** (20.2-28.3)	**26.8** (22.1-31.8)	**28.8** (23.3-34.4)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

Back to Top

PF graphical

CALCULATION OF WQDV AND WQFR
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

Drainage Area Label	WQ BMP	Area (acres)	VOLUME BASED BMP SIZING			FLOW-THROUGH BASED BMP SIZING	
			Percent Imperv. Cover (%)	WQDV Runoff Coeff.	Required WQDV Treatment Volume (cf)	WQFR Runoff Coeff.	Required WQFR Treatment Rate (cfs)
P-1	Detention Basin B1	0.815	41	0.42	**1,243**	-	**-**
P-2	Detention Basin B1	0.226	0	0.05	**41**	-	**-**
P-3	N/A	0.204	-	-	**-**	-	**-**
P-4	Veg. Swale S1	0.203	-	-	**-**	0.35	**0.03**
P-5	Veg. Swale S1	0.707	-	-	**-**	0.35	**0.10**
P-6	Veg. Buffer Strip V1	0.137	-	-	**-**	0.58	**0.03**
P-7	N/A	1.139	-	-	**-**	-	**-**
P-8	N/A	182.176	-	-	**-**	-	-
P-9	Veg. Buffer Strip V2	0.101	-	-	**-**	0.59	**0.02**

Notes:
1. Volume Based Sizing for Retention and Infiltration BMPs Per Maui Stormwater Treatment BMP Rules §15-111-5 (a) (1):
   WQDV = C x 1" x A x 3630
   WDQV Runoff Coefficient is determined based on the following EPA formula:
   C = 0.05 + 0.009 I, where I = Percent Impervious Cover
2. Flow-Through Based Sizing for Flow-Through BMPs Per Maui Stormwater Treatment BMP Rules §15-111-5 (b) (1):
   WQFR = C x 0.4 x A
   WQFR Runoff Coefficient matches that used in Runoff Calculations.

CHECK OF WQDV PROVIDED
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

WQ BMP	Total Contrib. Area (acres)	Total Required WQDV Treatment Volume (cf)	Provided WQDV Treatment Volume (cf)	Is Sufficient?
Detention Basin B1	1.041	1,284	**5,022**	Yes

Notes: 1. See previous page for calculation of Required Water Quality Design Volume (WQDV).
2. See Detention Basin Stage-Storage Data for WQDV Provided.

CHECK OF WQFR TREATMENT
2.0 MG WATER STORAGE TANK
PROPOSED CONDITIONS

WQ BMP	Contrib. Area (acres)	Required WQFR Treatment Rate (cfs)	Vegetated Swale/ Buffer Strip Length (ft)	Vegetated Swale/ Buffer Strip Slope (%)	Vegetated Swale/ Buffer Strip Flow Depth (in)	Vegetated Swale/ Buffer Strip Flow Velocity (ft/s)	Is Sufficient?
Veg. Swale S1	0.910	0.13	170	1.7	1.9	0.24	Yes
Veg. Buffer Strip V1	0.137	0.03	15	5.0	0.1	0.02	Yes
Veg. Buffer Strip V2	0.101	0.02	15	5.0	0.1	0.02	Yes

Notes: 1. See previous pages for calculation of Required Water Quality Flow Rate (WQFR).

2. Depth and velocity determined by solving the Manning's Equation using Studio Express software based on the following:

   Typical Swale Parameters:

   2:1 side-slopes

   3' swale base

   6" min. available swale depth

   n = 0.200 (as recommended in Honolulu Veg. Swale Sizing Guidance)

   Typical Buffer Strip Parameters:

   n = 0.250 (as recommended in Honolulu Veg. Buffer Strip Sizing Guidance)

3. Swale/ buffer strip slope shown above is the average along the segment.

4. Required vegetated swale parameters per Maui §15-111-5 (b)(2)(B)

   Length 100 ft min.

   Flow Depth 4" max.

   Slope 2% max.

5. Required vegetated buffer strip parameters per Honolulu Sizing Guidance

   Length 15 ft min.

   Flow Depth 1" max.

   Velocity 1 fps max.

   Slope 10% max.

FORM B

COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, HAWAII 96793
Ph: (808)270-7242 Fax: (808)270-7972 Inspector: (808)270-7366

STORMWATER RUNOFF CONTROL PRACTICES AND MAINTENANCE PLAN

INTRODUCTION

Increases in impervious surfaces associated with development can increase runoff, degrade water quality, and negatively impact streams, coastal waters, and other water bodies. The best way to mitigate these impacts is to treat, infiltrate, or store runoff onsite before it can impact water bodies downstream.

This General Permit allows the permit holder to construct the proposed project, subject to special conditions and requirements to mitigate stormwater impacts due to development.

OWNER/PERMITTEE INFORMATION

Project Name:	2.0 MG Water Storage Tank
Address:	Lipoa Parkway, Kihei, Maui, HI
Tax Map Key:	(2) 2-2-002: 084 (POR.)
Permit No.:	TBD
Facility Contact Name:	TBD
Phone Number:	TBD
E-Mail:	TBD

REQUIRED BEST MANAGEMENT PRACTICES

To the maximum extent feasible, runoff from paved areas and other impervious surfaces, roof drains, and other onsite drainage systems shall not be allowed to directly drain into the street, gutter, storm drain, or drainage ditch, or any stream, creek, or other body of water. Rather runoff shall be directed to vegetated areas, gravel or sand pits, retention ponds, vegetated swale, tree wells, planter areas, porous pavements, or other treatment devices.

TREATMENT CONTROL MEASURES

- ☑ Detention Basin
- ☐ Infiltration Basin/Trench
- ☐ Sand Filter
- ☐ Other
- ☐ Bioretention
- ☑ Vegetated Swale
- ☑ Vegetated Filter Strip
- ☐ Pre-fabricated Treatment Device
- ☐ Porous Pavement
- ☐ Subsurface Drainage System

- Attach appropriate checksheet.
- 8-1/2x11 exhibit showing location and size of the treatment control measure shall be provided.

MAINTENANCE REQUIREMENT

- Property owner shall provide adequate long term maintenance to ensure that all storm water control facilities remain in proper working condition.
- County representatives are authorized to enter the property at reasonable times and in a reasonable manner for the purpose of inspecting the facilities.
- Appropriate maintenance checklists are attached.

OWNER'S CERTIFICATION

- The site shall be developed and maintained in accordance with all provisions of this plan.
- Compliance with the provisions of this plan shall remain as a condition of the associated building permit or subdivision approval in perpetuity and shall run with the land unless otherwise released in writing by the County of Maui.

Name	Signature	Date

STORMWATER POST-DEVELOPMENT CONTROL MEASURE MAINTENANCE CHECK LIST FOR:

DETENTION BASIN

COUNTY OF MAUI

MAINTENANCE REQUIREMENTS	
Maintenance Activity	Schedule
Reconstruct or replace facility when it no longer functions properly.	As needed
Ensure that appropriate site runoff continues to flow to facility.	Annual
Assess overall operation of facility and make necessary repairs.	Annual
Inspect, clean, and repair all pretreatment areas.	Annual, After major storms
Maintain establishment of vegetation and replant bare areas.	Annual
Remove unwanted trees, brush, and weeds.	Annual
Repair inlet and outlet structures, overflow, low flow channels, and any other structures.	Annual, After major storms
Remove trash and debris.	Annual, After major storms
Repair erosion and other damage.	Annual, After major storms
Remove sediment from main basin	When 50% of original volume has been lost
Other:	

STORMWATER POST-DEVELOPMENT CONTROL MEASURE MAINTENANCE CHECK LIST FOR:

VEGETATED SWALE

COUNTY OF MAUI

MAINTENANCE REQUIREMENTS	
Maintenance Activity	Schedule
Reconstruct or replace facility when it no longer functions properly.	As needed
Ensure that appropriate site runoff continues to flow to facility.	Annual
Assess overall operation of facility and make necessary repairs.	Annual
Inspect, clean, and repair all pretreatment areas.	Annual, after major storms
Mow grass to maintain a height of 4 to 6 inches.	Bi-Annual
Remove trash and debris from the swale.	Annual, after major storms
Inspect swale for sign of erosion, vegetation damage/coverage, channelization problems, debris build-up and excessive sedimentation in bottom of the channel.	Annual, after major storms
Remove sediment in inlet areas, channels, culverts, and outlets whenever flow into the swale is retarded or blocked.	Annual, after major storms
Inspect swale for obstructions (e.g. debris accumulation, invasive vegetation) and pools of standing water that can provide mosquito-breeding habitat. Correct observed problems.	Annual, after major storms
Other:	

STORMWATER POST-DEVELOPMENT CONTROL MEASURE MAINTENANCE CHECK LIST FOR:

VEGETATED FILTER STRIP

COUNTY OF MAUI

MAINTENANCE REQUIREMENTS

Maintenance Activity	Schedule
Reconstruct or replace facility when it no longer functions properly.	As needed
Ensure that appropriate site runoff continues to flow to facility.	Annual
Assess overall operation of facility and make necessary repairs.	Annual
Inspect, clean, and repair all pretreatment areas.	Annual, after major storms
Mow grass to maintain a height of 2 to 4 inches.	Bi-Annual
Remove trash and debris from filter strip.	Annual, after major storms
Remove sediment.	Annual, after major storms
Repair ruts or holes in filter strip. Replant bare areas.	Annual, after major storms
Other:	

APPENDIX G-1.

HAWAIʻI STATE PLAN – ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

APPENDIX G-1

Analysis of Project Applicability to Hawai‘i State Plan

Chapter 226, HRS, also known as the Hawai‘i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Plan consists of three (3) parts. Part I includes the Overall Theme, Goals, Objectives, and Policies; Part II includes Planning, Coordination, and Implementation; and Part III establishes Priority Guidelines. Inasmuch as Part II of the State Plan covers its administrative structure and implementation process, discussion of the proposed project's applicability to Part II is not appropriate. Below is an analysis of the project's applicability to Part I and Part III of the Hawai‘i State Plan.

The methodology for the analysis involves examining the project's applicability to the Hawai‘i State Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the Hawai‘i State Plan, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advance or promote the objective, policy or priority guideline.

   Example: A county project to develop a new water source and related transmission facilities would be directly applicable to the objectives and policies for Facility Systems-Water (HRS 226-16) which states: *(5) Support water supply services to areas experiencing critical water problems.*

2. **Indirectly applicable:** the action and its potential effects indirectly support or advance the objective, policy or priority guideline.

   Example: The county water source project cited above supports other related objectives and policies for the economy (HRS 226-6, General), which, by example, states: *(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.* In this case, the principle purpose of the project was not to create new construction activities, but nonetheless, supports this policy by creating temporary construction activity during the implementation of the project. In this instance, the proposed action may be deemed to be indirectly applicable to the objective and policy of the Hawai‘i State Plan.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Hawai‘i State Plan.

   Example: That same county water source improvement project referenced above, may not have direct or indirect linkage to objectives and policies for the economy-Federal

Expenditures (HRS 226-9) which states: *(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment.* From the standpoint of the agency proposing the water system improvement, and assuming no Federal Funding for the project, there is an unlikely intent that the proposed water source project would be connected to or reliant upon the foregoing policy. Hence, from the standpoint of judiciously applied policy analysis, the proposed action would be considered not applicable to the policy.

In general, a proposed action's applicability to the objectives, policies and priority guidelines of the Hawai'i State Plan is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions.

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies **Key: DA = Directly Applicable, IA = Indirectly Applicable,** **NA = Not Applicable**	**DA**	**IA**	**NA**
HRS 226-1: Findings and Purpose			
HRS 226-2: Definitions			
HRS 226-3: Overall Theme			
HRS 226-4: State Goals. In order to ensure, for the present and future generations, those elements of choice and mobility that ensure that individuals and groups may approach their desired levels of self-reliance and self determination, it shall be the goal of the State to achieve: (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii's present and future generations. (2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people. (3) Physical, social, and economic well-being, for individuals and families in Hawaii, that nourishes a sense of community responsibility, of caring, and of participation in community life.			
Analysis: **The proposed Kihei water tank project supports the goals of the Hawai'i State Plan. The water tank will indirectly support the South Maui economy by providing a limited number of construction jobs and contributing to meeting the water supply needs of local businesses. By making the South Maui water supply network more resilient and reliable, the project will also support public health and sustainable stewardship of natural resources.**			
Chapter 226-5 Objective and Policies for Population			
Objective:			
(a) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic and social objectives contained in this chapter.			**X**
Policies:			
(b) To achieve the population objective, it shall be the policy of this State to:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.			X
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			X
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.			X
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			X
Analysis: **Not applicable.**			
Chapter 226-6 Objectives and policies for the economy – – in general			
Objectives:			
(a) Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawaii's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.			X
Policies:			
(b) To achieve general economic objectives, it shall be the policy of this State to:			
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.			X
(2) Expand Hawaii's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			X
(4) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(6) Seek broader outlets for new or expanded Hawaii business investments.			X
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			X
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.			X
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawaii's small scale producers, manufacturers, and distributors.			X
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			X
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.			X
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawaii's workers.			X
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			X
(17) Stimulate the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.			X
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			X
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new or innovative potential growth industries in particular.			X
(21) Foster a business climate in Hawaii--including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.			X
Analysis: **Not applicable.**			
Chapter 226-7 Objectives and policies for the economy – – agriculture.			
Objectives:			
(a) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawaii's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.			X

Hawai‘i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.			X
Policies:			
(b) To achieve the agriculture objectives, it shall be the policy of this State to:			
(1) Establish a clear direction for Hawaii's agriculture through stakeholder commitment and advocacy.			X
(2) Encourage agriculture by making the best use of natural resources.			X
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.			X
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawaii's food producers and consumers in the State, nation, and world.			X
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
(12) In addition to the State's priority on food, expand Hawaii's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			X
(13) Promote economically competitive activities that increase Hawaii's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D-104.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			X
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i‘a, māla, and irrigated lo‘i, and growth of traditional Hawaiian crops, such as kalo, ‘uala, and ‘ulu.			X
(18) Increase and develop small-scale farms.			X
Analysis: **Not applicable.**			
Chapter 226-8 Objective and policies for the economy – – visitor industry.			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
(a) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy.			X
Policies:			
(b) To achieve the visitor industry objective, it shall be the policy of this State to:			
(1) Support and assist in the promotion of Hawaii's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			X
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			X
Analysis: **Not applicable.**			
Chapter 226-9 Objective and policies for the economy – – federal expenditures.			
Objective:			
(a) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawaii's economy.		X	
Policies:			
(b) To achieve the federal expenditures objective, it shall be the policy of this State to:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment;			X
(2) Promote Hawaii's supportive role in national defense, in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy;			X
(3) Promote the development of federally supported activities in Hawaii that respect statewide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawaii's environment;		X	
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service;			X
(5) Promote federal use of local commodities, services, and facilities available in Hawaii;			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii; and			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(7) Pursue the return of federally controlled lands in Hawaii that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Analysis: **The proposed project will seek federal funds, to the extent available, to support this critical infrastructure improvement in the County.**			
Chapter 226-10 Objective and policies for the economy – – potential growth and innovative activities.			
Objective:			
(a) Planning for the State's economy with regard to potential growth and innovative activities shall be directed towards achievement of the objective of development and expansion of potential growth and innovative activities that serve to increase and diversify Hawaii's economic base.			X
Policies:			
(b) To achieve the potential growth and innovative activity objective, it shall be the policy of this State to:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;			X
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawaii through the export of services or products or substitution of imported services or products;			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;			X
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus;			X
(6) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people;			X
(7) Enhance and promote Hawaii's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;			X
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste;			X
(9) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State;			X
(10) Provide public incentives and encourage private initiative to attract new or innovative industries that best support Hawaii's social, economic, physical, and environmental objectives;			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			X
(12) Develop, promote, and support research and educational and training programs that will enhance Hawaii's ability to attract and develop economic activities of benefit to Hawaii;			X
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaii;			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawaii's social, economic, physical, and environmental objectives;			X
(15) Increase research and development of businesses and services in the telecommunications and information industries;			X
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Analysis: **Not applicable.**			
Chapter 226-10.5 Objectives and policies for the economy – – information industry.			
Objective:			
(a) Planning for the State's economy with regard to telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region.			X
Policies:			
(b) To achieve the information industry objective, it shall be the policy of this State to:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaii and between Hawaii and the world, and make high speed communication available to all residents and businesses in Hawaii;			X
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth and innovation in Hawaii's economy;			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawaii;			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaii, using technology to communicate with their headquarters, offices, or customers located out-of-state;			X
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people;			X
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy; and			X
(9) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.			X
Analysis: **Not applicable.**			
Chapter 226-11 Objectives and policies for the physical environment – – land based, shoreline, and marine resources.			
Objectives:			
(a) Planning for the State's physical environment with regard to land-based, shoreline, and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawaii's land-based, shoreline, and marine resources.			X
(2) Effective protection of Hawaii's unique and fragile environmental resources.			X
Policies:			
(b) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:			
(1) Exercise an overall conservation ethic in the use of Hawaii's natural resources.			X
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.			X
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.			X
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.			X
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.			X
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities, and natural resources.			X
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.			X
Analysis: **Not applicable.**			
Chapter 226-12 Objective and policies for the physical environment – – scenic, natural beauty, and historic resources.			
Objective:			
(a) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawaii's scenic assets, natural beauty, and multi-cultural/historical resources.			X
Policies:			
(b) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:			
(1) Promote the preservation and restoration of significant natural and historic resources.			X
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.			X
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.			X
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.			X
Analysis: **Not applicable.**			
Chapter 226-13 Objectives and policies for the physical environment – – land, air, and water quality.			
Objectives:			
(a) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives.			
(1) Maintenance and pursuit of improved quality in Hawaii's land, air, and water resources.		X	
(2) Greater public awareness and appreciation of Hawaii's environmental resources.			X
Policies:			
(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			
(1) Foster educational activities that promote a better understanding of Hawaii's limited environmental resources.			X
(2) Promote the proper management of Hawaii's land and water resources.		X	
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.			X
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.			X
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.		X	
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.			X
(7) Encourage urban developments in close proximity to existing services and facilities.			X
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.			X
Analysis: **The proposed project involves developing a water tank to provide redundancy to the County water system. The site is located outside of flood, tsunami, and sea level rise exposure areas to reduce threats from natural hazards.**			
Chapter 226-14 Objective and policies for facility systems – – in general.			
Objective:			
(a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, sustainable development, climate change adaptation, sea level rise adaptation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.	X		
Policies:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) To achieve the general facility systems objective, it shall be the policy of this State to:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	X		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.			X
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.			X
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			X
(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.			X
(6) Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities.			X
Analysis: **The proposed Kīhei Water Tank project is directly applicable to the general objectives and policies for facility systems set by the State. The proposed project will accommodate the needs of Hawai'i's people by providing a water storage facility in consonance with need for maintenance of public facilities and infrastructure in the Kīhei-Makena area.**			
Chapter 226-15 Objectives and policies for facility systems – – solid and liquid waste.			
Objectives:			
(a) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.			X
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.			X
Policies:			
(b) To achieve solid and liquid waste objectives, it shall be the policy of this State to:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.			X
(2) Promote reuse and recycling to reduce solid and liquid wastes and employ a conservation ethic.			X
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Analysis: **Not applicable.**			
Chapter 226-16 Objective and policies for facility systems – – water.			
Objective:			
(a) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities.	X		
Policies:			
(b) To achieve the facility systems water objective, it shall be the policy of this State to:			

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.			X
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	X		
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.			X
Analysis: **The proposed Kīhei Water Tank project is directly applicable to the objectives and policies for water facility systems set by the State. By bolstering the resiliency of the water supply system, the new water tank will ensure reliable storage and supply of drinking water to the people of Kīhei.**			
Chapter 226-17 Objectives and policies for facility systems – – transportation.			
Objectives:			
(a) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			X
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			X
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			X
Policies:			
(b) To achieve the transportation objectives, it shall be the policy of this State to:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			X
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			X
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			X
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			X
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			X
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			X
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			X
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and			X
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			X
Analysis: **Not applicable.**			
Chapter 226-18 Objectives and policies for facility systems – – energy.			
Objectives:			
(a) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawaii's dependence on imported fuels for electrical generation and ground transportation.			X
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;			X
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			X
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			X
Policies:			
(b) To achieve the energy objectives, it shall be the policy of this State to ensure the short- and long-term provision of adequate, reasonably prices, and dependable energy services to accommodate demand.			X
(c) To further achieve the energy objectives, it shall be the policy of this State to:			
(1) Support research and development as well as promote the use of renewable energy sources;			X
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			X
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including:			X
(A) Development of cost-effective demand-side management programs;			X
(B) Education;			X
(C) Adoption of energy-efficient practices and technologies; and			X
(D) Increasing energy efficiency and decreasing energy use in public infrastructure			X

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(5) Ensure, to the extent that new supply-side resources are needed, that the development or expansion of energy systems uses the least-cost energy supply option and maximizes efficient technologies; and			X
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			X
(7) Promote alternate fuels and transportation energy efficiency;			X
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			X
(9) Support actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives;			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy sources; and			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaii.			X
Analysis: **Not applicable.**			
Chapter 226-18.5 Objectives and policies for facility systems – – telecommunications.			
Objectives:			
(a) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people.			X
Policies:			
(b) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand.			X
(c) To further achieve the telecommunications objective, it shall be the policy of this State to:			
(1) Facilitate research and development of telecommunications systems and resources;			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
(3) Promote efficient management and use of existing telecommunications systems and services; and			X
(4) Facilitate the development of education and training of telecommunications personnel.			X
Analysis: **Not applicable.**			
Chapter 226-19 Objectives and policies for socio-cultural advancement – – housing.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			

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(1) Greater opportunities for Hawaii's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation between government and nonprofit and for-profit developers to ensure that more rental and for sale affordable housing is made available to very low-, low-, lower-, moderate-, and above moderate-income segments of Hawaii's population.			X
(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			X
Policies:			
(b) To achieve the housing objectives, it shall be the policy of this State to:			
(1) Effectively accommodate the housing needs of Hawaii's people.			X
(2) Stimulate and promote feasible approaches that increase affordable rental and for sale housing choices for extremely low-, very low-, lower moderate-, and above moderate-income households.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
(7) Foster a variety of lifestyles traditional to Hawaii through the design and maintenance of neighborhoods that reflect the culture and values of the community.			X
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaii.			X
Analysis: **Not applicable.**			
Chapter 226-20 Objectives and policies for socio-cultural advancement – – health.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.			X
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.			X
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
Policies:			
(b) To achieve the health objectives, it shall be the policy of this State to:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X

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(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.			X
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			X
Analysis: **Not applicable.**			
Chapter 226-21 Objectives and policies for socio-cultural advancement – – education.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations.			X
Policies:			
(b) To achieve the education objective, it shall be the policy of this State to:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.			X
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(9) Support research programs and activities that enhance the education programs of the State.			X
Analysis: **Not applicable.**			
Chapter 226-22 Objective and policies for socio-cultural advancement – – social services.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being.			X
Policies:			
(a) To achieve the social service objective, it shall be the policy of the State to:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Analysis: **Not applicable.**			
Chapter 226-23 Objective and policies for socio-cultural advancement – – leisure.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			X
Policies:			
(b) To achieve the leisure objective, it shall be the policy of this State to:			
(1) Foster and preserve Hawaii's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.			X
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.			X
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			X
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.			X

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(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.			X
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			X
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.			X
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			X
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawaii's population to participate in the creative arts.			X
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Analysis: **Not applicable.**			
Chapter 226-24 Objective and policies for socio-cultural advancement – – individual rights and personal well-being.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations.			X
Policies:			
(b) To achieve the individual rights and personal well-being objective, it shall be the policy of this State to:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.			X
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.			X
Analysis: **Not applicable.**			
Chapter 226-25 Objective and policies for socio-cultural advancement – – culture.			
Objective:			
(a) Planning for the State's socio-cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawaii's people.			X
Policies:			
(b) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawaii's ethnic and cultural heritages and the history of Hawaii.			X
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.			X
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.			X

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.			X
Analysis: **Not applicable.**			
Chapter 226-26 Objectives and policies for socio-cultural advancement – – public safety.			
Objectives:			
(a) Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.			X
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.			X
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			X
Policies (Public Safety):			
(b) To achieve the public safety objectives, it shall be the policy of this State to:			
(1) Ensure that public safety programs are effective and responsive to community needs.			X
(2) Encourage increased community awareness and participation in public safety programs.			X
Policies (Public Safety-Criminal Justice):			
(c) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
Policies (Public Safety – Emergency Management):			
(d) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			X
(2) Enhance the coordination between emergency management programs throughout the State.			X
Analysis: **Not applicable.**			
Chapter 226-27 Objectives and policies for socio-cultural advancement – – government.			
Objectives:			
(a) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.	X		
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			X

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Policies:			
(b) To achieve the government objectives, it shall be the policy of this State to:			
(1) Provide for necessary public goods and services not assumed by the private sector.	X		
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			X
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			X
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X
Analysis: **The proposed Kīhei Water Tank project is directly applicable to the objectives and policies for government socio-cultural advancements set by the State. The proposed project represents a public-private partnership that will improve water storage capacity and ensure reliable water services for the community in the Kīhei-Makena region.**			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Chapter 226-101: Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
Chapter 226-102: Overall direction. The State shall strive to improve the quality of life for Hawaii's present and future population through the pursuit of desirable courses of action in seven major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, quality education, principles of sustainability, and climate change adaptation.			
Chapter 226-103: Economic priority guidelines.			
(a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:			X
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			X
(A) Encourage investments which:			X
(i) Reflect long term commitments to the State;			X
(ii) Rely on economic linkages within the local economy;			X
(iii) Diversify the economy;			X
(iv) Reinvest in the local economy;			X
(v) Are sensitive to community needs and priorities; and			X
(vi) Demonstrate a commitment to provide management opportunities to Hawaii residents; and			X
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			X
(i) Present or former residents acting as entrepreneurs or principals;			X
(ii) Academic support from an institution of higher education in Hawaii;			X
(iii) Investment interest from Hawaii residents;			X
(iv) Resources unique to Hawaii that are required for innovative activity; and			X
(v) Complementary or supportive industries or government programs or projects.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			X
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the processes for building and development permit and review, and telecommunication infrastructure installation approval and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where scientific evidence indicates that public health, safety and welfare would not be adversely affected.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawaii's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			X
(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.			X
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			X
(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment.			X
(D) An industry that would provide reasonable income and steady employment.			X
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.			X
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			X
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			X
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			X
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			X
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			X
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.			X
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			
(1) Promote visitor satisfaction by fostering an environment which enhances the aloha spirit and minimizes inconveniences to Hawaii's residents and visitors.			X
(2) Encourage the development and maintenance of well-designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			X
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			X
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			X
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			X
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			X
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			X
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			X
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawaii's agricultural community.			X
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			X
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			X
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			X
(10) Support the continuation of land currently in use for diversified agriculture.			X
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			X
(e) Priority guidelines for water use and development:			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			X
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			X
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(f) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			X
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			X
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(g) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network, with an emphasis on broadband and wireless infrastructure and capability that will serve as the foundation of and catalyst for overall economic growth and diversification in Hawaii.			X
(2) Encourage the development of services such as financial data processing, a products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development; the development of new information systems, peripherals, and applications; data conversion and data entry services; and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawaii's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X
Analysis: **Not applicable.**			
Chapter 226-104: Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution:			
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawaii's people.			X

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

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			X
(12) Utilize Hawaii's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.			X
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			X
Analysis: **Not applicable.**			
Chapter 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Analysis: **Not applicable.**			
Chapter 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of extremely low-, very low-, lower-, moderate, and above and moderate-income households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawaii's low-, very low-, lower-, and moderate-income households and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawaii's people for the purchase of initial owner-occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawaii's residents and less priority to development of housing intended primarily for individuals outside of Hawaii.			X

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: **Not applicable.**			
Chapter 226-107: Quality education.			
Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision making responsibilities;			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			X
(A) The electronic exchange of information;			X
(B) Statewide electronic mail; and			X
(C) Access to the Internet.			X
(6) Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			X
(7) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			X
(8) Develop resources and programs for early childhood education;			X
(9) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			X
(10) Strengthen and expand educational programs and services for students with special needs.			X
Analysis: **Not applicable.**			
Chapter 226-108: Sustainability			
Priority guidelines and principles to promote sustainability shall include:			
(1) Encouraging balanced economic, social, community, and environmental priorities;			X
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;			X
(3) Promoting a diversified and dynamic economy;			X
(4) Encouraging respect for the host culture;			X
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;			X
(6) Considering the principles of the ahupuaa system; and			X
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii.			X
Analysis: **The proposed project involves developing a water tank for potable water and, therefore, is not applicable to the priority guidelines for sustainability.**			
Chapter 226-109: Climate change adaptation priority guidelines			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			
(1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities;			**X**
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;			**X**
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State;			**X**
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;			**X**
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;			**X**
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;			**X**
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;	**X**		
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;			**X**
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and			**X**
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.			**X**
Analysis: **The proposed project will provide redundancy to the County water system in a location that is not vulnerable to floods, tsunamis, or sea level rise hazards.**			

APPENDIX G-2.

COUNTYWIDE POLICY PLAN – ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

APPENDIX G-2

Analysis of Project Applicability to Countywide Policy Plan

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

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

Discussion of how the proposed project conforms to the relevant goals, objectives, policies, and implementing actions of the Countywide Policy Plan is provided below. The methodology for assessing a project's relationship to the Countywide Policy Plan involves examining the project's applicability to the Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how they advance or promote a particular set of goals, objectives and policies. In assessing the relationship between a proposed action and the Countywide Policy Plan, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advance, promote or affect the relevant goal, objective, or policy.

   Example: A County project to develop a new water source and related transmission facilities would be directly applicable to improving physical infrastructure. The relevant objective states: *"Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water"* (Objective I.1). A policy within this objective category states: *"Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents"* (Policy I.1.a).

   In this instance, the proposed action is considered to be directly applicable to the cited objective and policy.

2. **Indirectly applicable:** the action and its potential effects indirectly support, advance or affect the objective, policy or priority guideline.

   Example: The county water source project cited above supports the objective to: *"Improve land use management and implement a directed-growth strategy"* (Objective J.1). A related policy encompassed by this objective states: *"Direct new development in and*

around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources" (Policy J.1.h). In this case, the principle purpose of the project is not to create a water source specifically intended to improve land use management. Nonetheless, the proposed action indirectly supports the Countywide Policy Plan's directives relating to appropriate locations for new development.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Countywide Policy Plan.

   Example: The county water source improvement project referenced above, may not have direct or indirect linkage to Objective D.1, which states: *"In cooperation with the Federal and State governments and nonprofit agencies, broaden access to social and healthcare services and expand options to improve the overall wellness of the people of Maui County"*. Hence, from a policy analysis and linkage standpoint, the proposed action would be considered not applicable to this set of objectives and policies.

It is recognized that policy analysis is subject to interpretation and is best considered in the context of the proposed action's local and regional conditions.

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
A. PROTECT THE NATURAL ENVIRONMENT			
Goal: Maui County's natural environment and distinctive open spaces will be preserved, managed, and cared for in perpetuity.		X	
Objective:			
(1) Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.		X	
Policies:			
(a) Perpetuate native Hawaiian biodiversity by preventing the introduction of invasive species, containing or eliminating existing noxious pests, and protecting critical habitat areas.			X
(b) Preserve and reestablish indigenous and endemic species' habitats and their connectivity.			X
(c) Restore and protect forests, wetlands, watersheds, and stream flows, and guard against wildfires, flooding, and erosion.			X
(d) Protect baseline stream flows for perennial streams, and support policies that ensure adequate stream flow to support Native Hawaiian aquatic species, traditional kalo cultivation, and self-sustaining ahupua'a.			X
(e) Protect undeveloped beaches, dunes, and coastal ecosystems, and restore natural shoreline processes.			X
(f) Protect the natural state and integrity of unique terrain, valued natural environments, and geological features.			X
(g) Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.		X	
(h) Expand coordination with the State and nonprofit agencies and their volunteers to reduce invasive species, replant indigenous species, and identify critical habitat.			X
Implementing Actions:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(a) Develop island-wide networks of greenways, watercourses, and habitat corridors.			X
***Analysis*: The proposed water tank is located nearly 7,000 feet from Piʻilani Highway and is not anticipated to present significant adverse impacts to scenic resources.**			
Objective:			
(2) Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.			X
Policies:			
(a) Protect and restore nearshore reef environments and water quality.			X
(b) Protect marine resources and valued wildlife.			X
(c) Improve the connection between urban environments and the natural landscape, and incorporate natural features of the land into urban design.			X
(d) Utilize land-conservation tools to ensure the permanence of valued open spaces.			X
(e) Mitigate the negative effects of upland uses on coastal wetlands, marine life, and coral reefs.			X
(f) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.			X
(g) Regulate the use and maintenance of stormwater-treatment systems that incorporate the use of native vegetation and mimic natural systems.			X
(h) Advocate for stronger regulation of fishing, boating, cruise ship, and ecotourism activities.			X
(i) Restore watersheds and aquifer-recharge areas to healthy and productive status, and increase public knowledge about the importance of watershed stewardship, water conservation, and groundwater protection.			X
Implementing Actions:			
(a) Develop regulations to minimize runoff of pollutants into nearshore waters and reduce nonpoint and point source pollution.			X
***Analysis:* Not applicable.**			
Objective:			
(3) Improve the stewardship of the natural environment.		X	
Policies:			
(a) Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value.			X
(b) Improve communication, coordination, and collaboration among government agencies, nonprofit organizations, communities, individuals, and land owners that work for the protection of the natural environment.			X
(c) Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.			X
(d) Improve efforts to mitigate and plan for the impact of natural disasters, human influenced emergencies, and global warming.		X	
(e) Regulate access to sensitive ecological sites and landscapes.			X
(f) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.			X
(g) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			X
(h) Provide public access to beaches and shorelines for recreational and cultural purposes where appropriate.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(i) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.		X	
(j) Support the acquisition of resources with scenic, environmental, and recreational value, and encumber their use.			X
(k) Improve enforcement activities relating to the natural environment.			X
(l) For each shoreline community, identify and prioritize beach-conservation objectives, and develop action plans for their implementation.			X
Implementing Actions:			
(a) Document, record, and monitor existing conditions, populations, and locations of flora and fauna communities.			X
(b) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			X
(c) Establish a baseline inventory of available natural resources and their respective carrying capacities.			X
Analysis: **The proposed project will improve resiliency in the County water system and involves development of storage infrastructure in a location that is not susceptible to flood, tsunami, or sea level rise hazards. Best management practices (BMPs) and temporary erosion control measures will be implemented during construction.**			
Objective:			
(4) Educate residents and visitors about responsible stewardship practices and the interconnectedness of the natural environment and people.			X
Policies:			
(a) Expand education about native flora, fauna, and ecosystems.			X
(b) Align priorities to recognize that the health of the natural environment and the health of people are inextricably linked.			X
(c) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			X
Analysis: **Not applicable.**			
B. PRESERVE LOCAL CULTURES AND TRADITIONS			
Goal: Maui County will foster a spirit of pono and protect, perpetuate, and reinvigorate its residents multi-cultural values and traditions to ensure that current and future generations will enjoy the benefits of their rich island heritage.			X
Objective:			
(1) Perpetuate the Hawaiian culture as a vital force in the lives of residents.			X
Policies:			
(a) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.			X
(b) Prohibit inappropriate development of cultural lands and sites that are important for traditional Hawaiian cultural practices, and establish mandates for the special protection of these lands in perpetuity.			X
(c) Promote the use of ahupua‘a and moku management practices.			X
(d) Encourage the use of traditional Hawaiian architecture and craftsmanship.			X
(e) Promote the use of the Hawaiian language.			X
(f) Recognize and preserve the unique natural and cultural characteristics of each ahupua‘a or district.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(g) Encourage schools to promote broader incorporation of Hawaiian and other local cultures' history and values lessons into curriculum.			X
(h) Ensure the protection of Native Hawaiian rights.			X
(i) Promote, encourage, and require the correct use of traditional place names, particularly in government documents, signage, and the tourism industry.			X
Implementing Actions:			
(a) Establish alternative land use and overlay zoning designations that recognize and preserve the unique natural and cultural characteristics of each ahupua'a or district.			X
(b) Develop requirements for all County applicants to perpetuate and use proper traditional place names in all applications submitted.			X
Analysis: **Not applicable.**			
Objective:			
(2) Emphasize respect for our island lifestyle and our unique local cultures, family, and natural environment.			X
Policies:			
(a) Acknowledge the Hawaiian culture as the host culture, and foster respect and humility among residents and visitors toward the Hawaiian people and their practices.			X
(b) Perpetuate a respect for diversity, and recognize the historic blending of cultures and ethnicities.			X
(c) Encourage the perpetuation of each culture's unique cuisine, attire, dance, music, and folklore, and other unique island traditions and recreational activities.			X
(d) Recognize the interconnectedness between the natural environment and the cultural heritage of the islands.			X
(e) Protect and prioritize funding for recreational activities that support local cultural practices, such as surfing, fishing, and outrigger-canoe paddling.			X
Analysis: **Not applicable.**			
Objective:			
(3) Preserve for present and future generations the opportunity to know and experience the arts, culture, and history of Maui County.			X
Policies:			
(a) Foster teaching opportunities for cultural practitioners to share their knowledge and skills.			X
(b) Support the development of cultural centers.			X
(c) Broaden opportunities for public art and the display of local artwork.			X
(d) Foster the Aloha Spirit by celebrating the Hawaiian host culture and other Maui County cultures through support of cultural-education programs, festivals, celebrations, and ceremonies.			X
(e) Support the perpetuation of Hawaiian arts and culture.			X
(f) Support programs and activities that record the oral and pictorial history of residents.			X
(g) Support the development of repositories for culture, history, genealogy, oral history, film, and interactive learning.			X
Implementing Actions:			
(a) Establish incentives for the display of public art.			X
(b) Establish centers and programs of excellence for the perpetuation of Hawaiian arts and culture.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: **Not applicable.**			
Objective:			
(4) Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.			X
Policies:			
(a) Support the development of island-wide historic, archaeological, and cultural resources inventories.			X
(b) Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures to perpetuate a traditional sense of place.			X
(c) Identify a sustainable rate of use and set forth specific policies to protect cultural resources.			X
(d) Protect and preserve lands that are culturally or historically significant.			X
(e) Support programs that protect, record, restore, maintain, provide education about, and interpret cultural districts, landscapes, sites, and artifacts in both natural and museum settings.			X
(f) Perpetuate the authentic character and historic integrity of rural communities and small towns.			X
(g) Seek solutions that honor the traditions and practices of the host culture while recognizing the needs of the community.			X
(h) Support the development of an Archaeological District Ordinance.			X
(i) Protect summits, slopes, and ridgelines from inappropriate development.			X
(j) Support the registering of important historic sites on the State and Federal historic registers.			X
(k) Provide opportunities for public involvement with restoration and enhancement of all types of cultural resources.			X
(l) Foster partnerships to identify and preserve or revitalize historic and cultural sites.			X
Implementing Actions:			
(a) Identify, develop, map, and maintain an inventory of locally significant natural. cultural, and historical resources for protection.			X
(b) Prepare, continually update, and implement a cultural-management plan for cultural sites, districts, and landscapes, where appropriate.			X
(c) Enact an Archaeological District Ordinance.			X
(d) Nominate important historic sites to the State and Federal historic registers.			X
Analysis: **Not Applicable.**			
C. IMPROVE EDUCATION			
Goal: Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.			X
Objective:			
(1) Encourage the State to attract and retain school administrators and educators of the highest quality.			X
Policies:			
(a) Encourage the State to provide teachers with nationally competitive pay and benefit packages.			X
(b) Encourage the State to ensure teachers will have the teaching tools and support staff needed to provide students with an excellent education.			X
(c) Explore Maui County district- and school-based decision making in public education.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: **Not applicable.**			
Objective:			
(2) Provide nurturing learning environments that build skills for the 21st century.			X
Policies:			
(a) Expand professional-development opportunities in disciplines that support the economic-development goals of Maui County.			X
(b) Plan for demographic, social, and technological changes in a timely manner.			X
(c) Encourage collaborative partnerships to improve conditions of learning environments.			X
(d) Promote development of neighborhood schools and educational centers.			X
(e) Integrate schools, community parks, and playgrounds, and expand each community's use of these facilities.			X
(f) Support coordination between land use and school-facility planning agencies.			X
(g) Encourage the upgrade and ongoing maintenance of public-school facilities.			X
(h) Encourage the State Department of Education to seek reliable, innovative, and alternative methods to support a level of per-pupil funding that places Hawai'i among the top tier of states nationally for its financial support of public schools.			X
(i) Encourage the State to promote healthier, more productive learning environments, including by providing healthy meals, more physical activity, natural lighting, and passive cooling.			X
(j) Encourage the State to support the development of benchmarks to measure the success of Hawai'i's public-education system and clarify lines of accountability.			X
(k) Design school and park facilities in proximity to residential areas.			X
(l) Support technology- and natural-environment-based learning.			X
(m) Encourage the State to support lower student-teacher ratios in public schools.			X
(n) Encourage alternative learning and educational opportunities.			X
Implementing Actions:			
(a) Develop safe walking and bicycling programs for school children.			X
Analysis: **Not applicable.**			
Objective:			
(3) Provide all residents with educational opportunities that can help them better understand themselves and their surroundings and allow them to realize their ambitions.			X
Policies:			
(a) Encourage the State to improve Maui Community College as a comprehensive community college that will serve each community.			X
(b) Broaden the use of technology and telecommunications to improve educational opportunities throughout the County.			X
(c) Attract graduate-level research programs and institutions.			X
(d) Promote the teaching of traditional practices, including aquaculture; subsistence agriculture; Pacific Island, Asian, and other forms of alternative health practices; and indigenous Hawaiian architecture.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(e) Integrate cultural and environmental values in education, including self-sufficiency and sustainability.			X
(f) Foster a partnership and ongoing dialogue between business organizations, formal educational institutions, and vocational training centers to tailor learning and mentoring programs to County needs.			X
(g) Ensure teaching of the arts to all ages.			X
(h) Expand and develop vocational learning opportunities by establishing trade schools.			X
(i) Encourage the State to integrate financial and economic literacy in elementary, secondary, and higher-education levels.			X
Implementing Actions:			
(a) Encourage the State to establish a four-year university, and support the development of other higher-education institutions to enable residents to obtain bachelor degrees and postgraduate degrees in Maui County.			X
Analysis: **Not applicable.**			
Objective:			
(4) Maximize community-based educational opportunities.			X
Policies:			
(a) Encourage the State and others to expand pre-school, after-school, and homebased (parent-child) learning.			X
(b) Support public-private partnerships to develop youth-internship, -apprenticeship, and -mentoring programs.			X
(c) Support the development of a wide range of informal educational and cultural programs for all residents.			X
(d) Improve partnerships that utilize the skills and talents at Hawai‘i’s colleges and universities to benefit the County.			X
(e) Support career-development and job-recruitment programs and centers.			X
(f) Attract learning institutions and specialty schools to diversify and enhance educational opportunities.			X
(g) Expand education of important life skills for the general public.			X
(h) Support community facilities such as museums, libraries, nature centers, and open spaces that provide interactive-learning opportunities for all ages.			X
Analysis: **Not applicable.**			
D. STRENGTHEN SOCIAL AND HEALTHCARE SERVICES			
Goal: Health and social services in Maui County will fully and comprehensively serve all segments of the population.			X
Objective:			
(1) In cooperation with the Federal and State governments and nonprofit agencies, broaden access to social and healthcare services and expand options to improve the overall wellness of the people of Maui County.			X
Policies:			
(a) Work with other levels of government and the nonprofit sector to expand services to address hunger, homelessness, and poverty.			X
(b) Support the improvement of opportunities for disadvantaged youth, encourage the tradition of hanai relatives, and support expanded opportunities for foster care.			X
(c) Support expanded long-term-care options, both in institutions and at home, for patients requiring ongoing assistance and medical attention.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(d) Encourage the expansion and improvement of local hospitals, facilitate the establishment of new healthcare facilities, and facilitate prompt and high-quality emergency- and urgent-care services for all.			X
(e) Support broadened access to affordable health insurance and health care, and recognize the unique economic challenges posed to families when healthcare services are provided off-island.			X
(f) Encourage equal access to social and healthcare services through both technological and traditional means.			X
Analysis: **Not applicable.**			
Objective:			
(2) Encourage the Federal and State governments and the private sector to improve the quality and delivery of social and healthcare services.			X
Policies:			
(a) Strengthen partnerships with government, nonprofit, and private organizations to provide funding and to improve counseling and other assistance to address substance abuse, domestic violence, and other pressing social challenges.			X
(b) Encourage the State to improve the quality of medical personnel, facilities, services, and equipment.			X
(c) Encourage investment to improve the recruitment of medical professionals and the quality of medical facilities and equipment throughout Maui County.			X
(d) Promote the development of continuum-of-care facilities that provide assisted living, hospice, home-care, and skilled-nursing options allowing the individual to be cared for in a manner congruent with his or her needs and desires.			X
(e) Support improved social, healthcare, and governmental services for special needs populations.			X
(f) Plan for the needs of an aging population and the resulting impacts on social services, housing, and healthcare delivery.			X
(g) Improve coordination among the police, the courts, and the public in the administration of social and healthcare services.			X
(h) Support programs that address needs of veterans.			X
(i) Support programs that address the needs of immigrants.			X
Implementing Actions:			
(a) Invest in programs designed to improve the general welfare and quality of life of Native Hawaiians.			X
(b) Assist and facilitate the State Department of Public Safety and others in efforts to strengthen programs and facilities that will improve the mental and social health of incarcerated people and assist in prison inmates' successful transition back into Maui County communities.			X
(c) Develop and maintain a comprehensive index that will measure the health and wellness needs of families.			X
(d) Provide heliports countywide for emergency health and safety purposes.			X
Analysis: **Not applicable.**			
Objective:			
(3) Strengthen public-awareness programs related to healthy lifestyles and social and medical services.			X
Policies:			
(a) Expand public awareness about personal safety and crime prevention.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Encourage residents to pursue education and training for careers in the healthcare, social services, and community-development fields.			X
(c) Expand public awareness and promote programs to achieve healthy eating habits and drug-free lifestyles.			X
Analysis: **Not applicable.**			
E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS			
Goal: Quality, island-appropriate housing will be available to all residents.			X
Objective:			
(1) Reduce the affordable housing deficit for residents.			X
Policies:			
(a) Ensure that an adequate and permanent supply of affordable housing, both new and existing units, is made available for purchase or rental to our resident and/or workforce population, with special emphasis on providing housing for low- to moderate-income families, and ensure that all affordable housing remains affordable in perpetuity.			X
(b) Seek innovative ways to lower housing costs without compromising the quality of our island lifestyle.			X
(c) Seek innovative methods to secure land for the development of low- and moderate- income housing.			X
(d) Provide the homeless population with emergency and transitional shelter and other supportive programs.			X
(e) Provide for a range of senior-citizen and special needs housing choices on each island that affordably facilitates a continuum of care and services.			X
(f) Support the Department of Hawaiian Home Lands' development of homestead lands.			X
(g) Manage property-tax burdens to protect affordable resident homeownership.			X
(h) Explore taxation mechanisms to increase and maintain access to affordable housing.			X
(i) Improve awareness regarding available affordable homeowner's insurance.			X
(j) Redevelop commercial areas with a mixture of affordable residential and business uses, where appropriate.			X
(k) Ensure residents are given priority to obtain affordable housing units developed in their communities, consistent with all applicable regulations.			X
(l) Establish pricing for affordable housing that is more reflective of Maui County's workforce than the United States Housing and Urban Development's median-income estimates for Maui County.			X
(m) Develop neighborhoods with a mixture of accessible and integrated community facilities and services.			X
(n) Provide alternative regulatory frameworks to facilitate the use of Kuleana lands by the descendants of Native Hawaiians who received those lands pursuant to the Kuleana Act of 1850.			X
(o) Work with lending institutions to expand housing options and safeguard the financial security of homeowners.			X
(p) Promote the use of the community land trust model and other land-lease and land- financing options.			X
(q) Support the opportunity to age in place by providing accessible and appropriately designed residential units.			X
Analysis: **Not applicable.**			
Objective:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(2) Increase the mix of housing types in towns and neighborhoods to promote sustainable land use planning, expand consumer choice, and protect the County's rural and small town character.			X
Policies:			
(a) Seek innovative ways to develop 'ohana cottages and accessory-dwelling units as affordable housing.			X
(b) Design neighborhoods to foster interaction among neighbors.			X
(c) Encourage a mix of social, economic, and age groups within neighborhoods.			X
(d) Promote infill housing in urban areas at scales that capitalize on existing infrastructure, lower development costs, and are consistent with existing or desired patterns of development.			X
(e) Encourage the building industry to use environmentally sustainable materials, technologies, and site planning.			X
(f) Develop workforce housing in proximity to job centers and transit facilities.			X
(g) Provide incentives to developers and owners who incorporate green building practices and energy-efficient technologies into their housing developments.			X
Implementing Actions:			
(a) Revise laws to support neighborhood designs that incorporate a mix of housing types that are appropriate for island living.			X
Analysis: **Not applicable.**			
Objective:			
(3) Increase and maintain the affordable housing inventory.			X
Policies:			
(a) Recognize housing as a basic human need, and work to fulfill that need.			X
(b) Prioritize available infrastructure capacity for affordable housing.			X
(c) Improve communication, collaboration, and coordination among housing providers and social-service organizations.			X
(d) Study future projected housing needs, monitor economic cycles, and prepare for future conditions on each island.			X
(e) Develop public-private and nonprofit partnerships that facilitate the construction of quality affordable housing.			X
(f) Streamline the review process for high-quality, affordable housing developments that implement the goals, objectives, and policies of the General Plan.			X
(g) Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.			X
(h) Encourage long-term residential use of existing and future housing to meet residential needs.			X
Implementing Actions:			
(a) Develop policies to even out the peaks and valleys in Maui County's construction-demand cycles.			X
Analysis: **Not applicable.**			
Objective:			
(4) Expand access to education related to housing options, homeownership, financing, and residential construction.			X
Policies:			
(a) Broaden access to information about County, State, and Federal programs that provide financial assistance to renters and home buyers.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Expand access to information about opportunities for homeownership and self-help housing.			X
(c) Educate residents about making housing choices that support their individual needs, the needs of their communities, and the health of the islands' natural systems.			X
(d) Improve home buyers' education on all aspects of homeownership.			X
Analysis: **Not applicable.**			
F. STRENGTHEN THE LOCAL ECONOMY			
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.			X
Objective:			
(1) Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.			X
Policies:			
(a) Support economic decisions that create long-term benefits.			X
(b) Promote lifelong education, career development, and technical training for existing and emerging industries.			X
(c) Invest in infrastructure, facilities, and programs that foster economic diversification.			X
(d) Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local demand.			X
(e) Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.			X
(f) Encourage work environments that are safe, rewarding, and fulfilling to employees.			X
(g) Support home-based businesses that are appropriate for and in character with the community.			X
(h) Encourage businesses that promote the health and well-being of the residents, produce value-added products, and support community values.			X
(i) Foster an understanding of the role of all industries in our economy.			X
(j) Support efforts to improve conditions that foster economic vitality in our historic small towns.			X
(k) Support and encourage traditional host-culture businesses and indigenous agricultural practices.			X
(l) Support public and private entities that assist entrepreneurs in establishing locally operated businesses.			X
Implementing Actions:			
(a) Develop regulations and programs that support opportunities for local merchants, farmers, and small businesses to sell their goods and services directly to the public.			X
(b) Monitor the carrying capacity of the islands' social, ecological, and infrastructure systems with respect to the economy.			X
Analysis: **Not applicable.**			
Objective:			
(2) Diversify and expand sustainable forms of agriculture and aquaculture.			X
Policies:			
(a) Support programs that position Maui County's agricultural products as premium export products.			X

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(b) Prioritize the use of agricultural land to feed the local population, and promote the use of agricultural lands for sustainable and diversified agricultural activities.			X
(c) Capitalize on Hawai'i's economic opportunities in the ecologically sensitive aquaculture industries.			X
(d) Assist farmers to help make Maui County more self-sufficient in food production.			X
(e) Support ordinances, programs, and policies that keep agricultural land and water available and affordable to farmers.			X
(f) Support a tax structure that is conducive to the growth of the agricultural economy.			X
(g) Enhance County efforts to monitor and regulate important agricultural issues.			X
(h) Support education, research, and facilities that strengthen the agricultural industry.			X
(i) Maintain the genetic integrity of existing food crops.			X
(j) Encourage healthy and organic farm practices that contribute to land health and regeneration.			X
(k) Support cooperatives and other types of nontraditional communal farming and efforts.			X
(l) Encourage methods of monitoring and controlling genetically modified crops to prevent adverse effects.			X
(m) Work with the State to ease the permitting process for the revitalization of traditional fish ponds.			X
Implementing Actions:			
(a) Redirect efforts in the Office of Economic Development to further facilitate the development of the agricultural section and to monitor agricultural legislation and issues.			X
(b) Publicly identify, with signage and other means, the field locations of all genetically modified crops.			X
(c) Create agricultural parks in areas distant from genetically modified crops.			X
Analysis: **Not applicable.**			
Objective:			
(3) Support a visitor industry that respects the resident culture and the environment.			X
Policies:			
(a) Promote traditional Hawaiian practices in visitor-related facilities and activities.			X
(b) Encourage and educate the visitor industry to be sensitive to island lifestyles and cultural values.			X
(c) Encourage a spirit of welcome for residents at visitor facilities, such as by offering kama'aina incentives and discount programs.			X
(d) Support the renovation and enhancement of existing visitor facilities.			X
(e) Support policies, programs, and a tax structure that redirect the benefits of the visitor industry back into the local community.			X
(f) Encourage resident ownership of visitor-related businesses and facilities.			X
(g) Develop partnerships to provide educational and training facilities to residents employed in the visitor industry.			X
(h) Foster an understanding of local cultures, customs, and etiquette, and emphasize the importance of the Aloha Spirit as a common good for all.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(i) Support the diversification, development, evolution, and integration of the visitor industry in a way that is compatible with the traditional, social, economic, spiritual, and environmental values of island residents.			X
(j) Improve collaboration between the visitor industry and the other sectors of Maui County's economy.			X
(k) Perpetuate an authentic image of the Hawaiian culture and history and an appropriate recognition of the host culture.			X
(l) Support the programs and initiatives outlined in the Maui County Tourism Strategic Plan 2006-2015.			X
(m) Promote water conservation, beach conservation, and open-space conservation in areas providing services for visitors.			X
(n) Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.			X
Analysis: **Not applicable.**			
Objective:			
(4) Expand economic sectors that increase living-wage job choices and are compatible with community values.			X
Policies:			
(a) Support emerging industries, including the following: • Health and wellness industry; • Sports and recreation industry; • Film and entertainment industry; • Arts and culture industry; • Renewable-energy industry; • Research and development industry; • High-technology and knowledge-based industries; • Education and training industry; • Ecotourism industry; and • Agritourism industry.			X
Analysis: **Not applicable.**			
G. IMPROVE PARKS AND PUBLIC FACILITIES			
Goal: A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.			X
Objective:			
(1) Expand access to recreational opportunities and community facilities to meet the present and future needs of residents of all ages and physical abilities.			X
Policies:			
(a) Protect, enhance, and expand access to public shoreline and mountain resources.			X
(b) Expand and enhance the network of parks, multi-use paths, and bikeways.			X
(c) Assist communities in developing recreational facilities that promote physical fitness.			X
(d) Expand venue options for recreation and performances that enrich the lifestyles of Maui County's people.			X
(e) Expand affordable recreational and after-school programs for youth.			X
(f) Encourage and invest in recreational, social, and leisure activities that bring people together and build community pride.			X
(g) Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our communities.			X

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(h) Expand affordable access to recreational opportunities that support the local lifestyle.			X
Implementing Actions:			
(a) Identify and reserve lands for cemeteries, and preserve existing cemeteries on all islands, appropriately accommodating varying cultural and, faith-based traditions.			X
Analysis: **Not applicable.**			
Objective:			
(2) Improve the quality and adequacy of community facilities.			X
Policies:			
(a) Provide an adequate supply of dedicated shelters and facilities for disaster relief.			X
(b) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.			X
(c) Ensure that parks and public facilities are safe and adequately equipped for the needs of all ages and physical abilities to the extent reasonable.			X
(d) Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.			X
(e) Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable.			X
Analysis: **Not applicable.**			
Objective:			
(3) Enhance the funding, management, and planning of public facilities and park lands.			X
Policies:			
(a) Identify and encourage the establishment of regulated and environmentally sound campgrounds.			X
(b) Manage park use and control access to natural resources in order to rest sensitive places and utilize the resources in a sustainable manner.			X
(c) Provide public-recreational facilities that are clean and well-maintained.			X
(d) Develop partnerships to ensure proper stewardship of the islands' trails, public lands, and access systems.			X
(e) Ensure that there is an adequate supply of public restrooms in convenient locations.			X
Implementing Actions:			
(a) Encourage the State to allow for overnight fishing along the shoreline in accordance with management plans and regulations.			X
(b) Develop and regularly update functional plans, including those relating to public facilities, parks, and campgrounds.			X
(c) Develop and adopt local level-of service standards for public facilities and parks.			X
(d) Identify, acquire, and develop lands for parks, civic spaces, and public uses.			X
Analysis: **Not applicable.**			
H. DIVERSIFY TRANSPORTATION OPTIONS			
Goal: Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.			X
Objective:			
(1) Provide an effective, affordable, and convenient ground-transportation system that is environmentally sustainable.			X
Policies:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(a) Execute planning strategies to reduce traffic congestion.			X
(b) Plan for the efficient relocation of roadways for the public benefit.			X
(c) Support the use of alternative roadway designs, such as traffic-calming techniques and modern roundabouts.			X
(d) Increase route and mode options in the ground-transportation network.			X
(e) Ensure that roadway systems are safe, efficient, and maintained in good condition.			X
(f) Preserve roadway corridors that have historic, scenic, or unique physical attributes that enhance the character and scenic resources of communities.			X
(g) Design new roads and roadway improvements to retain and enhance the existing character and scenic resources of the communities through which they pass.			X
(h) Promote a variety of affordable and convenient transportation services that meet countywide and community needs and expand ridership of transit systems.			X
(i) Collaborate with transit agencies, government agencies, employers, and operators to provide planning strategies that reduce peak-hour traffic.			X
(j) Develop and expand an attractive, island-appropriate, and efficient public transportation system.			X
(k) Provide and encourage the development of specialized transportation options for the young, the elderly, and persons with disabilities.			X
(l) Evaluate all alternatives to preserve quality of life before widening roads.			X
(m) Encourage businesses in the promotion of alternative transportation options for resident and visitor use.			X
(n) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			X
Implementing Actions:			
(a) Create incentives and implement strategies to reduce visitor dependence on rental cars.			X
(b) Establish efficient public-transit routes between employment centers and primary workforce residential areas.			X
(c) Create attractive, island-appropriate, conveniently located park-and-ride and ride- share facilities.			X
Analysis: **Not applicable.**			
Objective:			
(2) Reduce the reliance on the automobile and fossil fuels by encouraging walking, bicycling, and other energy-efficient and safe alternative modes of transportation.			X
Policies:			
(a) Make walking and bicycling transportation safe and easy between and within communities.			X
(b) Require development to be designed with the pedestrian in mind.			X
(c) Design new and retrofit existing rights-of-way with adequate sidewalks, bicycle lanes, or separated multi-use transit corridors.			X
(d) Support the development of a countywide network of bikeways, equestrian trails, and pedestrian paths.			X
(e) Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(f) Encourage educational programs to increase safety for pedestrians and bicyclists.			X
Implementing Actions:			
(a) Design, build, and modify existing bikeways to improve safety and separation from automobiles.			X
(b) Increase enforcement to reduce abuse of bicycle and pedestrian lanes by motorized vehicles.			X
(c) Identify non-motorized transportation options as a priority for new sources of funding.			X
Analysis: **Not applicable.**			
Objective:			
(3) Improve opportunities for affordable, efficient, safe, and reliable air transportation.			X
Policies:			
(a) Discourage private helicopter and fixed-wing landing sites to mitigate environmental and social impacts.			X
(b) Encourage the use of quieter aircraft and noise-abatement procedures for arrivals and departures.			X
(c) Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.			X
(d) Encourage a viable and competitive atmosphere for air carriers to expand service and ensure sufficient intra-County flights and affordable fares for consumers.			X
(e) Continue to support secondary airports, and encourage the State to provide them with adequate funding.			X
(f) During Community Plan updates, explore the use of the smaller airports.			X
(g) Encourage the State to provide efficient, adequate, and affordable parking and transit connections within and around airports.			X
Analysis: **Not applicable.**			
Objective:			
(4) Improve opportunities for affordable, efficient, safe, and reliable ocean transportation.			X
Policies:			
(a) Support programs and regulations that reduce the disposal of maritime waste and prevent spills into the ocean.			X
(b) Encourage the upgrading of harbors to resist damage from natural hazards and disasters.			X
(c) Encourage the State to study the use of existing harbors and set priorities for future use.			X
(d) Explore all options to protect the traditional recreational uses of harbors, and mitigate harbor-upgrade impacts to recreational uses where feasible.			X
(e) Encourage the upgrading of harbors and the separation of cargo and bulk materials from passenger and recreational uses.			X
(f) Encourage the State to provide for improved capacity at shipping, docking, and storage facilities.			X
(g) Encourage the State to provide adequate parking facilities and transit connections within and around harbor areas.			X
(h) Encourage the redevelopment and revitalization of harbors while preserving historic and cultural assets in harbor districts.			X
(i) Encourage the State to provide adequate facilities for small-boat operations, including small-boat launch ramps, according to community needs.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(j) Support the maintenance and cleanliness of harbor facilities.			X
(k) Support the redevelopment of harbors as pedestrian-oriented gathering places.			X
Analysis: **Not applicable.**			
Objective:			
(5) Improve and expand the planning and management of transportation systems.			X
Policies:			
(a) Encourage progressive community design and development that will reduce transportation trips.			X
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.			X
(c) Establish appropriate user fees for private enterprises that utilize public transportation facilities for recreational purposes.			X
(d) Support the revision of roadway-design criteria and standards so that roads are compatible with surrounding neighborhoods and the character of rural areas.			X
(e) Plan for multi-modal transportation and utility corridors on each island.			X
(f) Support designing all transportation facilities, including airport, harbor, and mass- transit stations, to reflect Hawaiian architecture.			X
(g) Utilize transportation-demand management as an integral part of transportation planning.			X
(h) Accommodate the planting of street trees and other appropriate landscaping in all public rights-of-way.			X
Analysis: **Not applicable.**			
I. IMPROVE PHYSICAL INFRASTRUCTURE			
Goal: Maui County's physical infrastructure will be maintained in optimum condition and will provide for and effectively serve the needs of the County through clean and sustainable technologies.	X		
Objective:			
(1) Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.	X		
Policies:			
(a) Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.			X
(b) Develop and fund improved water-delivery systems.			X
(c) Ensure a reliable and affordable supply of water for productive agricultural uses.		X	
(d) Promote the reclamation of gray water, and enable the use of reclaimed, gray, and brackish water for activities that do not require potable water.			X
(e) Retain and expand public control and ownership of water resources and delivery systems.	X		
(f) Improve the management of water systems so that surface-water and groundwater resources are not degraded by overuse or pollution.			X
(g) Explore and promote alternative water-source-development methods.			X
(h) Seek reliable long-term sources of water to serve developments that achieve consistency with the appropriate Community Plans.			X
Implementing Actions:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(a) Develop a process to review all applications for desalination.			X
Analysis: **The proposed Kīhei Water Tank project is directly related to the goals set forth for physical infrastructure. The proposed project will ensure retention of public control of water resources, proper storage of water, and reliable supply of potable water for the needs of the Kīhei-Makena community.**			
Objective:			
(2) Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.			X
Policies:			
(a) Provide sustainable waste-disposal systems and comprehensive, convenient recycling programs to reduce the flow of waste into landfills.			X
(b) Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.			X
(c) Encourage vendors and owners of automobile, appliance, and white goods to participate in the safe disposal and recycling of such goods, and ensure greater accountability for large waste producers.			X
(d) Develop strategies to promote public awareness to reduce pollution and litter, and encourage residents to reduce, reuse, recycle, and compost waste materials.			X
(e) Pursue improvements and upgrades to existing wastewater and solid-waste systems consistent with current and future plans and the County's Capital Improvement Program.			X
Implementing Actions:			
(a) Establish recycling, trash-separation, and materials recovery programs and facilities to reduce the flow of waste into landfills.			X
(b) Study the feasibility of developing environmentally safe waste-to-energy facilities.			X
(c) Utilize taxes and fees as means to encourage conservation and recycling.			X
(d) Implement and regularly update the Integrated Solid Waste Management Plan.			X
(e) Phase out the use of injection wells.			X
Analysis: **Not applicable.**			
Objective:			
(3) Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.			X
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			X
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			X
(c) Expand education about energy conservation and self-sufficiency.			X
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			X
(e) Expand renewable-energy production.			X
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(g) Require the incorporation of locally appropriate energy-saving and green building design concepts in all new developments by providing energy efficient urban design guidelines and amendments to the Building Code.			X
(h) Encourage the use of sustainable energy to power vehicles.			X
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.			X
(j) Encourage green footprint practices.			X
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			X
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			X
(m) Promote and support environmentally friendly practices in all energy sectors.			X
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			X
(b) Adopt a Green Building Code, and support green building practices.			X
Analysis: **Not applicable.**			
Objective:			
(4) Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.		X	
Policies:			
(a) Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.		X	
(b) Planning for new towns should only be considered if a region's growth is too large to be directed into infill and adjacent growth areas.			X
(c) Utilize appropriate infrastructure technologies in the appropriate locations.			X
(d) Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.			X
(e) Support catchment systems and on-site wastewater treatment in rural areas and aggregated water and wastewater systems in urban areas if they are appropriately located.			X
Implementing Actions:			
(a) Develop a streamlining system for urban infill projects.			X
(b) Identify appropriate areas for urban expansion of existing towns where infrastructure and public facilities can be provided in a cost-effective manner.			X
Analysis: **The proposed project involves developing a water tank in an already urbanized area and represents a system redundancy improvement, investing in an existing water system.**			
Objective:			
(5) Improve the planning and management of infrastructure systems.	X		
Policies:			
(a) Provide a reliable and sufficient level of funding to enhance and maintain infrastructure systems.			X
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.	X		
(c) Improve coordination among infrastructure providers and planning agencies to minimize construction impacts.			X

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(d) Maintain inventories of infrastructure capacity, and project future infrastructure needs.			X
(e) Require social-justice and -equity issues to be considered during the infrastructure-planning process.			X
(f) Discourage the development of critical infrastructure systems within hazard zones and the tsunami-inundation zone to the extent practical.			X
(g) Ensure that infrastructure is built concurrent with or prior to development.			X
(h) Ensure that basic infrastructure needs can be met during a disaster.			
(i) Locate public facilities and emergency services in appropriate locations that support the health, safety, and welfare of each community and that minimize delivery inefficiencies.	X		
(j) Promote the undergrounding of utility and other distribution lines for health safety, and aesthetic reasons.			X
Implementing Actions:			
(a) Develop and regularly update functional plans for infrastructure systems.			X
(b) Develop, adopt, and regularly update local or community-sensitive level-of service standards for infrastructure systems.			X
Analysis: **The proposed project is being undertaken as a public-private partnership between the County of Maui and Lipoa Investments, LLC, a private entity. Furthermore, the project is located near urban Kīhei, where demand for potable water already exists, and is located in an area that is not susceptible to flood, tsunami, or sea level rise risk.**			
J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT			
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.			X
Objective:			
(1) Improve land use management and implement a directed-growth strategy.			X
Policies:			
(a) Establish, map, and enforce urban- and rural-growth limits.			X
(b) Direct urban and rural growth to designated areas.			X
(c) Limit the number of visitor-accommodation units and facilities in Community Plan Areas.			X
(d) Maintain a sustainable balance between the resident, part-time resident, and visitor populations.			X
(e) Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources.			X
(f) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			X
(g) Restrict development in areas that are prone to natural hazards, disasters, or sea-level rise.			X
(h) Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.			X
(i) Establish and maintain permanent open space between communities to protect each community's identity.			X
(j) Support the dedication of land for public uses.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(k) Preserve the public's rights of access to and continuous lateral access along all shorelines.			X
(l) Enable existing and future communities to be self-sufficient through sustainable land use planning and management practices.			X
(m) Protect summits, slopes, and ridgelines from inappropriate development.			X
Implementing Actions:			
(a) Regularly update urban- and rural-growth boundaries and their maps.			X
(b) Establish transfer and purchase of development rights programs.			X
(c) Develop and adopt a green infrastructure plan.			X
(d) Develop studies to help determine a sustainable social, environmental, and economic carrying capacity for each island.			X
(e) Identify and define resort-destination areas.			X
Analysis: **Not Applicable**			
Objective:			
(2) Improve planning for and management of agricultural lands and rural areas.			X
Policies:			
(a) Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.			X
(b) Provide opportunities and incentives for self-sufficient and subsistence homesteads and farms.			X
(c) Discourage developing or subdividing agriculturally designated lands when non- agricultural activities would be primary uses.			X
(d) Conduct agricultural-development planning to facilitate robust and sustainable agricultural activities.			X
Implementing Actions:			
(a) Inventory and protect prime, productive, and potentially productive agricultural lands from competing non-agricultural land uses.			X
Analysis: **Not applicable.**			
Objective:			
(3) Design all developments to be in harmony with the environment and to protect each community's sense of place.			X
Policies:			
(a) Support and provide incentives for green building practices.			X
(b) Encourage the incorporation of green building practices and technologies into all government facilities to the extent practicable.			X
(c) Protect and enhance the unique architectural and landscape characteristics of each Community Plan Area, small town, and neighborhood.			X
(d) Ensure that adequate recreational areas, open spaces, and public-gathering places are provided and maintained in all urban centers and neighborhoods.			X
(e) Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations.			X
(f) Use trees and other forms of landscaping along rights-of-way and within parking lots to provide shade, beauty, urban-heat reduction, and separation of pedestrians from automobile traffic in accordance with community desires.			X
(g) Where appropriate, integrate public-transit, equestrian, pedestrian, and bicycle facilities, and public rights-of-way as design elements in new and existing communities.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(h) Ensure better connectivity and linkages between land uses.			X
(i) Adequately buffer and mitigate noise and air pollution in mixed-use areas to maintain residential quality of life.			X
(j) Protect rural communities and traditional small towns by regulating the footprint, locations, site planning, and design of structures.			X
(k) Support small-town revitalization and preservation.			X
(l) Facilitate safe pedestrian access, and create linkages between destinations and within parking areas.			X
Implementing Actions:			
(a) Establish design guidelines and standards to enhance urban and rural environments.			X
(b) Provide funding for civic-center and civic-space developments.			X
(c) Establish and enhance urban forests in neighborhoods and business districts.			X
Analysis: **Not applicable.**			
Objective:			
(4) Improve and increase efficiency in land use planning and management.			X
Policies:			
(a) Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses.			X
(b) Ensure that new development projects requiring discretionary permits demonstrate a community need, show consistency with the General Plan, and provide an analysis of impacts.			X
(c) Encourage public and private partnerships to preserve lands of importance, develop housing, and meet the needs of residents.			X
(d) Promote creative subdivision designs that implement best practices in land development, sustainable management of natural and physical resources, increased pedestrian and bicycle functionality and safety, and the principles of livable communities.			X
(e) Coordinate with Federal, State, and County officials in order to ensure that land use decisions are consistent with County plans and the vision local populations have for their communities.			X
(f) Enable greater public participation in the review of subdivisions.			X
(g) Improve land use decision making through the use of land and geographic information systems.			X
Implementing Actions:			
(a) Institute a time limit and sunsetting stipulations on development entitlements and their implementation.			X
Analysis: **Not applicable.**			
K. STRIVE FOR GOOD GOVERNANCE			
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.			X
Objective:			
(1) Strengthen governmental planning, coordination, consensus building, and decision making.			X
Policies:			
(a) Plan and prepare for the effects of social, demographic, economic, and environmental shifts.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Plan for and address the possible implications of Hawaiian sovereignty.			X
(c) Encourage collaboration among government agencies to reduce duplication of efforts and promote information availability and exchange.			X
(d) Expand opportunities for the County to be involved in and affect State and Federal decision making.			X
(e) Plan and prepare for large-scale emergencies and contingencies.			X
(f) Improve public awareness about preparing for natural hazards, disasters, and evacuation plans.			X
(g) Improve coordination among Federal, State, and County agencies.			X
Implementing Actions:			
(a) Develop policies, regulations, and programs to protect and enhance the unique character and needs of the County's various communities.			X
(b) Evaluate and if necessary, recommend modifications to the County Charter that could result in a possible change to the form of governance for Maui County.			X
(c) Study and evaluate the feasibility and implications of voting in Maui County Council elections.			X
(d) Study and evaluate the feasibility of authorizing town governments in Maui County.			X
Analysis: **Not applicable.**			X
Objective:			
(2) Promote civic engagement.			X
Policies:			
(a) Foster consensus building through in-depth, innovative, and accessible public participatory processes.			X
(b) Promote and ensure public participation and equal access to government among all citizens.			X
(c) Encourage a broad cross-section of residents to volunteer on boards and commissions.			X
(d) Encourage the State to improve its community-involvement processes.			X
(e) Support community-based decision making.			X
(f) Expand advisory functions at the community level.			X
(g) Expand opportunities for all members of the public to participate in public meetings and forums.			X
(h) Facilitate the community's ability to obtain relevant documentation.			X
(i) Increase voter registration and turnout.			X
Implementing Actions:			
(a) Implement two-way communication using audio-visual technology that allows residents to participate in the County's planning processes.			X
(b) Ensure and expand the use of online notification of County business and public meetings, and ensure the posting of all County board and commission meeting minutes.			X
(c) Explore funding mechanisms to improve participation by volunteers on boards and commissions.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(d) Develop a project-review process that mandates early and ongoing consultation in and with communities affected by planning and land use activities.			X
Analysis: **Not applicable.**			
Objective:			
(3) Improve the efficiency, reliability, and transparency of County government's internal processes and decision making.			X
Policies:			
(a) Use advanced technology to improve efficiency.			X
(b) Simplify and clarify the permitting process to provide uniformity, reliability, efficiency, and transparency.			X
(c) Improve communication with Lana'i and Moloka'i through the expanded use of information technologies, expanded staffing, and the creation and expansion of government-service centers.			X
(d) Ensure that laws, policies, and regulations are internally consistent and effectuate the intent of the General Plan.			X
Implementing Actions:			
(a) Update the County Code to be consistent with the General Plan.			X
(b) Identify and update County regulations and procedures to increase the productivity and efficiency of County government.			X
(c) Develop local level-of-service standards for infrastructure, public facilities, and services.			X
(d) Implement plans through programs, regulations, and capital improvements in a timely manner.			X
(e) Expand government online services.			X
Analysis: **Not applicable.**			
Objective:			
(4) Adequately fund in order to effectively administer, implement, and enforce the General Plan.			X
Policies:			
(a) Adequately fund, staff, and support the timely update and implementation of planning policy, programs, functional plans, and enforcement activities.			X
(b) Ensure that the County's General Plan process provides for efficient planning at the County, island, town, and neighborhood level.			X
(c) Encourage ongoing professional development, education, and training of County employees.			X
(d) Encourage competitive compensation packages for County employees to attract and retain County personnel.			X
(e) Enable the County government to be more responsive in implementing our General Plan and Community Plans.			X
(f) Review discretionary permits for compliance with the Countywide Policy Plan.			X
(g) Strengthen the enforcement of County, State, and Federal land use laws.			X
Implementing Actions:			
(a) Establish penalties to ensure compliance with County, State, and Federal land use laws.			X
Analysis: **Not applicable.**			
Objective:			

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(5) Strive for County government to be a role model for implementing cultural and environmental policies and practices.			X
Policies:			
(a) Educate residents on the benefits of sustainable practices.			X
(b) Encourage the retention and hiring of qualified professionals who can improve cultural and environmental practices.			X
(c) Incorporate environmentally sound and culturally appropriate practices in government operations and services.			X
(d) Encourage all vendors with County contracts to incorporate environmentally sound and culturally appropriate practices.			X
Analysis: **Not applicable.**			
L. MITIGATE CLIMATE CHANGE AND WORK TOWARD RESILIENCE			
Goal: Minimize the causes and negative effects of climate change.			X
Objective:			
(1) Lower carbon emissions levels to mitigate climate change impacts and limit the rate of global warming.			X
Policies:			
(a) Increase reforestation efforts by encouraging residents and visitors to plant non-invasive gardens and trees.			X
(b) Improve communication, coordination, and collaboration among those that work to mitigate climate change impacts.			X
(c) Promote the teaching and use of regenerative agriculture.			X
(d) Invest in infrastructure that is not dependent on fossil fuels and utilizes renewable energy.			X
(e) Improve efforts to mitigate and plan for the impact of natural disasters and global warming.			X
(f) Encourage the building industry to use environmentally sustainable materials, technology, and site planning.			X
(g) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.			X
(h) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			X
(i) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			X
(j) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			X
Implementing Actions:			
(a) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			X
(b) Establish a Countywide Climate Action Plan			X
(c) Develop programs that assist residents and businesses with obtaining access to renewable energy sources.			X
(d) Revise laws to support neighborhood designs that incorporate the use of renewable energy sources that are appropriate for island living.			X
(e) Incorporate planting of native and indigenous trees as a major component of Urban Design to both cool neighborhoods and reduce carbon dioxide.			X
(f) Coordinate with State, County, and private landowners in the development of forestry and prioritizing of native and indigenous trees to reduce carbon dioxide.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(g) Strongly support efforts to restore and improve Maui County's watersheds for the purpose of improving the water supply, controlling carbon dioxide levels, decreasing soil runoff, and reducing coastal flooding.			X
Analysis: **Not applicable.**			
Objective:			
(2) Reduce the impacts of sea-level rise by acknowledging climate change, adapting, mitigating, and planning accordingly.			X
Policies			
(a) Evaluate development to assess potential short-term and long-term sea-level rise impacts on nearshore environments.			X
(b) Improve efforts to mitigate and plan for the impact of sea-level rise.			X
(c) Protect undeveloped beaches, dunes, and ecosystems, and restore natural shoreline processes.			X
(d) Develop an inventory of private wastewater systems (septic systems, cesspools) that may be affected by sea-level rise.			X
(e) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.			X
(f) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.			X
(g) Discourage beach hardening processes such as building sea walls and revetments that block movement of the shoreline and can accelerate erosion.			X
(h) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			X
(i) Restrict development in areas that are prone to sea-level rise.			X
(j) Move or rebuild public facilities away from nearshore environments to account for sea-level rise to the extent reasonable.			X
(k) Move or rebuild roads that are in sea-level rise inundation zones to the extent reasonable.			X
(l) Ensure that public or affordable housing projects include siting and design standards that promote equity and resilience for vulnerable populations.			X
(m) Identify, research, and evaluate innovative and sustainable financing to support mitigation and adaptation to sea level rise.			X
Implementing Actions:			
(a) Develop programs to help transition shoreline property owners out of their nearshore locations and develop a long-term plan to stay out of the way of natural beach migration.			X
(b) Identify buildings, roads, and other infrastructure that are in sea-level rise inundation zones and assist in adaptive efforts, including nature-based solutions, elevation, or moving them away from such zones.			X
(c) Identify disaster redevelopment alternatives that support resilience-focused adaptation to sea level rise in the event of a catastrophic coastal event.			X
Analysis: **Not applicable.**			
Objective:			
(3) Significantly increase the use of renewable and green technologies to. promote energy efficiency and energy self-sufficiency.			X
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			X

COUNTYWIDE POLICY PLAN Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			X
(c) Expand education about energy conservation and self-sufficiency.			X
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			X
(e) Expand renewable-energy production.			X
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			X
(g) Require the incorporation of locally appropriate energy-saving and green building design concepts in all new developments by providing energy-efficient urban design guidelines and amendments to the Building Code.			X
(h) Encourage the use of sustainable energy to power vehicles.			X
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.			X
(j) Encourage green footprint practices.			X
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			X
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			X
(m) Promote and support environmentally friendly practices in all energy sectors.			X
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			X
(b) Adopt a Green Building Code and support green building practices.			X
Analysis: **Not applicable.**			

APPENDIX G-3.

MAUI ISLAND PLAN – ASSESSMENT OF PROJECT APPLICABILITY TO GOALS, OBJECTIVES, AND POLICIES

APPENDIX G-3

Analysis of Project Applicability to Maui Island Plan

The Maui Island Plan (MIP) is applicable to the island of Maui only providing more specific policy-based strategies for population, land use, transportation, public and community facilities, water and wastewater systems, visitor destinations, urban design, and other matters related to future growth.

As provided by Chapter 2.80B, the MIP shall include the following components:

1. *An island wide land use strategy, including a managed and directed growth plan*
2. *A water element assessing supply, demand and quality parameters*
3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted that Ordinance No. 4004 does not address the component relating to the implementation program. Chapter 2.80B of the Maui County Code, relating to the General Plan, was amended via Ordinance No. 3979, October 5, 2012, to provide that the implementation program component be adopted no later than one (1) year following the effective date of Ordinance No. 4004. In December 2013 and March 2014, the Council approved time extensions for approval and adoption of the implementation chapter of the MIP. The implementation program component of the MIP was adopted as Ordinance No. 4126 on May 29, 2014.

The MIP addresses a number of planning categories with detailed policy analysis and recommendations which are framed in terms of goals, objectives, policies and implementing actions. These planning categories address the following areas:

1. *Population*
2. *Heritage Resources*
3. *Natural Hazards*
4. *Economic Development*
5. *Housing*
6. *Infrastructure and Public Facilities*
7. *Land Use*

The proposed project has been reviewed with respect to pertinent goals, objectives, policies and implementing actions of the MIP. The analysis is presented in the table below.

The methodology used for assessing a project's relationship to the MIP involves examining the project's applicability to the Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the MIP, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advance or promote the objective, policy or priority guideline.

   Example: Using a county project to develop a new water source and related transmission facilities as an example, a project of this nature would be directly applicable to the MIP's Objective 6.3.2, which states: *"Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs".* As well, this action would directly advance the MIP's Policy 6.3.2.f, which states: "*Acquire and develop additional sources of potable water"*. The need, purpose and effects of the proposed new water source project is directly applicable to the foregoing objective and policy.

2. **Indirectly applicable:** the action's potential effects indirectly support or advance the objective, policy or priority guideline.

   Example: The county water source project cited above supports the MIP's Objective 7.3.2 which states: *"Facilitate more self-sufficient and sustainable communities"*. Additionally, this kind of action is indirectly applicable to the related MIP Policy 7.3.2.f, which states: *"Facilitate the development of housing by focusing projects in locations where land and infrastructure costs facilitate the development of affordably-priced housing"*. In this case, the principle purpose of the project was not to specifically facilitate the development of affordably-priced housing. However, the project's contribution to adequate infrastructure systems is supportive of the policy. In this instance, the proposed action may be deemed to be indirectly applicable to the objective and policy of the MIP.

3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Maui Island Plan.

   Example: That same county water source improvement project referenced above, may not have direct or indirect linkage to the MIP's Objective 4.2.1, which states: *"Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life"*. In this case, there is no reasonably deduced direct or indirect relationship between the proposed action and Objective 4.2.1. Hence, the proposed action would be considered not applicable to the objective.

In general, a proposed action's applicability to the MIP is assessed on the basis of the action's direct or indirect relationship to the respective objectives, policies and implementing actions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions.

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
CHAPTER 1 – POPULATION			
Goal:			
1.1 Maui's people, values, and lifestyles thrive through strong, healthy, and vibrant island communities.			X
Objective:			
1.1.1 Greater retention and return of island residents by providing viable work, education, and lifestyle options.			X
Policies:			
1.1.1.a Expand programs that enable the community to meet the education, employment, housing, and social goals of youth and young adults.			X
1.1.1.b Expand housing, transportation, employment, and social opportunities to ensure residents are able to comfortably age within their communities.			X
1.1.1.c Measure and track resident satisfaction through surveys and community indicators.			X
1.1.1.d Support funding for transportation, housing, health care, recreation, and social service programs that help those with special needs (including the elderly and disabled).			X
Analysis: **Not applicable.**			
CHAPTER 2 – HERITAGE RESOURCES			
CULTURAL, HISTORICAL, AND ARCHAEOLOGICAL RESOURCES ISSUES			
Goal:			
2.1 Our community respects and protects archaeological and cultural resources while perpetuating diverse cultural identities and traditions.		X	
Objective:			
2.1.1 An island culture and lifestyle that is healthy and vibrant as measured by the ability of residents to live on Maui, access and enjoy the natural environment, and practice Hawaiian customs and traditions in accordance with Article XII, Section 7, Hawai'i State Constitution, and Section 7-1, Hawai`i Revised Statutes (HRS).			X
Policies:			
2.1.1.a Perpetuate the spirit of aloha and celebrate the host Hawaiian culture and other ethnic cultures.			X
2.1.1.b Perpetuate a respect for diversity and recognize the broad blending of cultures and ethnicities as vital to the quality of life on Maui.			X
2.1.1.c Ensure traditional public access routes, including native Hawaiian trails, are maintained for public use.			X
2.1.1.d Support the education of visitors and new residents about the customs and etiquette of the Hawaiian culture, as well as other cultures.			X
Analysis: **Not applicable.**			
Objective:			
2.1.2 A more effective and efficient planning and review process that incorporates the best available cultural resources inventory, protection techniques, and preservation strategies.		X	
Policies:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.1.2.a Ensure that the island has a comprehensive and up-to-date inventory of historic and archaeological resources, and their cultural significance.			X
2.1.2.b Require the update of existing planning and regulatory mechanisms to protect the natural, cultural, scenic, and historic resources within designated Heritage Areas (see Cultural Resources Overlay/Scenic Corridor Protection Technical Reference Map).			X
2.1.2.c Ensure that cultural, historic, and archaeological resources are protected for the benefit of present and future generations.		X	
Objective:			
2.1.3 Enhance the island's historic, archaeological, and cultural resources.		X	
Policies:			
2.1.3.a Identify and pursue a listing of the properties and sites on the State and National Register of Historic Places.			X
2.1.3.b Support the use of easements, dedications, and other mechanisms to acquire, maintain, and protect lands with cultural, archaeological, and historic significance.			X
2.1.3.c Support regulations to require developers, when appropriate, to prepare an Archaeological Inventory Survey, Cultural Impact Assessment, and Ethnographic Inventories that are reviewed and commented upon by the Office of Hawaiian Affairs, Native Hawaiian advisory bodies, the State Historic Preservation Division (SHPD), and the Office of Environmental Quality Control, and systematically comply with the steps listed in SHPD's administrative rules, including consultation and monitoring during construction phases of projects.		X	
2.1.3.d Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures.			X
2.1.3.e Encourage property owners to register historic and archaeological sites on the State and National Register.			X
2.1.3.f Support opportunities for public involvement with the intent to facilitate the protection and restoration of historic and archeological sites, including consultation with stakeholders.			X
2.1.3.g Encourage the resolution of land title questions relating to Land Commission Awards and Royal patents.			X
2.1.3.h Ensure compliance with historic preservation laws, and discourage demolition of properties that are determined to be eligible for listing on the National or State Register of Historic Places.			X
Analysis: **An Archaeological Literature Review and Field Inspection report and Cultural Impact Assessment were prepared for the project.**			
SHORELINE, REEFS, AND NEARSHORE WATERS			
Goal:			
2.2 An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.			X
Objective:			
2.2.1 A more comprehensive and community-based ICZM program.			X
Policies:			
2.2.1.a Encourage a management system that protects and temporarily rests the reef ecosystems from overuse.			X
2.2.1.b Support the establishment of additional MMAs and reef replenishment areas.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.2.1.c Work with appropriate agencies and community members to protect any special managed conservation areas from overuse and ensure that surrounding land uses do not contribute to the degradation of the natural resources, such as ʻAhihi-Kinaʻu Natural Area Reserve, Honolua-Mokulēʻia Bay Marine Life Conservation District, and Mākena State Park.			X
2.2.1.d Incorporate the following into the MIP, where consistent with the MIP:			X
(1) Beach Management Plan for Maui;			X
(2) Coastal Nonpoint Pollution Control Program Management Plan;			X
(3) Implementation Plan for Polluted Runoff Control; and			X
(4) Ocean Resource Management Plan.			X
2.2.1.e Support greater coordination among governmental agencies involved with the protection of the island's marine resources.			X
Objective:			
2.2.2 Improved reef health, coastal water quality, and marine life.			X
Policies:			
2.2.2.a Create additional mechanisms where needed to contain and control runoff and pollution.			X
2.2.2.b Allow extraction of high quality, Class A, low silt sands only when they will be used to protect or restore Maui's shorelines and beaches.			X
2.2.2.c Carefully manage beach nourishment activities to protect the coastal and marine ecosystem.			X
2.2.2.d Require, where appropriate, a buffer between landscaped areas and the shoreline, gulches, and streams to reduce the runoff of fertilizers, pesticides, herbicides, and other pollutants into coastal waters.			X
2.2.2.e Strictly regulate shoreline armoring in accordance with adopted Shoreline Rules, with an intent to protect the coastal and marine ecosystem.			X
2.2.2.f Support greater protection of Keālia Pond National Wildlife Refuge through the following:			X
(1) Enhancement of marine ecosystems;			X
(2) Beach and sand dune restoration; and			X
(3) Expansion of habitat for Maui's threatened or endangered sea turtles, birds, and other species.			X
2.2.2.g Support the development of regulations to prevent the excessive depletion of fish stocks due to non-sustainable practices and gear such as SCUBA spear-fishing and lay nets, within the context of nearshore ecosystems.			X
2.2.2.h Encourage the State to conduct a regular census of fish populations and monitor coral health.			X
2.2.2.i Encourage the State to significantly increase the number of park rangers, enforcement officers, and marine biologists to protect coastal resources.			X
2.2.2.j Encourage the State to prohibit the collection and exportation of fish, coral, algae, and other marine species for the ornamental and aquarium trade.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.2.3 Water quality that meets or exceeds State Clean Water Act standards.			X
Policies:			
2.2.3.a Reduce the amount of impervious surface and devise site plan standards that aim to minimize storm runoff and NPS pollution.			X
2.2.3.b Support the revision of existing regulations to require an Erosion and Sedimentation Control Plan (ESCP) for development activities that may pose a threat to water quality.			X
2.2.3.c Require an on-site monitoring program, where applicable, when grading may pose a threat to water quality or when recommended in the ESCP.			X
2.2.3.d Avoid development actions that impair Maui's reef systems and remove identified stressors.			X
2.2.3.e Phase out cesspools and restrict the use of septic systems in ecologically sensitive coastal areas by converting to environmentally-friendly alternative sewage treatment systems, and connecting to central sewerage systems when and where feasible.			X
2.2.3.f Prohibit the development of new wastewater injection wells, except when unavoidable for public health and safety purposes.			X
2.2.3.g Ensure that the County upholds its affirmative duty under the Clean Water Act by monitoring and reducing point and NPS pollution to help safeguard coastal waters.			X
Objective:			
2.2.4 Acquire additional shoreline lands and shoreline access rights.			X
Policies:			
2.2.4.a Promote the use of conservation easements, land trusts, transfer and purchase of development rights, and mitigation banking.			X
2.2.4.b Require the dedication of public beach and rocky shoreline access ways to and along the shoreline where it serves a practical public interest as a condition of development or subdivision approval; future subdivisions and developments shall be consistent with and effectuate, to the extent practicable, the Shoreline Access Inventory Update - Final Report (March 2005), and its updates.			X
2.2.4.c Incorporate the Shoreline Access Inventory Update - Final Report (March 2005), and its regular updates, into this plan.			X
2.2.4.d Identify access points while further acquiring key shoreline parcels and easement rights to enhance and protect beach access and shoreline recreation.			X
Analysis: **Not applicable.**			
WATERSHEDS, STREAMS, AND WETLANDS ISSUES			
Goal:			
2.3 Healthy watersheds, streams, and riparian environments.			X
Objective:			
2.3.1 Greater protection and enhancement of watersheds, streams, and riparian environments.			X
Policies:			
2.3.1.a All present and future watershed management plans shall incorporate concepts of ahupua'a management based on the interconnectedness of upland and coastal ecosystems/species.			X
2.3.1.b Continue to support and be an active member of watershed partnerships.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.3.1.c Support the establishment of regional water trusts, composed of public and private members, to manage water resources.			X
2.3.1.d Support regulations to require developments to utilize ahupua‘a management practices.			X
2.3.1.e Work with private and non-profit entities to educate the public about the connection between upland activities within the watershed and the impacts on nearshore ecosystems and coral reefs.			X
2.3.1.f Provide adequate funding and staff to develop and implement watershed protection plans and policies, including acquisition and management of watershed resources and land.			X
2.3.1.g Encourage the State to mandate instream assessment to provide adequate water for native species.			X
2.3.1.h Maui will protect all watersheds and streams in a manner that guarantees a healthy, sustainable riparian environment.			X
Objective:			
2.3.2 Decreased NPS and point source pollution.			X
Policies:			
2.3.2.a Enforce water pollution related standards and codes.			X
2.3.2.b Support the use of LID Techniques such as those described in the State of Hawai‘i LID Practitioner’s Guide (June 2006), as amended.			X
2.3.2.c Encourage farmers and ranchers to use agricultural BMPs to address NPS pollution.			X
Objective:			
2.3.3 Preserve existing wetlands and improve and restore degraded wetlands.			X
Policies:			
2.3.3.a Prohibit the destruction and degradation of existing upland, mid-elevation, and coastal wetlands.			X
2.3.3.b Support and fund wetland protection and improvement, and restoration of degraded wetlands.			X
2.3.3.c Where applicable, require developers to provide a wetland protection buffer and/or other protective measures around and between development and wetland resources.			X
Objective:			
2.3.4 Greater preservation of native flora and fauna biodiversity to protect native species.			X
Policies:			
2.3.4.a Work with appropriate agencies to eliminate feral ungulate populations and invasive species.			X
2.3.4.b Encourage the State to provide adequate funding to preserve biodiversity, protect native species, and contain or eliminate invasive species.			X
2.3.4.c Support the work of conservation groups and organizations that protect, reestablish, manage, and nurture sensitive ecological areas and threatened indigenous ecosystems.			X
Objective:			
2.3.5 Limited development in critical watershed areas.			X
Policies:			
2.3.5.a Discourage development and subdivision of land within critical watersheds and in areas susceptible to high erosion and sediment loss.			X

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2.3.5.b Designate critical watershed areas as conservation lands.			X
2.3.5.c Strongly encourage new subdivisions and developments that are proximate to environmentally sensitive watershed resources to prepare and implement CSD plans.			X
Objective:			
2.3.6 Enhance the vitality and functioning of streams, while balancing the multiple needs of the community.			X
Policies:			
2.3.6.a Protect and enhance natural streambeds and discourage stream alteration.			X
2.3.6.b Work with appropriate agencies to establish minimum stream flow levels and ensure adequate stream flow to sustain riparian ecosystems, traditional kalo cultivation, and self-sustaining ahupua'a.			X
2.3.6.c Respect and participate in the resolution of native Hawaiian residual land and water rights issues (kuleana lands, ceded lands, and historic agricultural and gathering rights).			X
2.3.6.d Ensure that stream flows implement laws and policies found in the State Constitution and Water Code.			X
2.3.6.e Work with appropriate agencies and stakeholders to establish minimum stream flow levels, promote actions to support riparian habitat and the use of available lo'i, and maintain adequate flows for the production of healthy kalo crops.			X
Analysis: **Not applicable.**			
WILDLIFE AND NATURAL AREAS			
Goal:			
2.4 Maui's natural areas and indigenous flora and fauna will be protected.			X
Objective:			
2.4.1 A comprehensive management strategy that includes further identification, protection, and restoration of indigenous wildlife habitats.			X
Policies:			
2.4.1.a Identify and inventory the following:			X
(1) Natural, recreational, and open space resources;			X
(2) Flora and fauna with medium, high, and very high concentrations of threatened or endangered species; and			X
(3) Location and extent of invasive species.			X
2.4.1.b Require flora and fauna assessment and protection plans for development in areas with concentrations of indigenous flora and fauna; development shall comply with the assessment and protection plan and shall use the avoidance, minimization, and mitigation approach respectively, with an emphasis on avoidance.			X
2.4.1.c Support the implementation of Hawai`i's Comprehensive Wildlife Conservation Strategy (October 2005).			X
Objective:			
2.4.2 A decrease in invasive species through programs and partnerships that eradicate undesirable species and protect native habitat.			X
Policies:			
2.4.2.a Prevent the introduction of invasive species at all of Maui's airports and harbors.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.4.2.b Encourage the State to increase funding in support of invasive species interception, control, and eradication.			X
2.4.2.c Encourage the State to develop programs that allow students to participate in invasive species eradication projects.			X
Objective:			
2.4.3 Greater protection of sensitive lands, indigenous habitat, and native flora and fauna.			X
Policies:			
2.4.3.a Secure an interconnected network of sensitive lands, greenways, watercourses, and habitats.			X
2.4.3.b Protect Maui's sensitive lands (see Sensitive Lands on Protected Areas Diagrams).			X
2.4.3.c Promote innovative environmental-planning methods and site-planning standards that preserve and re-establish indigenous flora and fauna habitat, to preserve and restore connected habitat corridors and open space.			X
2.4.3.d Utilize protection tools such as conservation easements, land trusts, land banks, Purchase of Developments Rights (PDRs), Transfer of Development Rights (TDRs), and other stewardship tools to acquire natural areas			X
2.4.3.e Encourage discussions with communities to designate heritage areas that protect recreational and cultural lifestyles and resources.			X
2.4.3.f Support the expansion of Haleakalā National Park, and the creation of new national parks, where appropriate and supported by local communities.			X
2.4.3.g Encourage reforestation efforts that increase native species' habitat.			X
2.4.3.h Utilize the Natural Area Partnership Program (NAPP) and other programs to protect natural lands.			X
2.4.3.i Support increased dedicated funding for the acquisition, protection, restoration, or preservation of important natural areas or open space through the following: grants from the Land and Water Conservation Fund; dedicated funding from real property taxes or other appropriate revenues; bond issues; real estate transfer tax; revenues from the Transient Accommodations Tax; development mitigation fees; and other appropriate funding sources.			X
Analysis: **Not applicable.**			
SCENIC RESOURCES			
Goal:			
2.5 Maui will continue to be a beautiful island steeped in coastal, mountain, open space, and historically significant views that are preserved to enrich the residents' quality of life, attract visitors, provide a connection to the past, and promote a sense of place.			X
Objective:			
2.5.1 A greater level of protection for scenic resources.			X
Policies:			
2.5.1.a Protect views to include, but not be limited to, Haleakalā, ʻĪao Valley, the Mauna Kahalawai (West Maui Mountains), Puʻu Ōʻlaʻi, Kahoʻolawe, Molokini, Molokaʻi, and Lānaʻi, Mauna Kea, Mauna Loa, sea stacks, the Pacific Ocean, and significant water features, ridgelines, and landforms.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.5.1.b Identify, preserve, and provide ongoing management of important scenic vistas and open space resources, including mauka-to-makai and makai-to-mauka view planes.			X
2.5.1.c Protect "night sky" resources by encouraging the implementation of ambient light ordinances and encouraging conversion of all sources that create excessive light pollution, affecting our ability to view the stars.			X
2.5.1.d Protect ridgelines from development where practicable to facilitate the protection of public views.			X
2.5.1.e Protect scenic resources along Maui's scenic roadway corridors.			X
Objective:			
2.5.2. Reduce impacts of development projects and public-utility improvements on scenic resources.			X
Policies:			
2.5.2.a Enforce the policies and guidelines of the SMA regarding the protection of views.			X
2.5.2.b Require any new subdivision of land, development, or redevelopment adjacent to a "high" or "exceptional" scenic corridor to submit an impact assessment of the project's scenic impacts; this assessment shall use the avoidance, minimization, and mitigation steps respectively, with an emphasis on avoidance.			X
2.5.2.c Require appropriate building setbacks and limits on wall heights to protect views along scenic corridors.			X
2.5.2.d Encourage the State of Hawai`i Board of Land and Natural Resources to deny any development within the State Conservation District that interferes with a scenic landscape or disrupts important open space resources.			X
2.5.2.e Require Urban Design and Review Board (UDRB) review and approval of utility poles, facilities, and other visible infrastructure improvements along scenic corridors.			X
2.5.2.f Ensure little or no effect on scenic resources from utility improvements, primarily power poles.			X
2.5.2.g Protect scenic vistas from intrusion by power poles.			X
Objective:			
2.5.3 Greater protection of and access to scenic vistas, access points, and scenic lookout points.			X
Policy:			
2.5.3.a Protect, enhance, and acquire access to Maui's scenic vistas and resources.			X
Analysis: **Not applicable.**			
CHAPTER 3 – NATURAL HAZARDS			
Goal:			
3.1 Maui will be disaster resilient.		X	
Objective:			
3.1.1 Increased inter-agency coordination.			X
Policy:			
3.1.1.a Reinforce the island's preparedness capacity by:			X
(1) Applying the latest data-gathering techniques/technology;			X

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(2) Pursuing funding opportunities;			X
(3) Improving monitoring and advance warning systems;			X
(4) Fostering public awareness; and			X
(5) Working with external agencies to coordinate disaster mitigation and response.			X
Objective:			
3.1.2 Greater protection of life and property.		X	
Policies:			
3.1.2.a Identify critical infrastructure, lifelines, roads, and populations that are vulnerable to coastal hazards, and encourage strategic retreat and relocation to safer areas.		X	
3.1.2.b Consider the location of dams, reservoirs, holding ponds, and other water-containing entities that are upstream of inhabited areas to anticipate, avoid, and mitigate inundation risks, and discourage new development in areas where possible inundation hazards may exist.			X
3.1.2.c Strengthen current development standards to minimize destruction of land and property.			X
3.1.2.d Encourage the use of construction techniques that reduce the potential for damage from natural hazards.			X
3.1.2.e Increase the County's resilience to drought.		X	
3.1.2.f Increase food and energy security through local production and storage.			X
Objective:			
3.1.3 A more coordinated emergency response system that includes clearly defined and mapped evacuation routes.			X
Policy:			
3.1.3.a Identify and expand shelter facilities and evacuation routes away from areas susceptible to natural hazards.			X
Objective:			
3.1.4 A more educated and involved public that is aware of and prepared for natural hazards.			X
Policies:			
3.1.4.a Promote public education and involvement related to natural hazards awareness and preparedness.			X
3.1.4.b Coordinate a multi-agency effort to establish and promote a comprehensive public education program that will focus on practical approaches to preparedness, damage prevention, and hazard mitigation.			X
Analysis: **The proposed project is located outside risk areas for sea level rise, tsunamis, and flooding. In addition, the proposed project will add redundancy water storage capacity to the water supply system.**			
CHAPTER 4 – ECONOMIC DEVELOPMENT			
ECONOMIC DIVERSIFICATION			
Goal:			
4.1 Maui will have a balanced economy composed of a variety of industries that offer employment opportunities and well-paying jobs and a business environment that is sensitive to resident needs and the island's unique natural and cultural resources.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.1.1 A more diversified economy.			X
Policies:			
4.1.1.a Encourage an economy that is driven by innovation, research and development, and human resource development, including but not limited to, increasing technology- and knowledge-based sectors to be a major component in Maui County's economic base.			X
4.1.1.b Support the creation of new jobs and industries that provide a living wage.			X
4.1.1.c Facilitate and expedite permits and approvals.			X
4.1.1.d Develop linkages and partnerships among international research and development activities and Maui businesses.			X
Objective:			
4.1.2 Increase activities that support principles of sustainability.			X
Policies:			
4.1.2.a Support industries that are sustainable, and culturally and environmentally sensitive.			X
4.1.2.b Encourage and support local businesses.			X
4.1.2.c Substitute imports with locally-produced services and products where practicable.			X
4.1.2.d Support the development of economic development clusters in targeted industry sectors.			X
4.1.2.e Encourage all businesses to save energy, water, and other resources.			X
Objective:			
4.1.3 Improve the island's business climate.			X
Policies:			
4.1.3.a Upgrade, maintain the quality of, and improve access to telecommunications infrastructure.			X
4.1.3.b Ensure an adequate supply of affordable workforce housing.			X
4.1.3.c Develop neighborhoods and communities that are attractive to the workforce of a diversified economy.			X
4.1.3.d Encourage, nurture, and reward entrepreneurship and innovation.			X
4.1.3.e Encourage employers to establish incentive programs. Support flexibility in workforce policies compatible with business and quality of life goals.			X
4.1.3.f Assist community development organizations with revitalization and development of neighborhoods and communities that are attractive to the workforce of a diversified economy.			X
Analysis: **Not applicable.**			
TOURISM			
Goal:			
4.2 A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.			X
Objective:			
4.2.1 Increase the economic contribution of the visitor industry to the island's environmental well-being for the island's residents' quality of life.			X
Policies:			
4.2.1.a Engage the visitor industry in the growth of emerging sectors where practicable.			X

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4.2.1.b Support the implementation of the Maui County TSP, when consistent with the MIP.			X
4.2.1.c Focus economic growth in the visitor industry through enhanced visitor experiences and an emphasis on attracting higher-spending.			X
4.2.1.d Provide a rich visitor experience, while protecting the island's natural beauty, culture, lifestyles, and aloha spirit.			X
4.2.1.e Diversify the tourism industry by supporting appropriate niche activities such as ecotourism, cultural tourism, voluntourism, ag-tourism, health and wellness tourism, educational tourism, medical tourism, and other viable tourism-related businesses in appropriate locations.			X
4.2.1.f Recognize the important economic contributions that the visitor industry makes and support a healthy and vibrant visitor industry.			X
4.2.1.g Support the increased availability of kama'āina discount programs.			X
Objective:			
4.2.2 Comprehensively manage future visitor-unit expansion.			X
Policies:			
4.2.2.a Mitigate the impact of tourism on the host culture, natural environment, and resident lifestyles.			X
4.2.2.b Allow, where permitted by the community plan, the development of business hotels and small, sensitively-designed inns.			X
4.2.2.c Manage impacts from transient vacation rentals, hotels, bed and breakfast units, timeshares, and resort condominiums on residential communities, public infrastructure, and community facilities.			X
4.2.2.d Discourage supplanting of existing island housing to visitor accommodations that may have a negative impact on long-term rental housing, price of housing, and price of land.			X
4.2.2.e Allow the designation of retreat/mini-conference centers in appropriate locations through the community plan process.			X
4.2.2.f Community plans should consider establishing standards such as limits on building size, room count, and the number of inns, if any, that will be allowed in small towns.			X
Objective:			
4.2.3 Maximize residents' benefits from the visitor industry.			X
Policies:			
4.2.3.a Promote a desirable island population by striving to not exceed an island-wide visitor population of roughly 33 percent of the resident population.			X
4.2.3.b Use the required General Plan Annual Status Report to monitor trends related to residents and visitors.			X
Analysis: **Not applicable.**			
AGRICULTURE			
Goal:			
4.3 Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.			X
Objective:			
4.3.1 Strive for at least 85 percent of locally-consumed fruits and vegetables and 30 percent of all other locally-consumed foods to be grown in-State.			X
Policies:			
4.3.1.a Strive to substitute food/agricultural product imports with a reliable supply of locally produced food and agricultural products.			X

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4.3.1.b Facilitate and support the direct marketing/sale of the island's agricultural products to local consumers, through farmers markets and similar venues.			X
4.3.1.c Encourage growing a diverse variety of crops and livestock to ensure the stewardship of our land while safeguarding consumer safety.			X
4.3.1.d Work with the State to regulate and monitor genetically-modified-organism (GMO) crops to ensure the safety of all crops and label all GMO products.			X
Objective:			
4.3.2 Maintain or increase agriculture's share of the total island economy.			X
Policies:			
4.3.2.a Encourage the export of the island's agricultural products to offshore markets.			X
4.3.2.b Support infrastructure investments at harbors, such as ferry service, airports, and other facilities for the rapid and cost-effective export of island-grown products.			X
4.3.2.c Encourage the continued viability of sugar cane production, or other agricultural crops, in central Maui and all of Maui Island.			X
4.3.2.d Work with the State to reduce excise taxes for commercial agricultural products produced within the State.			X
4.3.2.e Coordinate with appropriate State and Federal Departments and agencies, private shipping companies, and farmers associations to assist in the rapid and cost-effective export of Maui's agricultural products to off-island markets.			X
Objective:			
4.3.3 Expand diversified agriculture production at an average annual rate of 4 percent.			X
Policies:			
4.3.3.a Promote the development of locally-grown and ecologically-sound biofuels, aquaculture, and forest products.			X
4.3.3.b Support the development of farming associations/cooperatives.			X
4.3.3.c Work with educational institutions and appropriate agencies to provide education and training for farm owners and entrepreneurs.			X
Analysis: **Not applicable.**			
EMERGING SECTORS			
Goal:			
4.4 A diverse array of emerging economic sectors.			X
Objective:			
4.4.1 Support increased investment and expanded activity in emerging industries.			X
Policies:			
4.4.1.a Support the development of and access to state-of-the-art voice, video, and data telecommunications systems and high-speed Internet.			X
4.4.1.b Attract and assist industries to compete in high technology activities such as those related to renewable energy, green technologies, diversified agriculture, ocean sciences, health sciences, space technologies, and other knowledge-based industries.			X
4.4.1.c Support new industries that are environmentally and culturally sensitive such as health and wellness, sports and outdoor activities, cultural activities, the arts, film-making, entertainment, and digital media.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.4.1.d Support a sustainable, culturally sensitive, astronomy industry.			X
4.4.1.e Support the continued development of the Maui Research and Technology Park in Kihei, as a center for research and development, education, and diversified economic development, as provided by the Maui County Code.			X
4.4.1.f Work with appropriate organizations to support the development of high technology clusters around renewable energy, diversified agriculture, ocean sciences, health sciences, and other knowledge-based industries.			X
Objective:			
4.4.2 Increase the development of renewable energy technologies that are supported by the local community.			X
Policies:			
4.4.2.a Support the expansion of the renewable energy sector and the use of solar, wind, wave, and biofuel technologies.			X
4.4.2.b Provide incentives to encourage renewable energy development, the use of green energy technologies, and energy conservation.			X
4.4.2.c Ensure an adequate supply of land and facilitate permitting to meet the needs for renewable energy technologies such as solar, wind, wave, biofuel, and other technologies, provided that environmental, view plane, and cultural impacts are addressed.			X
4.4.2.d Support the Maui County Energy Alliance Plan where consistent with the MIP.			X
Analysis: **Not applicable.**			
SMALL BUSINESS DEVELOPMENT			
Goal:			
4.5 Small businesses will play a key role in Maui's economy.			X
Objective:			
4.5.1 Increase the number of and revenue generated by small businesses and decrease the percentage of small business failures.			X
Policies:			
4.5.1.a Provide incentives and support for small businesses and entrepreneurs that incorporate sustainable technologies and practices into their operations, utilize local materials, or produce and sell locally-made goods or services.			X
4.5.1.b Assist traditional "mom and pop" business establishments.			X
4.5.1.c Reduce barriers to small business development.			X
4.5.1.d Require, where feasible, the government procurement of goods and services from locally-owned, small businesses.			X
4.5.1.e Support community markets and venues that sell locally-made produce, goods, and services.			X
Analysis: **Not applicable.**			
HEALTH CARE SECTOR			
Goal:			
4.6 Maui will have a health care industry and options that broaden career opportunities that are reliable, efficient, and provide social well-being.			X
Objective:			
4.6.1 Expand the economic benefits of the health care sector.			X
Policies:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.6.1.a Encourage expanded services at MMMC and at other medical facilities.			X
4.6.1.b Support expansion of federally qualified health centers with the direct involvement of the residents of the communities served.			X
4.6.1.c Support the use of multimedia as a means to provide healthcare information.			X
4.6.1.d Encourage digitalization of all diagnostic equipment at all facilities on Maui to enable sharing of data and more efficient use of limited provider workforce, consistent with data protection and patient privacy.			X
4.6.1.e Support the expansion of telemedicine.			X
4.6.1.f Encourage expansion and improved access to emergency care in all communities.			X
Objective:			
4.6.2 Be more efficient in the delivery of health care services and in minimizing health care costs.			X
Policies:			
4.6.2.a Support expansion of health care providers and facilities to improve access to quality care throughout the island.			X
4.6.2.b Encourage the expansion of veteran health care services.			X
4.6.2.c Allow home-based out-patient medical care that does not interfere with surrounding neighborhoods.			X
Objective:			
4.6.3. Expand Maui's alternative health care services, including spiritual practices.			X
Policies:			
4.6.3.a Support efforts to promote alternative medicine.			X
4.6.3.b Allow small-scale home-alternative medicine businesses such as massage, chiropractic care, traditional Hawaiian healing, and acupuncture that do not interfere with surrounding neighborhoods.			X
Analysis: **Not applicable.**			
EDUCATION AND WORKFORCE DEVELOPMENT			
Goal:			
4.7 Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.			X
Objective:			
4.7.1 Improve preschool and K-12 education to allow our youth to develop the skills needed to successfully navigate the 21st century.			X
Objective:			
4.7.1.a Encourage the State to implement programs such as:			X
(1) Universally available preschool for children between the ages of one and five;			X
(2) Mandatory kindergarten;			X
(3) Mandatory K-5th grade classroom size limits of 1 teacher to 20 students;			X
(4) Mandatory nutrition programs; and			X
(5) Mandatory Native Hawaiian programs at all grade levels.			X
4.7.1.b Encourage the DOE to extend the school day by at least an hour.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.7.1.c Encourage the State to increase funding for public education so that Hawai'i is among the top 10 states nationally as measured by investment per pupil.			X
4.7.1.d Encourage the State to ensure teacher certifications relate to effective delivery and improved student performances, and develop an industry experience/equivalency certification to assure our DOE students have access to career technical education and training.			X
4.7.1.e Encourage the UHMC to provide dormitory space for high school students.			X
4.7.1.f Encourage the development and implementation of curriculum on native Hawaiian history, culture, and practices, in consultation with native Hawaiian groups and associations.			X
Objective:			
4.7.2 Encourage an increase in the number of certificate recipients and associate, bachelors, and graduate degrees conferred.			X
Policies:			
4.7.2.a Encourage the State to increase the number of articulation agreements between the UHMC and four-year universities, particularly the University of Hawai'i at Manoa.			X
4.7.2.b Encourage the State to expand accredited 2-year, 4-year, and graduate programs through the UHMC.			X
4.7.2.c Encourage the education and training of our residents to meet the needs of a diversified economy.			X
4.7.2.d Support education and training programs such as student internships, vocational training, and career development opportunities to ensure a highly skilled workforce			X
4.7.2.e Work with educational institutions to improve and expand access to education and training through multiple modes, including distance learning.			X
Objective:			
4.7.3 Strive to ensure that more of Maui's jobs are developed in STEM-related sectors by 2030.			X
Policies:			
4.7.3.a Support the development of STEM-related certificates and degrees at the two- and four year levels.			X
4.7.3.b Support the education initiatives of the Maui Agricultural Development Plan.			X
4.7.3.c Expand and seek funding for internships, mentoring, job shadowing, etc. to foster interest in health and green workforce careers.			X
4.7.3.d Work with MEDB, UHMC, and other similar organizations to expand internship/education programs to support STEM careers.			X
4.7.3.e Continue to partner with the MEDB and other similar organizations to recruit, assist, and retain emerging industries, research and development activities, and educational/workforce opportunities.			X
Analysis: **Not applicable.**			
CHAPTER 5 – HOUSING			
Goal:			
5.1 Maui will have safe, decent, appropriate, and affordable housing for all residents developed in a way that contributes to strong neighborhoods and a thriving island community.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
5.1.1 More livable communities that provide for a mix of housing types, land uses, income levels, and age.			X
Policies:			
5.1.1.a Promote livable communities (compact/walkable/bikeable, access to transit) that provide for a mix of housing types and land uses, including parks, open space, and recreational areas.			X
5.1.1.b Promote planning approaches that provide a mix of multifamily and single-family housing units to expand housing choices.			X
5.1.1.c Discourage gated communities.			X
5.1.1.d Provide incentives for the rehabilitation or adaptive reuse of historic structures to facilitate more housing choices.			X
5.1.1.e Use planning and regulatory approaches to provide higher housing densities.			X
Objective:			
5.1.2 Better monitoring, evaluation, and refinement of affordable housing policy in conjunction with the economic cycle.			X
Policies:			
5.1.2.a Improve data on resident and nonresident housing.			X
5.1.2.b Utilize the following approaches to promote resident housing and to minimize offshore market impacts:			X
(1) Ensure that the future housing stock is composed of a mix of housing types (multifamily, small lots, ohana units, co-housing, cottage houses, etc.);			X
(2) Encourage new housing in proximity to jobs and services, in places that are conducive/affordable to island residents; and			X
(3) Explore taxation alternatives and building fee structures.			X
Objective:			
5.1.3 Provide affordable housing, rental or in fee, to the broad spectrum of our island community.			X
Policies:			
5.1.3.a Consider regulations that can help keep affordable housing available at affordable rents.			X
5.1.3.b Seek to have ownership of affordable for-sale and rental housing vested in a non-profit community land trust, or other qualified housing provider, committed to keeping such housing affordable in perpetuity.			X
5.1.3.c Facilitate the use of public lands in urban areas that are suitable for affordable housing.			X
5.1.3.d Develop or support partnerships and initiatives that provide housing-related education/outreach.			X
5.1.3.e Support the continuing efforts of the County and its community partners to:			X
(1) Disseminate information on different housing/financial assistance programs (loans, grants, etc.) including information on housing rehabilitation/restoration/adaptive reuse;			X
(2) Provide housing-related counseling including budget, credit, and financial planning assistance; and			X
(3) Create and maintain a comprehensive/master list of available affordable housing to help residents secure a unit that satisfies their need.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
5.1.4 Provide infrastructure in a more timely manner to support the development of affordable housing.			X
Policies:			
5.1.4.a Prioritize the development of infrastructure that supports the development of affordable housing.			X
5.1.4.b Utilize appropriate financing approaches and assistance tools to encourage the development of infrastructure and public facilities.			X
5.1.4.c Tailor infrastructure requirements to correspond with appropriate level-of-service standards to help control housing costs and to maintain safety.			X
Objective:			
5.1.5 A wider range of affordable housing options and programs for those with special needs.			X
Policies:			
5.1.5.a Ensure that residents with special needs have access to appropriate housing.			X
5.1.5.b Encourage housing to be built or rehabilitated to allow the elderly and those with special needs to live in their homes.			X
5.1.5.c Ensure and facilitate programs to assist those with special needs from becoming homeless.			X
5.1.5.d Promote programs that stimulate the production of sustainable homeless shelters and alternative housing technologies.			X
5.1.5.e Support programs that offer home modification counseling on low-interest retrofit loans and grants to those with special needs.			X
Objective:			
5.1.6 Reduce the cost to developers of providing housing that is affordable to families with household incomes 160 percent and below of annual median income.			X
Policies:			
5.1.6.a Support fast-track processing procedures for the following housing-related entitlements: affordable housing projects/units; indigenous Hawaiian housing/units; and special-needs housing units (seniors, disabled, homeless, etc.).			X
5.1.6.b Require the construction of affordable for-sale and rental housing units as part of the construction of new housing developments.			X
5.1.6.c Offer extra incentives in boom periods and withdraw incentives during slack periods.			X
Objective:			
5.1.7 Increased preservation and promotion of indigenous Hawaiian housing and architecture.			X
Policies:			
5.1.7.a Preserve, promote, and give priority to Hawaiian housing/architecture forms to preserve Hawaiian culture.			X
5.1.7.b Provide for indigenous architecture as an allowable structure for native Hawaiian uses to include hula and lāʻau lapaʻau.			X
Analysis: **Not applicable.**			
CHAPTER 6 – INFRASTRUCTURE AND PUBLIC FACILITIES			
SOLID WASTE			
Goal:			
6.1 Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
6.1.1 Meet our future solid waste needs with a more comprehensive planning and management strategy.			X
Policies:			
6.1.1.a Update and publicize the ISWMP every ten years.			X
6.1.1.b Strengthen inter-agency coordination including Planning and Environmental Management departments.			X
6.1.1.c Divert waste from the landfills and educate the public about the recommendations of the ISWMP.			X
6.1.1.d Minimize future active, unlined landfill cells to the extent feasible.			X
Objective:			
6.1.2 Divert at least 60 percent of solid waste from the island's landfills.			X
Policies:			
6.1.2.a Require residents and commercial enterprises that generate waste to pay a fair proportion of disposal costs.			X
6.1.2.b Encourage environmentally safe waste-to-energy solutions.			
6.1.2.c Facilitate the reduction of solid waste generated by packaging, food service products, construction waste, etc.			X
6.1.2.d Educate residents and visitors about the impacts of and methods to reduce, reuse, and recycle.			X
6.1.2.e Discourage the disposal of landfill leachate by diversion to wastewater treatment plants, where practicable.			X
Analysis: **Not applicable.**			
WASTEWATER			
Goal:			
6.2 Maui will have wastewater systems that comply with or exceed State and Federal regulations; meet levels-of-service needs; provide adequate capacity to accommodate projected demand; ensure efficient, effective, and environmentally sensitive operation; and maximize wastewater reuse where feasible.			X
Objective:			
6.2.1 A wastewater planning program capable of efficiently providing timely and adequate capacity to service projected demand where economically feasible and practicable.			X
Policies:			
6.2.1.a Encourage the use of renewable energy in support of wastewater treatment facilities.			X
6.2.1.b Focus the expansion of wastewater systems to accommodate planned growth consistent with the MIP Directed Growth Strategy.			X
6.2.1.c Establish new wastewater treatment plant(s) outside the tsunami zone.			X
Objective:			
6.2.2 Adequate levels of wastewater service with minimal environmental impacts.			X
Policies:			
6.2.2.a Meet or exceed all State and Federal standards regulating wastewater disposal or reuse.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.2.2.b Encourage tertiary treatment for all municipal wastewater that is disposed through deep injection wells. Phase out all municipal and private injection wells in coordination with water reuse programs, where feasible, by 2020.			X
6.2.2.c Improve and upgrade the County's existing wastewater collection, treatment, and reuse facilities consistent with current and future plans and the County's CIP.			X
6.2.2.d Maintain an ongoing sewer inspection program for public and private multi-user systems to identify potential problems and forecast each system's residual life.			X
6.2.2.e Require all new developments to fund system improvements in proportion to the development impact and in accordance with the County's wastewater functional plan.			X
6.2.2.f Require appropriate funding mechanisms, such as a sinking fund, to adequately maintain or replace aging water-system components.			X
6.2.2.g Strongly encourage the phase out of cesspools.			X
Objective:			
6.2.3 Increase the reuse of wastewater.			X
Policies:			
6.2.3.a Strengthen coordination between the Department of Water Supply (DWS) and the WWRD to promote reuse/recycling of wastewater.			X
6.2.3.b Expand the reuse of wastewater from the Central Maui, Kīhei, Lahaina, and other wastewater systems.			X
Analysis: **Not applicable.**			
WATER			
Goal:			
6.3 Maui will have an environmentally sustainable, reliable, safe, and efficient water system.	X		
Objective:			
6.3.1 More comprehensive approach to water resources planning to effectively protect, recharge, and manage water resources including watersheds, groundwater, streams, and aquifers.			X
Policies:			
6.3.1.a Ensure that DWS actions reflect its public trust responsibilities toward water.			X
6.3.1.b Ensure the WUDP implements the State Water Code and MIP's goals, objectives, and policies.			X
6.3.1.c Regularly update the WUDP, to maintain compliance with the General Plan.			X
6.3.1.d Ensure that the County's CIP for water-source development is consistent with the WUDP and the MIP.			X
6.3.1.e Where desirable, retain and expand public ownership and management of watersheds and fresh-water systems.			X
6.3.1.f Encourage and improve data exchange and coordination among Federal, State, County, and private land use planning and water resource management agencies.			X
Objective:			
6.3.2 Increase the efficiency and capacity of the water systems in striving to meet the needs and balance the island's water needs.	X		
Policies:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.3.2.a Ensure the efficiency of all water system elements including well and stream intakes, water catchment, transmission lines, reservoirs, and all other system infrastructure.	X		
6.3.2.b Encourage increased education about and use of private catchment systems where practicable for nonpotable uses.			X
6.3.2.c Maximize the efficient use of reclaimed wastewater to serve nonpotable needs.			X
6.3.2.d Work with appropriate State and County agencies to achieve a balance in resolving the needs of water users in keeping with the water allocation priorities of the MIP.			X
6.3.2.e Ensure water conservation through education, incentives, and regulations.			X
6.3.2.f Acquire and develop additional sources of potable water.			X
Objective:			
6.3 Improve water quality and the monitoring of public and private water systems.			X
Policy:			
6.3.3.a Protect and maintain water delivery systems.			X
Analysis: **The proposed Kīhei Water Tank project is directly related to the goals set forth for water. The proposed project will support the goals of proper storage, increased storage capacity, and reliable supply of potable water for the needs of the Kīhei-Makena community.**			
TRANSPORTATION			
Goal:			
6.4 An interconnected, efficient, and well-maintained, multimodal transportation system.			X
Objective:			
6.4.1 Provide for a more integrated island-wide transportation and land use planning program that reduces congestion and promotes more efficient (transit-friendly) land use patterns.			X
Policies:			
6.4.1.a Plan for an integrated multi-modal transportation system comprised of public transit, bicycle, pedestrian, automobile, and other transportation modes.			X
6.4.1.b Refocus transportation investment from the construction of additional roadways only for the automobile to the expansion of a multimodal transportation system.			X
6.4.1.c Encourage the use of “complete streets” design methods.			X
6.4.1.d Encourage employers to implement TDM strategies.			X
Objective:			
6.4.2 Safe, interconnected transit, roadway, bicycle, equestrian, and pedestrian network.			X
Policies:			
6.4.2.a Ensure transit-, roadway-, and pedestrian-facilities design and level-of-service standards respect the unique character of our communities.			X
6.4.2.b Prioritize transportation improvements list to cost-effectively meet existing and future needs consistent with the MIP.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.4.2.c Require new development, where appropriate, to integrate sidewalks, pathways, bikeways, and transit infrastructure into new commercial and residential projects while enhancing community character.			X
6.4.2.d Identify and improve hazardous and substandard sections of roadways, drainage infrastructure, and bridges, provided that the historical integrity of the roads and bridges are protected.			X
6.4.2.e Consider identification, acquisition where appropriate, and utilization of abandoned right of-ways for bikeways, pedestrian pathways, and open-space networks.			X
6.4.2.f Support the implementation of the Central Maui Pedestrian & Bicycle Master Plan (March 2012), when consistent with the MIP.			X
Objective:			
6.4.3 An island-wide, multimodal transportation system that respects and enhances the natural environment, scenic views, and each community's character.			X
Policies:			
6.4.3.a Ensure that the roadway and transit alignments respect the natural environment and scenic views.			X
6.4.3.b Ensure that roadways and transit systems in rural areas and small towns enhance community character.			X
6.4.3.c Design all transit systems to respect visual corridors and Maui's character.			X
Analysis: **Not applicable.**			
TRANSIT			
Goal:			
6.5 An island-wide transit system that addresses the needs of residents and visitors and contributes to healthy and livable communities.			X
Objective:			
6.5.1 An integrated transit system that better serves all mobility needs of Maui's residents and visitors.			X
Policies:			
6.5.1.a Maximize access to public transit in town centers, commercial districts, and employment centers.			X
6.5.1.b Expand regional and inter-regional transit services, where appropriate, in heavily traveled corridors and within communities			X
6.5.1.c Increase the frequency of current service, add additional bus routes as demand requires, and transition to nonpolluting transit vehicles, as funding permits.			X
6.5.1.d Provide adequate transit infrastructure (e.g., bus pullouts, waiting benches and shelters, signs) along existing and future transit right-of-ways.			X
6.5.1.e Require new development where appropriate, to provide right-of-ways (ROWs) to accommodate transit circulation and support facilities.			X
6.5.1.f Identify, protect, and preserve, or acquire corridors for future inter-community transit use, including but not limited to, rail and also multimodal use corridors.			X
6.5.1.g Establish transit corridors by planning for and securing right-of-way when appropriate for alternative modes of transportation (such as rail and water ferry service).			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.5.1.h Pursue improvements and upgrades to the existing transit system consistent with updated MDOT planning studies/transit plans (within the framework of comprehensive island-wide multimodal transportation plans).			X
6.5.1.i Increase inter-agency coordination between the Department of Planning, State Department of Transportation, County Department of Public Works, and other applicable agencies.			X
Objective:			
6.5.2 Plan for a more diversified and stable funding base to support transportation goals.			X
Policies:			
6.5.2.a Support alternative methods and sources of funding transportation improvements (including impact fees, higher taxes, fare adjustments, dedicated sources of funding, and assessments).			X
6.5.2.b Collaborate with public-private entities or nonprofit organizations to reduce public transit operational expenses.			X
6.5.2.c Coordinate with appropriate Federal, State, and County agencies to fund transportation projects in areas where growth is anticipated.			X
Analysis: **Not applicable.**			
PARKS			
Goal:			
6.6 Maui will have a diverse range of active and passive recreational parks, wilderness areas, and other natural-resource areas linked, where feasible, by a network of greenways, bikeways, pathways, and roads that are accessible to all.			X
Objective:			
6.6.1 More effective, long-range planning of parks and recreation programs able to meet community needs.			X
Policies:			
6.6.1.a Support, consistent with the MIP, the implementation of open-space and recreational plans, such as the Pali to Puamana Parkway Master Plan and the Upcountry Greenways Master Plan.			X
6.6.1.b Utilize the ahupua‘a approach by integrating mauka-to-makai natural landscapes into an island-wide parks and recreation functional plan.			X
6.6.1.c Provide a balanced mix of passive and active parks, including neighborhood, community, and regional parks, in each community plan area.			X
6.6.1.d Support the expansion of Haleakala National Park, where supported by affected communities.			X
6.6.1.e Support lo‘i and dryland taro restoration in County, State, and Federal parks.			X
6.6.1.f Encourage private landowners to dedicate land to Federal, State, or County governments, or nonprofit land trusts, for parks and open-space protection consistent with the MIP.			X
6.6.1.g Strengthen inter-agency coordination including State and County departments, such as resolving joint use of facilities and properties.			X
6.6.1.h Work with the State to prepare and implement a master management plan for ‘Āhihi-Kīna‘u and La Perouse-Keone‘ō‘io Bay to Kanaloa Point region.			X
Objective:			
6.6.2 Achieve parks and recreation opportunities to meet the diverse needs of our community.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies:			
6.6.2.a Establish appropriate level-of-service standards at the neighborhood, community, and regional levels.			X
6.6.2.b Identify and acquire parks and recreational facilities that address existing park inadequacies and complement and enhance neighborhoods, communities, and natural land features.			X
6.6.2.c Design park facilities to preserve and enhance natural site characteristics, maximize views, protect environmental and cultural sites, and minimize water demands.			X
6.6.2.d Acquire lands along the shoreline, between coastal roadways and the ocean.			X
6.6.2.e Encourage the development of regional parks, district parks, and greenways in a manner that helps to contain sprawl, provide separation between distinct communities, or offer open space within urban communities.			X
6.6.2.f Require large master-planned communities that incorporate a mixture of park facilities pursuant to parks standards and functional plans.			X
6.6.2.g Support appropriate areas for cultural parks (e.g., Kepaniwai) in each community plan area.			X
6.6.2.h Incorporate community input to determine the appropriate location, design, and long-term stewardship of parks and recreation facilities.			X
6.6.2.i Manage commercial activities at public parks to minimize impacts to residents.			X
6.6.2.j Support public-private partnerships to implement the acquisition and development of parks when consistent with the General Plan.			X
6.6.2.k Support a coordinated program to improve, operate, and maintain joint-use facilities and grounds.			X
Objective:			
6.6.3 An expanded network of greenways, trails, pathways, and bikeways.			X
Policies:			
6.6.3.a Link existing and future park sites, natural areas, the shoreline, and residential areas with a network of bikeways, pedestrian paths, trails, and greenways.			X
6.6.3.b Support the implementation of plans and programs that facilitate pedestrian mobility and access to active and passive recreation areas and sites.			X
6.6.3.c Collaborate with the State and private land owners to ensure perpetual access and proper stewardship of traditional trails and access systems.			X
6.6.3.d Facilitate the development of well-managed noncommercial campgrounds throughout the island.			X
6.6.3.e Consider requiring commercial bike rental businesses to provide funding that supports a mauka-to-makai Haleakalā bikeway improvement program.			X
6.6.3.f Ensure ADA compliance and seek opportunities to make all parks and recreational facilities accessible to people with disabilities.			X
Analysis: **Not applicable.**			
PUBLIC FACILITIES			
Goal:			
6.7 Maui will have adequate public facilities that meet the diverse needs of residents.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.7.1 More effective planning for public facilities to meet community needs.			X
Policies:			
6.7.1.a Ensure the development and update of island-wide public facilities functional plans that incorporate prioritized facilities, programs, and a financial component.			X
6.7.1.b Establish appropriate level-of-service standards for public facilities provided by the County.			X
6.7.1.c Pursue improvements and upgrades of County public facilities consistent with the public facilities functional plan.			X
6.7.1.d Recognize Wailuku Town as Maui's Civic Center and support the revitalization of the Civic Center District by consolidating government office spaces, enhancing landscape beautification, and providing adequate public parking.			X
6.7.1.e Support, with community input, the relocation of the Maui Community Correctional Center from Wailuku to an appropriate location in Puʻunēnē.			X
6.7.1.f Adequately plan and fund public safety facilities (fire, police, ambulance, civil defense) to meet community needs.			X
6.7.1.g Increase joint facilities utilization and program coordination between State and County agencies such as baseyards, communication centers, recreational facilities, etc., where feasible.			X
6.7.1.h Focus future expenditures for additional government office space, parking, and related facilities in Wailuku's Civic Center District.			X
6.7.1.i Encourage continuous and safe walkways for children within one mile of each school.			X
6.7.1.j Encourage public-private partnerships to identify and resolve public facility plan shortcomings when consistent with the General Plan.			X
6.7.1.k Incorporate community/area residents' input to determine the appropriate location and design of public facilities.			X
Analysis: **Not applicable.**			
SCHOOLS AND LIBRARIES			
Goal:			
6.8 Maui will have school and library facilities that meet residents' needs and goals.			X
Objective:			
6.8.1 Assist in providing appropriate school and library facilities in a timely manner and in strategic locations.			X
Policies:			
6.8.1.a Work in partnership with all educational institutions to meet current and future needs including appropriate location, timing, and design of future facilities.			X
6.8.1.b Allow for the expansion and intensification of uses at the UHMC including satellite campuses operating in remote areas.			X
6.8.1.c Encourage the DOE to build and maintain smaller, community-oriented schools.			X
6.8.1.d Encourage better cooperation by the State and County for use of State and County facilities.			X
6.8.1.e Encourage the State to upgrade, modernize, and expand school facilities, including those in remote communities.			X
6.8.1.f Work with the State to develop a master plan for the expansion of UHMC in accordance with the MIP.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.8.1.g Support partnerships (public/private/nonprofit) to build and staff new schools and improve existing facilities.			X
6.8.1.h Work with the BOE HSPLS to provide centralized library services (including telecommunications) to all areas of Maui.			X
6.8.1.i Work with the State to expedite planning and construction of Kīhei High School, including the integration of the high school with the Maui Research and Technology Park.			X
6.8.1.j Work with the State to identify intermediate school sites in Central Maui and other areas where needed.			X
Objective:			
6.8.2 Provide a more expansive network of safe and convenient pedestrian-friendly streets, trails, pathways, and bikeways between neighborhoods and schools where appropriate.			X
Policies:			
6.8.2.a Encourage the State to build new school facilities in appropriate locations that minimize time and distance for students to travel to and from school.			X
6.8.2.b Encourage the State to implement the Safe Routes to School initiative with funding commitments to help the County plan and fund projects that ensure safe access routes to school.			X
Analysis: **Not applicable.**			
HEALTH CARE			
Goal:			
6.9 All of Maui residents will have the best possible health care to include healthy living, disease prevention, as well as acute and long-term care.			X
Objective:			
6.9.1 Greater autonomy to the Maui region in their efforts to improve medical care on the island.			X
Policies:			
6.9.1.a Encourage the State to give greater autonomy to the Maui region in their efforts to improve medical care on the island.			X
6.9.1.b Support innovative financial solutions, such as capital partnerships, joint ventures, and consolidations for MMMC and other health institutions.			X
6.9.1.c Support MMMC as a major core medical center that provides a greater range of services.			X
6.9.1.d Support the immediate development of a critical access hospital in West Maui.			X
6.9.1.e Support the expansion of regional critical-access facilities, where allowed by Federal regulations.			X
6.9.1.f Improve medical service to remote and outlying regions.			X
6.9.1.g Support transportation services for dialysis patients and community dialysis programs.			X
6.9.1.h Work with the State to determine the feasibility of appropriate medical facilities in South Maui and Hāna, including the possible reestablishment of a small community hospital in Hāna, the establishment of a hospital in South Maui, and assist the State in securing funding to meet Maui's health care needs.			X
Objective:			
6.9.2 An expansion of long-term care facilities and long-term care alternatives to meet the needs of our aging population.			X
Policies:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.9.2.a Support efforts to increase Maui's long-term care bed capacity to cover current and future needs, close to large population centers.			X
6.9.2.b Recognize that facilities for low-income elders who need long-term care are a needed form of affordable and subsidized housing.			X
6.9.2.c Evaluate the needs of the long-term disabled and provide planning support for their care, if there is a need for long-term care facilities.			X
6.9.2.d Consider long-term care facilities as a major potential employment base and encourage the recruitment and training of potential employees.			X
Objective:			
6.9.3 More support to home-care and community-based programs so they become alternatives to traditional nursing homes.			X
Policies:			
6.9.3.a Support the establishment of a program to assist the elderly and people with disabilities to remain in their homes or in a home-like setting.			X
6.9.3.b Support the establishment of senior and adult-day-care centers and senior housing.			X
6.9.3.c Continue to support existing senior centers (e.g. Kaunoa), and establish new senior centers that will provide day-care sites and programs for the disabled and elderly.			X
6.9.3.d Support funding alternatives for community-based services that assist home-care efforts.			X
6.9.3.e Encourage the State to adopt the recommendations contained within the Legislative Reference Bureau's report entitled "Gimme a Break: Respite Care Services in Other States," (December 2007) where appropriate, feasible, and consistent with the MIP.			X
Objective:			
6.9.4 Improved preventative medicine and primary health care.			X
Policies:			
6.9.4.a Develop and utilize health-status benchmarks to measure prevention and primary health care service delivery.			X
6.9.4.b Support programs that provide family planning assistance.			X
Analysis: **Not applicable.**			
ENERGY			
Goal:			
6.10 Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.			X
Objective:			
6.10.1 Reduce fossil fuel consumption. Using the 2005 electricity consumption as a baseline, reduce by 15 percent in 2015; 20 percent by 2020; and 30 percent by 2030.			X
Policies:			
6.10.1.a Support energy efficient systems, processes, and methods in public and private operations, buildings, and facilities.			X
6.10.1.b Support the Maui Solar Rooftop initiative.			X
6.10.1.c Support Hawai`i Energy and other Public Utility Commission (PUC) approved energy efficiency programs.			X
Objective:			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.10.2 Increase the minimum percentage of electricity obtained from clean, renewable energy sources. By 2015, more than 15 percent of Maui's electricity will be produced from locally-produced, clean, renewable energy sources, 25 percent by 2020, and 40 percent by 2030.			X
Policies:			
6.10.2.a Evaluate available renewable energy resource sites and applicable technologies.			X
6.10.2.b Encourage the installation of renewable energy systems, where appropriate.			X
6.10.2.c Support the establishment of new renewable energy facilities at appropriate locations provided that environmental, view plane, and cultural impacts are addressed.			X
6.10.2.d Encourage all new County facilities completed after January 1, 2015, to produce at least 15 percent of their projected electricity needs with onsite renewable energy.			X
Objective:			
6.10.3 Increased use of clean, renewable energy.			X
Policies:			
6.10.3.a Support efforts in the PUC to upgrade Maui's power grid to integrate renewable energy from multiple sources and wheeling of electricity.			X
6.10.3.b Encourage the PUC to work with the County to implement and expedite community supported renewable energy projects.			X
6.10.3.c Encourage efforts to produce more renewable energy using distributed generation.			X
6.10.3.d Encourage import substitution by MECO and the broader community to become more self-sufficient in energy production.			X
6.10.3.e Educate the public on the economic and environmental benefits from the increased use of renewable energy.			X
6.10.3.f Encourage support from the Federal government, State, and the private sector for Maui's renewable energy objectives.			X
6.10.3.g Encourage incentives to support the development and use of renewable energy.			X
Objective:			
6.10.4 More efficient distribution of power throughout the island while preserving island beauty.			X
Analysis: **Not applicable.**			
HARBORS AND AIRPORT			
Goal:			
6.11 Maui will have harbors and airports that will efficiently, dependably, and safely facilitate the movement of passengers and cargo.			X
Objective:			
6.11.1 Upgraded harbor facilities to handle larger volumes of freight and passengers and additional small boat harbors.			X
Policies:			
6.11.1.a Support the expansion and upgrade of Kahului Harbor through the following, provided that any expansion is respectful of cultural practices and existing recreational uses and supports improved water quality:			X
(1) Accommodate increasing volumes of cargo;			X
(2) Provide deeper pier depths and greater fuel-receiving and storing capacities; and			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(3) Ensure safe and efficient work areas, including separating passenger operations from fuel and cargo operations.			X
6.11.1.b Work with public and private entities to provide adequate pier slips, utilities, repair facilities, and waste-disposal capabilities.			X
6.11.1.c Encourage the State to safely separate passenger (cruise and ferry) operations from hazardous bulk fuels and heavy cargo transporting operations, while not decreasing harbor's capacity to safely support various recreational uses.			X
6.11.1.d Encourage the State to develop cargo inspecting sites and facilities for efficient cargo and container processing and transportation and to prevent alien species entry.			X
6.11.1.e Support a State and County task force to study the feasibility of a second commercial harbor on Maui.			X
Objective:			
6.11.2 Establish more economically thriving and environmentally sensitive small boat harbors accommodating resident and business activity, including fishing, recreation, and tour boats.			X
Policy:			
6.11.2.a Provide for needed shore-side facilities and capabilities to support small boat harbor users (e.g. repair facilities, parking, cold storage, and mass-transit connections).			X
Objective:			
6.11.3 Upgraded airport facilities and navigation aids to serve the needs of passengers, freight movements, and general aviation.			X
Policies:			
6.11.3.a Protect the island's airports from encroaching urbanization that may negatively impact the airport operations.			X
6.11.3.b Support State efforts to improve Kahului Airport operations to better serve passenger and cargo needs.			X
6.11.3.c Support State efforts to identify sites and plan to relocate and accommodate small and rotary wing aircraft.			X
6.11.3.d Encourage the State to improve airport safety including lighting, fuel transmission, fuel safety, etc.			X
6.11.3.e Consider expansion of rental car facilities in West and South Maui.			X
6.11.3.f Consider expansion of mass transit (bus, fixed-rail, shuttle, and taxis, bicycle, and pedestrian facilities) to and from Kahului Airport and not limited to passenger movements (allowing for luggage and cargo).			X
6.11.3.g Encourage the State to maintain airport capacity and to encourage more responsive air services to Hāna and Kapalua.			X
Analysis: **Not applicable.**			
CHAPTER 7 – LAND USE			
AGRICULTURAL LANDS			
Goal:			
7.1 Maui will have a prosperous agricultural industry and will protect agricultural lands.			X
Objective:			
7.1.1 Significantly reduce the loss of productive agricultural lands.			X
Policies:			
7.1.1.a Allow, where appropriate, the clustering of development on agricultural lands when approved as a CSD plan or similar approval mechanism.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.1.1.b Require, where appropriate, the review and approval of CSD plans prior to the subdivision of agricultural land.			X
7.1.1.c Discourage developing or subdividing productive agricultural lands for residential uses in which the residence would be the primary use and any agricultural activities would be secondary uses.			X
7.1.1.d Consider requirements for public notification and review of the subdivision of agricultural land into four or more lots.			X
7.1.1.e Focus urban growth, to the extent practicable, away from productive and important agricultural lands.			X
7.1.1.f Strongly discourage the conversion of productive and important agricultural lands (such as sugar, pineapple, and other produce lands) to rural or urban use, unless justified during the General Plan update, or when other overriding factors are present.			X
7.1.1.g Further develop the requirements for agricultural assessments found under Section 19.510, MCC.			X
7.1.1.h Provide incentives for landowners to preserve and protect agricultural lands from development through the use of TDR/PDR, tax credits, easement programs, or similar means.			X
7.1.1.i Promote the use of U.S.D.A. Farm and Ranch Lands Protection Program grants to fund the acquisition of conservation easements on eligible agricultural lands.			X
7.1.1.j Require all major developments adjacent to agricultural lands to provide an appropriate and site-specific agricultural protection buffer as part of a required site plan.			X
7.1.1.k Support and promote the viability of Maui's agricultural businesses through property tax incentives and other programs and subsidies.			X
7.1.1.l Encourage future community plan efforts to identify lands within the County Agricultural zoning district that are primarily being used for large-lot residential or rural use and consider such lands for reclassification to an appropriate County Rural zone.			X
Objective:			
7.1.2 Reduction of the island's dependence on off-island agricultural products and expansion of export capacity.			X
Policies:			
7.1.2.a Coordinate with the agricultural community, associations/community groups, agricultural landowners, and the State to designate IALs.			X
7.1.2.b Support an incentive package for productive Agricultural Lands which aims to ensure agricultural viability for small- and commercial-scale agricultural producers.			X
7.1.2.c Actively look to acquire land and provide infrastructure to expand the agricultural park and establish new agricultural parks.			X
7.1.2.d Support the designation of a research and development area within agricultural parks to help farmers stay attuned to new technology and research.			X
7.1.2.e Support local cooperative extension services to facilitate timely technology transfer opportunities.			X
7.1.2.f Support plans and programs to develop additional sources of water for irrigation purposes.			X
7.1.2.g Consider appropriate subdivision requirements (gravel roads, above-ground utilities, etc.) in those subdivisions creating Agricultural Parks where lots are limited to agricultural production with no dwellings.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.1.2.h Support the recommendations, policies, and actions contained within the Maui Agricultural Development Plan, July 2009, when consistent with the MIP.			X
7.1.2.i Allow water and tax discounts for legitimate farming operations on rural and agricultural land.			X
7.1.2.j Give priority in delivery and use of agricultural water and agricultural land within County agricultural parks to cultivation of food crops for local consumption.			X
7.1.2.k Support programs that control pests and diseases that affect agriculture.			X
7.1.2.l Support the development of training and apprenticeship programs to encourage an adequate supply of agricultural workers.			X
Objective:			
7.1.3 Support and facilitate connectivity between communities.			X
Policies:			
7.1.3.a Evaluate the impact of gated communities on interconnectivity.			X
7.1.3.b Discourage land use and urban design that impedes interconnectivity between adjacent communities.			X
Analysis: **Not applicable.**			
RURAL AREAS			
Goal:			
7.2 Maui will have a rural landscape and lifestyle where natural systems, cultural resources and farm lands are protected and development enhances and compliments the viability and character of rural communities.			X
Objective:			
7.2.1 Reduce the proliferation and impact of residential development outside of urban, small town, and rural growth boundaries.			X
Policies:			
7.2.1.a Focus development to areas inside urban, small town, and rural growth boundaries to preserve natural, cultural, and agricultural resources.			X
7.2.1.b Encourage cluster development with a mandatory buffer requirement/clear edge at the interface of country towns, agricultural uses, and surrounding rural landscapes.			X
7.2.1.c Encourage or require, where appropriate, CSDs and the use of green spaces/natural separations to protect the character of rural landscapes.			X
7.2.1.d Encourage basic goods/services in business country towns.			X
7.2.1.e Allow for mixed uses, including residential uses, within Business Country Town Districts.			X
7.2.1.f Encourage the use of alternative stormwater management techniques that minimize land disturbance and preserve natural drainage features.			X
7.2.1.g Encourage green belts, open space buffers, and riparian zones to minimize conflicts between agriculture and residential uses.			X
7.2.1.h Evaluate the impact of gated communities on inter-connectivity.			X
Objective:			
7.2.2 More appropriate service/infrastructure standards to enhance and protect the island's rural character and natural systems.			X
Policies:			
7.2.2.a Minimize impermeable surfaces within rural areas.			X

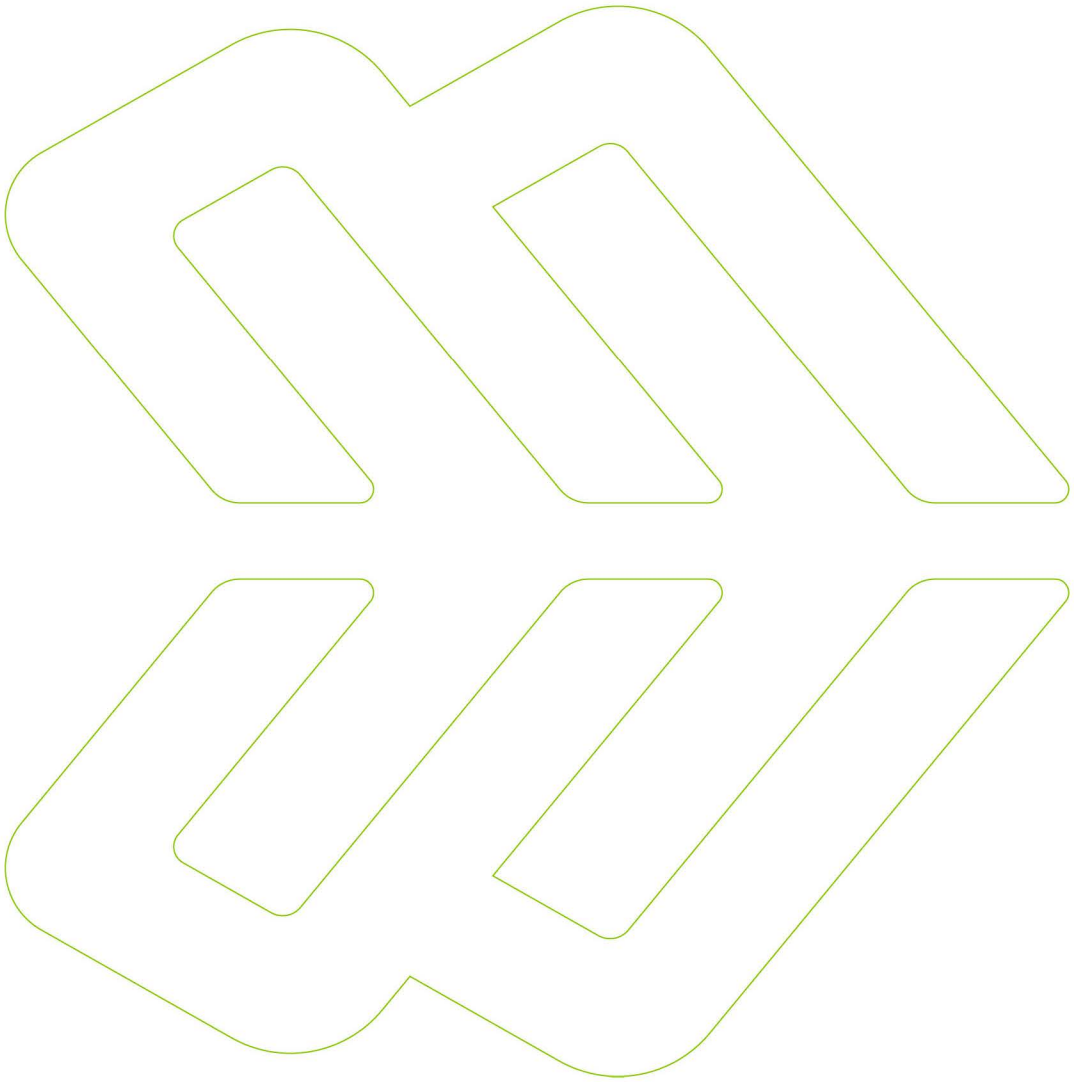
Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.2.2.b Protect and support the character, economic viability, and historic integrity of Maui's small towns.			X
7.2.2.c Use infrastructure, public service, and design standards that are appropriate to rural areas.			X
7.2.2.d Discourage land use and urban design that impede interconnectivity between adjacent communities.			X
Analysis: **Not applicable.**			
URBAN AREAS			
Goal:			
7.3 Maui will have livable human-scale urban communities, an efficient and sustainable land use pattern, and sufficient housing and services for Maui residents.			X
Objective:			
7.3.1 Facilitate and support a more compact, efficient, human-scale urban development pattern.			X
Policies:			
7.3.1.a Ensure higher-density compact urban communities, infill, and redevelopment of underutilized urban lots within Urban Growth Boundaries.			X
7.3.1.b Maintain a distinct separation between communities, such as but not limited to, Wailuku and Waikapū; Wailuku and Waiheʻe; Pukalani and Makawao; Pukalani and Kula; Makawao and Hāliʻimaile; Lahaina and Kāʻanapali; Kīhei and Māʻalaea; and Māʻalaea and Waikapū, to protect the character and identity of Maui's communities.			X
7.3.1.c Strengthen evaluation requirements for new urban expansion, new towns, and major urban infill projects within urban growth areas. Tailor submittal requirements to reflect the impact or scale of different projects.			X
7.3.1.d Ensure future amendments to urban growth boundaries achieve the following: (1) provide a beneficial extension of the existing community; (2) are in areas where it is cost-effective to provide and operate infrastructure/public service facilities; and (3) do not promote automobile-oriented land use patterns.			X
7.3.1.e Evaluate the impact of gated communities on inter-connectivity.			X
7.3.1.f Encourage the development and implementation of neighborhood design standards that are environmentally friendly, such as LEED for Neighborhood Development (LEED – ND) standards.			X
7.3.1.g Discourage future pyramid zoning within the industrial zoning districts, while allowing accessory commercial uses and grandfathering existing uses.			X
7.3.1.h Promote agriculture by encouraging community gardening, community-supported agricultural programs, and farmers markets within and adjacent to urban areas.			X
7.3.1.i Discourage land use and urban design that impedes inter-connectivity between adjacent communities.			X
Objective:			
7.3.2 Facilitate more self-sufficient and sustainable communities.			X
Policies:			
7.3.2.a When developing new communities, provide sufficient lands for commercial, appropriate industrial, educational, spiritual, and non-profit uses to serve the daily needs of community residents.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.3.2.b Site community facilities such as schools, parks, libraries, and community centers within walking and biking distance of residences.			X
7.3.2.c Facilitate self-sufficient communities and shorten commutes by:			X
(1) Directing residential development to job-rich areas;			X
(2) Allowing for appropriate commercial development and community services to shorten commutes; and			X
(3) Allowing home occupations or home-based businesses that are compatible with surrounding neighborhoods and lifestyles.			X
7.3.2.d Ensure, where appropriate, that affordable employee housing and multi-modal transportation opportunities are located near major employment centers.			X
7.3.2.e Discourage the establishment of bedroom communities where long commutes are required to employment centers.			X
7.3.2.f Facilitate the development of housing by focusing projects in locations where land and infrastructure costs facilitate the development of affordably-priced housing.			X
7.3.2.g Provide incentives to facilitate the development of multifamily housing.			X
7.3.2.h Encourage the placement of rental housing projects in the same areas as for-sale housing to facilitate mixed-income communities.			X
7.3.2.i Develop communities that provide sufficient parks, schools, libraries, and other essential public facilities and services to serve resident needs.			X
7.3.2.j Promote agriculture by encouraging community gardening, edible landscaping, community-supported agricultural programs, and farmers markets within and adjacent to urban areas.			X
Objective:			
7.3.3 Strengthen the island's sense of place.			X
Policies:			
7.3.3.a Protect and enhance the unique architectural and landscape characteristics of each community.			X
7.3.3.b Encourage Hawaiian architecture and tropical building designs.			X
7.3.3.c Support the continued revitalization of historic country towns, Wailuku Town, and Kahului's commercial core and harbor-front without displacing traditional, cultural, recreational and customary uses.			X
7.3.3.d Strongly encourage the preservation of buildings, structures, and sites of historic significance.			X
7.3.3.e Require community input through Design Workshops for major new urban expansion, new towns, and major urban infill projects.			X
7.3.3.f Require design enhancement, landscaping, and integration of park and rides, bicycle parking areas, and mass-transit infrastructure to mitigate the effect of parking lots and structured parking on the urban landscape.			X
7.3.3.g Ensure that safe and attractive public spaces (e.g., plazas, parks, town/village squares) are provided throughout the island's urban areas.			X
Objective:			
7.3.4 Strengthen planning and management for the visitor industry to protect resident quality of life and enhance the visitor experience.			X
Policies:			
7.3.4.a Discourage the conversion of hotel units to timeshares and fractional ownership.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.3.4.b Monitor and manage the amount of, and impacts from, timeshares and fractional ownership.			X
7.3.4.c Manage short-term rentals and bed-and-breakfast homes through a permitting and regulatory process in accordance with adopted ordinances and community plan policies.			X
7.3.4.d Limit large-scale resort development to the four existing resort destination areas of Wailea, Mākena, Kapalua and Kā‘anapali. “Large Scale Resort” is defined as complexes that include multiple accommodation facilities, activity businesses, retail complexes, and other amenities.			X
Objective:			
7.3.5 Ensure that Maui’s planning and development review process becomes more transparent, efficient, and innovative.			X
Policies:			
7.3.5.a Encourage greater community involvement in land use planning and decision making.			X
7.3.5.b Establish a predictable and timely development review process that facilitates the approval of projects that meet planning and regulatory requirements.			X
7.3.5.c Increase inter-agency coordination between the Department of Planning and all State and County agencies responsible for infrastructure and public facilities provision, particularly as it relates to the mitigation of long-term cumulative impacts resulting from development projects.			X
7.3.5.d Provide greater certainty and transparency in the development review process.			X
7.3.5.e Expand and maintain land use and geographic information system databases for improved decisions, and make data and products available to the public.			X
Analysis: **Not applicable.**			
CHAPTER 8 – DIRECTED GROWTH PLAN			
URBAN AND SMALL TOWN GROWTH AREA			
Goal:			
8.1 Maui will have well-serviced, complete, and vibrant urban communities and traditional small towns through sound planning and clearly defined development expectations.			X
Policies:			
8.1.a The County, with public input, will be responsible for designating new growth areas where infrastructure and public facilities will be provided, consistent with the policies of the MIP and in accordance with State and County infrastructure plans.			X
8.1.b Amendments to a UGB or STB shall be reviewed as a MIP amendment. A UGB or STB shall only be expanded if the island-wide inventory (maintained by the Department of Planning) of existing land uses (residential, commercial, industrial) indicates that additional urban density land is necessary to provide for the needs of the projected population growth within ten years of that inventory; or, during the decennial update of the MIP.			X
8.1.c Community plans shall provide for urban density land use designations only within UGBs and Small Towns. The County may only support and approve State Urban Land Use Designations for areas within UGBs, STBs, and Rural Villages.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
8.1.d	The unique character and function of existing small towns shall be protected to retain and preserve their sense of place.			X
8.1.e	New development shall be consistent with the UGBs, STBs, and all other applicable policies of the MIP. New urban-density development shall not be allowed outside of a UGB or STB.			X
8.1.f	The County, as a condition of development approval, shall require developers of privately owned infrastructure systems to provide financial insurance (bonding, etc.) for the operation and maintenance of these systems.			X
8.1.g	The County shall implement a zoning program to comprehensively redistrict and rezone lands within UGBs according to updated community plan policies and map designations.			X
8.1.h	The County will seek to focus capital improvements (schools, libraries, roads, and other infrastructure and public facilities) within the UGBs and STBs in accordance with the MIP.			X
8.1.i	The County will promote (through incentives, financial participation, expedited project review, infrastructure/public facilities support, etc.) appropriate urban infill, redevelopment and the efficient use of buildable land within UGBs to avoid the need to expand the UGBs.			X
8.1.j	The MIP's UGBs and STBs shall not be construed or implemented to prohibit the construction of a single-family dwelling on any existing parcel where otherwise permitted by law.			X
Analysis: **Not applicable.**				
RURAL GROWTH AREA				
Goal:				
8.2	Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations.			X
Policies:				
8.2.a	Amendments to a RGB shall be reviewed as an MIP amendment. A RGB shall only be expanded if an island-wide inventory of existing land uses (residential, commercial, industrial) indicates that additional lands are necessary to provide for the needs of the projected population growth within ten years of that inventory; or, during the decennial update of the MIP.			X
8.2.b	New development shall be consistent with RGB and all other applicable policies and requirements of the MIP. Public, quasi-public, civic, and limited commercial or industrial uses may be allowed in the RGB when the proposed uses demonstrate a public need and are consistent with the Community Plan and zoning.			X
8.2.c	Environmental protection and compatibility will be a top priority in rural growth areas.			X
8.2.d	All development within rural growth areas should avoid encroachment upon prime agricultural land.			X
8.2.e	Rural growth areas include Rural Residential Areas and Rural Villages. Rural residential areas may be designated when they are located in association with or on the border of urban growth areas or Small Towns; and/or when they provide for complete, self-sufficient rural communities with a range of uses to be developed at densities that do not require urban infrastructure.			X

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
8.2.f	Community plans shall provide for rural density land use designations only within RGBs; provided that limited community plan urban designations may be allowed within Rural Villages. New rural growth areas shall not be located where urban expansion may ultimately become necessary or desirable. New rural-density development shall not be allowed outside of a RGB.			X
8.2.g	New rural growth areas intended to be complete, self-sufficient rural communities must be located a significant distance from existing urban areas, distinctly separated by agricultural or open lands.			X
8.2.h	Urban-scale infrastructure and public facilities shall not be provided in rural areas except as described in the defined Level-of-Service (LOS) standards. There should be no expectations of urban services in rural areas.			X
8.2.i	Urban development standards shall not be required within RGBs except in fulfillment of Federal law.			X
8.2.j	The unique character and function of existing small towns and rural communities shall be protected to retain and preserve their sense of place.			X
8.2.k	Preserve rural landscapes in which natural systems, cultural resources, and agricultural lands are protected and development compliments rural character and contributes to the viability of communities and small towns.			X
8.2.l	The MIP's RGBs shall not be construed or implemented to prohibit the construction of a single family dwelling on any existing parcel where otherwise permitted by law.			X
8.2.m	The County shall implement a zoning program to comprehensively redistrict and rezone lands within RGBs, and to implement community plan policies and map designations.			X
8.2.n	At the time of zoning from agricultural to rural, Council will consider prohibiting restrictions on agricultural activity.			X
Analysis: **Not applicable.**				
PROTECTED AREA POLICY				
8.3.a	The Protected Areas in Diagrams E-1, NW-1, N-1, NE-1, S-1, SE-1, and WC-1 should be concurrently reviewed with Table 8-2 and with any proposed land uses that may result in an adverse impact on a Protected Area. The County Council and the Administration should be notified if a Protected Area may be compromised by a development proposal.			X
Analysis: **The proposed project is not located in or adjacent to a protected area.**				



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