RICHARD T. BISSEN, JR.
Mayor

SHAYNE R. AGAWA, P.E.
Director

MICHAEL D. PETERSEN
Deputy Director

MICHAEL KEHANO, P.E.
Solid Waste Division

ERIC A. NAKAGAWA, P.E.
Wastewater Reclamation Division

CECILE POWELL
Environmental Protection &
Sustainability Division



COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2145 KAOHU STREET, SUITE 102
WAILUKU, MAUI, HAWAI'I 96793

February 10, 2026

Ms. Mary Alice Evans, Director
State of Hawai‘i
Office of Planning and Sustainable Development
Environmental Review Program
P.O. Box 2359
Honolulu, Hawai‘i 96804-2359

Aloha Ms. Evans:

Subject: **Final Environmental Assessment and Finding of No Significant Impact for the Proposed Waiko Road Sewer System/Waterline Improvements Project at TMKs (2)3-5-004, 028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047); County roadways and a portion of Honoapi‘ilani Highway, Waikapū, Maui, Hawai‘i**

The **County of Maui**, **Department of Environmental Management**, respectfully submits the **Final Environmental Assessment** and **Finding of No Significant Impact** (FEA-FONSI) for the **Waiko Road Sewer System/Waterline Improvements** project. This document is being transmitted for publication in the next available edition of *The Environmental Notice*.

The proposed project will affect the following Tax Map Keys (TMKs) and associated areas:

- (2)3-5-004:028, 031, 063
- (2)3-5-010:001, 033, 034, 036, 037, 038
- (2)3-5-011:001-041, 043-046, 048
- (2)3-5-012:001-023, 025, 035-040, 043-047

Additionally, County of Maui roadways and a portion of the State of Hawai‘i **Honoapi‘ilani Highway**.

In accordance with the requirements for HRS Chapter 343, we are providing this Final EA electronically via the "***Submittal Form for HRS Chapter 343 Publications in the Periodic Bulletin***". This submittal includes a **searchable PDF file** of the Final EA and a **.zip file** containing

a **shapefile** of the action location boundary.

We invite any comments or inquiries regarding this document and look forward to further engagement as the project progresses.

If you have any questions, please contact Juan Rivera, P.E., Project Manager, at (808) 270-7268 or our consultant, Adam Strubeck of Munekiyo Hiraga, via email at planning@munekiyohiraga.com.

Sincerely,

Digitally signed by Michael D. Petersen (Deputy Director) for Shayne R. Agawa
Date: 2026.01.29 15:20:16 -10'00'

for SHAYNE AGAWA, P.E.
Director of Environmental Management

cc: Juan Rivera, Department of Environmental Management, Wastewater Reclamation Division
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
Adam Strubeck, Munekiyo Hiraga
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Final EA\ERP\FONSI.docx

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Wednesday, February 11, 2026 12:47:36 PM

Action Name

Waiko Road Sewer System/Waterline Improvements

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

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) 3-5-004:028; (2) 3-5-004:031; (2) 3-5-004:063; (2) 3-5-010:001; (2) 3-5-010:033; (2) 3-5-010:034; (2) 3-5-010:036; (2) 3-5-010:037; (2) 3-5-010:038; (2) 3-5-011:001; (2) 3-5-011:002; (2) 3-5-011:003; (2) 3-5-011:004; (2) 3-5-011:005; (2) 3-5-011:006; (2) 3-5-011:007; (2) 3-5-011:008; (2) 3-5-011:009; (2) 3-5-011:010; (2) 3-5-011:011; (2) 3-5-011:012; (2) 3-5-011:013; (2) 3-5-011:014; (2) 3-5-011:015; (2) 3-5-011:016; (2) 3-5-011:017; (2) 3-5-011:018; (2) 3-5-011:019; (2) 3-5-011:020; (2) 3-5-011:021; (2) 3-5-011:022; (2) 3-5-011:023; (2) 3-5-011:024; (2) 3-5-011:025; (2) 3-5-011:026; (2) 3-5-011:027; (2) 3-5-011:028; (2) 3-5-011:029; (2) 3-5-011:030; (2) 3-5-011:031; (2) 3-5-011:032; (2) 3-5-011:033; (2) 3-5-011:034; (2) 3-5-011:035; (2) 3-5-011:036; (2) 3-5-011:037; (2) 3-5-011:038; (2) 3-5-011:039; (2) 3-5-011:040; (2) 3-5-011:041; (2) 3-5-011:043; (2) 3-5-011:044; (2) 3-5-011:045; (2) 3-5-011:046; (2) 3-5-011:048; (2) 3-5-012:001; (2) 3-5-012:002; (2) 3-5-012:003; (2) 3-5-012:004; (2) 3-5-012:005; (2) 3-5-012:006; (2) 3-5-012:007; (2) 3-5-012:008; (2) 3-5-012:009; (2) 3-5-012:010; (2) 3-5-012:011; (2) 3-5-012:012; (2) 3-5-012:013; (2) 3-5-012:014; (2) 3-5-012:015; (2) 3-5-012:016; (2) 3-5-012:017; (2) 3-5-012:018; (2) 3-5-012:019; (2) 3-5-012:020; (2) 3-5-012:021; (2) 3-5-012:022; (2) 3-5-012:023; (2) 3-5-012:025; (2) 3-5-012:035; (2) 3-5-012:036; (2) 3-5-012:037; (2) 3-5-012:038; (2) 3-5-012:039; (2) 3-5-012:040; (2) 3-5-012:043; (2) 3-5-012:044; (2) 3-5-012:045; (2) 3-5-012:046; (2) 3-5-012:047 portions of County of Maui roadways and a portion of Honoapi‘ilani Highway.

Action type

Agency

Other required permits and approvals

Chapter 6E-8 HRS, archaeology; Chapter 11-46 HRS, Community Noise control, as applicable; Chapter 11-60.1- 33, Fugitive Dust, as applicable; National Pollutant Discharge Elimination System Permit, as applicable; State and County Roadway Permits; Maui County Construction permits (i.e., building and grading permits)

Proposing/determining agency

Department of Environmental Management

Agency jurisdiction

County of Maui

Agency contact name

Juan Rivera

Agency contact email (for info about the action)

Juan.Rivera@co.maui.hi.us

Email address for receiving comments

planning@munekiyohiraga.com

Agency contact phone

(808) 270-8230

Agency address

200 South High Street
Wailuku, Hawaii 96793
United States
Map It

Is there a consultant for this action?

Yes

Consultant

Munekiyo Hiraga

Consultant contact name

Adam Strubeck

Consultant contact email

planning@munekiyohiraga.com

Consultant contact phone

(808) 983-1233

Consultant address

305 High Street
Suite 104
Wailuku, Hawaii 96793
United States
Map It

Action summary

The County of Maui, Department of Environmental Management (DEM) is proposing the construction of the Waiko Road Subdivision Sewer System and waterline improvements. The proposed project will include the construction of approximately 5,800 linear feet of gravity sewerline and service laterals to connect approximately 100 lots in the Waikapū area, and it will be located within the County of Maui owned roads: West Waiko Road, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street, Old Waikapu Road and a portion of the State of Hawai‘i owned Honoapi‘ilani Highway. DEM also coordinated with the Department of Water Supply for proposed waterline replacement work in the vicinity of the project area to be done in conjunction with the subject sewer system improvements project. The proposed sewerline improvements will provide the homes with connections to the County wastewater system, while the waterline improvements will replace and improve the existing waterlines in the area as well as allow for the installation of fire hydrants in the area. The project will also include a connection to the existing Waikapu Homesites Subdivision, which will also allow homes to be able to connect to the County sewer system.

Reasons supporting determination

Please refer to Chapter VIII of the Final EA - Significance Criteria Assessment

Attached documents (signed agency letter & EA/EIS)

- WUE_Waiko__Sewer_FONSI_-February_10_2026.pdf
- WUE_Waiko__Sewer_Final-EA_-February_11_2026.pdf

ADA Compliance certification (HRS §368-1.5):

The authorized individual listed below acknowledges that they retain the responsibility for ADA compliance and are knowingly submitting documents that are unlocked, searchable, and may not be in an ADA compliant format for publication. Audio files do not include transcripts, captions, or alternative descriptions. The project files will be published without further ADA compliance changes from ERP, with the following statement included below the project summary in The Environmental Notice: "If you are experiencing any ADA compliance issues with the above project, please contact (authorized individual submitting the project at email)."

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- WUE_Waiko-_Sewer_Shapefile.shp_.zip

Authorized individual

Adam Strubeck

Authorized individual email

adam@munekiyohiraga.com

Authorized individual phone

(808) 983-1233

Authorization

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

Final Environmental Assessment

WAIKO ROAD SEWER SYSTEM/WATERLINE IMPROVEMENTS WAIKAPŪ, MAUI

(TMK NOS.: (2)3-5-004:028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047)

Prepared for:

County of Maui, Department of Environmental Management

February 2026

Copyright © 2026
By Munekiyo Hiraga

MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.

Final Environmental Assessment

WAIKO ROAD SEWER SYSTEM/WATERLINE IMPROVEMENTS WAIKAPŪ, MAUI

(TMK NOS.: (2)3-5-004:028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047)

Prepared for:

County of Maui, Department of Environmental Management

February 2026

Copyright © 2026
By Munekiyo Hiraga

MUNEKIYO HIRAGA

CONTENTS

Page

Executive Summary v
List of Acronyms vii

I. PROJECT OVERVIEW 1

A. PROPERTY BACKGROUND, EXISTING USE, AND LAND OWNERSHIP 1
B. PROJECT NEED 1
C. PROPOSED ACTION 4
D. CHAPTER 343 HAWAIʻI REVISED STATUTES, ENVIRONMENTAL ASSESSMENT 4
E. ESTIMATED CONSTRUCTION SCHEDULE AND COSTS 7

II. DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND MITIGATION MEASURES 8

A. PHYSICAL SETTING 8
1. Surrounding Land Uses 8
2. Climate 9
3. Topography and Soil Conditions 9
4. Agricultural Productivity Considerations 12
5. Flood, Tsunami, and Sea Level Rise 15
6. Streams and Wetlands 17
7. Flora and Fauna 17
8. Archaeological Resources 21
9. Cultural Resources 23
10. Air Quality 26
11. Greenhouse Gas Considerations 27
12. Noise Quality 28
13. Hazardous Materials 29
14. Scenic and Open Space Resources 29

B. SOCIO-ECONOMIC ENVIRONMENT 29
1. Land Use and Community Character 29
2. Population 30
3. Economy 30
4. Housing 32

C. PUBLIC SERVICES 32
1. Solid Waste Collection and Disposal 32
2. Police, Fire, and Medical Facilities 33
3. Educational Facilities 34
4. Recreational Facilities 35

D. INFRASTRUCTURE 35
1. Roadways 35
2. Water 36
3. Wastewater 37
4. Drainage System 38
5. Electric, Telephone, and Cable 38

E. CUMULATIVE AND SECONDARY IMPACTS 39

III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS 40
A. STATE LAND USE DISTRICTS 40
B. HAWAI'I STATE PLAN 40
C. STATE FUNCTIONAL PLAN 50
D. HAWAI'I 2050 SUSTAINABILITY PLAN 54
E. GENERAL PLAN OF THE COUNTY OF MAUI 56
1. Countywide Policy Plan 57
2. Maui Island Plan 59
F. WAILUKU-KAHULUI COMMUNITY PLAN 65
G. HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM 69
1. Recreational Resources 71
2. Historic/Cultural Resources 72
3. Scenic and Open Space Resources 72
4. Coastal Ecosystems 73
5. Economic Use 74
6. Coastal Hazards 74
7. Managing Development 75
8. Public Participation 76
9. Beach and Coastal Dune Protection 76
10. Marine and Coastal Resources 77
H. HAWAI'I CLEAN WATER STATE REVOLVING FUND ENVIRONMENTAL CROSSCUTTERS 78
IV. ALTERNATIVES TO THE PROPOSED ACTION 83
A. PREFERRED ALTERNATIVE 83
B. ALTERNATIVE CONFIGURATIONS 83
C. NO ACTION ALTERNATIVE 83
D. DEFERRED ACTION ALTERNATIVE 84
V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED 85
VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES 86
VII. LIST OF PERMITS AND APPROVALS 87
VIII. SIGNIFICANCE CRITERIA ASSESSMENT 88
IX. PARTIES CONSULTED DURING THE PREPARATION OF THE DRAFT ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS 93
X. PARTIES CONSULTED DURING THE PREPARATION OF THE FINAL ENVIRONMENTAL ASSESSMENT; LETTERS RECEIVED AND RESPONSES TO SUBSTANTIVE COMMENTS 199
XI. REFERENCES i

List of Figures

Page

Figure 1. Regional Location Map 2
Figure 2. Project Location Map 3
Figure 3. Site Plan (Area 1) 5
Figure 4. Site Plan (Area 2) 6
Figure 5. Soil Association Map 10
Figure 6. Soil Classification Map 11
Figure 7. Agricultural Lands of Importance to the State of Hawai'i Map 13
Figure 8. Land Study Bureau Map 14
Figure 9. Flood Hazard Zones Map 16
Figure 10. Streams and Wetlands Map 18
Figure 11. State Land Use District Map 41
Figure 12. Maui Island Plan 61
Figure 13. Wailuku-Kahului Community Plan 66
Figure 14. Maui County Zoning Map 70

List of Tables

Page

Table 1. Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives, and Policies (HRS 226-1 to 226-27) 43
Table 2. Summary of Project's Applicability to Hawai'i State Plan Priority Guidelines 49
Table 3. Relationship Between the Proposed Waiko Road Sewer System and the State Functional Plans 51
Table 4. Hawai'i 2050 Sustainability Plan (HRS, Section 226-65) 54
Table 5. Summary of Project's Applicability to Countywide Policy Plan 58
Table 6. Summary of Project's Applicability to Maui Island Plan 62
Table 7. Environmental Cross-Cutters and Project Documentation 79

List of Appendices

Appendix A	Waiko Road Subdivision Sewer System/Waikapū Waterline Project Plans
Appendix B.	Upper Waiko Road Sewer Extension/Waikapū Waterline Project Plans
Appendix C-1.	2021 Biological Resources Survey
Appendix C-2.	2022 Biological Resources Survey
Appendix D-1.	HRS 6E-8 Submittal Package
Appendix D-2.	Archaeological Monitoring Plan
Appendix E.	Cultural Impact Assessment
Appendix F-1.	Analysis of Project Applicability to Hawai‘i State Plan
Appendix F-2.	Analysis of Project Applicability to Countywide Policy Plan
Appendix F-3.	Analysis of Project Applicability to Maui Island Plan

Executive Summary

Project Name:	Waiko Road Sewer System/Waterline Improvements
Type of Document:	Final Environmental Assessment
Legal Authority:	Chapter 343, Hawai‘i Revised Statutes Title 11, Chapter 200.1, Hawai‘i Administrative Rules
Anticipated Determination:	Finding of No Significant Impact (FONSI)
Applicable Environmental Assessment review “Trigger”:	Use of State and County lands and funds
Location:	Maui Island Waikapū TMK Nos. (2)3-5-004:028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047
Landowner:	County of Maui
Applicant:	County of Maui Department of Environmental Management 200 South High Street Wailuku, Hawai‘i 96793 Contact: Juan Rivera Phone: (808) 270-8230
Approving Agency:	County of Maui Department of Environmental Management 200 South High Street Wailuku, Hawai‘i 96793
Consultant:	Munekiyo Hiraga 305 High Street, Suite 104 Wailuku, Hawai‘i 96793 Contact: Adam Strubeck Phone: (808) 983-1233
Project Summary:	The County of Maui, Department of Environmental Management (DEM) is proposing the construction of the Waiko Road Subdivision Sewer System improvements. The proposed project will include the construction of approximately 5,800 linear feet of gravity sewerline and service laterals to connect approximately 100 lots in the Waikapū area, and it will be located within the County of Maui owned roads: West Waiko Road, Wilikona

Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street, Old Waikapu Road and a portion of the State of Hawai‘i owned Honoapi‘ilani Highway. DEM also coordinated with the Department of Water Supply for proposed waterline replacement work in the vicinity of the project area to be done in conjunction with the subject sewer system improvements project. The anticipated affected Tax Map Key (TMK) parcels within the project area include, the following: TMKs (2)3-5-004:028, 031 and 063; (2)3-5-010:001, 033, 034, 036, 037, and 038; (2)3-5-011:001 to 041, 043 to 046, and 048; (2)3-5-012:001 to 023, 025, 035 to 040, and 043 to 047 as well as the roadway rights-of-way (ROW). The proposed sewerline improvements wil provide the homes with connections to the County wastewater system, while the waterline improvements will replace and improve the existing waterlines in the area as well as allow for the installation of fire hydrants in the area. The project will also include a connection to the existing Waikapu Homesites Subdivision, which will also allow homes to be able to connect to the County sewer system.

List of Acronyms

ALISH	Agricultural Lands of Importance to the State of Hawai‘i
AMP	Archaeological Monitoring Plan
BMP	Best Management Practice
CDP	Census Designated Place
CIA	Cultural Impact Assessment
CO2 EQ	carbon dioxide equivalent
CSH	Cultural Surveys Hawai‘i
DEM	Department of Environmental Management
DOE	Department of Education
DOH-SDWB	Department of Health Safe Drinking Water Branch
DWS	Department of Water Supply
EA	Environmental Assessment
EPA	Environmental Protection Agency
FEMA	Federal Emergency Management Agency
FONSI	Finding of No Significant Impact
GHG	Greenhouse Gas
HAR	Hawai‘i Administrative Rules
HCZMP	Hawai‘i Coastal Zone Management Program
HRS	Hawai‘i Revised Statutes
IcB	Iao clay
IbB	Iao cobbly silty clay
lf	linear feet
LSB	Land Study Bureau
MIP	Maui Island Plan
mph	miles per hour
NHPA	National Historic Preservation Act
RGB	Rural Growth Boundary
ROW	Rights-of-way
rRR	Rough broken land
SHPD	State Historic Preservation Division
SMA	Special Management Area
SRF	State Revolving Fund
STB	Small Town Growth Boundary
TMK	Tax Map Key
UGB	Urban Growth Boundary
UHERO	University of Hawai‘i Economic Research Organization
U.S.	United States
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
WWRF	Wastewater Reclamation Facility
WVB	Wailuku silty clay

PROJECT OVERVIEW

1

I. PROJECT OVERVIEW

A. PROPERTY BACKGROUND, EXISTING USE, AND LAND OWNERSHIP

The County of Maui, Department of Environmental Management (DEM) is proposing the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 5,800 linear feet (lf) of gravity sewerline and service laterals to connect approximately 100 lots in the Waikapū area, and it will be located within the County of Maui-owned West Waiko Road, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street, Old Waikapu Road and a portion of the State-owned Honoapi‘ilani Highway. DEM coordinated with the Department of Water Supply (DWS) for proposed waterline replacement work in the vicinity of the project area. Construction of the waterline improvements will be done in conjunction with the subject sewer system improvements project. The anticipated affected Tax Map Key (TMK) parcels within the project area include, the following: TMKs (2)3-5-004:028, 031 and 063; (2)3-5-010:001, 033, 034, 036, 037, and 038; (2)3-5-011:001 to 041, 043 to 046, and 048; (2)3-5-012:001 to 023, 025, 035 to 040, and 043 to 047. Additionally, as previously noted, work will occur within portions of roadway rights-of-way (ROW) for County- and State-owned roads. See **Figure 1** and **Figure 2**. See **Appendix “A”** and **Appendix “B”**.

Various other residential developments and a handful of small locally owned businesses comprise the general land use fabric of this area of Waikapū. The project area has been designated for “Urban” use by the State Land Use Commission. Maui County Zoning designates the project area as “Agriculture” with one (1) parcel zoned as “Business-Country Town”. The Wailuku-Kahului Community Plan designates the area as “SF, Single-Family Residential”. In its current use, the project area is primarily residential with some limited commercial uses and is in close proximity to the urban centers of Wailuku and Kahului.

B. PROJECT NEED

The proposed sewer system improvements project is consistent with DEM’s mission to protect the public’s health, safety, property, and environment by developing and operating the County’s wastewater infrastructure. Currently, the anticipated affected lots are not connected to the County sewer system and rely on cesspools or septic tanks for wastewater disposal. The continued treatment of wastewater is necessary to the health and well-being of the community and environment. The proposed project will allow for continued wastewater treatment and provides an alternative to cesspools and septic tanks which may have long-term effects on the surrounding environment. The waterline improvements will provide replacements for existing aging infrastructure and provide for reliable water service for the area.

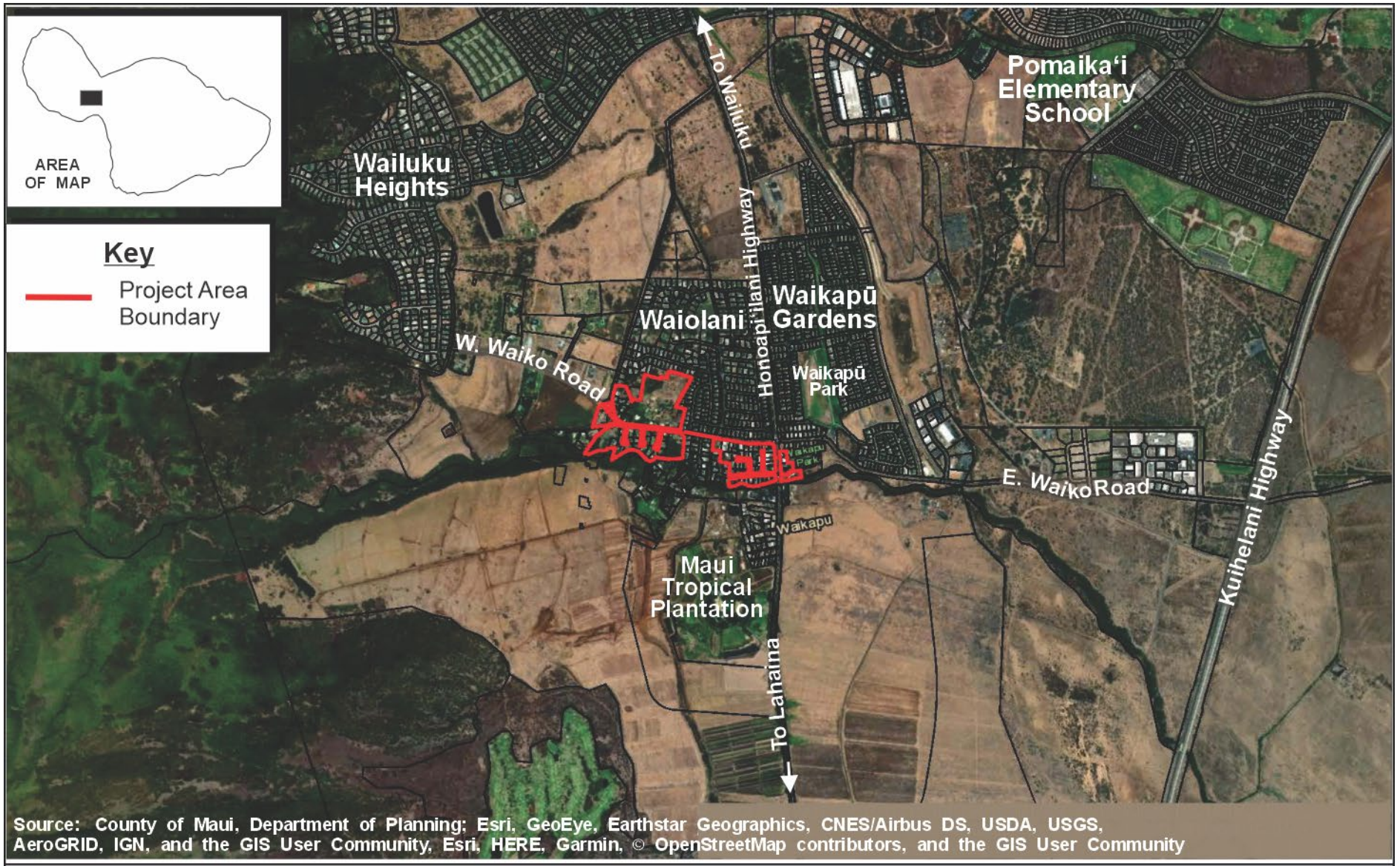


Figure 1

Waiko Road Sewer System and Waterline Improvements

Regional Location Map

0 500 1000 2000 Feet

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/RegLoc



Figure 2

Waiko Road Sewer System and Waterline Improvements

Project Location Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

W:\UE\Waikapu Sewer Improvements\Applications\Figures\ProjLoc

C. PROPOSED ACTION

The proposed sewer system will be comprised of approximately 5,800 lf of gravity sewerline and service laterals. The sewer system will connect to an existing manhole located on East Waiko Road and will be installed within West Waiko Road, Honoapiʻilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Kilohi Street, Nuna Place, Honua Place, and Old Waikapu Road ROW. Service laterals will be installed up to two (2) feet into affected lots. Wastewater collected through this new sewer system will flow to the existing Wailuku-Kahului Wastewater Reclamation Facility (WWRF) for treatment. See **Figure 3** and **Figure 4**. The proposed sewer system will include a connection to the existing Waikapu Homesites Subdivision, such that the parcels in this subdivision will also be able to connect to the County sewer system.

Additionally, DEM coordinated with the DWS for proposed waterline replacement work in the vicinity of the project area. The construction will be done in conjunction with the subject sewer system improvements project. DWS proposes to replace waterlines within the project area along portions of Honoapiʻilani Highway, Kemoa Place, Keilo Place, Wilikona Place, Kilohi Street, Nuna Place, and Honua Place. Existing 4-inch waterlines on Honoapiʻilani Highway, Kilohi Street, Nuna Place, Honua Place, and Kemoa Place will be replaced with 8-inch waterlines. The existing 2.5-inch and 4-inch waterlines along Wilikona Place and Keilio Place will also be replaced with 8-inch waterlines. Replacing the identified waterlines with a larger size is anticipated to provide reliable water flow capacity and more adequate fire protection. There are existing 8-inch and 12- inch waterlines along West Waiko Road that will remain. The Department of Water Supply (DWS) indicated that they are exempt from certain requirements. The Wastewater Reclamation Division (WWRD) will be collaborating with DWS on this project.

D. CHAPTER 343 HAWAIʻI REVISED STATUTES, ENVIRONMENTAL ASSESSMENT

The affected roadways are State and County-owned ROW. The use of County lands and State lands and funds are a trigger for preparation of an EA pursuant to Chapter 343, Hawaiʻi Revised Statutes (HRS). As such, a Draft EA was prepared for this project to address the technical characteristics, potential environmental impacts, and alternatives. The Draft EA was published in the September 23, 2025 edition of *The Environmental Notice.* State Revolving Funds (SRF) through the Environmental Protection Agency (EPA) will also be used for this project, therefore, the applicable federal crosscutters are addressed in the Final EA, as well as Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act. Accordingly, this document addresses the technical characteristics and potential environmental impacts of the proposed project, as well as advance findings and mitigative measures relative to the project.



Source: **Warren S. Unemori Engineering, Inc.**

Figure 3

Waiko Road Sewer System and Waterline Improvements

Site Plan (Area 1)

NOT TO SCALE

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/SitePlan1

KEY

Sewer Improvements

Waterline Improvements

LOCATION MAP

West Waiko Road

To Honoapi'ilani Highway

Kilohi Place

Nuna Place

Honua Place

Kilinoe Place

Source: Warren S. Unemori Engineering, Inc.

Figure 4

Waiko Road Sewer System and Waterline Improvements
Site Plan (Area 2)

NOT TO SCALE

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/SitePlan2

The DEM will serve as the approving agency for the EA.

E. ESTIMATED CONSTRUCTION SCHEDULE AND COSTS

The project will have an anticipated development timeframe of approximately 12 months. The total estimated construction cost for the proposed project is approximately $6 million.

DESCRIPTION OF THE EXISTING CONDITIONS, POTENTIAL IMPACTS AND MITIGATION MEASURES

II

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

A. PHYSICAL SETTING

1. Surrounding Land Uses

a. Existing Conditions

The project site is located within the central Waikapū area, affecting approximately 100 residential lots in the area. The proposed sewer system improvements will connect to an existing manhole located at East Waiko Road and the new lines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street, and Old Waikapu Road. Directly to the north and adjacent to the property area is the existing Waiolani subdivision. The Waikapū Gardens subdivision is located northeast of the project area near East Waiko Road. Waikapū Community Center and Park are located next to the project site on the makai side of Honoapi‘ilani Highway, below East Waiko Road. The Waikapu Homesites Subdivision is to the southwest of the project site. Various other residential developments and a handful of small locally owned businesses comprise the general land use fabric of this area of Waikapū. There are existing 4-inch waterlines on Kilohi Street, Nuna Place, and Honua Place that will be replaced with 8-inch waterlines connecting to the existing 8-inch waterline along West Waiko Road, Wilikona Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. Refer to **Figure 3** and **Figure 4**.

b. Potential Impacts and Mitigation Measures

The proposed project will be implemented within a previously developed residential area, adjacent to other existing infrastructure. In the context of surrounding land uses, the proposed project is not anticipated to have a significant adverse effect on the surrounding landscape and is compatible with the existing uses of the area. The proposed project will ensure the continued treatment of wastewater for residents of the affected area, which will help protect the health of the community and the surrounding area’s environment and natural resources. The waterline improvements will also provide for increased health and safety by allowing for the installation of fire hydrants along the area roadways.

2. Climate

a. Existing Conditions

Maui's climate is relatively consistent throughout the year. The island's climate varies as the terrain changes. Characteristic of Maui's climate, the proposed project site experiences mild and uniform temperatures year-round, moderate humidity, and consistent trade winds.

Average temperatures at the general project area (based on temperatures recorded at Kahului Airport) range from the high 60s to high 80s (Fahrenheit). August is historically the warmest month, while January is the coolest. The annual precipitation rainfall average was approximately 7 inches (Maui County Data Book, 2022). Winds blow predominantly out of the north-northeasterly direction.

b. Potential Impacts and Mitigation Measures

The proposed sewer system and waterline improvements will be implemented in an existing residential and commercial area and will be located in the midst of other residential developments. The proposed project is not anticipated to have an adverse effect on climate.

3. Topography and Soil Conditions

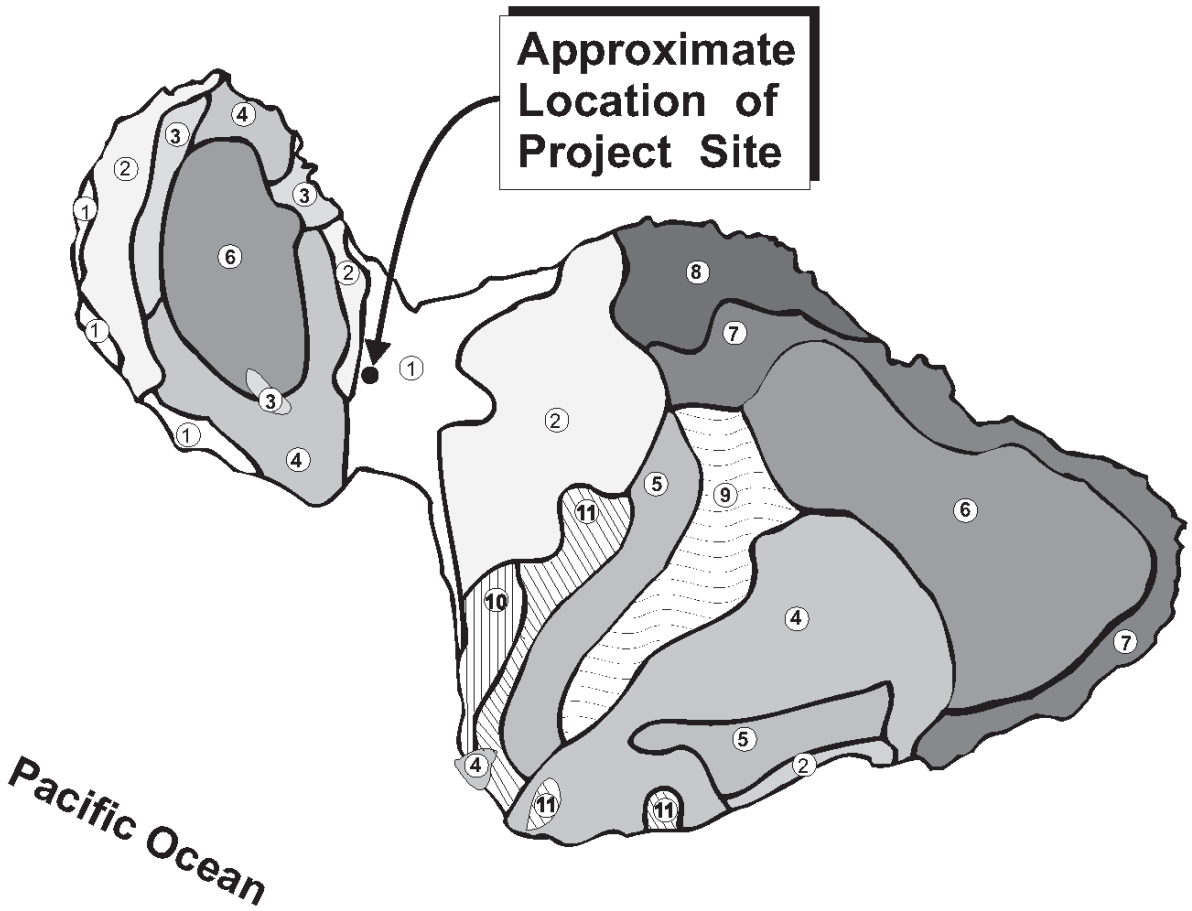
a. Existing Conditions

Underlying the project site and surrounding area are soils belonging to the Pulehu-Ewa-Jaucus association. According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawai'i*, prepared by the United States Department of Agriculture Soil Conservation Service, these soils are characterized as having a slight to moderate erosion hazard. These soil types have been used for sugarcane and pasture (Foote et al, 1972). See **Figure 5**.

Per the "Soil Survey Database for the Island of Maui, Hawaii", the project area is located on soils identified as Iao clay (IcB), Iao cobbly silty clay (IbB), Wailuku silty clay (WvB) 3 to 7 percent slopes, and Rough broken land (rRR). IcB, IbB, and WvB soils are reported to produce a low to medium amount of runoff and represent a slight to moderate erosion hazard. Rough broken land has slopes of 40 to 70 percent with rapid runoff and active geologic erosion (U.S. Department of Agriculture, 2014). See **Figure 6**.

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



Map Source: U.S. Department of Agriculture, Soil Conservation Service, 1972

Figure 5 Waiko Road Sewer System and Waterline Improvements
Soil Association Map

NOT TO SCALE

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE\Waikapu Sewer Improvements\Applications\Figures\SoilAssoc

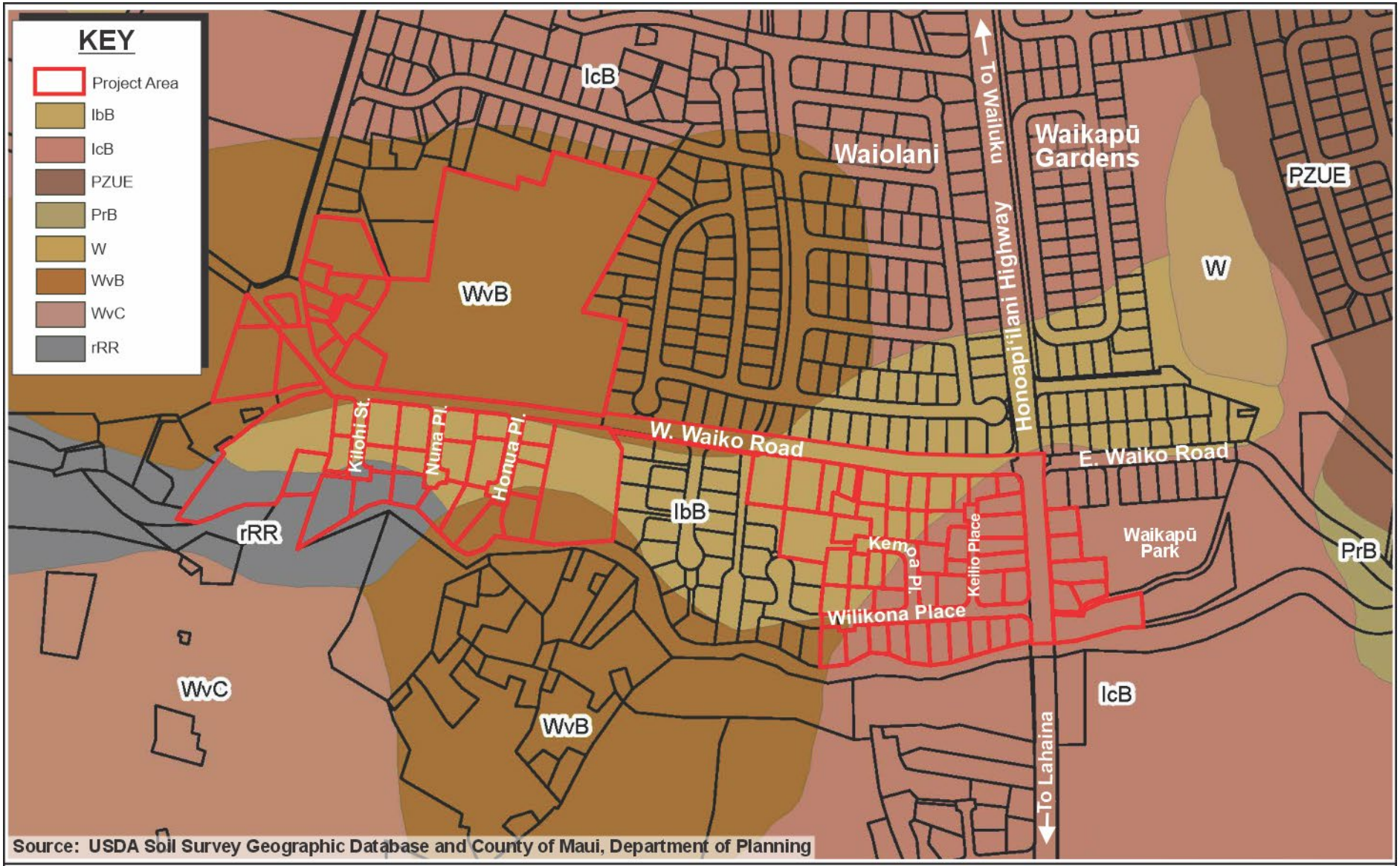


Figure 6

Waiko Road Sewer System and Waterline Improvements

Soil Classification Map

0 225 112.5 450 Feet

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/SoilClass

b. Potential Impacts and Mitigation Measures

The proposed project will be implemented within the existing ROW and a previously developed residential community. Best Management Practices (BMPs) will be implemented during construction to minimize impacts from soil erosion resulting from wind and water (e.g., dust and silt fencing, watering for dust control, etc.). The underlying soils do not pose limitations with respect to project constructability. The proposed project is not anticipated to have an adverse effect on topography and soils.

4. Agricultural Productivity Considerations

a. Existing Conditions

In 1977, the State Department of Agriculture developed a classification system to identify Agricultural Lands of Importance to the State of Hawai‘i (ALISH). The classification system is based primarily, but not exclusively, on the soil classification of the land. The three (3) categories are “Prime”, “Unique” and “Other Important” agricultural lands, with all remaining lands identified as “Unclassified”.

“Prime” agricultural lands have soil quality, growing season, and moisture supply needed to produce sustained high yield crops economically. “Unique” agricultural lands possess a combination of soil quality, growing season, and moisture supply to produce sustained high yields of specific crops. “Other” important agricultural lands are lands that have not been rated “Prime” or “Unique” agricultural lands that are also of statewide or local importance for agricultural use.

The majority of the project area is “Unclassified”, with portions of parcels located within the ALISH’s “Prime” land use. See **Figure 7**.

Separately, the University of Hawai‘i, Land Study Bureau (LSB) developed the Overall Productivity Rating, which classified soils according to five (5) productivity levels, with “A” representing the class of highest productivity soils and “E” representing the lowest.

Similar to the project site’s ALISH classification, a majority of the project site is “Unclassified”, with portions of the affected parcels classified “A” and “E” by the LSB. See **Figure 8**.

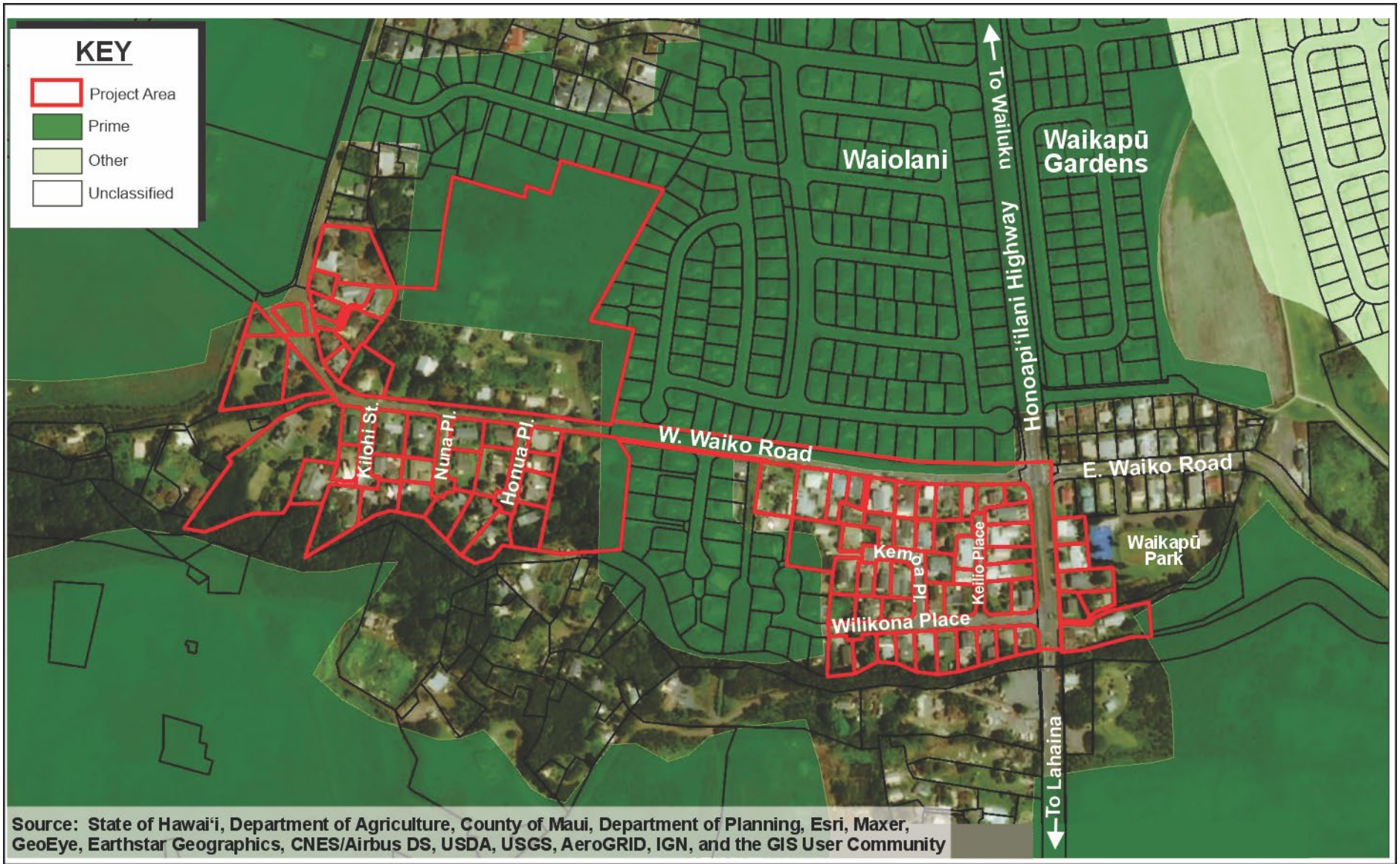


Figure 7

Waiko Road Sewer System and Waterline Improvements

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

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/ALISH



Figure 8

Waiko Road Sewer System and Waterline Improvements

Land Study Bureau Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/LSB

b. Potential Impacts and Mitigation Measures

As previously discussed, the proposed project will install a sewer system and replace waterlines to service an existing residential community, connecting approximately 100 lots to the County sewer system within the area. Although portions of the project area are within “Prime” agricultural lands, the lands are not currently cultivated and exist within a previously developed residential area. Therefore, there are no anticipated adverse impacts to agriculturally productive lands as a result of the proposed action.

5. Flood, Tsunami, and Sea Level Rise

a. Existing Conditions

The Flood Insurance Rate Map, Geographic Information System layer provided by the United States (U.S.) Federal Emergency Management Agency (FEMA) indicates the project site is mostly situated in Flood Zone X, outside both the floodplain and tsunami zone, with the parcels on the lowest half of the project area partially situated within Flood Zone AE, due to their proximity to the Waikapū Stream. See **Figure 9**. Flood Zone X (unshaded) represents areas outside of the 0.2 percent annual chance flood plain, and there are no restrictions upon development within this zone. Areas located within Flood Zone AE present a one (1) percent annual chance of flooding, and base flood elevations are determined.

A 3.2-foot rise in sea level is projected for the Hawaiian Islands by the mid-to-latter half of the 21st century based on the findings of the Hawai‘i Sea Level Rise Vulnerability and Adaptation Report that was prepared in 2017 by the Hawai‘i Climate Change Mitigation and Adaptation Commission (Hawai‘i Climate Change Mitigation and Adaptation Commission, 2017). It is noted that the project site is located inland and outside of the projected 3.2-foot sea-level rise exposure area.

b. Potential Impacts and Mitigation Measures

It is noted that portions of the project area are within Flood Zone AE. However, the proposed sewerlines and waterlines will be installed underground and are not anticipated to be adversely impacted by flood hazards or create additional flood obstructions. A Flood Development Permit will be secured, as may be needed, for the portions of work occuring within Flood Zone AE.

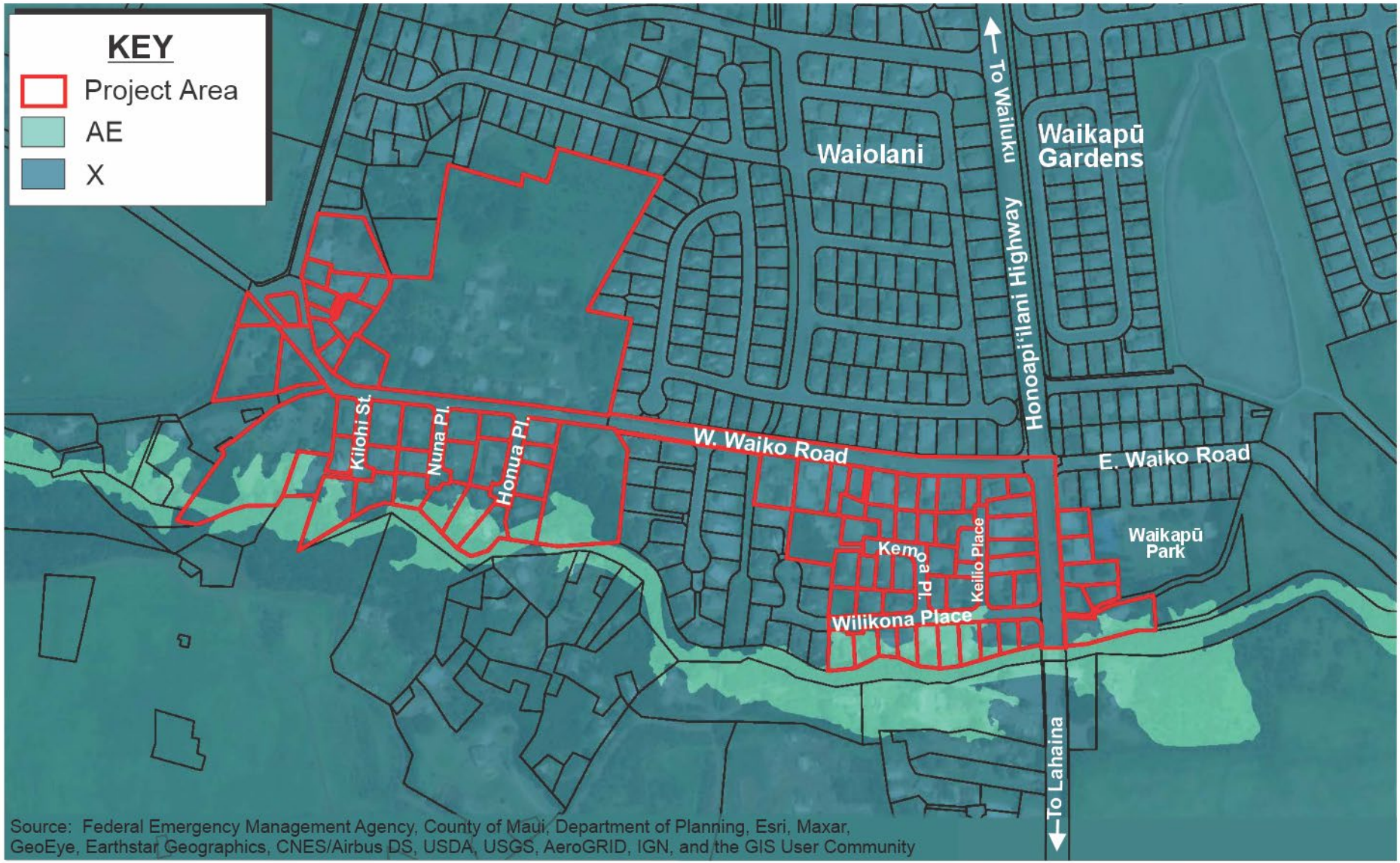


Figure 9

Waiko Road Sewer System and Waterline Improvements

Flood Hazard Zones Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/FHZ

The development of the proposed project will comply with County of Maui's drainage standards and will utilize stormwater runoff BMPs during construction. There are no significant adverse impacts to drainage conditions and flooding anticipated as a result of the proposed project. Accordingly, significant adverse impacts associated with floods, tsunamis, and sea-level rise are not anticipated.

6. Streams and Wetlands

a. Existing Conditions

The Waikapū Stream is located directly south of the project site. See **Figure 10**. Waikapū Stream is a perennial stream which originates in the upper reaches of Waikapū Valley, ultimately discharging into Keālia Pond in the Mā'alaea flats. Wetlands in the project area, as identified by the U.S. Fish and Wildlife Service (USFWS), include a reservoir and unnamed riverine.

b. Potential Impacts and Mitigation Measures

The project site is located in a residential community in the midst of other residential developments in Waikapū and will not involve work within the Waikapū Stream. Appropriate BMPs will be used during construction and applicable drainage detention and water quality measures will be provided to ensure that the project will not impact the Waikapū Stream or any other waterbody in the region.

7. Flora and Fauna

a. Existing Conditions

A flora and fauna survey and assessment of the original project area was conducted in May 2021 by Robert W. Hobdy, environmental consultant. See **Appendix "C-1"**. An additional flora and fauna survey was conducted by Mr. Hobdy for the expanded project area in August 2022. See **Appendix "C-2"**. The objectives of the surveys were to document what plant and animal species occur on the property; document the status and abundance of each species; determine the presence of any native flora and fauna, particularly any that are federally listed as threatened or endangered, and if such occur, identify what features of the habitat may be essential for these species; and to determine if the project area contains any special habitats, which if lost or altered, might result in a significant negative impact on the flora and fauna in the vicinity of the project.

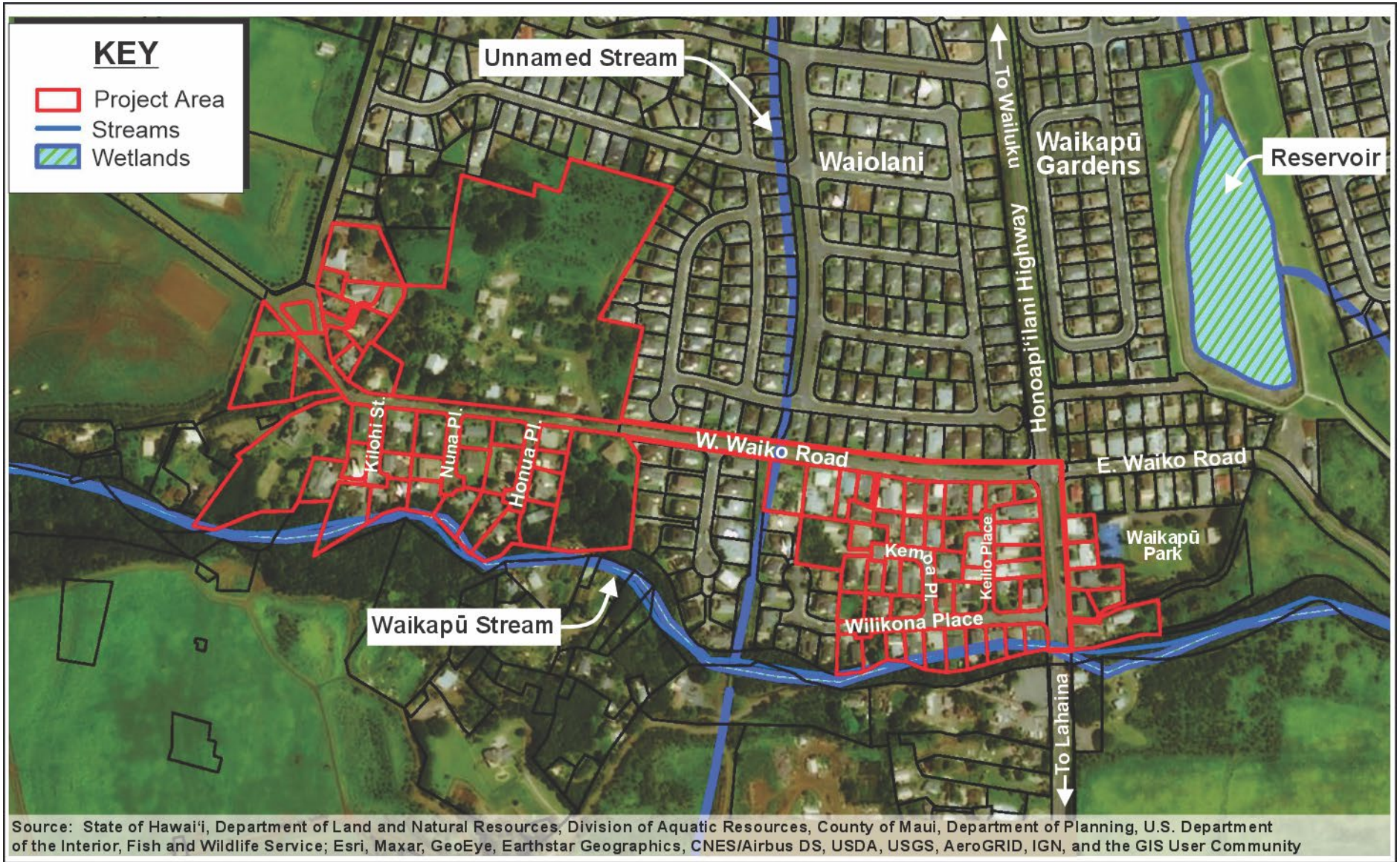


Figure 10

Waiko Road Sewer System and Waterline Improvements

Streams and Wetlands Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/Streams.Wetlds

In terms of flora, the project area is not dominated by any species in particular. The vegetation bordering the rights-of-way varied between manicured grasses with some ornamental shrubs or small trees, some unmanaged sections that are occasionally mowed, and some unmaintained areas. Over the course of both the 2021 survey and the 2022 survey, the environmental consultant identified two (2) commonly found species, Bermuda grass *(Cynodon dactylon)* and Guinea Grass *(Megathyrsus maximus)*. Fourteen (14) other species were found to be uncommon within the project area and are all non-native species. These uncommon species detected include the Manila palm *(Veichia merrillii)*, centipede grass *(Eremochloa ophiuroides)*, reticulate false eranthemum *(Pseuderanthemum carruthersii* var. *reticulatum)*, straggler daisy *(Calyptocarpus vialis)*, koa haole *(Leucaena leucocephala)*, cheeseweed *(Malva parviflora)*, false mallow *(Malvastrum coromandelianum)*, bracted fanpetals *(Sida cilaris)*, bougainvillea *(bougainvillea spectabilis)*, kou *(Cordia subcordata)*, coat buttons *(Tridax procumbens)*, summer heliotrope *(Heliotropium amplexicaule)*, creeping indigo *(Indigofera spicata)*, and scarlet spiderling *(Boerhavia coccinea)*. The remaining plant species identified during the surveys were rarely abundant. All rarely abundant species identified are non-native, with the exception of the kou tree *(Cordia subcordata)* and ʻuhaloa *(Waltheria indica)*, a common shrub. Both kou and ʻuhaloa are indigenous plant species that are common throughout Hawaiʻi. No endangered or threatened plant species were found and none of the species observed within the project area are candidates for such status. The disturbed environment was not found to include any special habitats of plant species or ecosystems. Refer to **Appendices "C-1"** and **"C-2"**.

There were no mammal species observed during the fauna survey. While not seen as part of the survey, the report noted the possible occurrence of mice *(Mus domesticus)*, rats *(*Rattus spp.*)*, mongoose (*Herpestes auropunctatus*), domestic dogs *(Canis familiaris)*, and domestic cats *(Felis catus)*. Durng both surveys, a special effort was made to observe the endangered ʻōpeʻapeʻa or Hawaiian hoary bat by conducting an evening survey with the use of a bat detecting device. No evidence of the ʻōpeʻapeʻa was observed or heard. The reports noted birdlife was uncommon throughout the area with minimal species diversity. A total of four (4) non-native species were observed during the site visits conducted; the house sparrow (*Passer domesticus*), the common myna *(Acridotheres tristis)*, spotted dove *(Streptopelia chinensis)*, and the zebra dove *(Geopelia striata)* were of uncommon occurrence. Other non-native bird species such as the house finch *(Haemorhous mexicanus)*, northern cardinal *(Cardinalis cardinalis)* and Japanese white-eye *(Zosterops japonicus)* may occasionally be seen in the project area, however, the environmental

consultant determined that the habitat is unsuitable for any native forest birds, waterbirds, seabirds, or nēnē geese. There were only five (5) common, non-native insect species observed, and no native insect species were seen during the survey. The cabbage butterfly *(Pieris rapae)* and long-tailed blue butterfly *(Lampides boeticus)* were uncommon, and the sleepy orange butterfly *(Eurema niccipe)*, monarch butterfly *(Danaus plexippus)* and short-horned grasshopper *(Oedaleus abruptus)* were of rare occurrence.

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

As discussed above, the flora and fauna observed within the project area is mostly represented by non-native species that are of no environmental concern. Two (2) common native plant species were identified at the project site. The flora and fauna reports for the proposed project concluded that the project is not expected to result in any significant negative impacts on native plant communities in this area of Maui. The reports also noted that no native, endangered or threatened animal species were found as part of the survey, nor were any animal species candidates for such status. Refer to **Appendices "C-1"** and **"C-2"**.

In addition, the USFWS was consulted for this project. Although not observed during the flora and fauna survey, the USFWS noted nine (9) species that have the potential to either be in or fly through the vicinity of the project area, which include: the federally endangered ōpeʻapeʻa or Hawaiian hoary bat *(Lasiurus cinereus semotus)*; the threatened Nēnē or Hawaiian Goose *(Branta (Nesochen) sandvicensis)*; the endangered Blackburn's sphinx moth *(Manduca blackburni);* the endangered Aeʻo or Hawaiian stilt *(Himantopus mexicanus knudseni);* the endangered ʻAlae kea or Hawaiian coot *(Fulica alai)*; the endangered Koloa or Hawaiian duck *(Anas wyvilliana*); and Hawaiian seabirds: the endangered Hawaiian petrel or ʻuaʻu *(Pterodroma sandwichensis)*, the endangered Hawaiʻi Distinct Population Segment of the band-rumped storm-petrel *(Oceanodroma castro*), and the threatened Newell's shearwater or ʻaʻo (*Puffinus auricularis newelli)*.

The USFWS recommended conservation measures and BMPs to mitigate impacts to threatened and endangered species should they be in the vicinity during the project's construction. As such, the following conservation measures will be followed as applicable. The USFWS will be contacted for further guidance should any ōpeʻapeʻa, nēnē, Blackburn's sphinx moth, or endangered or threatened water birds or seabirds and their appropriate habitats be observed during the staging and construction

process. Reduced speed limits and protection measures will be implemented should nēnē or endangered water birds and seabirds and their nests be seen in the project area. The ōpeʻapeʻa is known to forage from as low as three (3) feet to higher than 500 feet above the ground, thus making them prone to becoming entangled in barbed wire fencing. Therefore, there will be no disturbing, removing, or trimming of woody plants higher than 15 feet during the bat birthing and pup-rearing season of June 1 through September 15, as practicable, and no use of barbed wire fencing. It is noted that the Hawaiian seabirds ʻuaʻu, band-rumped storm-petrel, and ʻaʻo may traverse the project area at night during the breeding, nesting, and fledging seasons of March 1 to December 14. Seabirds are attracted to lights, and, therefore, outdoor lighting could result in seabird disorientation, injury, or mortality as they become prone to exhaustion and collision with wires, buildings, or other structures. If they land on the ground, they become prone to threats from vehicle strikes, starvation, and predation by dogs, cats, and other predators. In addition, young birds in their first flights are particularly vulnerable to light attraction. As such, outdoor lighting will be shielded and downward facing, and nighttime construction will be avoided during the seabird fledging period of September 15 to December 15. Given the aforementioned mitigation measures and results of the flora and fauna survey, the development of the proposed project is not expected to result in a significant negative impact on native or endangered flora and fauna in this area of Maui.

8. Archaeological Resources

a. Existing Conditions

The lands within and in the vicinity of the project area have been subject to a number of archaeological studies following the passage of the NHPA in 1966 and HRS Chapter 6E. See **Appendix "D-1"**. In January 2022, Cultural Surveys Hawaiʻi (CSH) observed six (6) geotechnical test bores throughout the eastern half of the project area and submitted a letter report dated February 28, 2022 on the interim archaeological documentation for the Waiko Road Subdivision Sewer System Project. In general, the observed stratigraphy included asphalt and associated base course material overlying previously disturbed fill sediment, natural loamy or clay-based alluvial soils, and bedrock. Two (2) locations contained water-worn pebbles and cobbles indicative of a former stream channel or meander of the adjacent Waikapū Stream channel. Three (3) historic properties were identified within or immediately adjacent to the project area. An Archaeological Monitoring Plan (AMP) was completed by CSH for the proposed project in April 2024. See **Appendix "D-2"**. The AMP reviews

the traditional and historic background of the project area as well as previously conducted archaeological research, including surveys, test excavations, assessments, inventories, and subsurface samples.

CSH recommended on-site archaeological monitoring for identification purposes for all project-related ground disturbance. In a letter dated October 4, 2022, the DEM submitted the project to the SHPD for review under HRS 6E-8 and requested SHPD concurrence with archaeological monitoring for identification purposes for all project-related ground disturbance. In a letter dated February 9, 2024, the SHPD provided a review of the DEM project submission and concurred with the request that the project proceed with archaeological monitoring.

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

On-site archaeological monitoring for identification purposes shall be conducted during all project-related ground disturbing activities. One (1) archaeological monitor will be assigned to each piece of ground disturbing equipment in operation at all times and in all locations throughout the project area. Any departure from this mitigation measure will occur only after consultation with and written concurrence from the SHPD.

Three (3) historic properties are located within or immediately adjacent to the project area. However, the proposed project is anticipated to have "no effect" on these significant historic properties since they are located outside of the areas proposed for project-related ground disturbance. More information on the history and findings at these properties is provided within the AMP in **Appendix "D-2"**. The AMP was accepted by SHPD in September 2025.

The monitoring fieldwork will likely encompass the documentation of subsurface archaeological deposits (e.g., trash pits, structural remnants) and will employ current standard archaeological recording techniques. Photographs and representative profiles of excavations will be taken even if no historically significant sites are documented. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents. Profile locations, historic property locations, and any other points of interest will be located using a sub-meter accurate Global Positioning System device. In the event of significant finds, the SHPD will be notified. If human remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. Any human skeletal

remains that may be encountered during excavation will be handled in compliance with HAR §13-300 and HRS 6E-43.

The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to ensure that the necessary archaeological sampling and recording can take place. The archaeological monitoring report shall be prepared and submitted to the SHPD within 90 days of the end of archaeological monitoring fieldwork. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human remains be identified, CSH will provide all appropriate additional written documentation (e.g., letters, memos, reports) that may be requested by SHPD.

9. Cultural Resources

a. Existing Conditions

A Cultural Impact Assessment (CIA) was prepared in 2023 by CSH for the proposed project to identify cultural practices or resources within the project area or vicinity, and to assess the impact of the proposed project on these cultural resources. The report includes archival research using cultural documents, primary and secondary historical sources, historic maps, photographs, and consultation with native Hawaiian organizations and community members. See **Appendix "E"**.

The CIA indicates that the project area is located in the Waikapū Ahupuaʻa in the Pūʻali Komohana Moku in the isthmus of Central Maui between the northwest slopes of Haleakalā and the southeast slopes of Mauna Kahālāwai (West Maui Mountains). This ahupuaʻa is one of the four (4) ahupuaʻa (traditional land sections usually extending from the mountain to the sea) that make up "Nā Wai ʻEhā" or "The Four Waters" of Maui; this includes Waiheʻe, Wailuku, Waiʻehu, and Waikapū. In the tradition of Hawaiian naming practices, the wind associated with Waikapū is called Kololio, and the rain specific to this ahupuaʻa is called Kiliʻoʻopu. The place name "Waikapū," literally translates to "Water of the Conch." This translation is due to a cave within Waikapū Valley that supposedly housed a supernatural conch shell (named Kīhapū, blessed with the breath of Lono) that resided there until it was stolen by a supernatural dog named Puapualenalena. In ancient times, Waikapū and Wailuku were agriculturally abundant lands known for their extensive loʻi, or wetland taro

cultivation. The CIA describes Waikapū Stream as land bound, as opposed to emptying into the ocean, with the water diverted into loʻi and the overflow dissipating on the dry plains of the central isthmus between West and East Maui feeding the wetland of Keālia. Refer to **Appendix "E"**.

The CIA report continues, Ke Kula o Kamaʻomaʻo, or the Plains of Kamaʻomaʻo, is the name given to a region of sandy plains spanning portions of Wailuku and Waikapū Ahupuaʻa. This area was known by Hawaiians in traditional times as a wandering place of the souls, a place where dead spirits waited for a friendly escort, perhaps an ʻaumakua (family god), to show them the way to eternity. Kamaʻomaʻo is also a region where the "Marchers of the Night," or Ka huakaʻi o ka Pō, are sometimes heard and seen. When these spiritual "Night Marchers" appear, according to Beckwith, "*It is said that such a sight is fatal unless one has a relative among the dead to intercede for him.*" Ahulau ka Piʻipiʻi i Kakanilua or The Battle of Waikapū Common entailed the clash of invading Hawaiʻi Island forces, headed by Kalaniʻōpuʻu with the Maui forces under Kahekili in 1776. Kalaniʻōpuʻu landed his invading troops at Māʻalaea and marched across the isthmus of Kamaʻomaʻo. Refer to **Appendix "E"**.

The nineteenth century brought to Maui a multitude of commercial, demographic, social, and religious changes encouraged by the burgeoning foreign influx. In 1819, the first whaling ships arrived in Hawaiian waters and Lāhainā Harbor became a primary port of call for provisioning ships in the Islands. Closely following the arrival of the first whaling ships, the first Protestant missionaries and their families arrived in Lāhainā in 1823. In 1838, the Waikapū Congregational Church was established as a home-based Christian service. During World War II, Waikapū Congregational Church was turned over to the military and used as a surgical hospital. The Church building was used as a ward with an additional "nurses quarters" built off to the side of the main structure. Refer to **Appendix "E"**.

Foreign commercialism initially came to Waikapū in the form of sugar processing and coffee production. By the mid-nineteenth century, most of the Waikapū Commons and across the isthmus was covered with sugarcane. Waikapu Sugar Company operated from 1862 to 1894, when it was purchased and incorporated into the holdings of Wailuku Sugar Company. Beginning in 1880, the Waikapū plantation lands began to be merged with those of the Wailuku and Waiheʻe plantations. In 1905, a new sugar mill was constructed in Wailuku to accommodate the sugar brought in from the new outlying plantations, including Waikapū. The economic boom, resulting from the passage of the Reciprocity Treaty in 1876, encouraged sugar baron Claus Spreckels and other Hawaiian sugar

planters to invest heavily in capital improvements such as irrigation systems, mills, and railroads. Numerous ditches including the Hamakua Ditch, Honomanu Ditch, Waihe‘e Ditch (also named the Spreckels Ditch), and the Lowrie Ditch were created to provide additional water to the plantations of the central Maui plains. In addition to sugarcane cultivation, much of the lands of Waikapū in the mid-twentieth century were also tied up in pastoral endeavors. In 1952, over 7,000 acres of land along the base of the West Maui Mountains, spanning from Waikapū to Ukumehame, were sold at auction in two (2) leases (15- to 21-year lease terms) for $16,582. These land tracts served as hog and cattle pastures. In the latter half of the 1900s, residential tracts were constructed along both the Kuihelani Highway and Honoapi‘ilani Highway corridors that traverse Waikapū. Complementing the residential are light industrial parcels, grocery stores, and business developments on the outskirts of Waikapū sugar fields. Refer to **Appendix “E”**.

During the CIA, CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 33 individuals or groups; eight (8) responded, one (1) provided written testimony, and two (2) kama‘āina (native-born) and/or kūpuna (elders/of the grandparent’s generation) met with CSH for in-depth interviews.

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

Through the consultation process, the CIA identifies freshwater resources, iwi kūpuna (ancestral remains), and burial practices as cultural, historical, and natural resources where cultural practices (including traditional and customary native Hawaiian rights) are being exercised in the Waikapū Ahupua‘a.

No on-going cultural practices were identified within the project area during community consultation. The project area is located in the general vicinity of on-going cultural practices such as freshwater gathering and uses, and burial practices. The results of community consultation, underscored by background research conducted for the CIA, inform the following mitigation possibilities promoting and preserving cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups.

BMPs will be implemented during the construction process to reduce potential runoff or contamination of the stream and that any identified

broken sewerlines be repaired and environmental remediation included if and when needed in compliance with applicable laws. 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 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, a burial treatment plan will be completed in compliance with HAR §13-300 and HRS Chapter 6E-43. Cultural and lineal descendants of the area will be consulted to develop a reinternment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

10. Air Quality

a. Existing Conditions

There are no point sources of airborne emissions in the immediate vicinity of the project site. Although minimal, airborne pollutants are largely attributable to vehicular traffic on the surrounding roadways. Windblown dust from surrounding fallow agricultural lands is another source of indirect emissions in the region. These sources, however, are intermittent and prevailing winds quickly disperse the particulates generated by these temporary sources. Overall, the air quality in the region is considered good.

b. Potential Impacts and Mitigation Measures

In the short term, construction-related activities for the proposed project will be the primary source of airborne pollutants affecting the surrounding area. Site work involving clearing, grubbing, and grading operations will generate fugitive dust. Appropriate BMPs, such as periodic watering of exposed surfaces, installation of dust screens, and regular maintenance of construction equipment will be utilized to minimize air quality impacts associated with project construction.

The proposed project is not an action which will generate adverse long-term air quality impacts. In the long term, the proposed project will provide adequate sewerage facilities and waterlines to residents of the project area and are not anticipated to have an adverse effect upon air quality.

11. 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 (Intergovernmental Pannel on Climate Change, 2023). Within the State of Hawai'i, the energy sector (including fossil fuel burning to produce electricity, transportation, waste incineration, and natural gas systems) is identified as the source of approximately 89 percent of GHG emissions (Hawai'i Department of Health, 2021). 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 Power Plant and Mā'alaea Power Plant, the Hawaiian Commercial and Sugar Company's industrial waste landfill, and the Central Maui Landfill (United States EPA, 2020).

b. Potential Impacts and Mitigation Measures

The proposed action involves the construction of a sewer system and waterline improvements. In the context of the GHG Reporting Program (25,000 metric tons of CO2 EQ), the relative effects of GHG emissions (CO2 EQ) from the project are not considered significant.

The proposed action will involve short-term consumption of fuel for construction equipment, vehicles, and machinery during the construction period. This usage is not anticipated to be substantial or excessive within the context of the action's benefits over the lifetime of the project.

Furthermore, the State of Hawai'i has set a renewable energy portfolio standard of 100 percent (100%) by the year 2045 (Section 269-92, HRS) to minimize dependence on fossil fuel combustion, and has declared a policy to reduce GHG emissions to 1990 levels by the year 2020 (Act 234, Session Laws of Hawai'i, 2007). In efforts to reduce emissions, Chapter

11-60.1 of the HAR was amended to place a cap on facilities with potential sources of GHG emissions at or above 100,000 tons per year. The State is on track to meet these goals and emission inventory reports conducted by ICF International, Inc., the University of Hawai‘i, and the State of Hawai‘i, Department of Health project that Hawai‘i’s GHG emissions in 2017 (excluding aviation emissions) were lower than the net GHG emissions in 1990 which indicates a reduction of GHG emissions statewide (State of Hawai‘i Department of Health, 2021).

Given the foregoing analysis, the proposed action is not anticipated to create significant direct and indirect foreseeable GHG emissions. In addition, this action does not fall within the threshold of mandatory GHG reporting.

12. Noise Quality

a. Existing Conditions

There are no fixed noise generators in the vicinity of the project site. Noise generated in the area is primarily attributed to vehicular traffic along the surrounding roadways, including Honoapi‘ilani Highway which runs between East and West Waiko Road. Overall, the noise level in the region is fairly low.

b. Potential Impacts and Mitigation Measures

Ambient noise conditions may be temporarily affected by construction activities. Heavy construction machinery, such as backhoes, dump trucks, front-end loaders, and material-transport vehicles are anticipated to be the dominant noise-generating sources during the construction period of the proposed project.

In order to mitigate noise impacts, construction activities are anticipated to be limited to daylight work hours, generally Monday through Friday. Project-related noise will be minimized through use of applicable BMPs, such as regular maintenance of construction equipment and use of properly muffled equipment. In the long term, the proposed project is not anticipated to have adverse noise quality impacts.

13. Hazardous Materials

a. Existing Conditions

The project site is located on former agricultural lands and developed residential areas. Agricultural production has ceased in the project area for over 45 years and has been mainly in residential use. There may be the limited potential for hazardous materials to be present in the land, associated with the residential use such as motor oil or fertilizer.

b. Potential Impacts and Proposed Mitigation Measures

The project area is mostly residential and has not been in agricultural cultivation for over 45 years. The soils in the project area are not anticipated to contain significant amounts of hazardous materials.

14. Scenic and Open Space Resources

a. Existing Conditions

Mauna Kahālāwai (a.k.a. West Maui Mountains) to the west, Haleakalā to the east and Kahului Bay and the Pacific Ocean to the northeast define the scenic resources in Central Maui.

The project site is surrounded by fallow former agricultural lands, residential developments, and small local businesses.

b. Potential Impacts and Mitigation Measures

The proposed wastewater and water infrastructure improvements project will be implemented underground and, as such, is not anticipated to have an adverse impact on scenic and open space resources.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Land Use and Community Character

a. Existing Conditions

From a regional perspective, the project site is located immediately south of the urbanized area of Wailuku Town and immediately north of Waikapū Town. Wailuku Town serves as the commercial and governmental center of the region, while Waikapū Town consists of residential developments and former agricultural lands. The project site is surrounded by other

residential developments of the same nature as the proposed project's affected area.

b. Potential Impacts and Proposed Mitigation Measures

The project is compatible with the adjacent residential uses and community character. As such, the proposed project is in consonance with the current land use and community character of the area. The proposed improvements will benefit the residences in the project area by providing connections to the County wastewater system as well as provide additional fire protection with the replacement of waterlines which will allow for the installation of fire hydrants in the area.

2. Population

a. Existing Conditions

The population of the island of Maui has exhibited relatively strong growth over the past decade. According to the U.S. Census, the resident population of the island in 2020 was 200,629, an increase of 6.7 percent from the 2010 population of 144,444 (U.S. Census 2020).

The project area is located in the Central Maui region of the island in the Waikapū census designated place (CDP). The population of the Waikapū CDP grew from 2,965 in 2010 to 3,437 in 2020 (U.S. Census 2020).

b. Potential Impacts and Proposed Mitigation Measures

The proposed project involves construction of a sewer system and waterline replacements that will serve an existing residential neighborhood. In the context of the County of Maui's population, the proposed project is not anticipated to significantly alter population trends. The proposed project is not anticipated to result in adverse impacts on the regions or island's population parameters.

3. Economy

a. Existing Conditions

The general economy of Maui is heavily dependent upon the visitor industry. Many of the hotel and resort amenities are in South Maui and West Maui, with non-resort, smaller hotels located in Central Maui.

The economy of the Wailuku region is anchored by government services, with County and State agency offices occupying the civic center of town,

near the High Street-Main Street intersection. With access to government offices, professional services such as engineering, architectural, and accounting offices are located nearby. Waikapū, while mainly residential in nature, also features a number of small businesses and the Maui Tropical Plantation.

Hawai‘i’s economy through 2019 was strong, with record-setting visitor arrivals and low unemployment. However, the COVID-19 pandemic had far-reaching impacts on the economy on Maui, in Hawai‘i, and across the nation and world. Stay-at-home regulations and travel quarantines aimed to curb the spread of COVID-19 virus in Hawai‘i caused many businesses to shut down or drastically reduce operations. This caused unemployment rates in Hawai‘i to peak at 21.9 percent in April and May 2020, compared to just 2.7 percent in February 2020 (Department of Labor and Industrial Relations, 2021).

With the end of the COVID-19 pandemic and return of the visitor industry, Maui’s economy was growing through the first half of 2023. However, the tragic wildfires in August 2023 will have significant impacts on the economy for several years. Although the project area was not directly impacted by the fires, the entire Maui community is experiencing economic disruption. The fire in Lāhainā destroyed approximately 2,200 structures, displacing thousands of families and impacting many businesses. The fires have had a significant impact on the tourism industry and the overall path to recovery will be a long-term process, dependent on the pace and manner of rebuilding. In 2022, Maui County’s unemployment rate averaged 3.8 percent, comparable to the statewide rate of 3.5 percent. Following the fires, the University of Hawai‘i Economic Research Organization (UHERO) reported that Maui County’s unemployment rate was approximately 11.6 percent in April of 2024, compared to 2.9 percent for the State as a whole (UHERO, 2024). In March of 2025, the Maui County unemployment rate was 3 percent, compared to 2.4 percent statewide (State of Hawai‘i, Department of Business, Economic Development and Tourism, April 2025).

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

The proposed project will generate a short-term positive economic impact associated with construction-related activity and is not anticipated to have adverse impacts to Maui’s economy.

4. Housing

a. Existing Conditions

Housing in Waikapū encompasses a mix of established single-family residential units and the residential subdivisions of Waiolani Elua, Waiolani Mauka and Waikapū Gardens.

The median sales price for single-family homes on Maui in the month of March 2025 was $1,299,346.00, while the median sales price for condominiums was $1,301,250.00 (Realtors Association of Maui, 2025).

With these pricing levels, affordability for local residents continues to be a concern for policy makers. The County has responded with its adoption of Maui County Code Chapter 2.96, Residential Workforce Housing Policy, and more recently, Chapter 2.97, Residential Workforce Housing Policy Incentives and Exemptions. These ordinances set forth guidance for the provision of workforce housing associated with market-rate residential and hotel development, as well as the establishment of process guidance for providing incentives for developers to build workforce and affordable housing.

b. Potential Impacts and Proposed Mitigation Measures

The proposed sewer system and waterline improvements will be constructed to connect existing residential lots to the County sewer system and replace pre-existing waterlines. As a wastewater infrastructure and waterline replacement project, the proposed action is not anticipated to affect the availability of housing or affordable housing.

C. PUBLIC SERVICES

1. Solid Waste Collection and Disposal

a. Existing Conditions

Single-family residential solid waste collection service in Waikapū is provided by the County of Maui on a weekly basis. Residential solid waste collected by County crews are disposed of at the County's Central Maui Landfill located 4.0 miles southeast of the Kahului Airport. In addition to County-collected refuse, the Central Maui Landfill accepts commercial waste from private collection companies. A privately operated green waste recycling facility, Maui Earth Compost Company, is situated at Pulehu Road and Hansen Road, while Eko Compost is operated at the Central

Maui Landfill. According to the County of Maui, the Central Maui Landfill has adequate capacity to accommodate residential and commercial waste needs through the year 2026. The DEM is currently planning to implement a processing facility project adjacent to the landfill, which would further extend the projected capacity by an estimated 16 years. The remaining capacity estimate is based on future disposal volumes that assume significant population growth.

b. Potential Impacts and Proposed Mitigation Measures

Construction-related waste will be properly disposed of in accordance with policy and practices established by the Solid Waste Division to ensure that there are no adverse impacts to the County's Central Maui Landfill.

The proposed project is not anticipated to have adverse impacts on solid waste collection on Maui.

2. Police, Fire, and Medical Facilities

a. Existing Conditions

Police protection for the Wailuku-Kahului region is provided by the Maui Police Department located at the Wailuku Station headquartered on Mahalani Street, approximately eight (8) miles northeast of the project site. The Maui Police Department provides investigative services, uniform patrol services, technical support, and traffic services as stated in its mission to protect the residents of Maui County.

Fire prevention, protection, rescue, and emergency services for the Wailuku-Kahului region are provided by the Maui County Department of Fire and Public Safety. The department has two (2) stations to service the Wailuku-Kahului region, both in proximity of the project site. The Wailuku station is located in Wailuku town approximately 2.7 miles north of the project site and the Kahului station is located on Dairy Road in Kahului approximately 4.2 miles northeast of the project site.

Maui Memorial Medical Center is managed by Kaiser Permanente and is the only major medical facility on the island. Acute, general, and emergency care services are provided by the 219-bed Maui Memorial Medical Center facility located on Mahalani Street, Wailuku, about three (3) miles east of the subject property.

In addition, Kaiser, Maui Medical Group, Maui Medical Clinic, and Liberty Dialysis Clinic provide health care for the island of Maui. These facilities are located in Wailuku and Kahului. Dental and other medical offices are also located within the Wailuku-Kahului region to serve its residents and visitors.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project involves the installation of a County sewer system and waterline replacement in a primarily residential community of Waikapū. The proposed project is located within service areas for existing police, fire, and medical facilities and is not anticipated to adversely impact these services.

3. Educational Facilities

a. Existing Conditions

The State Department of Education (DOE) operates several schools in the Wailuku-Kahului region. Public school facilities within the Wailuku-Kahului District area include: two (2) high schools, Henry Perrine Baldwin High and Maui High (grades 9 to 12); two (2) intermediate schools, ʻĪao Intermediate and Maui Waena Intermediate School (grades 6 to 8); and six (6) elementary schools (Grades K to 5), Wailuku Elementary, Waiheʻe Elementary, Pōmaikaʻi Elementary, Kahului Elementary, Lihikai Elementary, and Puʻu Kukui Elementary School.

The area is also served by several privately operated schools providing education for elementary, intermediate, and high school students. Privately operated schools serving the Wailuku-Kahului region include St. Anthony School (grades K to 12), Kaʻahumanu Hou Christian School (grades K to 12), Emmanuel Lutheran School (K to 6), and Maui Adventist School (grades 1 to 8).

Additionally, the University of Hawaiʻi Maui College is a four-year college located on Kaʻahumanu Avenue in Kahului.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project entails installation of a sewer system and waterline replacement in an existing residential community and is not anticipated to have adverse impacts on educational facilities.

4. Recreational Facilities

a. Existing Conditions

Within the Wailuku-Kahului Community Plan Region, there are many recreational activities, including shoreline and boating activities at the Kahului Harbor and adjoining beach parks, and organized recreational activities provided at County Parks. Near the project site is Waikapū Park and Community Center. In Wailuku town are Wells Park, the Wailuku Elementary School Park, the ʻĪao Valley State Park, the Kehalani Mauka Park, the Velma McWayne Santos Community Center, Papohaku Park, War Memorial Athletic complex, Wailuku Little League baseball fields, the 65-acre Maui Regional Park, Maui Lani Parkway Park, Sakamoto Swimming Pool, and Keōpūolani Regional Park.

In addition, there are several golf courses in the Wailuku-Kahului region. These include the Kahili and Kamehameha Golf Courses, The Dunes at Maui Lani Golf Course, and the Maui County-owned Waiehu Golf Course.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project entails sewer system improvements and waterline replacement within existing ROWs and residential lots in Waikapū. As such, adverse impacts to recreational resources are not anticipated.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

The proposed sewer system will be connected to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapiʻilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street and Old Waikapu Road.

East Waiko Road is an east-west, two-way, two-lane roadway extending westward from Kuihelani Highway to Honoapiʻilani Highway where it continues as West Waiko Road. Honoapiʻilani Highway is a north-south, two-lane, two-way undivided State-owned arterial highway with posted speed limits ranging between 30 miles per hour (mph) and 45 mph. Honoapiʻilani Highway begins as the continuation of South High Street near Kahookele Street and continues southward through Waikapū, Māʻalaea,

and wraps around the pali to West Maui. Wilikona Place, Kemoa Place, and Keilio Place are County ROWs connecting the residential community of the project area on the mauka side of Honoapi‘ilani Highway.

b. Potential Impacts and Proposed Mitigation Measures

As previously mentioned, the proposed sewer system will connect to an existing manhole on East Waiko Road. The proposed action will temporarily impact the affected roadways through the construction period, however, there are no significant adverse effects anticipated as a result of the project. Waterline work will take place on Honoapi‘ilani Highway, Kemoa Place, Wilikona Place, Keilio Place, Kilohi Street, Nuna Place, and Honua Place. There are existing 4-inch waterlines on Kilohi Street, Nuna Place, and Honua Place that will be replaced with 8-inch waterlines connecting to the existing 8-inch waterline along West Waiko Road.

The project contractor will be required to secure necessary permits and approvals prior to the start of construction. The DEM will also coordinate with the contractor and area residents for access during construction, prior to project initiation.

2. Water

a. Existing Conditions

The proposed project area is serviced by the Maui County Department of Water Supply’s (DWS) Central Maui Water System.

Water source for the project includes groundwater wells within the ‘Īao aquifer and treated surface water from ‘Īao Stream. It is noted that approximately 3.75 acres of the project area falls within the DWS wells’ 10-year time of travel zone. As such, non-pathogen-related chemicals disposed of in cesspools and septic systems can potentially contaminate DWS wells within the 10-year time of travel zone. In this regard, the proposed project will aid in the protection and maintenance of DWS’s wells and water sources. There are existing waterline improvements within the project area ranging in size from 2 ½ inches to 12 inches.

b. Potential Impacts and Proposed Mitigation Measures

The DEM has coordinated with the DWS for proposed waterline replacement work in the vicinity of the project area to be done in conjunction with the subject sewer system improvements project. The DWS proposes to replace waterlines within the project area along Honoapi‘ilani Highway,

Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. Existing 4-inch waterlines on Honoapi‘ilani Highway, Kilohi Street, Nuna Place, Honua Place, and Kemoa Place will be replaced with 8-inch waterlines. The existing 2.5-inch and 4-inch waterlines along Wilikona Place and Keilio Place will also be replaced with 8-inch waterlines. Replacing the identified waterlines with a larger size will provide increased water flow capacity and more adequate fire protection. There are existing 8-inch and 12-inch waterlines along West Waiko Road that will remain. The proposed project is expected to decrease the likelihood of well water contamination from wastewater disposed of in cesspools and septic tanks as well as allow for the installation of fire hydrants along the project area to provide for additional fire protection.

3. Wastewater

a. Existing Conditions

The parcels of the proposed project area are currently not connected to the County sewer system. Residents in the project area utilize cesspools and septic tanks for wastewater disposal. Wastewater from cesspools are left untreated. Lots in the Waikapū area with septic tanks have sewage drained by private waste haulers and discharged in an upstream manhole near the Wailuku Pump Station.

The County of Maui currently operates four (4) wastewater reclamation facilities (WWRF) in Wailuku-Kahului, Lāhainā, Kīhei, and Kaunakakai. The Waikapū area is served by the Wailuku-Kahului WWRF located in Central Maui. Wastewater from lots in Waikapū that are connected to the County sewer system is conveyed to the Wailuku-Kahului WWRF for screening, grit removal, activated sludge biological treatment, effluent filtration, and chlorination to produce R-2 (recycled) water. Effluent that is not suitable for reuse is disposed of via injection wells. Remaining sludge from the treatment process is taken off-site for composting.

b. Potential Impacts and Proposed Mitigation Measures

The construction of the sewerline improvements provides adequate infrastructure to expand the wastewater system to connect approximately 100 lots in Waikapū. Twenty-nine of these lots are part of a subdivision that installed a dry wastewater system as part of their condition to build. Completing this project will allow that system and the approximately 90 additional lots to connect to the County system. The additional connected lots will likely result in an increase of wastewater being treated at the Wailuku-Kahului WWRF. As such, coordination will be undertaken with the

DEM's Wastewater Reclamation Division to ensure the facility has adequate capacity to accommodate the increased flow.

Once connected to the County sewer system, wastewater from the project area will flow to the Wailuku-Kahului WWRF for treatment and disposal.

4. Drainage System

a. Existing Conditions

There is no existing County drainage system within the project area, with the exception of an existing catch basin and underground drainage system at the northwest corner of the Waiko Road-Honoapi'ilani Highway intersection. The runoff from this catch basin is conveyed to an existing drainage basin located at the end of Waiolu Place. Currently, runoff from the project area drains from roadways to adjacent parcels. The West Waiko Road Kuleana ditch, a private irrigation system, runs along the south side of West Waiko Road as an open ditch and crosses Kilohi, Nuna and Honua Place through underground piping.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project improvements will be installed underground. The project area will generally be returned to its prior state, following the completion of construction. As such, no increase in runoff is anticipated due to the installation of the proposed improvements. The proposed sewer and water improvements would cross under the Kuleana ditch system and are not anticipated to impact the system.

5. Electric, Telephone, and Cable

a. Existing Conditions

There are existing overhead electrical, telephone, and cable transmission lines provided by Hawaiian Electric Company, Ltd (Maui Electric), Hawaiian Telcom, and Spectrum Cable, respectively, along Honoapi'ilani Highway.

b. Potential Impacts and Proposed Mitigation Measures

The proposed action is not anticipated to have significant adverse negative effects on electric, telephone, and cable lines. The DEM and its contractor will coordinate with the utility companies when a construction schedule is defined.

E. CUMULATIVE AND SECONDARY IMPACTS

Pursuant to the Hawai'i Administrative Rules, Chapter 200, Section 11-200.1-2, 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.*

"Secondary impacts" or "indirect impacts" are defined as:

> *…effects that are caused by the action or are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems including ecosystems.*

Cumulative and secondary impacts can be viewed as actions of others that are taken because of the presence of the project. Secondary impacts from highway projects, for example, can occur because they can induce development by removing one (1) of the impediments to growth.

The project is proposed to be implemented in a developed residential area and will connect existing lots to the County sewer system and wastewater treatment facility as well as provide for greater fire protection with the waterline improvements. The proposed project is not a phase of a larger action, nor does it represent a commitment to such actions. Given the surrounding residential developments and with the implementation of BMPs, significant environmental impacts are not anticipated as a result of the project.

Secondary impacts are those which have the potential to occur later in time or farther in distance, but are still reasonably foreseeable. They can be viewed as actions of others that are taken because of the presence of a project. The proposed project involves the installation of a sewer system, providing an alternative to cesspools and septic tanks. The sewer system will allow for the continued treatment of wastewater and will aid in the prevention of wastewater contamination that is potentially harmful to the community and surrounding environment. The waterline replacement improvements will provide for enhanced fire protection for the residential neighborhood. Further, the area where the proposed improvements will be constructed is developed as a residential area. As such, no secondary impacts are anticipated to result from the implementation of the proposed project.

RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

III

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 project site is primarily located within the "Urban" district with portions of the project located within the "Agriculture" district. See **Figure 11**. Pursuant to Chapter 205, HRS, the "Urban" districts shall include uses or activities provided by ordinances or regulations of the County in which the "Urban" district is located. Permissible uses in the "Agriculture" district includes public utility lines. Section D below outlines the County of Maui's zoning regulations that are applicable to the proposed project. As infrastructural improvements, the proposed project is consistent with the "Urban" and "Agriculture" 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

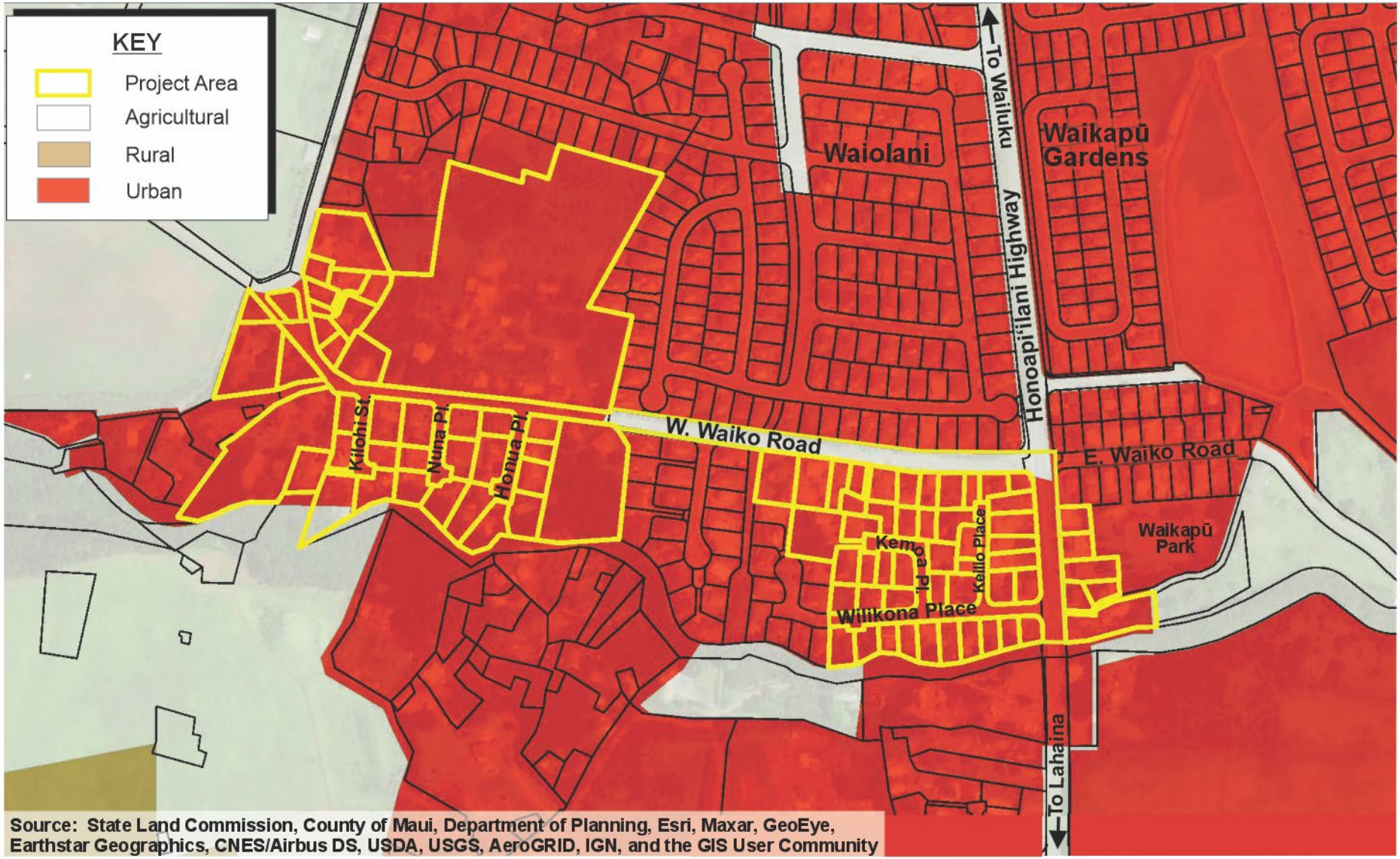


Figure 11

Waiko Road Sewer System and Waterline Improvements

State Land Use District Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/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 “F-1”**.

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

2. **Indirectly applicable**: the action and its potential effects indirectly support or advance 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 the table 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 “F-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 guarantee, for the present and future generations, those elements of choice and mobility that insure 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.			✓
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.		✓	
(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.		✓	
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.			✓

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
(2) Growth and development of diversified agriculture throughout the State.			✓
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.			✓
Chapter 226-8 Objective and policies for the economy – – visitor industry.			
Objective: 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.			✓
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.		✓	
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.			✓
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.			✓
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.	✓		
(2) Effective protection of Hawaii's unique and fragile environmental resources.		✓	

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 226-12 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.		✓	
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.	✓		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.		✓	
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, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.	✓		
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.	✓		
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	✓		
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.	✓		
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:			

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) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			✓
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			✓
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;			✓
(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.			✓
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;			✓
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			✓
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			✓
Chapter 226-18.5 Objectives and policies for facility systems – – telecommunications.			
Objectives: 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.			✓
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.			✓
(2) The orderly development of residential areas sensitive to community needs and other land uses.			✓
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			✓

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 226-20 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.			✓
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.	✓		
(3) Elimination of health disparities by identifying and addressing social determinants of health.			✓
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.			✓
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.			✓
Chapter 226-23 Objective and policies for socio-cultural advancement – – leisure.			
Objective: Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations.			✓
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.			✓
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.		✓	
Chapter 226-26 Objectives and policies for socio-cultural advancement – – public safety.			
Objective: Planning for the State's socio-cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			

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) Assurance of public safety and adequate protection of life and property for all people.	✓		
(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.			✓
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			✓
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.		✓	
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			✓

The proposed sewer system and waterline replacement is directly applicable to the objective and policies for facility systems, specifically the objectives for solid and liquid waste facility systems, as the proposed action involves the construction of sewerlines to connect residences to the County wastewater system. The proposed action also directly supports the objectives and policies for the maintenance of public health and sanitation standards through the provision of adequate sewerage facilities to safely and properly treat, reuse, and dispose of wastewater in the project area's residential community. In addition, the installation of a sewer system is directly relevant to the objectives for the physical environment and promotes effective measures to protect the quality of surface, ground, and coastal waters. The proposed improvements are directly applicable for the objectives and policies for facility systems-water in that it will provide for improved water service for the existing residential area. Further the waterline improvements are directly applicable for the objectives and policies for socio-cultural advancement as it relates to public safety. The improvements will allow for the installation of fire hydrants in the project area.

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.

The table below summarizes the relationship between the proposed action and the priority guidelines of the Hawai'i State Plan. A more detailed discussion is presented in **Appendix "F-1"**.

Table 2. Summary of Project's Applicability to Hawai'i State Plan 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**	**N/A**
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:		✓	
(b) Priority guidelines to promote the economic health and quality of the visitor industry:			✓
(c) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			✓
(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			✓
(e) Priority guidelines for water use and development:		✓	
(f) Priority guidelines for energy use and development:			✓
(g) Priority guidelines to promote the development of the information industry:			✓
Chapter 226-104: Population growth and land resources priority guidelines.			
(a) Priority guidelines to effect desired statewide growth and distribution:			✓
(b) Priority guidelines for regional growth distribution and land resource utilization:		✓	
Chapter 226-105: Crime and criminal justice.			
Priority guidelines in the area of crime and criminal justice:			✓
Chapter 226-106: Affordable housing.			
Priority guidelines for the provision of affordable housing:			✓
Chapter 226-107: Quality education.			
Priority guidelines to promote quality education:			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
CHAPTER 226-108: Sustainability			
Priority guidelines and principles to promote sustainability shall include:		✓	
CHAPTER 226-109: Climate change adaptation			
Priority guidelines and principles to promote climate change adaptation shall include:		✓	

The proposed project is indirectly applicable to the economic priority guidelines and supports local design and construction activity, contributing to a diversified economy and increased employment opportunities. The proposed action also indirectly supports the goals and priority guidelines for population growth and land resource management by providing sewer system and waterline improvements in a previously developed, urban area in close proximity to existing developments. The proposed sewer system also promotes the priority guidelines for sustainability and climate change adaptation by providing an alternative to cesspools for wastewater disposal, which can prevent long-term impacts on the environment. The waterlines will improve access for emergency needs through the installation of fire hydrants.

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 13 Functional Plans which have been developed by the State agency primarily responsible for a given 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 Waiko Road Sewer System 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	A portion of the proposed project is situated on State agricultural lands. However, the proposed project is not anticipated to contravene the objectives and policies of this functional plan.
2	Conservation Lands State Functional Plan (1991)	Department of Land and Natural Resources	Addresses issues of population and economic growth and their 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 will not utilize any State Conservation lands. Similarly, the project is located inland, and not near the coastline. Best Management Practices (BMPs) will be implemented to minimize adverse impacts to downstream properties and the shoreline. The proposed action is not anticipated to contravene the objectives and policies of this 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 action is not anticipated to contravene the objectives and policies of this 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 action will result in the creation of construction jobs throughout the construction period. This will provide local residents with opportunities to successfully compete in the workforce. The proposed action is not anticipated to contravene the objectives and policies of this functional plan.
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 action is not anticipated to contravene the objectives and policies of this functional plan.

	State Functional Plan	State Coordinating Agency	Purpose	Analysis
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 action is not anticipated to contravene the objectives and policies of this functional plan.
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 action is not anticipated to contravene the objectives and policies of this 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	A Cultural Impact Assessment (CIA) conducted as part of the environmental review process for the proposed project demonstrates an effort to preserve Hawai'i's natural and historic resources and protect Hawai'i's ethnic and cultural heritage. The SHPD has been consulted, and the proposed project will comply with the SHPD's recommendations for mitigation.
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 Hawai'i resident will have the opportunity to live in a safe, decent and affordable home.	The proposed action is not anticipated to contravene the objectives and policies of this 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 action is not anticipated to contravene the objectives and policies of this functional plan.

	State Functional Plan	State Coordinating Agency	Purpose	Analysis
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 action is not anticipated to contravene the objectives and policies of this functional plan.
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 action is not anticipated to contravene the objectives and policies of this 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 action is not anticipated to contravene the objectives and policies of this 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 in which the United Nations declared 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 is 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) **DA = Directly Applicable, IA = Indirectly Applicable, N/A = Not Applicable**	**DA**	**IA**	**N/A**
1. Promote a Sustainable Economic Recovery			
Strategy 1: Support farmer livelihoods			✓
Strategy 2: Support local markets for locally grown food			✓
Strategy 3: Promote sustainable & resilient farmland, practices, and infrastructure			✓
Strategy 4: Invest in green workforce development beginning with youth.			✓
Strategy 5: Foster the development of jobs that can sustain families financially.			✓
Strategy 6: Support diversification of the economy.			✓
Strategy 7: Reduce the environmental footprint of the tourism industry.			✓
Strategy 8: Support native Hawaiian culture and reduce impacts of the tourism industry to local communities.			✓
Analysis: ***Not Applicable***			
2. Reduce Greenhouse Gas Emissions			
Strategy 9: Measure, manage, and plan for GHG emission reduction.			✓
Strategy 10: Incorporate climate change planning into decision-making processes.			✓
Strategy 11: Promote energy conservation and efficiency through outreach, communication, and community and public engagement.			✓
Strategy 12: Continue to invest in the deployment of clean energy technologies to reduce reliance on fossil fuels.			✓
Strategy 13: Expand the adoption of zero emission vehicles.			✓
Strategy 14: Promote alternative modes of transportation.			✓
Strategy 15: Reduce the generation of waste, including plastic waste.			✓
Strategy 16: Increase diversion of waste through recycling, reuse, and			✓

Hawai‘i 2050 Sustainability Plan (HRS, Section 226-65) DA = Directly Applicable, IA = Indirectly Applicable, N/A = Not Applicable		DA	IA	N/A
	composting.			
Analysis*:** ***Not Applicable				
3. Improve Climate Resilience				
Strategy 17:	Integrate climate change adaptation and resilience considerations into planning and implementation.			✓
Strategy 18:	Assess and communicate the impacts of climate change to residents, businesses, and communities most likely to be impacted.			✓
Strategy 19:	Implement actions that improve the state's resilience to climate change.			✓
Strategy 20:	Increase the resilience of vulnerable populations to the impacts of climate change and other shocks and stressors.			✓
Analysis: ***Not Applicable***				
4. Advance Sustainable Communities				
Strategy 21:	Advance smart growth initiatives and multimodal transportation systems.			✓
Strategy 22:	Advance sustainability in school and university operations			✓
Strategy 23:	Integrate sustainable design principles into new and existing buildings.			✓
Analysis: ***Not Applicable***				
5. Advance Equity				
Strategy 24:	Strengthen broadband access to support digital learning and online solutions in rural areas.			✓
Strategy 25:	Continue to improve economic and social sustainability of individuals through access to affordable housing.			✓
Strategy 26:	Continue to implement strategies that reduce homelessness in Hawai‘i to enhance livelihoods.			✓
Strategy 27:	Continue to advance opportunities for all, regardless of gender.			✓
Analysis: ***Not Applicable***				
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.			✓
Strategy 29:	Update state policies to reflect sustainability and climate change priorities.			✓
Strategy 30:	Incorporate sustainability into government operations.			✓
Analysis: ***Not Applicable***				
7. Preserve the Natural Environment				
Strategy 31:	Improve water quality through reduced pollution and dumping.			✓
Strategy 32:	Support water reuse strategies to conserve water.			✓
Strategy 33:	Establish policies to protect Hawai‘i's unique marine ecosystems.			✓
Strategy 34:	Manage climate change impacts to marine resources.			✓

Hawai'i 2050 Sustainability Plan (HRS, Section 226-65) DA = Directly Applicable, IA = Indirectly Applicable, N/A = Not Applicable	DA	IA	N/A
Strategy 35: Protect and manage watersheds.			✓
Strategy 36: Continue to adopt strategies that protect land-based natural resources.	✓		
Strategy 37: Conserve working forest landscapes, protect forests from harm, and enhance public benefits from trees and forests.			✓
Analysis: This is directly applicable to the project as the new sewer and water lines will protect land based resources by providing new and improved transmission lines that will prevent failure and spillage long into the future.			
8. Perpetuate Traditional Ecological Knowledge and Values			
Strategy 38: Ground climate and sustainability strategies in our cultural foundation.			✓
Analysis: Not Applicable.			

The project is directly applicable to the 2050 Sustainability Plan as it will provide new sewer and waterlines which will help to preserve the natural environment. The new sewer lines will replace existing cesspool and septic systems which will ensure that potential impacts to the natural environment are minimized as the new sewerline will be structurally sound and are needed. The replacement waterline will be an improvement of the existing line to ensure that water transmission occurs uninterrupted, reducing the chance of water-line failure. This project will ensure that the future of the region has a reduced risk of sewage or water spills, thereby reducing potential impact on the environment.

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 foregoing 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.

The table 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 "F-2"**.

1. **Directly applicable:** the action and its potential effects directly advance, promote, or affect the relevant goal, objective, or policy.

2. **Indirectly applicable:** the action and its potential effects indirectly support, advance, or affect 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 **Appendix "F-2"** and summarized below focuses on key elements of the proposed action's relationship to the Countywide Policy Plan. **Table 5** below, presents a summary of the Countywide Policy Plan in relation to the proposed project. Detailed discussion on the applicability of the proposed action to each goal and related objectives, policies, and implementing actions of the Countywide Policy Plan is provided in **Appendix "F-2"**.

Table 5. Summary of Project's Applicability to 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.		✓	
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.		✓	
C. IMPROVE EDUCATION			
Goal: Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.			✓
D. STRENGTHEN SOCIAL AND HEALTHCARE SERVICES			
Goal: Health and social services in Maui County will fully and comprehensively serve all segments of the population.			✓
E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS			
Goal: Quality, island-appropriate housing will be available to all residents.			✓
F. STRENGTHEN THE LOCAL ECONOMY			
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.		✓	
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.			✓
H. DIVERSIFY TRANSPORTATION OPTIONS			
Goal: Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.			✓
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.	✓		
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.		✓	
K. STRIVE FOR GOOD GOVERNANCE			
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.		✓	
L. MITIGATE CLIMATE CHANGE AND WORK TOWARD RESILIENCE			
Goal: Minimize the causes and negative effects of climate change.		✓	

The proposed action involves the installation of a sewer system and waterline improvements in a residential area, supporting the goal for improving physical infrastructure, specifically waste-disposal and water systems, through the provision of adequate sewerage facilities to safely and properly treat, reuse, and dispose of wastewater and provide for enhanced fire protection. The proposed action will comply with regulatory requirements of the environmental review process that advances transparency in the flow of project-related information to the public and allows for early consultation and public input for the proposed project. Included in the environmental review process is the completion of a biological resources survey with the objective of preserving the natural environment and indigenous and endemic species' habitats if found within the project area. Furthermore, the proposed sewer improvements are consistent with the plans of the County's Capital Improvement Program.

2. <u>Maui Island Plan</u>

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 (STB), and rural growth boundaries (RGB). The respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

The proposed project is located within the STB of the MIP. In this regard, it is consistent with the directed growth strategy defined via growth maps adopted in the MIP. See **Figure 12**.

The table 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 "F-3"**.

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

2. **Indirectly applicable:** the action's potential effects indirectly support or advance 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 **Appendix "F-3"** and summarized below in **Table 6**, 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 "F-3"**.

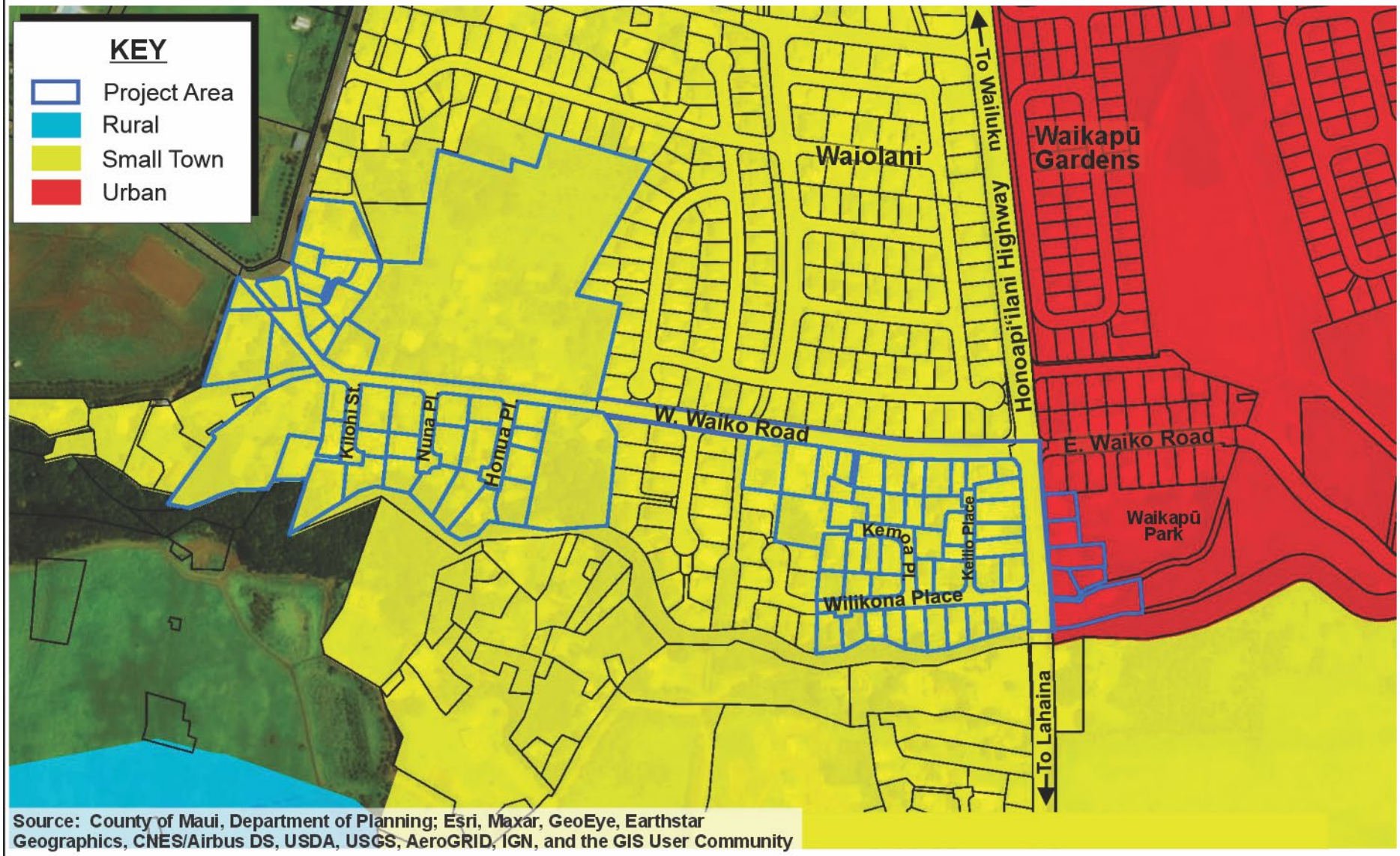


Figure 12

Waiko Road Sewer System and Waterline Improvements

Maui Island Plan

0 225 112.5 450 Feet

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/MIP

Table 6. Summary of Project's Applicability to Maui Island Plan

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.			✓
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.		✓	
SHORELINE, REEFS, AND NEARSHORE WATERS			
2.2 An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.		✓	
WATERSHEDS, STREAMS, AND WETLANDS ISSUES			
2.3 Healthy watersheds, streams, and riparian environments.	✓		
WILDLIFE AND NATURAL AREAS			
2.4 Maui's natural areas and indigenous flora and fauna will be protected.		✓	
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.			✓
CHAPTER 3 – NATURAL HAZARDS			
3.1 Maui will be disaster resilient.			✓
CHAPTER 4 – ECONOMIC DEVELOPMENT			
ECONOMIC DIVERSIFICATION			
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.		✓	
TOURISM			
4.2 A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.			✓
AGRICULTURE			
4.3 Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
EMERGING SECTORS			
4.4 A diverse array of emerging economic sectors.			✓
SMALL BUSINESS DEVELOPMENT			
4.5 Small businesses will play a key role in Maui's economy.			✓
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.			✓
EDUCATION AND WORKFORCE DEVELOPMENT			
4.7 Maui will have effective education and workforce development programs and initiatives that are aligned with economic development goals.			✓
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.			✓
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.			✓
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.	✓		
WATER			
6.3 Maui will have an environmentally sustainable, reliable, safe, and efficient water system.	✓		
TRANSPORTATION			
6.4 An interconnected, efficient, and well-maintained, multimodal transportation system.			✓
TRANSIT			
6.5 An island-wide transit system that addresses the needs of residents and visitors and contributes to healthy and livable communities.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
PARKS			
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.			✓
PUBLIC FACILITIES			
6.7 Maui will have adequate public facilities that meet the diverse needs of residents.			✓
SCHOOLS AND LIBRARIES			
6.8 Maui will have school and library facilities that meet residents' needs and goals.			✓
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.			✓
ENERGY			
6.10 Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.			✓
HARBORS AND AIRPORT			
6.11 Maui will have harbors and airports that will efficiently, dependably, and safely facilitate the movement of passengers and cargo.			✓
CHAPTER 7 – LAND USE			
AGRICULTURAL LANDS			
7.1 Maui will have a prosperous agricultural industry and will protect agricultural lands.			✓
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.			✓
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.			✓
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.	✓		

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
RURAL GROWTH AREA			
8.2 Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations.			✓

The proposed action is directly applicable to the goal of providing access to adequate wastewater facilities through the installation of a sewer system that will connect to the County wastewater treatment facility. Further, the proposed action will provide enhanced fire protection by improving the existing waterlines in the project area. The continued treatment of wastewater directly supports the protection of nearby water sources. Additionally, a flora and fauna survey addressing biological resources in the project area was conducted as part of the environmental review process. This assessment addresses the objective of identification and protection (as applicable) of wildlife habitats. The proposed project area is located within the STB and the UGB and is in consonance with the related objective and policies of the Maui Island Plan.

F. WAILUKU-KAHULUI COMMUNITY PLAN

The project site is located within the Wailuku-Kahului 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 Wailuku-Kahului 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 Wailuku-Kahului Community Plan was adopted by the County of Maui through Ordinance Number 3061 and became effective on June 5, 2002. The Community Plan land use map designates the project area as "Single-Family" and "Commercial". See **Figure 13**.

The proposed project is consistent with the following goals, objectives, and policies of the Wailuku-Kahului Community Plan as outlined below.

ENVIRONMENT

Goal:

A clean and attractive physical and natural environment in which man-made developments or alterations to the natural environment relate to sound environmental and ecological practices, and important scenic and open space resources are maintained for public use and enjoyment.

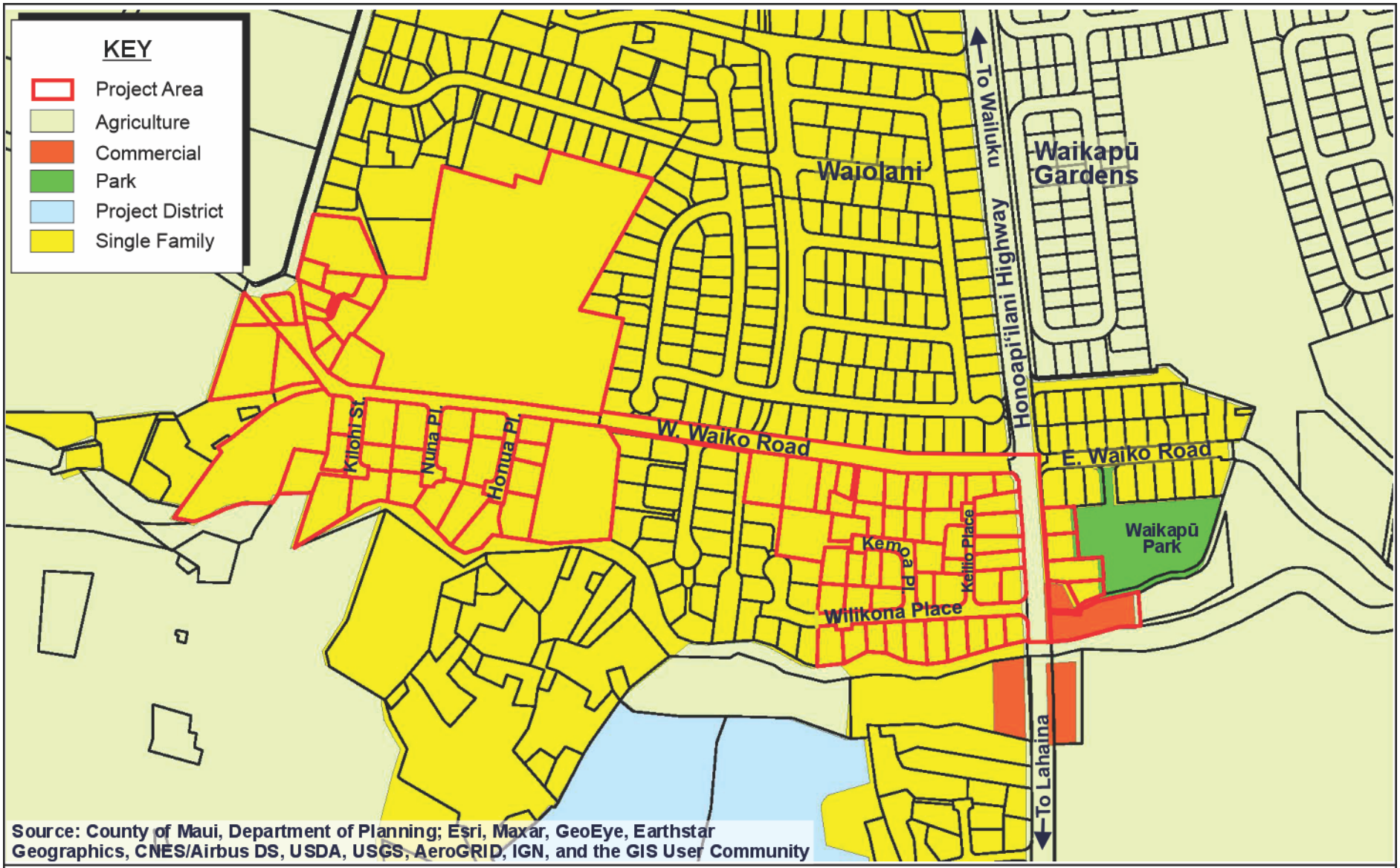


Figure 13

Waiko Road Sewer System and Waterline Improvements

Wailuku-Kahului Community Plan

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/WKCP

Objectives and Policies:

- *Protect nearshore waters by ensuring that discharges from waste disposal meet water quality standards. Continuous monitoring of existing and future waste disposal systems is necessary to ensure their efficient operation.*

- *Protect shoreline wetland resources and flood plain areas as valuable natural systems and open space resources. These natural systems are important for flood control, as habitat area for wildlife, and for various forms of recreation. Future development actions should emphasize flood prevention and protection of the natural landscape.*

Discussion and Response: The proposed sewer system and waterline replacement project will connect approximately 100 lots to the County sewer system, ensuring wastewater is properly treated, and eliminating the need for many cesspools and septic systems that can have long term effects on the surrounding environment and drinking water sources. The proposed project will allow for the proper treatment of wastewater and can prevent the potential contamination of nearby water sources.

CULTURAL RESOURCES

Goal:

Identification, protection, preservation, enhancement, and where appropriate, use of cultural practices and sites, historic sites and structures, and cultural landscapes and view planes that:

- *Provide a sense of history and define a sense of place for the Wailuku-Kahului region; and*

- *Preserve and protect native Hawaiian rights and practices customarily and traditionally exercised for subsistence, cultural and religious purposes in accordance with Article XII, Section 7, of the Hawaii State Constitution, and the Hawaii Supreme Court's PASH opinion, 79 HAW. 425 (1995).*

Objective and Policy:

Recognize the importance of historically and archaeologically sensitive sites and encourage their preservation through development project review.

Discussion and Response: The project prepared a CIA which included consultation with various cultural groups including the SHPD, Office of Hawaiian Affairs, and the Maui/Lānaʻi Islands Burial Council. Refer to **Appendix "E"**.

GOVERNMENT

Goal:

Government that demonstrates the highest standards of fairness; responsiveness to the needs of the community; fiscal integrity; effectiveness in planning and implementation of programs and projects; a fair and equitable approach to taxation and regulation; and efficient, results oriented management.

Objective and Policy:

- *Utilize the County's budgeting process as a means of carrying out the policies and priorities of the Community Plan*

- *Ensure that adequate infrastructure is or will be available to accommodate planned development.*

Implementing Action:

Explore feasibility of extending sewer service to unserviced areas as part of comprehensive sewer system planning.

Discussion and Response: The proposed project will connect approximately 100 lots to the County wastewater treatment facility, providing adequate infrastructure for residents of the affected lots which are currently not connected to County sewerlines. Further, the proposed waterline improvements will provide enhanced fire protection for the existing residences in the area.

INFRASTRUCTURE

Goal:

Timely and environmentally sound planning, development and maintenance of infrastructure systems which serve to protect and preserve the safety and health of the region's residents, commuters and visitors through the provision of clean water, effective waste disposal and drainage systems, and efficient transportation systems which meet the needs of the community.

Discussion and Response: The proposed project has been planned to improve existing sewer and water lines. This will improve not only health of residents, but will also help to mitigate environmental risks. The newer and more efficient systems mark a commitment to the future for this region in Maui and will improve daily living for residents.

LIQUID AND SOLID WASTE

Objective and Policy:

- *Coordinate sewer system improvement plans with future growth requirements, as defined in the Community Plan.*

Discussion and Response: The proposed sewer system improvements serve to protect and preserve the safety and health of the project area's residents through the provision of a sewer system to ensure the continued treatment of wastewater.

COUNTY ZONING

The land underlying the proposed project site is zoned "Agriculture" with one (1) project parcel zoned for "Business Country Town" by the Maui County Zoning Ordinance. See **Figure 14**. The proposed action involves the installation of sewerlines and waterlines and is considered to be a permitted use within the "Agricultural" district. The affected roadways are not classified by Maui County Zoning. Section 19.04.040 of the Maui County Code defines minor utility facilities as "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". As previously discussed, the project area is primarily residential in its current use and is surrounded by similar residential communities and subdivisions. The one (1) parcel located within the Business Country Town Work district contains several small-scale commercial buildings. The work proposed within this parcel is limited to the installation of sewer laterals to connect the lot to the County sewer system. The commercial use of the parcel and the "country town" atmosphere will be maintained.

G. HAWAIʻI COASTAL ZONE MANAGEMENT PROGRAM

The Hawaiʻi Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawaiʻi's coastal zone. Although the proposed improvements are not within the County of Maui's Special Management Area (SMA), 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.

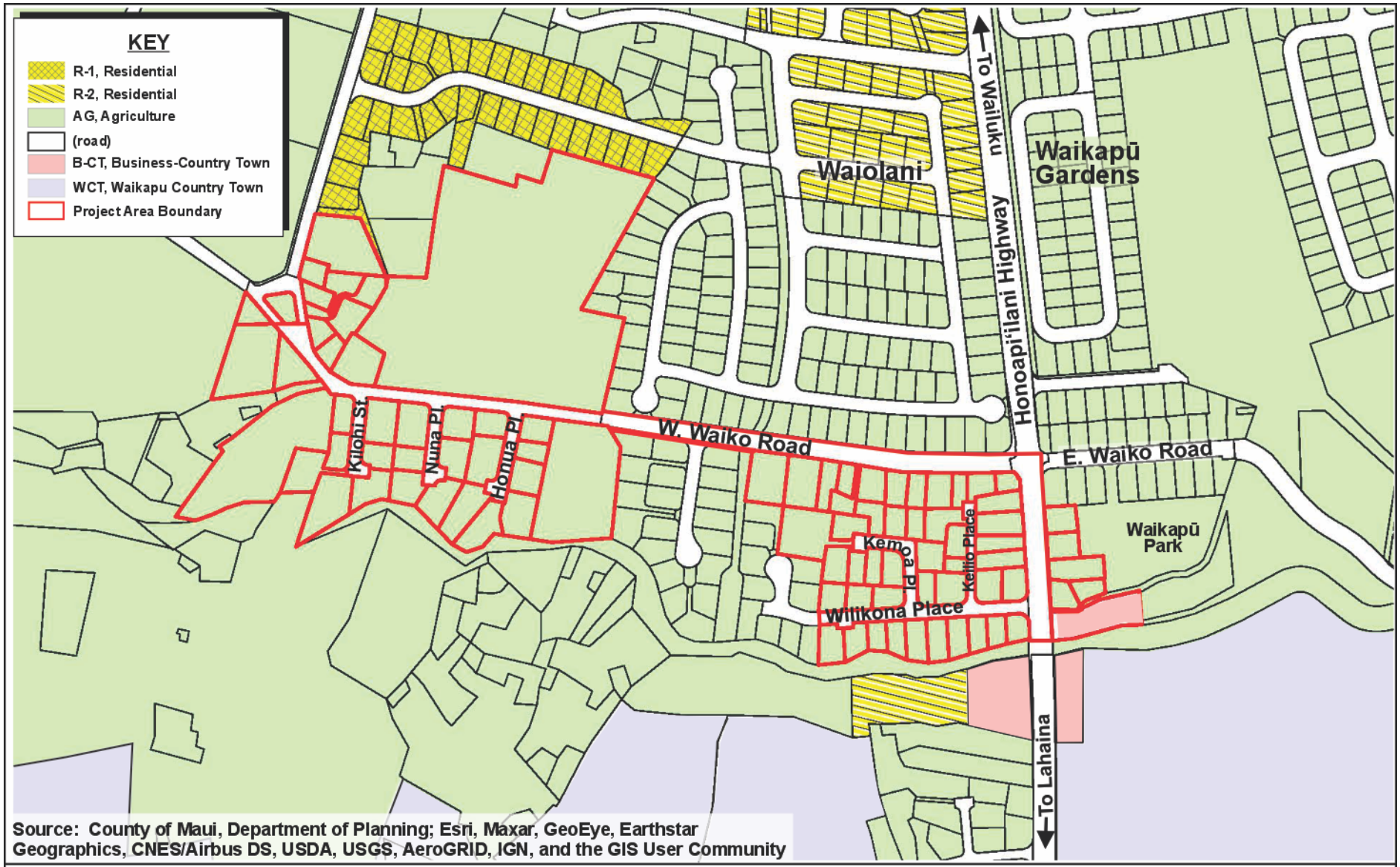


Figure 14

Waiko Road Sewer System and Waterline Improvements

Maui County Zoning Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUE/Waikapu Sewer Improvements/Applications/Figures/MCZ

1. Recreational Resources

Objective:

Provide coastal recreational opportunities accessible to the public.

Policies:

a. Improve coordination and funding of coastal recreational planning and management; and

b. Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by

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

ii. Requiring restoration of coastal resources that have significant 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 federal 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; Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

vii. 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 that dedication against the requirements of section 46-6.

Response: The project site is located inland and away from the coastline. The proposed action is not anticipated to impact coastal recreational opportunities or affect existing public access to and along the shoreline.

2. Historic/Cultural 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: A CIA conducted as part of the environmental review process demonstrates an effort to preserve Hawai‘i’s natural and historical resources and protect Hawai‘i’s ethnic and cultural heritage. The SHPD has been consulted regarding archaeological review and the proposed project will comply with the SHPD’s recommendations for mitigation. Additionally, an AMP was prepared, following consultation with SHPD and was submitted to SHPD for review and approval. The approved plan will be implemented during construction.

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: As indicated previously, the project is located inland and not on or near the shoreline. Further, all of the proposed improvements will be located underground. The proposed project is not anticipated to adversely impact coastal scenic and open space 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: The proposed project is located inland, away from coastal ecosystems and is, therefore, not anticipated to have adverse impacts on coastal/shoreline resources, including reefs, beaches, dunes, and marine resources. Appropriate BMPs will be utilized to ensure that construction runoff is appropriately detained, minimizing any potential impact on coastal waters.

5. Economic Use

Objective:

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

Policies:

a. Concentrate coastal dependent development in appropriate areas;

b. Ensure that coastal dependent development 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 proposed project is not a coastal dependent or related development. The project site is located inland from the shoreline. The proposed project will stimulate the economy through design and construction activity. The project will also generate revenue for the County from the new sewer user accounts that would be established for lots in the project area. As there are existing waterlines in the area, no new revenue is anticipated for the County. The proposed project does not contravene the objective and policies for economic use.

6. Coastal Hazards

Objective:

Reduce hazard to life and property from coastal hazards.

Policies:

a. Develop and communicate adequate information about the risks 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: According to the FEMA Flood Insurance Rate Map for the area, the project site falls within Zones X and AE. A majority of the project area is in Zone X, which is considered an area of minimal flooding. There are several parcels of the project site that are partially within zone AE, which FEMA classifies as a high-risk flood area, due to their proximity to the Waikapū Stream. The lines installed through the proposed project will be subsurface, and therefore, it is not anticipated to be adversely impacted by flooding or create additional flood hazards. In addition, the project site is not located within the tsunami evacuation zone or projected 3.2-foot sea-level rise exposure area. Adverse impacts to hazard-sensitive areas are not anticipated.

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: Opportunities for agency and public review of the proposed action are provided pursuant to Chapter 343, HRS. In addition, the public had an opportunity to provide comments on the Draft EA during the 30-day public comment period. Responses to public comments are provided in the Final EA. See Chapter X of this document.

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 agency and public review of the proposed action are also provided through the comment processes pursuant to Chapter 343, HRS.

9. Beach and Coastal Dune Protection

Objectives:

a. Protect beaches and coastal dunes for:

i. Public use and recreation;

ii. The benefit of coastal ecosystems; 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 site is located inland, away from the shoreline and is not anticipated to impact coastal and shoreline processes.

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 project is located inland, away from the ocean and is, therefore, not anticipated to have an impact on marine or coastal resources.

H. HAWAIʻI CLEAN WATER STATE REVOLVING FUND ENVIRONMENTAL CROSSCUTTERS

The proposed project may be funded in part by the Hawaiʻi Clean Water SRF. As such, the project will comply with the Environmental Cross-Cutters and Federal Requirements for Clean Water SRF projects. **Table 7** below 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).	An Archaeological Assessment, AMP and CIA were prepared for this project. The Draft EA was provided to the SHPD for review and comment.	**Approved AMP**
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 ensure project conforms with State Implementation Plan (SIP).	State Department of Health, Clean Air Branch.	The Draft EA was provided to the Department of Health for review and comment.	See **Chapter II, Section A.10** of this Final 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-1, HRS, the project site is within the Coastal Zone Management Area, which encompasses all lands of the State. The project site is, however, outside of the SMA. A SMA permit is not required.	See **Chapter III, Section F** of this Final EA document for discussion of the Coastal Zone Management Program review criteria.
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 was provided to USFWS for review and comment.	See **Chapter II, Section A.7** of this Final EA document for discussion on flora and fauna in the area.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
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. In addition, the project will upgrade wastewater infrastructure in an area of existing residential development.	Refer to **Chapter II, Section B** of this Final 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 area includes areas in Flood Zone X and Flood Zone AE. Flood Development Permits will be secured from the Department of Public Works, as may be applicable, prior to the start of construction.	Refer to **Chapter II, Section A.5** of this Final 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)	The USACE received an early consultation letter on the project and was provided with a copy of the Draft EA for review and comment.	Refer to **Chapter IX** of this Final EA document for the early consultation letter distribution list. Refer to **Chapter II, Section A.6** of this Final 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)	Not Applicable. The project site consists of residential lots and public roadways.	Refer to **Chapter II, Section A.4** of this Final EA document for a discussion of agriculture.
11.	Fish and Wildlife Coordination Act	Obtain review for all projects.	USFWS	The USFWS received an early consultation letter and was provided with a copy of the Draft EA for review and comment.	Refer to **Chapter IX** of this Final EA document for the distribution list. Refer to **Chapter II, Section A.7** of this Final 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	Not applicable. The project site is located over three (3) miles inland of the nearest coastline. The proposed project will not affect essential fish habitats.	Refer to **Chapter III, Section F** of this Final EA document for a discussion of coastal zone management.
13.	Migratory Bird Treaty Act	Obtain review, if project impacts breeding bird species.	USFWS	The USFWS received an early consultation letter and was provided with a copy of the Draft EA for review and comment. Recommended conservation measures will be implemented, including but not limited to, the shielding of outdoor lighting and avoiding nighttime construction during the seabird fledging period. In addition, the USFWS will be contacted within 48 hours should any seabirds, waterbirds or their nests be observed in the project area.	Refer to **Chapter IX** of this EA document for the USFWS early consultation comments. Refer to **Chapter II, Section A.7** of this Final EA document for discussion of flora and fauna resources.
14.	National Historic Preservation Act (NHPA)	Obtain review for all projects.	SHPD	An Archaeological Assessment and an AMP were prepared for the project. The Draft EA was provided to the SHPD for review and comment.	The project will abide by requirements of the State Historic Preservation Officer regarding archaeological mitigation for the project. An AMP has been prepared and was submitted to the SHPD for review and approval.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
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 area borders the Waikapū Stream, however, there will be no work within the waters of the U.S. The Draft EA was provided to the USACE for review and comment.	Refer to **Chapter IX** for comments from USACE.
16.	Safe Drinking Water Act	Obtain review, if project could affect sole source aquifer.	State Department of Health, Safe Drinking Water Branch (DOH-SDWB)	The proposed project will not affect a sole source aquifer. The Draft EA was provided to the DOH-SDWB for review and comment.	Refer to **Chapter II, Section D.2** of this EA document for a discussion of water resources.
17.	Wild and Scenic Rivers Act	Obtain review, if project is located in an 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 over three (3) miles inland of the nearest coastline. The proposed project will not affect essential fish habitats.	Not applicable.

IV ALTERNATIVES TO THE PROPOSED ACTION

IV. ALTERNATIVES TO THE PROPOSED ACTION

The following is a discussion of the various development alternatives that have been considered by the Applicant as part of the planning process.

A. PREFERRED ALTERNATIVE

The preferred alternative is the proposed sewer system and waterline replacement described in Chapter I of this document. The proposed sewer system represents a use which will serve to advance the County of Maui Department of Environmental Management (DEM) efforts to provide adequate sewerage facilities to Maui residents. Further, the proposed waterline replacement improvements will also provide the opportunity for enhanced fire protection in the area with the installation of fire hydrants.

The preferred alternative proposes the construction of a sewer system and waterlines in an existing residential subdivision, making prudent use of land and resources. As such, the preferred alternative is deemed the most appropriate.

B. ALTERNATIVE CONFIGURATIONS

The DEM initially contemplated sewer system improvements involving 3,000 linear feet of gravity sewerline, to connect approximately 75 lots to the County sewer system. The preferred alternative, which involves 5,800 linear feet of sewerline, was selected in order to connect more lots which would allow for County wastewater treatment to approximately 100 lots.

C. NO ACTION ALTERNATIVE

Under the “no action” alternative, the project site would remain “as is”. The “no action” alternative is not considered to be in the best interest of affected Waikapū residents as the “no action” alternative would not connect the lots of the proposed project area to the County sewer system and would not provide alternatives to cesspools and septic tanks currently utilized in the project area. Further, without the proposed waterline improvements, the project area would not be able to install fire hydrants for enhance fire protection. The “no action” alternative is contrary to DEM’s plans to connect a residential subdivision to the County sewer system and the Department of Water Supply (DWS) goal to provide for increased fire protection. In this context, the proposed project is considered the most appropriate alternative.

D. DEFERRED ACTION ALTERNATIVE

A deferral of the proposed action means that the development proposal would be pursued at a later point in time. The deferral alternative is not considered viable in the long term as it does not offer alternatives to cesspools and septic tanks which may have enduring effects on the surrounding environment. Further, the delay in installing the waterline replacement improvements would delay additional fire protection for area residents. Deferring this project is contrary to the DEM and the DWS's goals to provide for improved infrastructure in the area. With this in mind, the "deferred action alternative" is not considered appropriate.

V

SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

V. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

An assessment of construction-related and post construction-related impacts on the physical and socio-economic environment, including a biological resources survey, a Cultural Impact Assessment, and archaeological consultation were carried out as part of the environmental assessment documentation process. The proposed development may result in limited, unavoidable construction-related impacts on the environment, as described in Chapter II.

Construction-related impacts may include those related to noise generation occurring from heavy equipment used for site preparation and construction activities. In addition, temporary air quality impacts associated with dust generation from construction activities and exhaust emissions discharged by construction equipment are also likely. However, during construction, these impacts are temporary and will be mitigated through the use of appropriate Best Management Practices (BMPs), watering of exposed surfaces, installing dust screens, and regular maintenance of construction equipment. Upon completion, the proposed project is not expected to be a source of long-term adverse air or noise conditions. The proposed project includes site and road drainage systems designed as a mitigation control measure to protect downstream properties and coastal waters from storm water runoff.

In summary, the proposed action is not anticipated to create any significant, long-term adverse environmental effects.

VI

IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

The proposed action is anticipated to result in the irreversible and irretrievable commitment of natural and fiscal resources. Other resource commitments include labor and material resources. This commitment, however, is considered appropriate insofar as the proposed action seeks to connect approximately 100 lots in Waikapū to the County sewer system, replace waterlines, and install fire hydrants within the project area.

LIST OF PERMITS AND APPROVALS

VII

VII. LIST OF PERMITS AND APPROVALS

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

State of Hawai‘i

1. Chapter 343, Hawai‘i Revised Statutes (HRS), Environmental Assessment
2. Chapter 6E-8 HRS, archaeology
3. Chapter 11-46 HRS, Community Noise Control, as applicable
4. Chapter 11-60.1-33 HRS, Fugitive Dust, as applicable
5. National Pollutant Discharge Elimination System (NPDES) Permit, as applicable
6. Roadway Permit

County of Maui

1. Construction permits (i.e., building and grading permits)

SIGNIFICANCE CRITERIA ASSESSMENT

VIII

VIII. 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 of the Administrative Rules. The following criteria and analyses are provided.

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

There are no known rare, threatened, or endangered species of flora, fauna, avifauna, or important habitats located within the project site. Further, based on consultation with the SHPD, archaeological monitoring will be required during all ground altering work for the project. An Archaeological Monitoring Plan (AMP) was prepared and submitted to the SHPD for review and approval. The SHPD approved the AMP via letter in September 2025. Additionally, a Cultural Impact Assessment (CIA) report was prepared for the proposed project. Through research into the project area and consultation with long-time area residents and those with cultural background, it was determined that there are no existing cultural practices occurring in the project area. Refer to **Appendix "D-2"** and **Appendix "E"**.

With the mitigation measures presented herein, the proposed project will not involve an irrevocable commitment to loss or destruction of any natural, cultural, or historic resources.

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

The proposed action will be implemented within a previously developed residential subdivision near other similar residential communities; and the commitment of land resources for the proposed action will not curtail the range of beneficial uses of the environment. The proposed use of the site for development of a new sewer system and replacement of existing waterline infrastructure is compatible with surrounding uses.

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

The proposed action does not conflict with the policies and guidelines of Chapter 343, HRS. An environmental assessment (EA) has been carried out to ensure the proposed

project will not have significant adverse impacts on environmental resources. While this project may cause adverse impacts, based on the analysis conducted in this EA, the adverse impacts are not anticipated to be significant.

Where mitigation measures are required due to potential impacts attributed to the project, the Department of Environmental Management (DEM) and Department of Water Supply (DWS) will implement those applicable measures to further reduce adverse impacts.

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

The proposed action will have a beneficial effect on the local economy during the design, construction, and maintenance of the sewer system.

In addition, a CIA and AMP were prepared for the proposed project. No cultural resources or activities were identified as occurring within the project area. Furthermore, archaeological monitoring will be undertaken for all ground disturbance activities.

5. Have a substantial adverse effect on public health.

The proposed project will have a beneficial effect on public health through the treatment of wastewater, which if left untreated, can be a public health hazard. In addition, the project is not anticipated to result in long-term air or noise impacts. Furthermore, the proposed action is not anticipated to create significant direct or indirect foreseeable greenhouse gas (GHG) emissions and does not fall within the threshold of mandatory GHG reporting. Lastly, the waterline replacement improvements will provide for additional fire protection with the installation of fire hydrants in the area. As such, no adverse impact to public health or welfare is anticipated as a result of the proposed action.

6. Involve adverse secondary impacts, such as population changes or effect on public facilities.

The proposed project involves the installation of a sewer system and replacement of existing waterline infrastructure in an existing residential community of Waikapū and is not anticipated to have secondary impacts on population. The sewer system is being constructed to connect residential lots in Waikapū to the County sewer system and wastewater reclamation facility. This may result in increased use of the wastewater treatment facility, however, it is not anticipated to have a significant adverse impact on public facilities. Similarly, the waterline improvements will serve the existing community and as such, are not anticipated to effect population changes or affect public facilities.

7. Involve a substantial degradation of environmental quality.

No substantial degradation of environmental quality resulting from the action is anticipated. Best Management Practices (BMPs) and appropriate erosion control

measures will be utilized during the construction period. As subsurface improvements, the project area will be returned to the same general condition as prior to the construction activities. Surface runoff is not anticipated to have an adverse effect on adjacent or downstream properties as it will continue to flow as prior to the installation of improvements.

Any potential short-term impacts to air and noise quality during the construction phase of the project will be mitigated through employing BMPs. In the long term, the project will not adversely impact air quality and ambient noise.

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

The proposed action is limited to the development of the proposed sewer system and waterline replacements and is not a phase or increment of a larger total undertaking; a necessary precedent for a larger project; a commitment to some larger project; or one (1) of a series of individual actions planned by the DEM or the DWS within the area in the reasonably foreseeable future. The cumulative impacts of the proposed project, when considered alongside other reasonably foreseeable actions, include routine maintenance of the sewer system. However, this maintenance is not expected to result in significant environmental effects. Therefore, the proposed project is not anticipated to contribute to cumulative impacts that are considerable in nature, nor does it represent a commitment to a larger project or series of actions.

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

A Flora and Fauna Survey report was prepared to ensure that any sensitive terrestrial flora/fauna biological resources within the project site would be identified and provided adequate protection. No rare, threatened, or endangered species of flora, fauna, avifauna, or important habitats were identified on the affected properties. Refer to **Appendices "C-1"** and **"C-2"**. In addition, consultation has been undertaken with the U.S. Fish and Wildlife Service (USFWS). It is noted that although not observed during the flora and fauna survey, species of conservation concern such as the endangered ōpeʻapeʻa or Hawaiian Hoary Bat, the endangered Blackburn Sphinx Moth, and the threatened nēnē or Hawaiian Goose have been recorded in the project area's vicinity. Endangered waterbirds and seabirds have also been known to transit the project area's vicinity. As such, the USFWS will be contacted for further guidance should any ōpeʻapeʻa, nēnē, Blackburn's sphinx moth, or endangered or threatened birds and appropriate habitats be observed during the staging and construction process. In addition, the following mitigation measures will be followed as applicable: Outdoor lighting will be shielded and downward facing; nighttime construction will be avoided during the seabird fledging period of September 15 to December 15; no disturbing of woody plants higher than 15 feet during the bat birthing and pup-rearing season of June 1 through September 15, and no use of barbed-wire

fencing. Furthermore, the project site is located adjacent to existing residential developments and roadways. The project is not anticipated to substantially affect rare, threatened, or endangered species, or its habitat.

10. Have a substantial adverse effect on air or water quality or ambient noise levels.

Construction activities will result in short-term air quality and noise impacts. BMPs, including erosion control and dust control measures (such as regular watering and sprinkling, installation of dust screens, and timely revegetation of graded areas), will be implemented to minimize wind-blown emissions. In the short term, noise impacts will occur primarily from construction equipment. Equipment mufflers or other noise attenuating equipment, as well as proper vehicle maintenance and limiting construction to daylight hours, will be used during construction activities. Construction noise impacts will be mitigated through compliance with the provisions of the State of Hawai'i, Department of Health Administrative Rules Title 11, Chapter 46, "Community Noise Control." These rules require a noise permit if the noise levels from construction activities are expected to exceed the allowable levels set forth in Chapter 46. In the long term, the proposed sewer system is not anticipated to significantly impact ambient noise levels.

As such, with implementation of the foregoing mitigation measures, the proposed project is not anticipated to detrimentally 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 a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters.

The project site is situated inland, outside of the 3.2-foot projected sea level rise exposure area and tsunami inundation zone and is not anticipated to have any adverse impact upon coastal waters or resources, beaches, estuaries, or other freshwater bodies.

According to the Federal Emergency Management Agency's Flood Insurance Rate Maps currently in effect, the project site primarily falls within Zone X (unshaded), an area of minimal flooding with the parcels on the lowest half of the project area partially situated within Flood Zone AE due to their proximity to the Waikapū Stream. Areas located within Flood Zone AE present a one (1) percent annual chance of flooding with base flood elevations determined. The proposed sewer system and waterline replacement will be constructed underground and are not anticipated to be affected by flood hazards.

During construction, recommended BMPs will be implemented for erosion and sedimentation control to minimize potential impacts to water quality.

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

The proposed sewer system and waterlines will be implemented underground and, therefore, are not anticipated to have substantial adverse effects on scenic vistas or viewplanes.

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

The proposed action will involve the short-term commitment of fuel for equipment, vehicles, and machinery during construction activities. However, this use is not anticipated to result in a substantial consumption of energy resources or substantial emission of GHGs.

The project's technical characteristics and related impact considerations were thoroughly evaluated. In accordance with HAR, Section 11-200.1-13, "Significance Criteria" every phase of the proposed action, the anticipated impacts, both primary and secondary, and the cumulative as well as the short-term and long-term effects of the action were considered. The analysis contained in this EA was supported through in-depth technical studies that were prepared by qualified professionals, and which were then reviewed by agencies having jurisdiction and expertise in their respective fields of authority.

Each section of the EA included a discussion and analysis of the impacts related to the respective environmental, infrastructural, public services and socio-economic parameters. While this project may cause impacts, based on the analysis conducted in the EA, the impacts are not anticipated to be significant. Where mitigation measures are required due to potential impacts attributed to the project, the DEM and/or DWS will implement those applicable measures to further reduce adverse impacts. Furthermore, the project will also result in positive impacts for the community.

In summary, the project will provide existing residents with access to County wastewater service and replace existing water infrastructure and add fire hydrants for additional safety measures. The proposed project is not anticipated to have a significant adverse impact on the surrounding physical, cultural, and socio-economic environments. Based on the preceding analysis in this EA document, and in accordance with the significance criteria set forth in 11-200.1-13, HAR, the proposed project has been determined to qualify for a finding of no significant impact (FONSI).

IX

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

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

The following agencies, organizations, and individuals were consulted during preparation of the Draft Environmental Assessment (EA). This Chapter addresses early consultation comments received from these agencies, organizations, and individuals.

FEDERAL AGENCIES

1. Gerald Gregory, District Conservationist
   U.S. Department of Agriculture
   Natural Resources Conservation Service
   77 Hoʻokele Street, Suite 202
   Kahului, Hawaiʻi 96732

2. Linda Speerstra, Chief
   U.S. Army Engineer District, Honolulu
   U.S. Department of the Army
   Regulatory Branch, Building 230
   Fort Shafter, Hawaiʻi 96858-5440
   (Via email: CEPOH0-RO@usace.army.mil)

3. Michelle Bogardus, Island Team Leader
   U. S. Fish and Wildlife Service
   300 Ala Moana Blvd., Rm. 3-122
   Honolulu, Hawaiʻi 96850

STATE AGENCIES

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

5. Dr. Christina Kishimoto, Superintendent
   State of Hawaiʻi
   Department of Education
   P.O. Box 2360
   Honolulu, Hawaiʻi 96804

6. Jade Butay, Director
   State of Hawaiʻi
   Department of Transportation
   869 Punchbowl Street
   Honolulu, Hawaiʻi 96813

7. State of Hawaiʻi
   Department of Land and Natural Resources
   State Historic Preservation Division, Maui
   130 Mahalani Street
   Wailuku, Hawaiʻi 96793

8. Dr. Sylvia Hussey, Chief Executive Officer
   State of Hawaiʻi
   Office of Hawaiian Affairs
   560 N. Nimitz Highway, Suite 200
   Honolulu, Hawaiʻi 96817

9. Mary Alice Evans, Director
   State of Hawaiʻi
   Office of Planning
   P. O. Box 2359
   Honolulu, Hawaiʻi 96804

MAUI COUNTY AGENCIES

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

11. Lori Tsuhako, Director
    County of Maui
    Department of Housing and Human Concerns
    2200 Main Street, Suite 546
    Wailuku, Hawaiʻi 96793

12. Karla Peters, Director
    County of Maui
    Department of Parks and Recreation
    700 Halia Nakoa Street, Unit 2F
    Wailuku, Hawaiʻi 96793

13. Michele Chouteau McLean, Director
    County of Maui
    Department of Planning
    2200 Main Street, Suite 315
    Wailuku, Hawai‘i 96793

14. Rowena Dagdag-Andaya, Director
    County of Maui
    Department of Public Works
    200 South High Street
    Wailuku, Hawai‘i 96793

15. Marc Takamori, Director
    County of Maui
    Department of Transportation
    110 Ala‘ihi Street, Suite 210
    Kahului, Hawai‘i 96732

16. Jeffrey Pearson, Director
    County of Maui
    Department of Water Supply
    200 South High Street, 5th Floor
    Wailuku, Hawai‘i 96793

17. Herman Andaya, Emergency Management Officer
    County of Maui
    Emergency Management Agency
    200 South High Street
    Wailuku, Hawai‘i 96793

18. Dean Rickard, Acting Chief
    County of Maui
    Police Department
    55 Mahalani Street
    Wailuku, Hawai‘i 96793

19. Honorable Alice Lee, Council Chair
    Maui County Council
    200 South High Street
    Wailuku, Hawai‘i 96793

MAUI COUNTY ORGANIZATIONS

20. Hawaiian Telecon
    60 South Church St
    Wailuku, Hawai‘i 96793

21. Marc Prince, Supervisor
    Hawaiian Electric
    P.O. Box 398
    Kahului, Hawai‘i 96733

22. Spectrum
    158 Ma‘a Street
    Kahului, Hawai‘i 96732

23. Travis Polido, President
    Waikapu Community Association
    P.O. Box 3046
    Wailuku, Hawai‘i 96793

24. Waikapu Gardens Homeowners Association
    P.O. Box 2390
    Wailuku, Hawai‘i 96793

25. Joseph G. Blackburn, II
    Waiolani Community Association
    P.O. Box 1067
    Wailuku, Hawai‘i 96793

26. Joseph G. Blackburn,II
    Waiolani Elua Community Association
    P.O. Box 1067
    Wailuku, Hawai‘i 96793

27. Joseph G. Blackburn, II
    Waiolani Mauka Community Association
    P.O. Box 1067
    Wailuku, Hawai‘i 96793

From: Winter, Frank J II CIV (USA) <Frank.J.Winter@usace.army.mil>
Sent: Thursday, July 22, 2021 9:43 AM
To: General eMail <planning@munekiyohiraga.com>
Subject: POH-2020-00115 (County of Maui, Department of Environmental Management, Waiko Road Subdivision Sewer System, Waikapu, Maui, HI)

Aloha,

Thank you for reaching out to the Corps in regards to the Waiko Road Subdivision Sewer System, Waikapu, Maui, HI. The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Branch has received your request for comments on June 10, 2021 for a Department of the Army (DA) scoping comments. Your request has been assigned DA file number POH-2020-00115. Please reference this number in all future correspondence with our office relating to this action.

To determine if a DA permit is required for a proposed action, the Corps must first determine whether the proposed project is located within the Corps' geographic jurisdiction (i.e., whether the activity is located within a water of the U.S.). If the activity is within a water of the U.S., the Corps must then determine whether the proposed project is a regulated activity under Section 10 and/or Section 404 or if the activity is exempt. The determination provided in this letter pertains only to the question of geographic jurisdiction.

Based on our review of the information you provided we are able to determine the project area may contain waters of the U.S., and/or wetlands, under the Corps' regulatory jurisdiction. More specifically the water feature that underpasses the Honoapiilani Highway south of Wilikona Place. I'm providing the following information in regards to the Regulatory program.

DA authorization is required if you propose to place dredged and/or fill material into waters of the U.S., including wetlands and/or perform work in navigable waters of the U.S.

Section 404 of the Clean Water Act requires that a DA permit be obtained for the placement or discharge of dredged and/or fill material into waters of the U.S., including jurisdictional wetlands (33 U.S.C. 1344). The Corps defines wetlands as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Section 10 of the Rivers and Harbors Act of 1899 requires that a DA permit be obtained for structures or work in or affecting navigable waters of the U.S. (33 U.S.C. 403). Section 10 waters are those waters subject to the ebb and flow of the tide shoreward to the mean high water mark, and/or other waters identified by the Honolulu District.

Based on the information provided, it would appear that there is a high probability that portions of the land being used would have waters of the US present on the site. As you are preparing the EA, it would be prudent to include a delineation of waters of the US for the Corps review. The Corps is requesting that all requests be submitted electronically to our general inbox (CEPOH-RO@usace.army.mil) which is monitored daily. If you have any questions or would like to discuss further please contact me via email

at Frank.J.Winter@usace.army.mil, by phone at (808) 835-4107 if you have questions. I appreciate your cooperation with the Corps' Regulatory Program.

Thank you,

Frank J. Winter
Biologist, Regulatory Branch
Honolulu District
U.S. Army Corps of Engineers
Building 230
Fort Shafter, Hawaii 96858-5440
808-835-4107
Frank.J.Winter@usace.army.mil

From: CEPOH-RO, POH <CEPOH-RO@usace.army.mil>
Sent: Friday, August 5, 2022 3:03 PM
To: General eMail
Cc: Speerstra, Linda CIV USARMY CEPOH (USA)
Subject: FW: Early Consultation Request for Waikapu Sewer Improvements
Attachments: US Dept of the Army.ecl.pdf

Aloha Ms. Emily Murai – thank you for reaching out to the Corps of Engineers regarding the Waikapu Sewer Improvements proposal. We appreciate the early coordination efforts and have the following information to offer:

The Corps' regulatory authorities are based on two laws: Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403), which prohibits the obstruction or alteration of navigable waters of the U.S. without a Department of the Army (DA) permit from the Corps; and Section 404 of the Clean Water Act (CWA), which prohibits the discharge of dredged or fill material into waters of the U.S. without a DA permit. Based on information provided, and available to our office, portions of the proposed work may occur in waters of the U.S. and would, therefore, be within the Corps' jurisdiction.

Waters of the U.S. include, but are not limited to, tidal waters, rivers both perennial and intermittent streams and wetlands. Wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include "muskegs," swamps, marshes, bogs, and similar areas.

The Corps' evaluation of a Section 10 and/or a Section 404 permit application involves multiple analyses, including (1) evaluating the proposal's impacts in accordance with the National Environmental Policy Act (NEPA) (33 CFR part 325), (2) determining whether the proposal is contrary to the public interest (33 CFR § 320.4), and (3) in the case of a Section 404 permit, determining whether the proposal complies with the Section 404(b)(1) Guidelines (Guidelines) (40 CFR part 230).

If work is to be conducted in waters of the United States, both a Section 404 and Section 10 permit application (this is a combined application), may be required. Additionally, the Guidelines specifically require that "no discharge of dredged or fill material shall be permitted if there is a practicable alternative to the proposed discharge which would have less adverse impact on the aquatic ecosystem, so long as the alternative does not have other significant adverse environmental consequences" (40 CFR § 230.10(a)).

If consultation under Section 106 is required, the Corps would request pursuant to 36 CFR 800.2(c)(3), that the County/Agent be designated as our non-Federal representative to conduct section 106 consultation for the proposed undertaking. The Corps would remain officially responsible for all required findings and determinations. Additionally, the Corps will be responsible for ensuring the contents of documents prepared by the non-Federal party meets applicable standards. Please reach out to me for further information regarding this designation.

As an application for a DA permit has not yet been submitted, we recommend a pre-application consultation meeting with the Corps to obtain information regarding the Endangered Species Act, Essential Fish Habitat

and Section 106 regarding historic properties. We would further discuss the data, studies or other information that will be necessary for the permit evaluation process.

Thank you for the early scoping on this project. We look forward to working with you. Linda

Linda Speerstra
Chief, Regulatory Branch
U.S. Army Corps of Engineers
Honolulu District
808-835-4300

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

September 10, 2025

Via email: CEPOH-RO@usace.army.mil

U.S. Army Corps of Engineers, Honolulu District
Regulatory Branch, Building 230
Fort Shafter, Hawai'i 96858-5440

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i; POH-2020-0115

Dear Sir or Madame:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's emails, dated July 22, 2021 and August 5, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

We understand that your agency reviewed our early consultation correspondence in relation to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, both of which require Department of Army (DA) authorization, if triggered. We note that based on the Corps' review of the provided information, DA authorization may be required if the project will affect waters of the U.S., including tidal waters, rivers both perennial and intermittent streams, and wetlands. We also acknowledge that wetlands are defined as areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

At this point in time, the project does not anticipate any construction activities in or near any waters of the U.S.; project improvements will be limited to existing roadway rights-of-way and will be constructed at least 100 feet away from the Waikapū Stream which lies adjacent to the project area. We acknowledge that if this project is anticipated to affect waters of the U.S., a jurisdictional determination should be sought, and that DA authorization will be required should the project involve placing dredged or fill material into U.S. waters. Should there be a change in plans whereby improvements would be within the stream, the DEM will coordinate with the Corps' office on said delineation.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\ARMY.docx

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

In Reply Refer To:
01EPIF00-2021-SL-0346

June 28, 2021

Emily Murai
Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawai‘i 96793

Subject: Species List for the Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System in Wailuku, Island and County of Maui

Dear Emily Murai:

The U.S. Fish and Wildlife Service (Service) received your correspondence on June 15, 2021, requesting a species list for the Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System in Wailuku on Maui. The anticipated affected Tax Map Key's (TMKs) within the project include, but not limited to the following TMKs: (2) 3-5-010:001, 033, 034, 036, 037, 038; (2) 3-5-011: 001-041, (2) 3-5-001:043-046; and (2) 3-5-011:048. The Service offers the following comments to assist you in your planning process so that impacts to trust resources can be avoided through site preparation, construction, and operation. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C 1531 *et seq.*).

Project Description

The County of Maui, Department of Environmental Management proposes the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 3,000 linear feet of gravity sewerline and service laterals to connect approximately 75 lots in the Waikapū area. The new sewer system will connect to an existing manhole located on East Waiko Road and the new sewerlines will be located within the West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, and Keilio Place.

The use of County lands and State lands and funds is a trigger for the preparation of an Environmental Assessment (EA) pursuant to State of Hawai'i regulations (HRS Chapter 343).

The Draft EA will be prepared for this project to address the technical characteristics, potential environmental impacts, and alternatives. State Revolving Funds through the Environmental Protection Agency will also be used for this project, therefore, the applicable federal authorities will be addressed in the Draft EA.

Based on information you provided and pertinent information in our files, including data compiled by the Hawaii Biodiversity and Mapping Project, there nine listed species in the immediate vicinity of the project area: the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), the threatened Hawaiian goose (*Branta (Nesochen) sandvicensis*), and the endangered Blackburn's sphinx moth (*Manduca blackburni*), the endangered Hawaiian stilt, (*Himantopus mexicanus knudseni*), the endangered Hawaiian coot (*Fulica alai*), and the endangered Hawaiian duck (*Anas wyvilliana*). Additionally, the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered Hawai'i Distinct Population Segment of the band-rumped storm-petrel (*Oceanodroma castro*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*) may transit the project area flying to upland breeding colonies.

To avoid and minimize potential project impacts to listed species, the following measures are recommended:

Hawaiian hoary bat: The Hawaiian hoary bat roosts in woody vegetation across all islands and will leave their young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, June 1 through September 15, there is a risk that young bats could inadvertently be harmed or killed, since they are too young to fly or move away from disturbance. Hawaiian hoary bats forage for insects from as low as 3 feet to higher than 500 feet above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you incorporate the following applicable measures into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Hawaiian goose: The Hawaiian goose are found on the islands of Hawai'i, Mau'i, Moloka'i, and Kaua'i. They are observed in a variety of habitats, but prefer open areas, such as pastures, golf courses, wetlands, natural grasslands and shrublands, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

To avoid and minimize potential project impacts to the Hawaiian goose we recommend you incorporate the following measures into your project description:

- Do not approach, feed, or disturb Hawaiian goose.
- If Hawaiian goose are observed loafing or foraging within the project area during the breeding season (September through April), have a biologist familiar with Hawaiian goose nesting behavior survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest).

- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed project, or a previously undiscovered nest is found within the 150-foot radius after work begins.
    - In areas where Hawaiian goose are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

Blackburn's sphinx moth: The adult Blackburn's sphinx moth feeds on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), iliee (*Plumbago zeylanica*), maiapilo (*Capparis sandwichiana*), and others. Blackburn's sphinx moth larvae feed on non-native tree tobacco (*Nicotiana glauca*) and native aiea (*Nothocestrum* sp.). To pupate, the larvae burrow into the soil and can remain in a state of torpor for a year or more before emerging from the soil. Soil disturbance can result in death of the pupae.

We offer the following survey recommendations to assess whether the Blackburn's sphinx moth occurs within the project area:

- A biologist familiar with the species should survey areas of proposed activities for Blackburn's sphinx moth and its larval host plants prior to work initiation.
    - Surveys should be conducted during the wettest portion of the year (usually November-April or several weeks after a significant rain) and within 4-6 weeks prior to construction.
    - Surveys should include searches for adults, eggs, larvae, and signs of larval feeding (chewed stems, frass, or leaf damage).
    - If moths, eggs, larvae, or native aiea or tree tobacco over 3 feet tall, are found during the survey, please contact the Service for additional guidance to avoid impacts to this species.

If no Blackburn's sphinx moth, aiea, or tree tobacco are found during surveys, it is imperative that measures be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site. Tree tobacco can grow greater than 3 feet tall in approximately 6 weeks. If it grows over 3 feet, the plants may become a host plant for Blackburn's sphinx moth. We therefore recommend that you:

- Remove any tree tobacco less than 3 feet tall.
- Monitor the site every 4-6 weeks for new tree tobacco growth before, during, and after the proposed ground-disturbing activity.
    - Monitoring for tree tobacco can be completed by any staff, such as groundskeeper or regular maintenance crew, provided with picture placards of tree tobacco at different life stages.

Hawaiian stilt, Hawaiian coot, Hawaiian duck: Hawaiian waterbirds are currently found in a variety of wetland habitats including freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, kalo or taro (*Colocasia esculenta*) loʻi or patches, irrigation ditches, sewage treatment ponds, and in the case of the Hawaiian duck, montane streams and marshlands. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur. Threats to these species include non-native predators, habitat loss, and habitat degradation. Hawaiian ducks are also subject to threats from hybridization with introduced mallards.

Based on the project details provided, your project may result in the creation of standing water or open water that could attract Hawaiian waterbirds to the project site. In particular, the Hawaiian stilt is known to nest in sub-optimal locations (e.g. any ponding water), if water is present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation and reduced reproductive success, and thus the project may create an attractive nuisance. Therefore, we recommend you work with our office during project planning so that we may assist you in developing measures to avoid impacts to listed species (e.g., fencing, vegetation control, predator management).

To avoid and minimize potential project impacts to Hawaiian waterbirds we recommend you incorporate the following measures into your project description:

- In areas where waterbirds are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.
- If water resources are located within or adjacent to the project site, incorporate applicable best management practices regarding work in aquatic environments into the project design (see enclosure).
- Have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat occurs within the vicinity of the proposed project site prior to project initiation. Repeat surveys again within 3 days of project initiation and after any subsequent delay of work of 3 or more days (during which the birds may attempt to nest). If a nest or active brood is found:
    - Contact the Service within 48 hours for further guidance.
    - Establish and maintain a 100-foot buffer around all active nests and/or broods until the chicks/ducklings have fledged. Do not conduct potentially disruptive activities or habitat alteration within this buffer.
    - Have a biological monitor that is familiar with the species' biology present on the project site during all construction or earth moving activities until the chicks/ducklings fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

Hawaiian petrel, Newell's shearwater, and Hawai'i Distinct Population Segment of the band-rumped storm petrel: Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable to light attraction.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below.

- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

If this potential project should receive federal funding, federal permits, or any federal authorization, it will require a Section 7 consultation with the Service. The Service only conducts Section 7 consultations with the federal action agency or their designated representative.

Thank you for participating with us in the protection of our endangered species. If you have any further questions or concerns regarding this consultation, please contact Eldridge Naboa, Fish and Wildlife Biologist, 808-284-0037, email: eldridge_naboa@fws.gov. When referring to this project, please reference **01EPIF00-2021-SL-0346**.

Sincerely,

DIANE SETHER

Digitally signed by DIANE SETHER
Date: 2021.06.28 11:14:48 -10'00'

Acting Island Team Manager
Maui Nui and Hawai‘i Island

Enclosure: Best Management Practices For Work In or Around Aquatic Environments

U.S. Fish and Wildlife Service
Recommended Standard Best Management Practices

The U.S. Fish and Wildlife Service (USFWS) recommends the following measures to be incorporated into project planning to avoid or minimize impacts to fish and wildlife resources. Best Management Practices (BMPs) include the incorporation of procedures or materials that may be used to reduce either direct or indirect negative impacts to aquatic habitats that result from project construction-related activities. These BMPs are recommended in addition to, and do not over-ride any terms, conditions, or other recommendations prepared by the USFWS, other federal, state or local agencies. If you have questions concerning these BMPs, please contact the USFWS Aquatic Ecosystems Conservation Program at 808-792-9400.

1. Authorized dredging and filling-related activities that may result in the temporary or permanent loss of aquatic habitats should be designed to avoid indirect, negative impacts to aquatic habitats beyond the planned project area.

2. Dredging/filling in the marine environment should be scheduled to avoid coral spawning and recruitment periods, and sea turtle nesting and hatching periods. Because these periods are variable throughout the Pacific islands, we recommend contacting the relevant local, state, or federal fish and wildlife resource agency for site specific guidance.

3. Turbidity and siltation from project-related work should be minimized and contained within the project area by silt containment devices and curtailing work during flooding or adverse tidal and weather conditions. BMPs should be maintained for the life of the construction period until turbidity and siltation within the project area is stabilized. All project construction-related debris and sediment containment devices should be removed and disposed of at an approved site.

4. All project construction-related materials and equipment (dredges, vessels, backhoes, silt curtains, etc.) to be placed in an aquatic environment should be inspected for pollutants including, but not limited to; marine fouling organisms, grease, oil, etc., and cleaned to remove pollutants prior to use. Project related activities should not result in any debris disposal, non-native species introductions, or attraction of non-native pests to the affected or adjacent aquatic or terrestrial habitats. Implementing both a litter-control plan and a Hazard Analysis and Critical Control Point plan (HACCP – see https://www.fws.gov/policy/A1750fw1.html) can help to prevent attraction and introduction of non-native species.

5. Project construction-related materials (fill, revetment rock, pipe, etc.) should not be stockpiled in, or in close proximity to aquatic habitats and should be protected from erosion (*e.g.*, with filter fabric, etc.), to prevent materials from being carried into waters by wind, rain, or high surf.

6. Fueling of project-related vehicles and equipment should take place away from the aquatic environment and a contingency plan to control petroleum products accidentally

spilled during the project should be developed. The plan should be retained on site with the person responsible for compliance with the plan. Absorbent pads and containment booms should be stored on-site to facilitate the clean-up of accidental petroleum releases.

7. All deliberately exposed soil or under-layer materials used in the project near water should be protected from erosion and stabilized as soon as possible with geotextile, filter fabric or native or non-invasive vegetation matting, hydro-seeding, etc.

Subject: FW: [EXTERNAL] Early Consultation Request for Waikapu Sewer Improvements, Waikapu, Maui
Attachments: USFWS PIFWC.ecl.pdf; IPaC Info Letter_Species List Instructions_PIFWO_20Apr2022_Final.pdf

From: Asman, Lindsy <Lindsy_Asman@fws.gov>
Sent: Wednesday, August 3, 2022 1:48 PM
To: Lynne Hiromoto <lynne@munekiyohiraga.com>
Subject: Fw: [EXTERNAL] Early Consultation Request for Waikapu Sewer Improvements, Waikapu, Maui

Aloha e Lynne,

Thank you for reaching out to us for comments. We received your request for preliminary comments on your preparation of a Draft EA. To determine whether the project would occur in areas where federally listed species may be present we recommend acquiring a species list from our online IPaC system. I have attached instructions on how to acquire a species list for your project. We highly recommend paying particular attention to the avoidance and minimization measures in the species list called "General project design guidelines". Implementing these avoidance and minimization measures would avoid adverse effects and take of federally listed species that may be present within the action area. We recommend including all the relevant avoidance and minimization measures into the Draft EA.

Based on the limited project details/information provided, we expect listed species that may be present are unlikely to be exposed to project-related effects because the project occurs in a highly developed residential/commercial area. However, if the project overlaps with suitable habitat for bats and waterbirds, trees or vegetation taller than 15 ft tall would be removed during the Hawaiian hoary bat pupping season (June 1 through Sept. 15), or if any standing water would be created, we recommend implementing the avoidance and minimization measures included in the species list you acquire from the IPaC system.

Please let us know if we can be of any assistance, and mahalo for your continued commitment to conserving our shared trust resources!

Lindsy Asman
Island Team Manager for Hawai'i Island and Maui Nui
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122, Honolulu, HI 96850
Phone 808-792-9490
https://www.fws.gov/pacificislands/

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
SENIOR ADVISOR

July 29, 2022

Via Email: pifwo_admin@fws.gov

Acting Island Team Leader
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Honolulu, Hawai'i 96850

SUBJECT: Chapter 343, Hawai'i Revised Statutes (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System

Dear Sir or Madame:

The County of Maui, Department of Environmental Management (DEM) proposes the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 5,800 linear feet (l.f.) of gravity sewerline and service laterals to connect approximately 119 lots in the Waikapū area. The anticipated affected TMKs within the project area include, but may not be limited to, the following: TMKs (2)3-5-004:028, 031, and 063; (2)3-5-010:001, 033, 034, 036, 037, and 038; (2)3-5-011:001 to 041, 043 to 046, and 048; (2)3-5-012:001 to 023, 025, 035 to 040, and 043 to 047. See **Figures 1** and **2**. The DEM previously sought early consultation comments for this project in a letter dated June 10, 2021. The proposed project previously involved the construction of approximately 3,000 l.f. of gravity sewerline to connect approximately 75 lots. However, the scope of the proposed project has since been revised to include County sewer connections to an additional 38 lots located in the western portion (mauka) of West Waiko Road. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights of way and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

The use of County lands and State lands and funds is a trigger for preparation of an Environmental Assessment (EA) pursuant to Chapter 343, HRS. As such, a Draft EA will be prepared for this project to address the technical characteristics, potential



Figure 1

Waiko Road Subdivision Sewer System
Regional Location Map

0 500 1000 2000 Feet

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

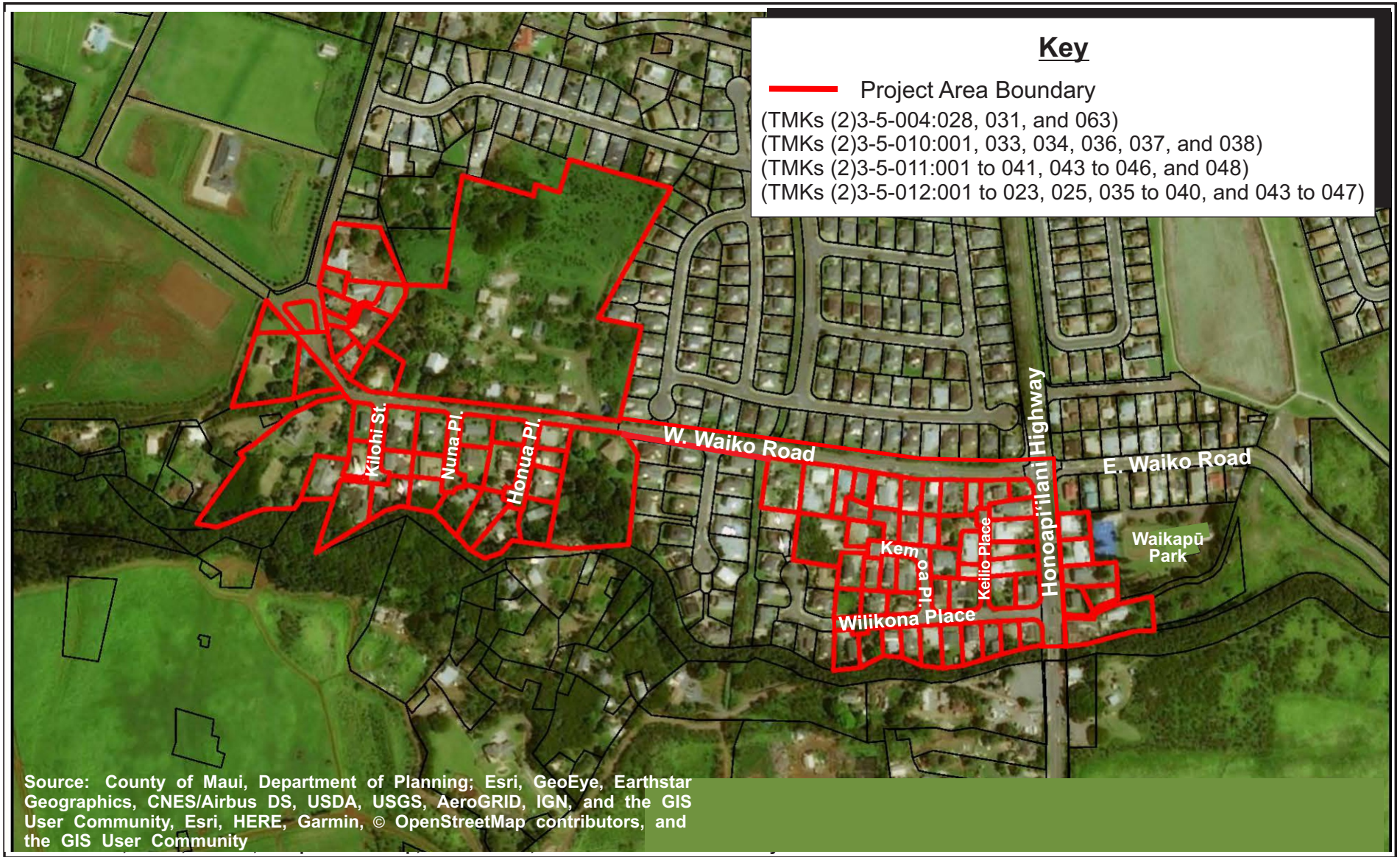


Figure 2

Waiko Road Subdivision Sewer System
Project Location Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

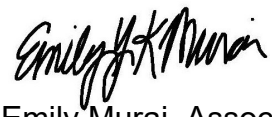
environmental impacts and alternatives. State Revolving Funds (SRF) through the Environmental Protection Agency (EPA) will also be used for this project, therefore, the applicable federal crosscutters will be addressed in the Draft EA, as well as Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA). DEM will be the approving agency for the EA.

On behalf of DEM, we kindly request your early review and comment on the proposed project in accordance with the requirements of Chapter 11-200.1, Hawai'i Administrative Rules. We appreciate receiving any comments you may have by **August 19, 2022**. Please send your comments to the address listed below:

Munekiyo Hiraga
Attention: Emily Murai, Associate
305 High Street, Suite 104
Wailuku, Hawai'i 96793
OR
Email: planning@munekiyohiraga.com

Thank you for your participation in the Chapter 343, HRS environmental review process. Should you have any questions regarding this Chapter 343, HRS early consultation request, please do not hesitate to contact me at (808) 983-1233.

Very truly yours,



Emily Murai, Associate

EM:lh
Enclosures
cc: Juan Rivera, P.E., County of Maui, Department of Environmental Management (w/enclosures)
Derek Ono, P.E., Warren S. Unemori Engineering, Inc. (w/enclosures)
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\Revised ECL\Early Consultation Letter (revised Jan 2022).docx

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.

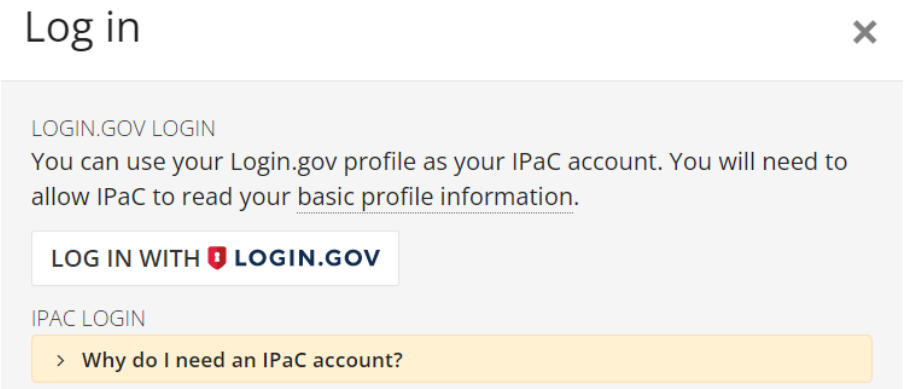
Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of your species list should be verified after 90 days. New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors 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.

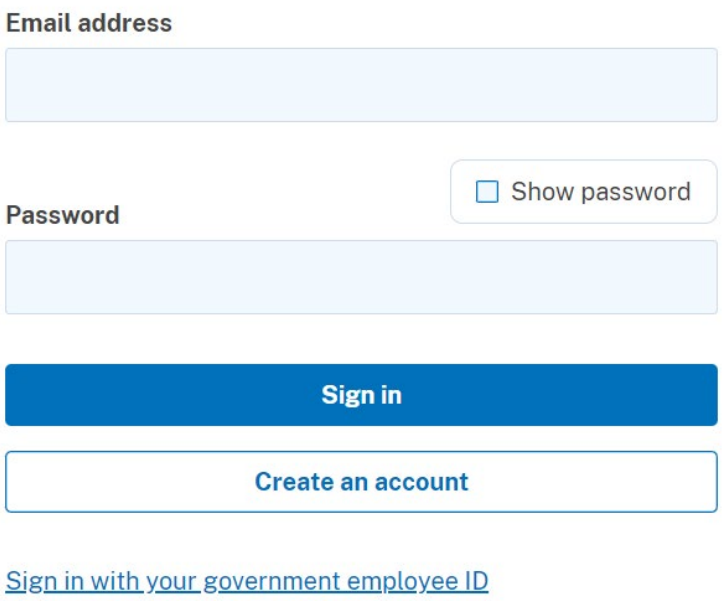
If you have questions about a species list obtained through the IPaC system or need assistance in completing an IPaC species list request, please contact the Service at 808-792-9400 or via email at pifwo_admin@fws.gov. We appreciate your efforts to conserve listed species across the Pacific Islands.

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

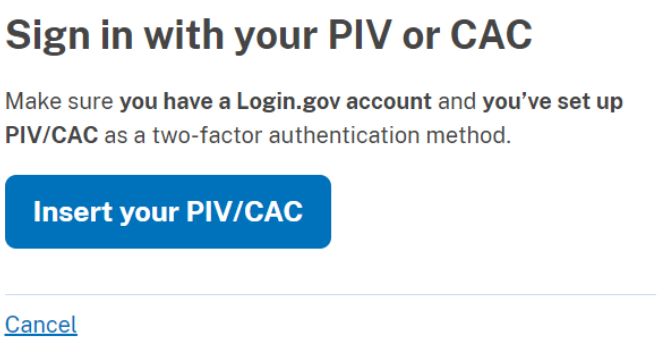
- Navigate to https://ipac.ecosphere.fws.gov/
- You can get an unofficial species list without logging in. However, if you want an official species list you will need to log in first using your Login.gov account. If you don't have an IPaC account, they are easy to create.



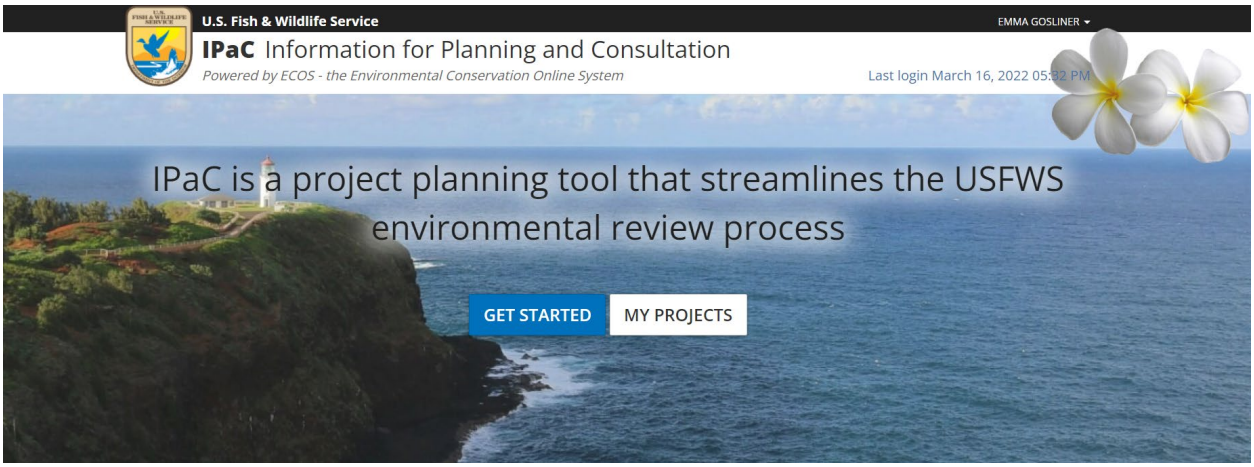
Select Log in with Login.gov and sign in using your email and password.



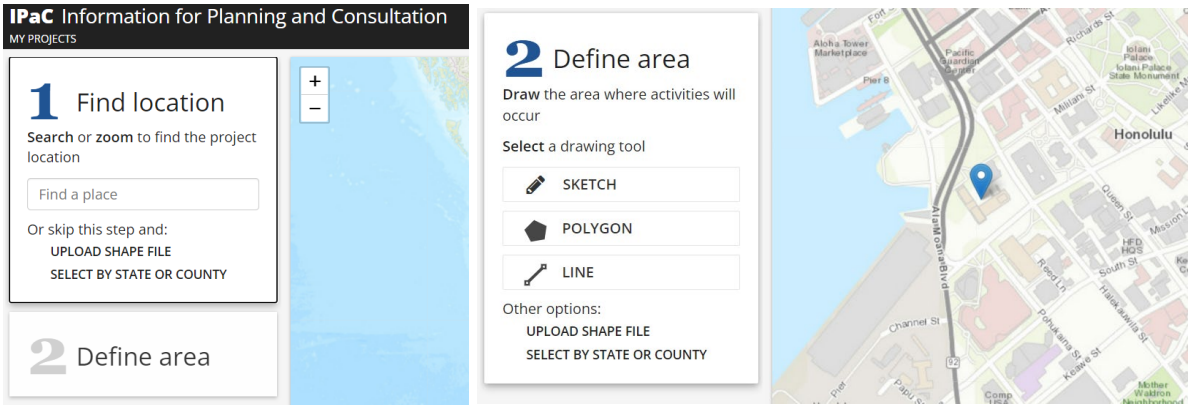
If you have a PIV or CAC card, you can sign in using that method as well.

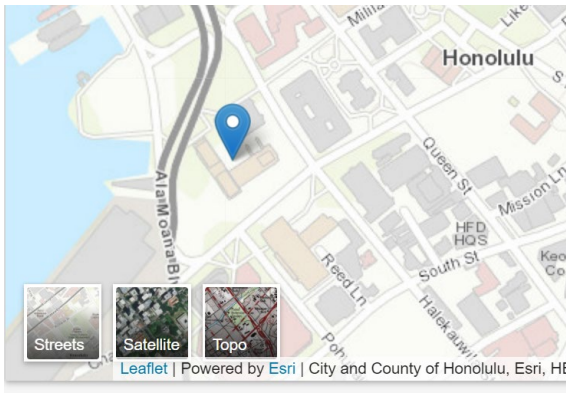


- Once you log in, select "Get Started".

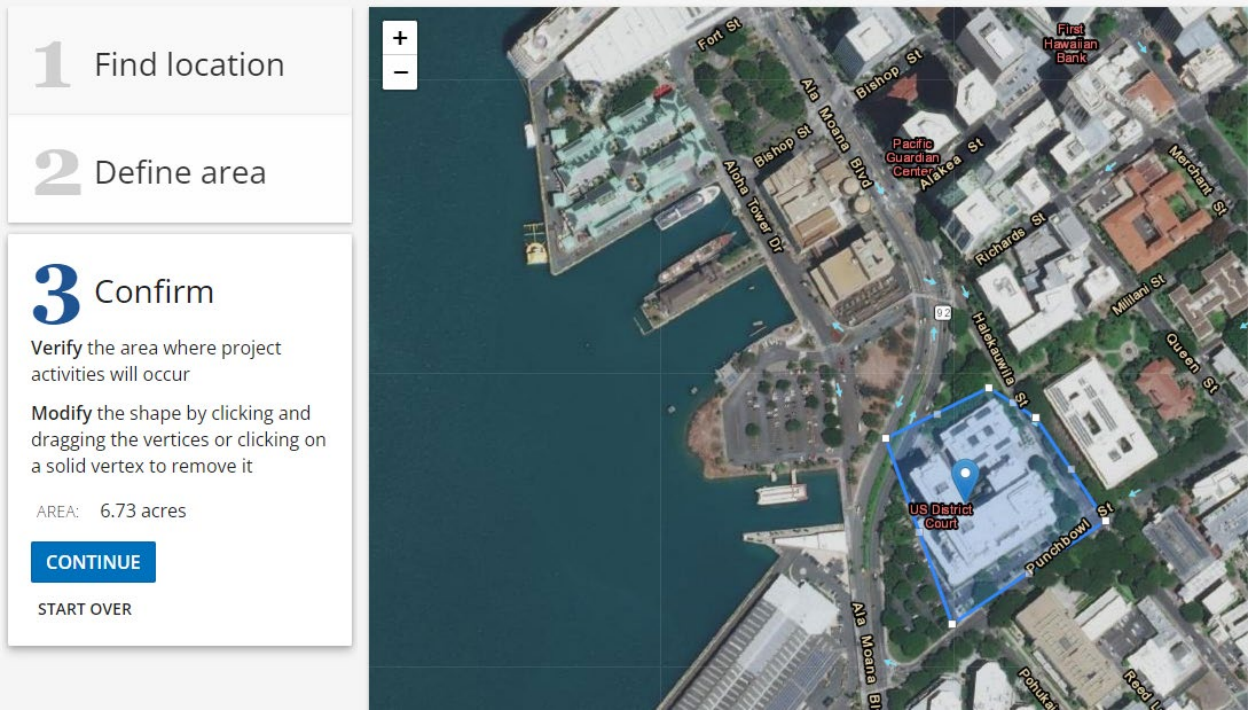


- Define the action area: Identify the location of the proposed action by uploading an existing shapefile or by entering an address or coordinates of the action area. Once identified on the map, you can manually draw the action area using the drawing tools.



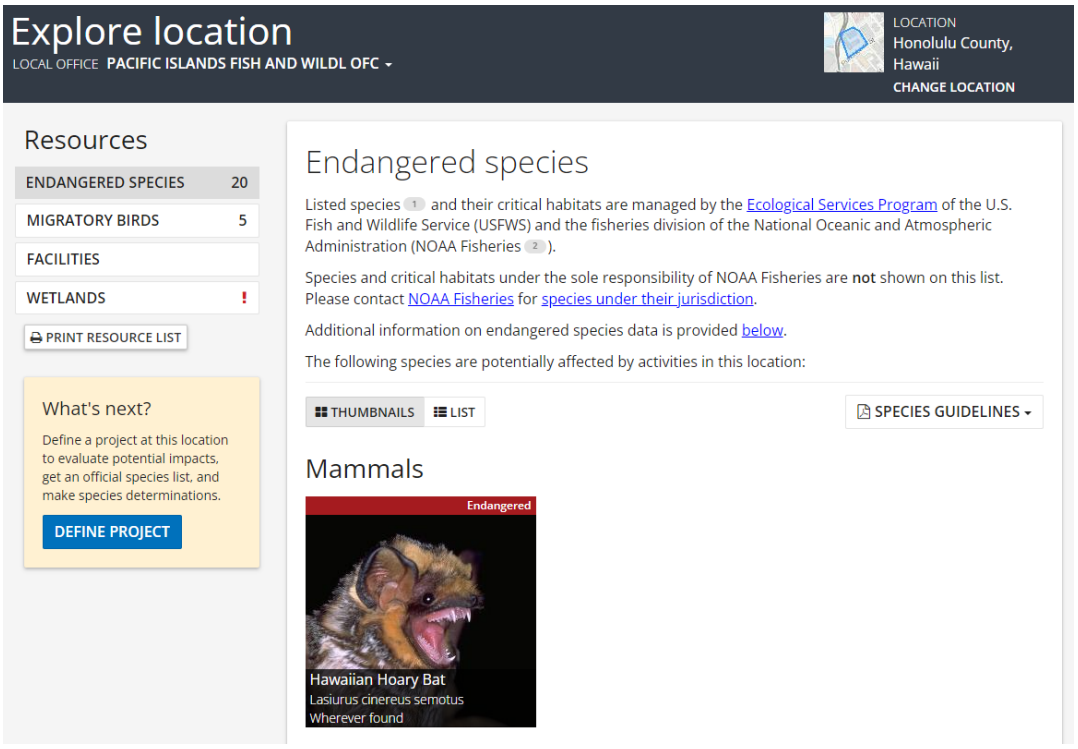


To help identify your action area you can choose between multiple base maps available.

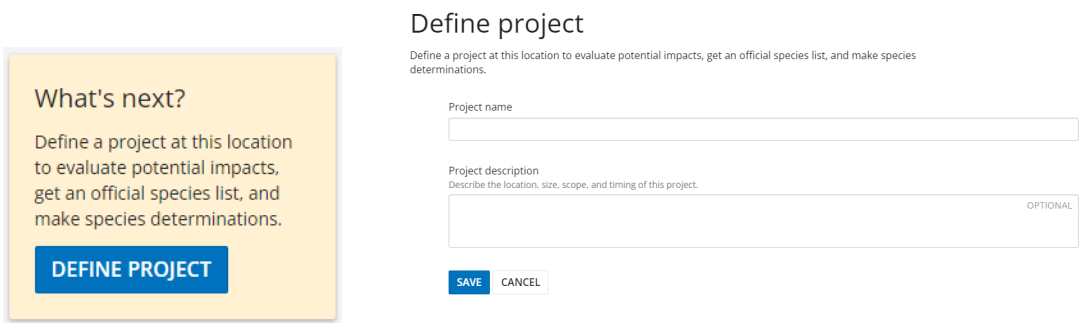


Press continue when you have finished drawing or uploading the action area location.

- 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.

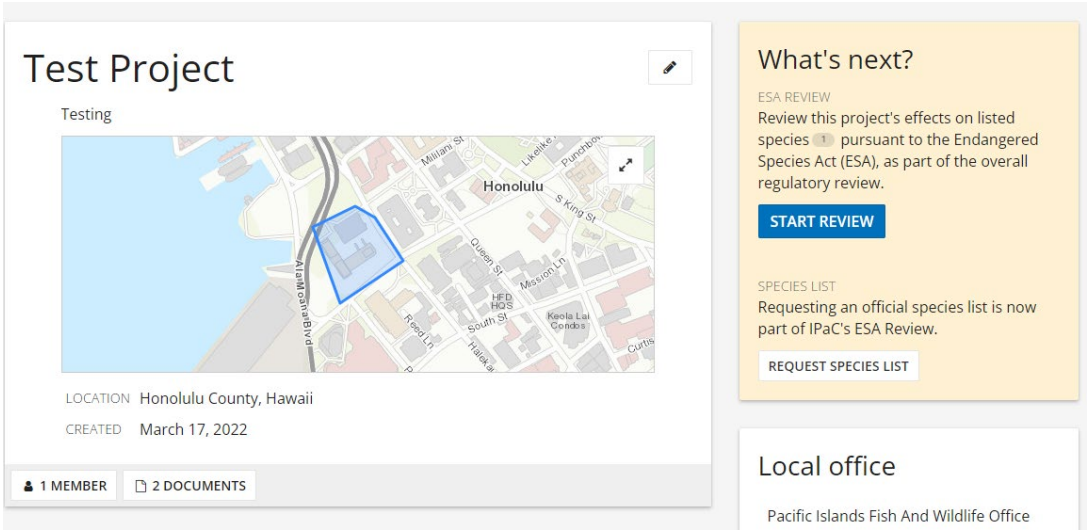


- Continue with the following steps to comply with the requirements of ESA section 7 to obtain an **official species list**.
- Select Define Project

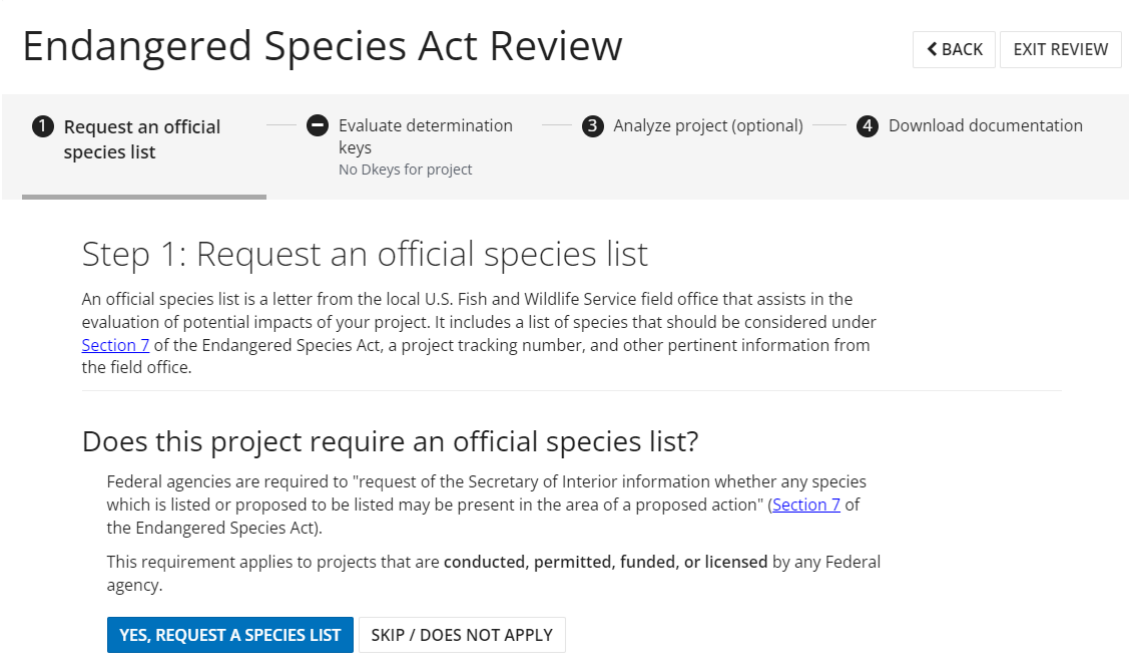


Enter the Project Name and a brief description of the project (a description is not mandatory, but recommended for future coordination with the Service). Click SAVE at bottom of page.

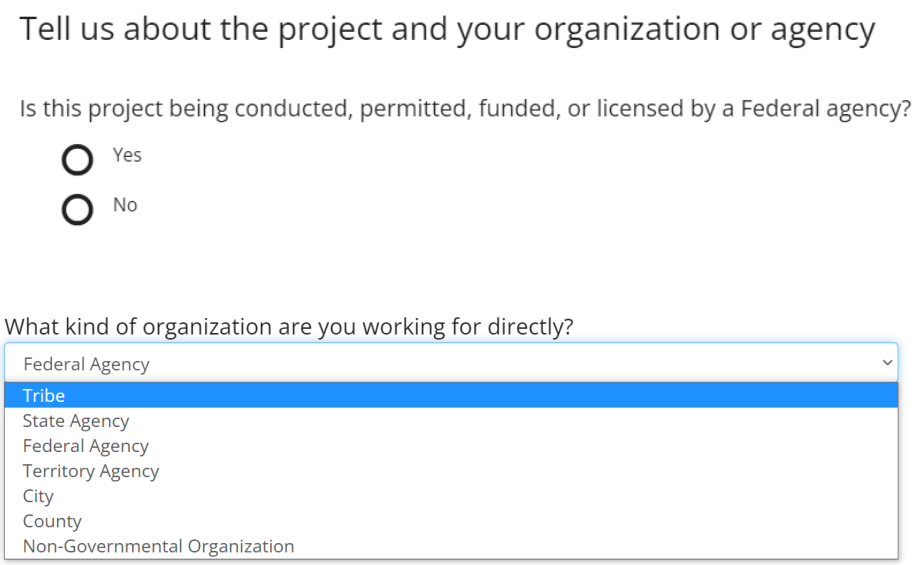
- At the bottom of the What's next box on the right, click Request Species List



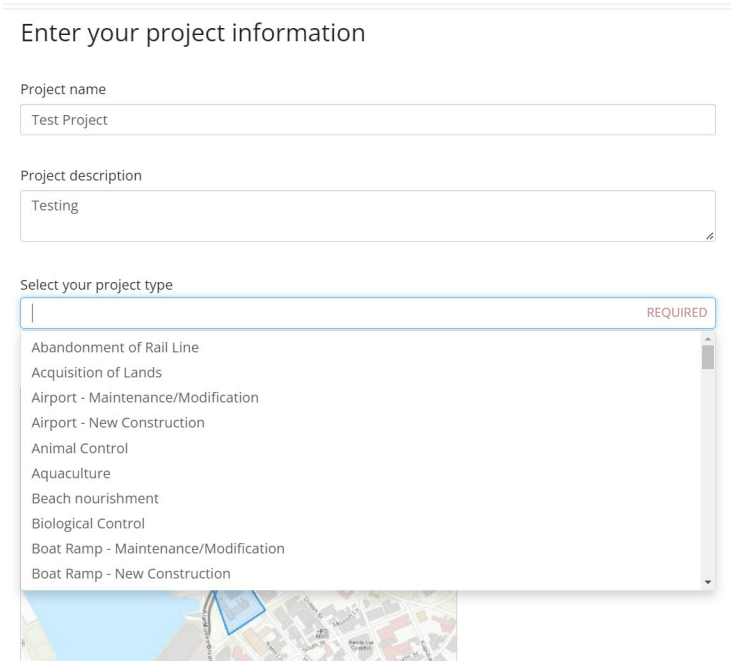
- on the following screen, click Yes, Request Species List



- 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.

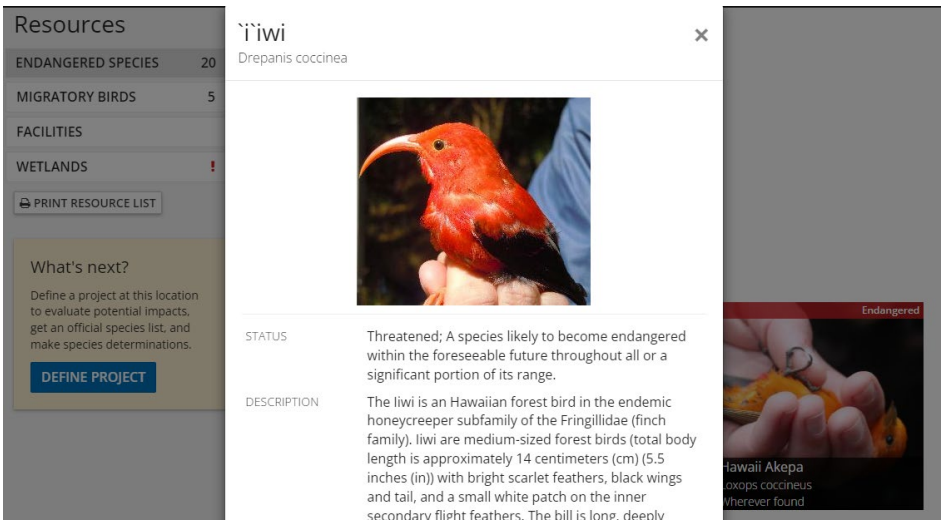


- Once all required sections are filled out, press SUBMIT OFFICIAL SPECIES LIST REQUEST



- 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.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
Phone: (808) 792-9400 Fax: (808) 792-9580

In Reply Refer To: August 11, 2022
Project Code: 2022-0073994
Project Name: Waiko Road Subdivision Sewer System

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened and endangered species, as well as designated critical habitat that may occur within the boundary of your proposed project and that may be affected by project related actions. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). Please contact the Service's Pacific Islands Fish and Wildlife Office (PIFWO) at 808-792-9400 if you have any questions regarding your IPaC species list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may adversely affect threatened and endangered species and/or designated critical habitat.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this 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 this list. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a Biological

Evaluation, similar to a Biological Assessment, be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment or Biological Evaluation are described at 50 CFR 402.12.

Due to the significant number of listed species found on each island within PIFWO's regulatory jurisdiction, and the difficulty in accurately mapping ranges for species that we have limited information about, your species list may include more species than if you obtained the list directly from a Service biologist. We recommend you use the species links in IPaC to view the life history, habitat descriptions, and recommended avoidance and minimization measures to assist with your initial determination of whether the species or its habitat may occur within your project area. If appropriate habitat is present for a listed species, we recommend surveys be conducted to determine whether the species is also present. If no surveys are conducted, we err on the side of the species, by regulation, and assume the habitat is occupied. Updated avoidance and minimization measures for plants and animals, best management practices for work in or near aquatic environments, and invasive species biosecurity protocols can be found on the PIFWO website at: https://www.fws.gov/office/pacific-islands-fish-and-wildlife/library.

If a Federal agency determines, based on the Biological Assessment or Biological Evaluation, that a listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: http://www.fws.gov/endangered/esa-library/index.

Non-federal entities can also use the IPaC generated species list to develop Habitat Conservation Plans (HCP) in accordance with section 10(a)(1)(B) of the Act. We recommend HCP applicants coordinate with the Service early during the HCP development process. For additional information on HCPs, the Habitat Conservation Planning handbook can be found at https://www.fws.gov/sites/default/files/documents/habitat-conservation-planning-handbook-entire.pdf.

Please be aware that wind energy projects should follow the Service’s wind energy guidelines (http://www.fws.gov/windenergy) for minimizing impacts to migratory birds. Listed birds and the Hawaiian hoary bat may also be affected by wind energy development and we recommend development of a Habitat Conservation Plan for those species, as described above. Guidance for minimizing impacts to migratory birds for projects including communications towers can be found at:

- http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers
- http://www.towerkill.com
- http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation actions that benefit threatened and endangered species into their project planning to further the purposes of the Act in accordance with section 7(a)(1). Please include the Consultation Tracking Number associated with your IPaC species list in any

request for consultation or correspondence about your project that you submit to our office. Please feel free to contact us at PIFWO_admin@fws.gov or 808-792-9400 if you need more current information or assistance regarding the potential impacts to federally listed species and federally designated critical habitat.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
(808) 792-9400

Project Summary

Project Code: 2022-0073994
Project Name: Waiko Road Subdivision Sewer System
Project Type: Wastewater Pipeline - New Constr - Below Ground
Project Description: The County of Maui, Department of Environmental Management (DEM) proposes the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 5,800 linear feet (l.f.) of gravity sewerline and service laterals to connect approximately 119 lots in the Waikapū area. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights of way and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@20.85641055,-156.50852699386252,14z



Counties: Maui County, Hawaii

Endangered Species Act Species

There is a total of 29 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Hawaiian Hoary Bat *Lasiurus cinereus semotus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/770 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6477.pdf	Endangered

Birds

NAME	STATUS
Band-rumped Storm-petrel *Oceanodroma castro*	Endangered
Population: USA (HI) No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1226 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf	
Hawaii Akepa *Loxops coccineus*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5714 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6938.pdf	
Hawaiian (=koloa) Duck *Anas wyvilliana*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7712 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf	
Hawaiian Coot *Fulica americana alai*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7233 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf	
Hawaiian Goose *Branta (=Nesochen) sandvicensis*	Threatened
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1627 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6925.pdf	
Hawaiian Petrel *Pterodroma sandwichensis*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6746 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf	
Hawaiian Stilt *Himantopus mexicanus knudseni*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2082 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf	

NAME	STATUS
Newell's Townsend's Shearwater *Puffinus auricularis newelli*	Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2048
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf

Reptiles

NAME	STATUS
Green Sea Turtle *Chelonia mydas*	Threatened

Population: Central North Pacific DPS
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6199
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6929.pdf

Insects

NAME	STATUS
Blackburn's Sphinx Moth *Manduca blackburni*	Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/4528
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6926.pdf

Flowering Plants

NAME	STATUS
(=native Yellow Hibiscus) Ma`o Hau Hele *Hibiscus brackenridgei*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/4075 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
`aiea *Nothocestrum latifolium*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1061 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
`ena`ena *Pseudognaphalium sandwicensium var. molokaiense*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5993 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
Bonamia menziesii	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2503 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
Carter's Panicgrass *Panicum fauriei var. carteri*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5578 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7060.pdf	
Hawaiian Gardenia (=na`u) *Gardenia brighamii*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6853 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
Ihi *Portulaca villosa*	Endangered
No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4886	
Ko`oko`olau *Bidens micrantha ssp. kalealaha*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7697 General project design guidelines:	

NAME STATUS

https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7060.pdf

Ko`oloa`ula *Abutilon menziesii* Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/3268
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf

Lanai Sandalwood (=`iliahi) *Santalum haleakalae var. lanaiense* Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/3282
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf

Ohai *Sesbania tomentosa* Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/8453
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf

Round-leaved Chaff-flower *Achyranthes splendens var. rotundata* Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/4709
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf

Schiedea salicaria Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/3354
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7060.pdf

Spermolepis hawaiiensis Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1670
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf

Tetramolopium remyi Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.
Species profile: https://ecos.fws.gov/ecp/species/1173
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7060.pdf

NAME	STATUS
Uhi Uhi *Mezoneuron kavaiense*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/7129 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
Vigna o-wahuensis	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8445 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	
Wahine Noho Kula *Isodendrion pyrifolium*	Endangered
There is **final** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/2235 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7051.pdf	

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

IPaC User Contact Information

Agency:	County of Maui
Name:	Emily Murai
Address:	305 High Street
Address Line 2:	Suite 104
City:	Wailuku
State:	HI
Zip:	96793
Email	emily@munekiyohiraga.com
Phone:	8089831233

Lead Agency Contact Information

Lead Agency: Environmental Protection Agency

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

September 10, 2025

Via email: pifwo_admin@fws.gov

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

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i (Project Code: 2022-0073994)

Dear Ms. Javar-Salas:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's emails, dated June 28, 2021 and August 3, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

Thank you for providing instructions for acquiring a list of federally listed species that may be present in the project area. A list of species has been generated using the U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) system website (see **Exhibit "A"**). The project team will review the recommended avoidance and minimization measures for incorporation into the project and discussion in the Draft Environmental Assessment (EA), as applicable.

We acknowledge that due to the project's location in a highly developed residential and commercial area, listed species that may be present are unlikely to be exposed to project-related effects. According to the species list obtained from the USFWS IPaC system, the project is not located within a critical habitat for listed species. In addition, removal of trees or vegetation taller than 15 feet will be avoided during the Hawaiian hoary bat pup rearing season (June 1 through September 15). No standing water is anticipated to be generated from the project. However, as previously noted, avoidance and mitigation measures will be incorporated into the project and discussed in the Draft EA, as applicable.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,

Adam Strubeck
Associate

AS:ab
Attachment
cc: Juan Rivera, County of Maui, Department of Environmental Management (w/attachment)
Reed Ariyoshi, Warren S. Unemori Engineering, Inc. (w/attachment)
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\USFWS.docx

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
Phone: (808) 792-9400 Fax: (808) 792-9580

In Reply Refer To: 08/11/2025 22:26:33 UTC
Project Code: 2022-0073994
Project Name: Waiko Road Subdivision Sewer System

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

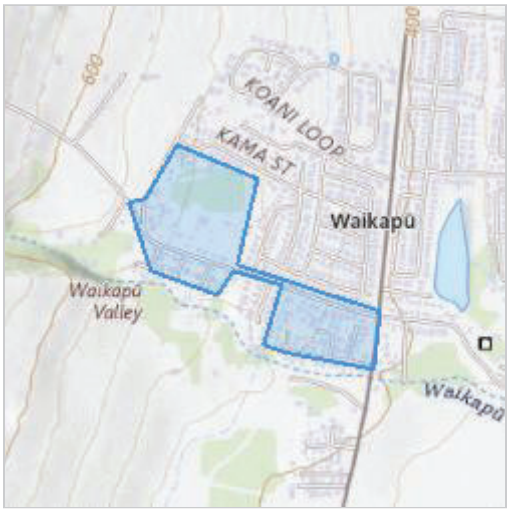
Pacific Islands Fish And Wildlife Office
300 Ala Moana Boulevard, Box 50088
Honolulu, HI 96850-5000
(808) 792-9400

PROJECT SUMMARY

Project Code: 2022-0073994
Project Name: Waiko Road Subdivision Sewer System
Project Type: Wastewater Pipeline - New Constr - Below Ground
Project Description: The County of Maui, Department of Environmental Management (DEM) proposes the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 5,800 linear feet (l.f.) of gravity sewerline and service laterals to connect approximately 119 lots in the Waikapū area. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights of way and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@20.85696205,-156.50855402420268,14z



Counties: Maui County, Hawaii

ENDANGERED SPECIES ACT SPECIES

There is a total of 28 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Hawaiian Hoary Bat *Lasiurus cinereus semotus*	Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/770
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6477.pdf

BIRDS

NAME	STATUS
Band-rumped Storm-petrel *Hydrobates castro*	Endangered

Population: USA (HI)
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1226
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf

Hawaiian Coot (alae Ke`oke`o) *Fulica alai* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7233
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf

Hawaiian Duck *Anas wyvilliana* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/7712
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf

Hawaiian Goose *Branta (=Nesochen) sandvicensis* — Threatened

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1627
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6925.pdf

Hawaiian Petrel *Pterodroma sandwichensis* — Endangered

No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/6746
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf

Hawaiian Stilt *Himantopus mexicanus knudseni* — Endangered

No critical habitat has been designated for this species.

NAME	STATUS

Species profile: https://ecos.fws.gov/ecp/species/2082
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6934.pdf

Newell"s Shearwater *Puffinus newelli* — Threatened
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/2048
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6939.pdf

REPTILES

NAME	STATUS

Hawksbill Sea Turtle *Eretmochelys imbricata* — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/3656

INSECTS

NAME	STATUS

Blackburn's Sphinx Moth *Manduca blackburni* — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/4528
General project design guidelines:
https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/6926.pdf

FLOWERING PLANTS

NAME	STATUS

(=native Yellow Hibiscus) Ma`o Hau Hele *Hibiscus brackenridgei* — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/4075

`aiea *Nothocestrum latifolium* — Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/1061

`ena`ena *Pseudognaphalium sandwicensium var. molokaiense* — Endangered
No critical habitat has been designated for this species.
Species profile: https://ecos.fws.gov/ecp/species/5993

Bonamia menziesii — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2503

Carter's Panicgrass *Panicum fauriei var. carteri* — Endangered
There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

NAME	STATUS
Species profile: https://ecos.fws.gov/ecp/species/5578	
Hawaiian Gardenia *Gardenia brighamii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6853	Endangered
Ihi *Portulaca villosa* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4886	Endangered
Ko`oko`olau *Bidens micrantha ssp. kalealaha* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7697	Endangered
Ko`oloa`ula *Abutilon menziesii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3268	Endangered
Lanai Sandalwood (=`iliahi) *Santalum haleakalae var. lanaiense* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3282	Endangered
Ohai *Sesbania tomentosa* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8453 General project design guidelines: https://ipac.ecosphere.fws.gov/project/6JOWLOC3PNEL7P53LYCKUMPFXM/documents/generated/7050.pdf	Endangered
Round-leaved Chaff-flower *Achyranthes splendens var. rotundata* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4709	Endangered
Schiedea salicaria There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3354	Endangered
Spermolepis hawaiiensis There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1670	Endangered
Tetramolopium remyi There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1173	Endangered
Uhiuhi *Mezoneuron kavaiense* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/7129	Endangered
Vigna o-wahuensis There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8445	Endangered

NAME	STATUS
Wahine Noho Kula *Isodendrion pyrifolium*	Endangered

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.
Species profile: https://ecos.fws.gov/ecp/species/2235

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Adam Strubeck
Address: 225 Queen St
Address Line 2: Suite 200
City: Honolulu
State: HI
Zip: 96813
Email adam@munekiyohiraga.com
Phone: 8089831233

LEAD AGENCY CONTACT INFORMATION

Lead Agency: County of Maui

JUL 07 2021

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

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

(P)21.123

JUN 30 2021

Ms. Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Ms. Murai:

Subject: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for Proposed Waiko Road Subdivision Sewer System

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

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

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

DC:mo
c: Mr. Wade Shimabukuro, DAGS-MDO

AUG 0 5 2022

DAVID Y. IGE
GOVERNOR

CURT T. OTAGURO
COMPTROLLER

AUDREY HIDANO
DEPUTY COMPTROLLER

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

(P)22.140

AUG - 3 2022

Ms. Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96703

Dear Ms. Murai:

Subject: Chapter 343, Hawaii Revised Statutes (HRS) Early Consultation Request for Proposed Waiko Road Subdivision Sewer System

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

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at (808) 586-0584.

Sincerely,

CHRISTINE L. KINIMAKA
Public Works Administrator

GT:mo
c: Jeff Pearson, DAGS 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

September 10, 2025

Keith Regan, Comptroller
State of Hawai'i
Department of Accounting and General Services
1151 Punchbowl Street
Honolulu, Hawai'i 96813

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Regan,

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's letters dated June 30, 2021 and August 3, 2022 regarding the proposed Waiko Road Subdivision Sewer System project. Thank you for confirming that the subject project does not impact any Department of Accounting and General Services facilities.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DAGS.docx

DAVID Y. IGE
GOVERNOR

KEITH T. HAYASHI
SUPERINTENDENT

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

OFFICE OF FACILITIES AND OPERATIONS

August 10, 2022

Emily Murai
Munekiyo Hiraga
205 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System

Dear Ms. Murai:

Thank you for your letter dated July 29, 2022. The Hawaii State Department of Education (Department) previously provided comments on the Project by letter dated June 28, 2021. Based on the revision included in the current letter the proposed project will not impact Department facilities.

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

Sincerely,

Roy Ikeda
Interim Public Works Manager
Planning Section

RI:ctc

c: Facilities Development Branch

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

September 10, 2025

Keith Hayashi, Superintendent
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Hayashi,

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's letter dated August 10, 2022, regarding the proposed Waiko Road Subdivision Sewer System project. We acknowledge your confirmation that the proposed project will not impact Department of Education facilities.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DOE.docx

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

Deputy Directors
LYNN A.S. ARAKI-REGAN
DEREK J. CHOW
ROSS M. HIGASHI
EDWIN H. SNIFFEN

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

IN REPLY REFER TO:
DIR 0562
HWY-M 2.216-21

June 24, 2021

VIA EMAIL: planning@munekiyohiraga.com

Ms. Emily Murai
Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Murai:

Subject: Proposed Waiko Road Subdivision Sewer System Early Consultation Request

Thank you for your correspondence dated June 10, 2021, regarding the proposed sewer system for Waiko Road Subdivision located in Waikapu, Maui.

As indicated, the construction of the new sewer system will include installation of pipes within the Honoapiilani Highway right-of-way (ROW) between Waiko Road and the Waikapu Stream Bridge to service an existing residential area. Hawaii Department of Transportation will require the review and approval of construction plans and the execution of a Use and Occupancy Agreement (UOA) prior to the issuance of a permit to work within the Honoapiilani Highway ROW. The processing of the UOA is coordinated through the Highways Division, Right-of-Way Branch.

Should you have any questions, please contact Robin Shishido, District Engineer, Maui District, Highways Division at (808) 873-3535 or by email at robin.k.shishido@hawaii.gov.

Sincerely,

JADE T. BUTAY
Director of Transportation

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
DIRECTOR

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

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

IN REPLY REFER TO:
DIR 0758
HWY-M 2.390-22

August 24, 2022

VIA EMAIL: planning@munekiyohiraga.com

Ms. Emily Murai
Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Murai:

Subject: Proposed Waiko Road Subdivision Sewer System Early Consultation Request (Expanded)

Thank you for your correspondence dated July 29, 2022, regarding the proposed expanded sewer system for Waiko Road Subdivision located in Waikapu, Maui. The expanded sewer system now includes 5,800 linear feet of gravity sewerline and 119 lots for new sewer laterals.

As indicated, the construction of the new sewer system will include installation of pipes within the Honoapiilani Highway right-of-way (ROW) between Waiko Road and the Waikapu Stream Bridge to service an existing residential area. Hawaii Department of Transportation will require the review and approval of construction plans and the execution of a Use and Occupancy Agreement (UOA) prior to the issuance of a permit to work within the Honoapiilani Highway ROW. The processing of the UOA is coordinated through the Highways Division, Right-of-Way Branch.

Should you have any questions, please contact Robin Shishido, District Engineer, Maui District, Highways Division at (808) 873-3535 or by email at robin.k.shishido@hawaii.gov.

Sincerely,

JADE T. BUTAY
Director of Transportation

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

September 10, 2025

Via email: DOT.LandUse@hawaii.gov

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

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i (DIR 0758 HWY-M2.390-22 and DIR 0562, HWY-M 2.216-21)

Dear Mr. Sniffen:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's letters dated June 24, 2021 and August 24, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

- DEM will submit construction plans to the State of Hawai'i, Department of Transportation (HDOT), Highways Division, for review and approval.

- DEM or its project consultant will coordinate with the HDOT Highways Division, Right-of-Way (ROW) Branch to obtain a Use and Occupancy Agreement (UOA) for the project.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\SDOT.docx

From: McCallister, Andrew S <andrew.mccallister@hawaii.gov>
Sent: Tuesday, June 15, 2021 4:40 PM
To: Emily Murai
Cc: Karlynn Fukuda
Subject: RE: Early Consultation for Waiko Road Subdivision Sewer System Project

Aloha Emily,

Based on the information you provided, my early consultation comments are as follows:

- Please include consultation with the Office of Hawaiian Affairs, cultural and linear decedents from the area, and Maui Lanai Islands Burial Council in your section 106 consultation.
- Prepare a map figure showing the survey area locations of previous archaeological investigation in the area.
- Consider using GPR in previously undisturbed areas in the project area.
- When submitting your project for review please include a cover letter from the federal agency regarding the section 106 process, and a cover letter from the County of Maui initiating the HRS 6E-8 process.
- It is likely SHPD will request archaeological monitoring for the project, however it is unclear if an AIS is needed for this project at this point. I need more information about the project before I can comment regarding the AMP.

Andrew
Andrew McCallister
Maui Island Archaeologist IV
State Historic Preservation Division
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, HI 96793
(808) 652-1510

From: Emily Murai
Sent: Tuesday, June 15, 2021 2:47 PM
To: McCallister, Andrew S
Cc: Karlynn Fukuda
Subject: [EXTERNAL] Early Consultation for Waiko Road Subdivision Sewer System Project

Hi Andrew,

Thank you for speaking with me yesterday. As discussed, please find attached letter regarding the proposed County sewer project for review and early consultation. Copied here is Karlynn Fukuda from Munekiyo Hiraga, who is working on this project with me.

In addition to any feedback you may have, we are also requesting consultation regarding the Archaeological Monitoring Plan (AMP) that will be prepared for this project. Dr. Janet Six recommended that an AMP be prepared prior to geotechnical borings and subsequently updated upon preparation of construction plans based on geotechnical findings. We understand that typically, SHPD does not allow for the preemptive submittal of an AMP, but was wondering if that is something we can coordinate given that an AMP will be prepared prior to geotechnical work *and* prior to the initiation of project construction. Please let me know if you have any questions or recommendations. Thank you!

With gratitude,

Emily Y.K. Murai, Associate
Email: emily@munekiyohiraga.com

MUNEKIYO HIRAGA

O'ahu: 735 Bishop Street, Suite 321, Honolulu, Hawai'i 96813 **T:** 808.983.1233
Maui: 305 High Street, Suite 104, Wailuku, Hawai'i 96793 **T:** 808.244.2015 **F:** 808.244.8729
Planning. Project Management. Sustainable Solutions. www.munekiyohiraga.com

CONFIDENTIAL AND PRIVILEGED COMMUNICATION: This message (including attachments) is intended for the use of the designated recipient(s) named above. The contents of this correspondence are considered privileged and confidential. If you have received this message in error, kindly notify us immediately by email or telephone, and delete this email from your computer system. Thank you.

Due to the COVID-19 pandemic, if you have a document or package that must be delivered to our office via FedEx, UPS, or other courier service, please reach out to a MH team member to coordinate prior to sending. We are committed to providing our clients excellent service to further project goals and objectives during these challenging times. Please take care and stay safe. Mahalo.

From: McCallister, Andrew S [mailto:andrew.mccallister@hawaii.gov]
Sent: Friday, July 29, 2022 12:30 PM
To: Emily Murai <emily@munekiyohiraga.com>
Cc: Karlynn Fukuda <karlynn@munekiyohiraga.com>
Subject: RE: Early Consultation for Waiko Road Subdivision Sewer System Project

Thank you Emily,

The County of Maui will need to complete archaeological identification for this project. The feasibility of an archaeological inventory survey should be evaluated in consultation with SHPD. Additionally, it is likely archaeological monitoring will be required during construction.

Andrew
Andrew McCallister
Maui Island Archaeologist IV
State Historic Preservation Division
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, HI 96793
(808) 652-1510

From: Emily Murai <emily@munekiyohiraga.com>
Sent: Friday, July 29, 2022 11:22 AM
To: McCallister, Andrew S <andrew.mccallister@hawaii.gov>
Cc: Karlynn Fukuda <karlynn@munekiyohiraga.com>
Subject: [EXTERNAL] RE: Early Consultation for Waiko Road Subdivision Sewer System Project

Aloha Andrew,

Please find attached early consultation letter for the subject project. You had previously provided comments on the previous scope. However, the project has been expanded to include additional lots in Waikapu. Please let me know if you have any questions. Thank you.

With gratitude,

Emily Y.K. Murai, Associate
Email: emily@munekiyohiraga.com

MUNEKIYO HIRAGA

O'ahu: 735 Bishop Street, Suite **412**, Honolulu, Hawai'i **T:** 808.983.1233
Maui: 305 High Street, Suite 104, Wailuku, Hawai'i 96793 **T:** 808.244.2015 **F:** 808.244.8729
Planning. Project Management. Sustainable Solutions. www.munekiyohiraga.com

CONFIDENTIAL AND PRIVILEGED COMMUNICATION: This message (including attachments) is intended for the use of the designated recipient(s) named above. The contents of this

correspondence are considered privileged and confidential. If you have received this message in error, kindly notify us immediately by email or telephone, and delete this email from your computer system. Thank you.

From: McCallister, Andrew S <andrew.mccallister@hawaii.gov>
Sent: Tuesday, June 15, 2021 4:40 PM
To: Emily Murai <emily@munekiyohiraga.com>
Cc: Karlynn Fukuda <karlynn@munekiyohiraga.com>
Subject: RE: Early Consultation for Waiko Road Subdivision Sewer System Project

Aloha Emily,

Based on the information you provided, my early consultation comments are as follows:

- Please include consultation with the Office of Hawaiian Affairs, cultural and linear decedents from the area, and Maui Lanai Islands Burial Council in your section 106 consultation.
- Prepare a map figure showing the survey area locations of previous archaeological investigation in the area.
- Consider using GPR in previously undisturbed areas in the project area.
- When submitting your project for review please include a cover letter from the federal agency regarding the section 106 process, and a cover letter from the County of Maui initiating the HRS 6E-8 process.
- It is likely SHPD will request archaeological monitoring for the project, however it is unclear if an AIS is needed for this project at this point. I need more information about the project before I can comment regarding the AMP.

Andrew
Andrew McCallister
Maui Island Archaeologist IV
State Historic Preservation Division
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, HI 96793
(808) 652-1510

From: Emily Murai
Sent: Tuesday, June 15, 2021 2:47 PM
To: McCallister, Andrew S
Cc: Karlynn Fukuda
Subject: [EXTERNAL] Early Consultation for Waiko Road Subdivision Sewer System Project

Hi Andrew,

Thank you for speaking with me yesterday. As discussed, please find attached letter regarding the proposed County sewer project for review and early consultation. Copied here is Karlynn Fukuda from Munekiyo Hiraga, who is working on this project with me.

In addition to any feedback you may have, we are also requesting consultation regarding the Archaeological Monitoring Plan (AMP) that will be prepared for this project. Dr. Janet Six recommended that an AMP be prepared prior to geotechnical borings and subsequently updated upon preparation of construction plans based on geotechnical findings. We understand that typically, SHPD does not allow for the preemptive submittal of an AMP, but was wondering if that is something we can coordinate given that an AMP will be prepared prior to geotechnical work *and* prior to the initiation of project construction. Please let me know if you have any questions or recommendations. Thank you!

With gratitude,

Emily Y.K. Murai, Associate
Email: emily@munekiyohiraga.com

MUNEKIYO HIRAGA

O'ahu: 735 Bishop Street, Suite 321, Honolulu, Hawai'i 96813 **T:** 808.983.1233
Maui: 305 High Street, Suite 104, Wailuku, Hawai'i 96793 **T:** 808.244.2015 **F:** 808.244.8729
Planning. Project Management. Sustainable Solutions. www.munekiyohiraga.com

CONFIDENTIAL AND PRIVILEGED COMMUNICATION: This message (including attachments) is intended for the use of the designated recipient(s) named above. The contents of this correspondence are considered privileged and confidential. If you have received this message in error, kindly notify us immediately by email or telephone, and delete this email from your computer system. Thank you.

Due to the COVID-19 pandemic, if you have a document or package that must be delivered to our office via FedEx, UPS, or other courier service, please reach out to a MH team member to coordinate prior to sending. We are committed to providing our clients excellent service to further project goals and objectives during these challenging times. Please take care and stay safe. Mahalo.

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

September 10, 2025

Via email: dlnr@hawaii.gov

State of Hawai'i
Department of Land and Natural Resources
State Historic Preservation Division (Maui)
130 Mahalani Street
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Sir or Madame:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's emails dated June 15, 2021 and July 29, 2022, regarding the proposed Waiko Road Subdivision Sewer System. In addition to the comments made following consultation for this project in 2021, we acknowledge your comments and recommendations as follows:

a. The County of Maui will need to complete archaeological identification for this project.

b. The feasibility of an archaeological inventory survey should be evaluated in consultation with the State Historic Preservation Division (SHPD).

c. It is likely archaeological monitoring will be required during construction.

d. Include a cover letter from the appropriate federal agency regarding the NHPA Section 106 process.

e. Include a cover letter from the County of Maui initiating the Hawai'i Revised Statutes (HRS) 6E-8 process.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS

proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft EA.

These comments and recommendations have been forwarded to DEM and the project team for review and consideration for incorporation into 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 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,



Adam Strubeck, Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\SHPD.docx

MICHAEL P. VICTORINO
Mayor

DAVID C. THYNE
Fire Chief

BRADFORD K. VENTURA
Deputy Fire Chief



DEPARTMENT OF FIRE & PUBLIC SAFETY

FIRE PREVENTION BUREAU
COUNTY OF MAUI
313 MANEA PL.
WAILUKU, HI 96793

June 30, 2021

Munekiyo Hiraga
Attn: Emily Murai
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: CHAPTER 343, HAWAII REVISED STATUES, EARLY CONSULTATION REQUEST FOR PROPOSED - WAIKO ROAD SUBDIVISION SEWER SYSTEM

Dear Emily,

Thank you for allowing our office to provide comment on the subject proposed project. As per your request, comments are provided below:

- As we understand it there will be only improvements and repairs to the transmission lines and no permanent changes to the finished design of the roadways. Should there be any design changes to existing road ways we reserve the right to review proposed changes.

- Please provide notice to in district fire station for any access restrictions or road closures.

If there are any questions or comments, please feel free to contact me at (808) 876-4694 or by email at oliver.vaas@mauicounty.gov.

Thank you,

Oliver Vaas – Fire Prevention Bureau

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

September 10, 2025

Via email: ***fire.planreview@mauicounty.gov***

Oliver Vaas, Captain
County of Maui
Department of Fire and Public Safety
Fire Prevention Bureau

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Capt. Vaas:

On behalf of the County of Maui Department of Environmental Management (DEM), thank you for your agency's letter dated June 30, 2021 regarding the proposed Waiko Road Subdivision Sewer System. We acknowledge that the Maui County Fire Prevention Bureau reserves the right to review any proposed actions should there be design changes to existing roadways. Further, we acknowledge the request to provide notice to in-district fire stations of any access restrictions or road closures related to this project. Attached is the completed Fire Prevention Bureau Review Request Form for your review.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
Attachment
cc: Juan Rivera, County of Maui, Department of Environmental Management (w/attachment)
Reed Ariyoshi, Warren S. Unemori Engineering, Inc. (w/attachment)
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\MFPS.docx

MICHAEL P. VICTORINO
Mayor

LORI TSUHAKO
Director

LINDA R. MUNSELL
Deputy Director

DEPARTMENT OF HOUSING
& HUMAN CONCERNS
COUNTY OF MAUI
2200 MAIN STREET, SUITE 546
WAILUKU, MAUI, HAWAII
96793
PHONE: (808) 270-7805



June 16, 2021

Ms. Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii, 96793

Subject: **Chapter 343, Hawaii Revised Statues (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System**

Dear Ms. Murai:

The Department has reviewed the information submitted for the above subject project. Based on our review, we have determined that the project is not subject to Chapter 2.96, Maui County Code. The project does not require a Residential Workforce Housing Agreement.

Please call Mr. Buddy Almeida of our Housing Division at 270-7355 if you have any questions.

Sincerely,

C. BUDDY ALMEIDA
Housing Administrator

cc: Lori Tsuhako, Director of Housing and Human Concerns

AUG 0 8 2022

MICHAEL P. VICTORINO
Mayor

LORI TSUHAKO
Director

LINDA R. MUNSELL
Deputy Director



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

August 4, 2022

Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Murai:

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

The Department has reviewed the information submitted for the above subject project. Based on our review, we have determined that the project is not subject to Chapter 2.96, Maui County Code, and does not require a residential workforce housing agreement. At the present time, the Department has no additional comments to offer.

Please contact Mr. Buddy Almeida, Housing Administrator, at (808) 270-7351 if you have any questions.

Sincerely,

LORI TSUHAKO, LSW, ACSW
Director of Housing and Human Concerns

xc: Buddy Almeida, Housing Administrator

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

September 10, 2025

Lori Tsuhako, 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 Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Ms. Tsuhako,

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your letters dated June 16, 2021 and August 4, 2022, regarding the proposed Waiko Road Subdivision Sewer System project. We acknowledge that the project is not subject to Chapter 2.96, Maui County Code, and does not require a residential workforce housing agreement.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DHC.docx

MICHAEL P. VICTORINO
Mayor

KARLA H. PETERS
Director

MARY A. KIELTY
Deputy Director



DEPARTMENT OF PARKS AND RECREATION

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

June 23, 2021

Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Murai:

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

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,

KARLA H. PETERS
Director of Parks and Recreation

c: Samual Marvel, Chief of Planning and Development

KHP:SM:csa

MICHAEL P. VICTORINO
Mayor

KARLA H. PETERS
Director

SAMUAL A. MARVEL
Deputy Director



DEPARTMENT OF PARKS AND RECREATION

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

September 13, 2022

Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96793

Dear Ms. Murai:

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

Thank you for the opportunity to review and comment on the subject revised 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 April Shiotani, Acting Chief of Planning and Development, at april.shiotani@co.maui.hi.us or (808) 270-8017.

Sincerely,

KARLA H. PETERS
Director of Parks and Recreation

c: April Shiotani, Acting Chief of Planning and Development

KHP:AS:csa

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

September 10, 2025

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

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. McCall:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's letters, dated June 23, 2021 and September 13, 2022, regarding the proposed Waiko Road Subdivision Sewer System project. We acknowledge that the Department of Parks and Recreation has no comments to provide at this time.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DPR.docx

MICHAEL P. VICTORINO
Mayor

MICHELE CHOUTEAU MCLEAN, AICP
Director

JACKY TAKAKURA
Deputy Director



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

August 18, 2022

Ms. Emily Murai
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Murai:

SUBJECT: REQUEST FOR EARLY CONSULTATION REGARDING THE PREPARATION OF AN ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM, LOCATED IN WAILUKU, ISLAND OF MAUI, HAWAII; TMKS INCLUDE BUT MAY NOT BE LIMITED TO: (2) 3-5-010:001, 033, 034, 036, 037, AND 038; (2) 3-5-011:001 TO 041, 043, TO 046 AND 048; (2) 3-5-012:001 TO 023, 025, 035 TO 040, AND 043 TO 047 (RFC2022-00062)

The Department of Planning (Department) is in receipt of your request for early review and comment on the proposed project in accordance with the requirements of Chapter 11-200.1 of the State Department of Health's Administration Rules. The Department understands from your letter, dated July 29, 2022, that the project will make use of County and State lands and funds thus, triggering preparation of an Environmental Assessment (EA) pursuant to Hawaii Revised Statutes (HRS) Chapter 343.. The County of Maui, Department of Environmental Management (DEM) will be the approving agency for the EA.

The proposed project involves the construction of approximately 5,800 linear feet of gravity sewer lines and service laterals to connect approximately 119 lots in the Waikapu area. The new sewer lines will be located within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street and connect to an existing manhole on East Waiko Road. The proposed project will be constructed within the roadway right-of-way and sewer connections will be installed at the boundaries of the lots. The proposed project will allow for the elimination of many cesspools and septic systems and their effects on the environment. The Department applauds this effort.

The Department offers for your consideration the following comments:

1. The area of the project is in the Waikapu Ahupua'a area and runs parallel with Waikapu Valley and Waikapu stream.
   - State District: Urban
   - Maui Island Plan (MIP): The majority of the project area is in Small Town Growth Boundarys and everything east of Honoapiilani Highway is in the Urban Growth Boundary. Adjacent to the eastern properties, the MIP has a Preservation area. To the west of the project area, the MIP has designated Sensitive Lands.
   - Community Plan: The project area is predominantly Single Family, and east of Honoapiilani Highway has a few lots designated Commercial.
   - County Zoning: Agricultural
   - Some streets in the project area appear to be in Flood Zone AE. Please verify with our Zoning Administration and Enforcement Division and see if a Flood Development Permit may be required.
   - The project area is located outside of the County of Maui's Special Management Area (SMA) and is not subject to Shoreline regulations.

2. The Department highly supports this project moving forward as it implements the following Maui Island Plan policies:

   - 6.2.2.c Improve and upgrade the County's existing wastewater collection, treatment, and reuse facilities consistent with the current and future plans and the County's CIP.

   - 6.2.2.g Strongly encourage the phase out of cesspools.

3. The issue of grading and ground disturbance in this location must be thoroughly reviewed and discussed in the DEA in the archaeological and cultural sections with a description of potential impacts and mitigation measures to be employed. Consultation, review and approval by DLNR/SHPD should be obtained, including requirements for archaeological surveying and monitoring.

4. Outline BMPs to ensure any potentially negative construction-related impacts will not be significant.

5. The project area may suffer traffic congestion due to project construction. Consider mitigation measures to address the impacts of traffic during construction.

6. Finally, the Department would like to comment on the Draft EA when completed and requests a copy of the Draft EA when available.

Thank you for the opportunity for early review and comment on the Proposed Waiko Road Subdivision Sewer System Project. Should you require further clarification, please contact Staff Planner Aliki Biniaris at aliki.biniaris@mauicounty.gov or at (808) 270-5570.

Sincerely,

MICHELE MCLEAN, AICP
Planning Director

Copy To: Ann T. Cua, Planning Program Administrator (PDF)
Jordan Hart, Planning Program Administrator (PDF)
Kathleen Aoki, Administrative Planning Officer (PDF)
Pam Eaton, Planning Program Administrator (PDF)
Aliki Biniaris, Staff Planner (PDF)
Emily Murai, Associate, Munekiyo Hiraga (PDF)
Project File

MCM:AB:rma
K:\WP_DOCS\Planning\RFC\2022\00062_Waiko_Rd_Sewer\Waiko Rd. Sub. Sewer Sys. Proj. Comment Letter.doc

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

September 10, 2025

Kate Blystone, Director
County of Maui
Department of Planning
Attention: Aliki Biniaris, Planner
2200 Main Street, Suite 315
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Ms. Blystone:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your Department's letter, dated August 18, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

1. We acknowledge that the project area is within the Waikapū ahupua'a and runs parallel to Waikapū Valley and Waikapū Stream.

   - Thank you for confirming that the project area is within the State Land Use Urban District.

   - Thank you for confirming that the majority of the project area is within the Maui Island Plan's (MIP) Small Town Growth Boundary with portions of the project area in the MIP Urban Growth Boundary. We acknowledge that there are MIP designated Preservation and Sensitive lands that are adjacent to or surrounding the project area.

   - We acknowledge that the project area's community plan region designates a majority of the project area as Single-Family with a few parcels designated for Commercial use.

   - Thank you for confirming that the project is mostly designated Agricultural by Maui County Zoning. There is one (1) parcel in the project area designated as "BC-T, Business Country-Town" by County Zoning.

2. We acknowledge that the Planning Department is supportive of this project and that the project implements Maui Island Plan policies 6.2.2c to "*Improve and upgrade the County's existing wastewater collection, treatment, and reuse facilities consistent with the current and future plans and the County's CIP"* and policy 6.2.2.g to "*Strongly encourage the phase out of cesspools*."

3. Grading and ground disturbance for the project will be discussed in the Draft Environmental Assessment (EA) along with potential impacts and mitigation measures to be employed. The DEM will consult with the State Historic Preservation Division (SHPD) and will comply with any recommended mitigation measures. Additionally, we note that the County's Archaeologist has been consulted on the proposed project and is in coordination with the project's archaeologist and the SHPD.

4. Best Management Practices (BMPs) will be discussed in the Draft EA and implemented to mitigate construction-related impacts.

5. All efforts will be made to limit and mitigate impacts to the flow of traffic during construction. No impacts to traffic are anticipated following the completion of construction.

6. The Draft EA will be provided to the Planning Department for review and comment once available.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 require additional information, please feel free to contact me at (808) 983-1233.

Very truly yours,



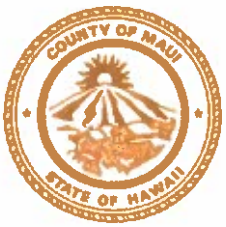
Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
Trevor Yucha, Cultural Surveys Hawaii
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DP.docx

MICHAEL P. VICTORINO
Mayor

MARC I. TAKAMORI
Director

MICHAEL B. DU PONT
Deputy Director





DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
TELEPHONE: (808) 270-7511
FAX: (808) 270-7505

June 30, 2021

Munekiyo Hiraga
Attention: Emily Murai, Associate
305 High Street, Suite 104
Wailuku, HI 96793
Email: planning@munekiyohiraga.com

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

Dear Ms. Murai,

Thank you for the opportunity to review and comment on this project.

It was stated that the new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, and Keilio Place. We have two Maui Buses (Lahaina Islander Route #20) that travel along Honoapi'ilani Highway through Waikapu that services the two Waikapu Maui Bus stops on an hourly basis. It was not mentioned if this project would close Honoapi'ilani Highway in the project area and if so, our department requests early notification of the closure or route modification so we're able to plan for possible bus stop closures and provide notice to the public transit riders in advance.

Other than mentioned, we have no additional comments.

Sincerely,

Marc Takamori
Director

MICHAEL P. VICTORINO
Mayor

MARC I. TAKAMORI
Director

MICHAEL B. DU PONT
Deputy Director



DEPARTMENT OF TRANSPORTATION
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAI'I 96793

TELEPHONE: (808) 270-7511
FAX: (808) 270-7505

August 24, 2022

Munekiyo Hiraga
Attention: Emily Murai, Associate
305 High Street, Suite 104
Wailuku, HI 96793
Email: planning@munekiyohiraga.com

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

Dear Ms. Murai,

Thank you for the opportunity to review and comment on this project.

It was stated that the new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, and Keilio Place. We have two Maui Buses (Lahaina Islander Route #20) that travel along Honoapi'ilani Highway through Waikapu that services the two Waikapu Maui Bus stops on an hourly basis. It was not mentioned if this project would close Honoapi'ilani Highway in the project area and if so, our department requests early notification of the closure or route modification so we're able to plan for possible bus stop closures and provide notice to the public transit riders in advance.

Other than mentioned, we have no additional comments.

Sincerely,

Marc Takamori
Transportation Director

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

September 10, 2025

Marc Takamori, Director
County of Maui
Department of Transportation
110 Ala'ihi Street, Suite #210
Kahului, Hawai'i 96732

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Takamori:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your letters, dated June 30, 2021 and August 24, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

- We acknowledge that the Maui County Department of Transportation has two (2) Maui Buses (Lahaina Islander Route #20) that travel along Honoapi'ilani Highway and service two (2) Waikapū Maui Bus stops on an hourly basis.

- We also acknowledge the Department's request for early notification of road closures or route modifications in order to plan for possible bus stop closures. The DEM will coordinate with the Department of Transportation should road closures be required.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Clifford Mukai, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\MDOT.docx

MICHAEL P. VICTORINO
Mayor

JEFFREY T. PEARSON, P.E.
Director

HELENE KAU
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAIʻI 96793
www.mauicounty.gov/water

July 8, 2021

Ms. Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Maui, Hawaiʻi, 96793

Dear Ms. Murai:

Re: Waiko Road Subdivision Sewer System Early Consultation Request for an Environmental Assessment (EA)
TMKs: 2-3-5-010:001, 033, 034, 036, 037, 038; 2-2-5-011:001-041; 2-3-5-011:043-046; and 2-3-5-001:048
Waikapu, Maui, Hawaiʻi

Thank you for the opportunity for the County of Maui Department of Water Supply's (MDWS) Water Resources and Planning Division to comment on the Waiko Road Subdivision Sewer System Early Consultation Request. The MDWS Wailuku System services the Waikapu area within which the proposed project is located. Please coordinate sewer system improvements with our Engineering Division at 808-270-7835, in order to address potential MDWS infrastructure impacts.

MDWS Wellhead Protection Areas
Approximately 3.75 acres of the project footprint is within the MDWS wells' 10-year time of travel zone (see attached map); therefore, non-pathogen-related chemicals disposed of in cesspools and septic systems can potentially contaminate MDWS wells within the 10-year time of travel zone. From the perspective of wellhead/source water protection, the proposed project appears to represent an improvement from the status quo.

Construction Best Management Practices (BMPs) for Pollution Prevention
In order to protect ground and surface water resources, we recommend that in addition to any required

BMPs, the following measures designed to minimize infiltration and runoff be implemented during construction:

1. Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the ground.
2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.
3. Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed off-site.
4. Properly install and maintain erosion control barriers such as silt fencing or straw bales.
5. Disturb the smallest area possible.
6. Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid establishment of stands of plants. In order to minimize chemical run-off, apply biocides only during dry periods of low rainfall.
7. Keep run-off on site.
8. Dust control: reclaimed water for dust control is available from the Kihei Wastewater Treatment plant at a reasonable cost. If feasible, it should be considered as an alternative source of water for dust control during construction.

We hope you find this information useful. Should you have any questions, please contact staff planner Alex Buttaro at (808) 463-3103 or alex.buttaro@mauicounty.gov.

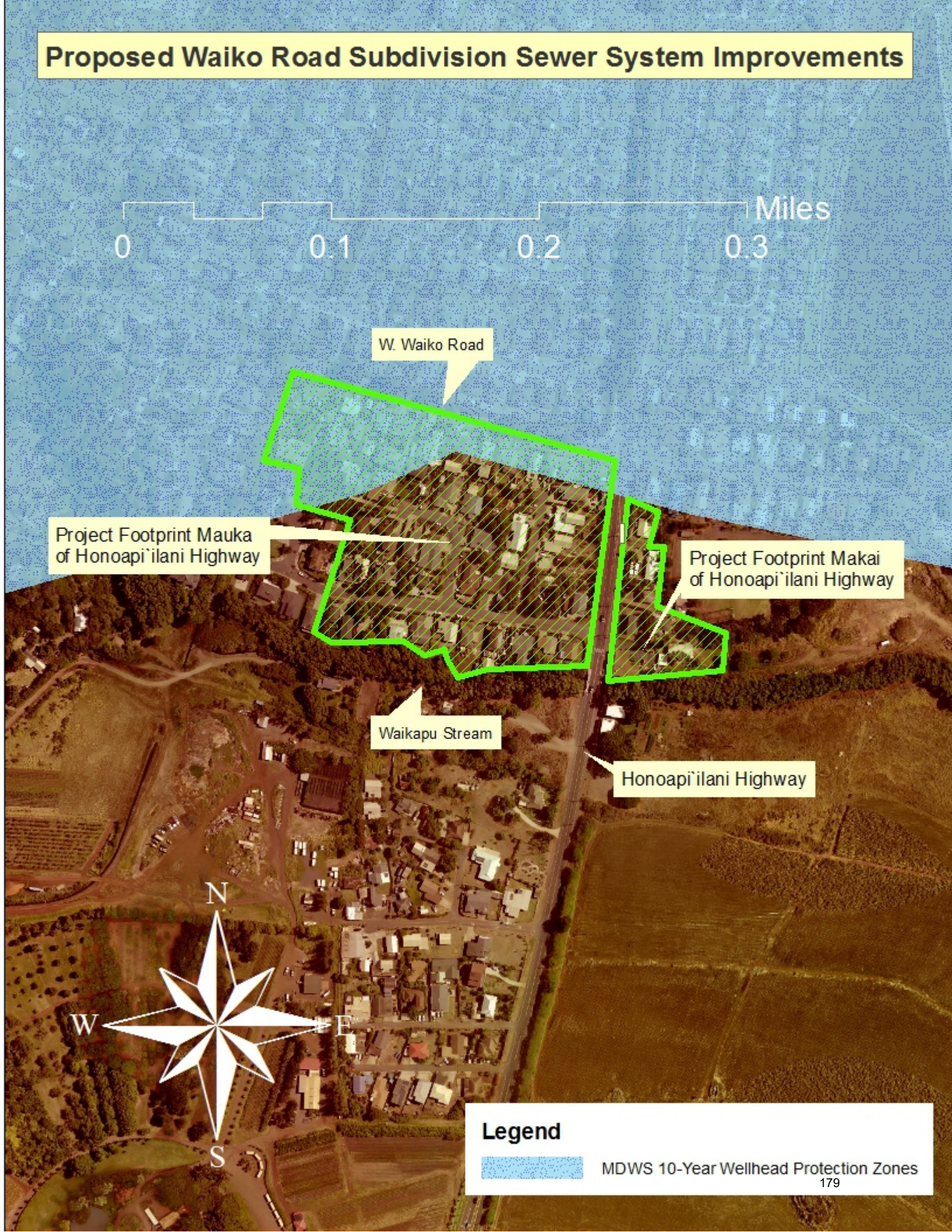
Sincerely,

Jeffrey T. Pearson, P.E.
Director
BAB

Cc: MDWS Engineering
Derek Takahashi, P.E., Department of Environmental Management
Derek Ono, P.E., Warren S. Unemori Engineering, Inc.

S:\PLANNING\Permit_Review\Projects Review\planning review\EA-EIS\235010001 Waiko Road Subdivision Sewer System EA

Proposed Waiko Road Subdivision Sewer System Improvements



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

September 10, 2025

John Stufflebean, P.E., Director
County of Maui
Department of Water Supply
200 S. High Street, 5th Floor
Wailuku, Hawai'i 96793

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Stufflebean:

On behalf of the County of Maui Department of Environmental Management (DEM), thank you for your agency's letter dated July 8, 2021 regarding the proposed Waiko Road Subdivision Sewer System. We acknowledge that the County of Maui Department of Water Supply's (DWS) Water Resources and Planning Department requests coordination with your Engineering Division to address potential DWS infrastructure impacts. We also acknowledge that approximately 3.75 acres of the project area falls within the DWS wells' 10-year time of travel zone, as depicted in the attachment of your letter. As such, we understand that non-pathogen-related chemicals disposed of in cesspools and septic systems can potentially contaminate DWS wells within the 10-year time of travel zone, and that the proposed project appears to represent an improvement to existing conditions from the perspective of wellhead/source water protection.

Furthermore, we acknowledge receipt of the following Best Management Practices (BMPs) for pollution prevention which have been forwarded to the project team for consideration and incorporation into the proposed project's construction plans as may be applicable:

1. Prevent cement products, oil, fuel and other toxic substances from falling or leaching into the ground.

2. Properly and promptly dispose of all loosened and excavated soil and debris material from drainage structure work.

3. Maintain vehicles and equipment to prevent oil or other fluids from leaking. Concrete trucks and tools used for construction should be rinsed off-site.

4. Properly install and maintain erosion control barriers such as silt fencing or straw bales.

5. Disturb the smallest area possible.

6. Retain ground cover until the last possible date. Stabilize denuded areas by sodding or planting as soon as possible. Use high seeding rates to ensure rapid establishment of stands of plants. In order to minimize chemical run-off, apply biocides only during dry periods of low rainfall.

7. Keep run-off onsite.

8. Dust control: reclaimed water for dust control is available from the Kihei Wastewater Treatment plant at a reasonable cost. If feasible, it should be considered as an alternative source of water for dust control during construction.

Since the early consultation request, the DEM has coordinated with the DWS for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\DWS.docx

MICHAEL P. VICTORINO
Mayor

HERMAN ANDAYA
Administrator



County of Maui
MAUI EMERGENCY MANAGEMENT AGENCY
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAI`I 96793
PH: (808) 270-7285
emergency.management@mauicounty.gov

July 8, 2021

Emily Murai
Munekiyo Hiraga
305 High St, Suite 104
Wailuku, HI 96793

Ms. Emily Murai,

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES (HRS) EARLY CONSULTATION, REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

Thank you for your proposal and the opportunity for us to submit suggestions and comments on the proposed Waiko Road Subdivision Sewer System. We have read the request and have offered some comments and considerations for your convenience below.

1.) Currently Maui County Emergency Management Agency (MEMA) does not have any suggestions regarding the upgrades to the Waiko Road Subdivision Sewer System.

Thank you for allowing us to make our suggestions to your project. Should you have any questions, please feel free to contact Gina Albanese (808) 270-7276, or via email at Herman.Andaya@co.maui.hi.us

Sincerely,

Herman Andaya
MEMA Administrator

MICHAEL P. VICTORINO
Mayor

HERMAN ANDAYA
Administrator



COUNTY OF MAUI
MAUI EMERGENCY MANAGEMENT AGENCY
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793
PH: (808) 270-7285
emergency.management@mauicounty.gov

August 8, 2022

Emily Murai
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Ms. Emily Murai:

SUBJECT: REVISION v01: CHAPTER 343, HAWAII REVISED STATUES (HRS) EARLY CONSULTATION, REQUEST FOR THE PROPOSED WAIKO ROAD SUBDIVISION SEWER SYSTEM

Thank you for your revised proposal and the opportunity for us to submit suggestions and comments on the additional properties that are being included in the Waiko Road Subdivision Sewer System. We have read the request and have offered some comments and considerations for your convenience below.

1. Currently, Maui County Emergency Management Agency (MEMA) does not have any suggestions regarding the upgrades to the Waiko Road Subdivision Sewer System, due to the additional properties being proposed.

Thank you for allowing us to make our suggestions to your project. Should you have any questions, please feel free to contact Gina Albanese (808) 270-7276, or via email at Herman.Andaya@co.maui.hi.us.

Sincerely,

Herman Andaya
MEMA Administrator

HA:ga

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

September 10, 2025

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

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Lonokailua-Hewett,

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your agency's letters dated July 8, 2021 and August 8, 2022, regarding the proposed Waiko Road Subdivision Sewer System project. We acknowledge that the Maui Emergency Management Agency has no suggestions to provide at this time.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,

Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\MEMA.docx

JUL 0 1 2021

POLICE DEPARTMENT
COUNTY OF MAUI

MICHAEL P. VICTORINO
MAYOR

OUR REFERENCE

YOUR REFERENCE

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

TIVOLI S. FAAUMU
CHIEF OF POLICE

DEAN M. RICKARD
DEPUTY CHIEF OF POLICE

June 18, 2021

Ms. Emily Murai, Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System

Dear Ms. Murai:

This is in response to your letter dated June 10, 2021 requesting comments on the proposed construction of the Waiko Road Subdivision Sewer System project.

In review of the submitted documents, we would like to recommend the project meets the minimal standards set forth by county codes and state laws. If the roads will be temporarily closed to alternating traffic, we ask the project manager utilize flag men to conduct traffic control and proper signage posted along the routes during construction.

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

Sincerely,

Assistant Chief John Jakubczak
for: DEAN M. RICKARD
Acting Chief of Police

AUG 2 9 2022

POLICE DEPARTMENT

COUNTY OF MAUI

MICHAEL P. VICTORINO
MAYOR

OUR REFERENCE

YOUR REFERENCE

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

JOHN PELLETIER
CHIEF OF POLICE

CHARLES L. HANK III
DEPUTY CHIEF OF POLICE

August 25, 2022

Ms. Emily Murai
Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System

Dear Ms. Murai:

This is in response to your letter dated July 29, 2022 requesting comments on the proposed Waiko Road Subdivision Sewer System project.

In review of the submitted documents, we have no objections to the upcoming construction project if it meets the minimal standards set forth by county codes and state laws. We also ask if the roads will be temporarily closed for one lane alternating traffic, the project manager utilize flag men to conduct traffic control and have proper signage posted along the routes during construction. Thank you for giving us the opportunity to comment on this project.

Sincerely,

Assistant Chief Reid Pursley
for: JOHN PELLETIER
Chief of Police

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

September 10, 2025

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

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Chief Pelletier,

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your department's letters dated June 18, 2021 and August 25, 2022, providing comments on the proposed Waiko Road Subdivision Sewer System project. We offer the following information in response to the comments received.

- Thank you for confirming that the Police Department has no objections to the proposed project if it meets the minimal standards set forth by the County code and State laws. We confirm that the project will comply with the standards set forth by the County code and State laws.

- We appreciate the recommendation to utilize flag men to conduct traffic control and have proper signage posted along roadway routes during construction. All efforts will be made to limit impacts to the flow of traffic.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\MPD.docx

Subject: FW: Early Consultation Request for Waikapu Sewer Improvements
Attachments: HawaiianTelcom.ecl.pdf

From: Kyle Higa <Kyle.Higa@hawaiiantel.com>
Sent: Thursday, August 4, 2022 8:03 AM
To: Lynne Hiromoto <lynne@munekiyohiraga.com>
Subject: FW: Early Consultation Request for Waikapu Sewer Improvements

Aloha Lynne,

Thank you for including Hawaiian Telcom in your plan review process. HT has no comments to add.

Mahalo,
Kyle Higa
Network OSP Engineer, Maui
Work: 808-283-6346

fioptics
powered by Hawaiian Telcom

From: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>
Sent: Friday, July 29, 2022 1:37 PM
To: Kyle Higa <Kyle.Higa@hawaiiantel.com>
Cc: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>; Gerry Sagucio <Gerry.Sagucio@hawaiiantel.com>
Subject: FW: Early Consultation Request for Waikapu Sewer Improvements

Aloha Kyle!

Can you please review attached early consult letter for Waikapu Sewer Improvement project and provide any comments/feedback to Lynne, if there are any? Thank you!

Greg Kawachi
Specialist – Structure Engineer
O: 808.546.7666
C: 808.779.8324

Hawaii's Technology Leader Hawaiian Telcom

NOTICE: This message is intended only for the person or entity to which it is addressed and may contain confidential and/or privileged information. If you are not the intended recipient, any review, retransmission, dissemination, copying or other use of this message is strictly prohibited. If you received this message in error, please contact the sender immediately by reply email, delete this message from all computers, and destroy any printed copies.

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
SENIOR ADVISOR

July 29, 2022

Via Email: HT-PlanReviews@hawaiiantel.net

Hawaiian Telcom
Plan Review Department
60 South Church Street
Wailuku, Hawai'i 96793

SUBJECT: Chapter 343, Hawai'i Revised Statutes (HRS) Early Consultation Request for the Proposed Waiko Road Subdivision Sewer System

Dear Sir or Madame:

The County of Maui, Department of Environmental Management (DEM) proposes the construction of the Waiko Road Subdivision Sewer System. The proposed project will include the construction of approximately 5,800 linear feet (l.f.) of gravity sewerline and service laterals to connect approximately 119 lots in the Waikapū area. The anticipated affected TMKs within the project area include, but may not be limited to, the following: TMKs (2)3-5-004:028, 031, and 063; (2)3-5-010:001, 033, 034, 036, 037, and 038; (2)3-5-011:001 to 041, 043 to 046, and 048; (2)3-5-012:001 to 023, 025, 035 to 040, and 043 to 047. See **Figures 1** and **2**. The DEM previously sought early consultation comments for this project in a letter dated June 10, 2021. The proposed project previously involved the construction of approximately 3,000 l.f. of gravity sewerline to connect approximately 75 lots. However, the scope of the proposed project has since been revised to include County sewer connections to an additional 38 lots located in the western portion (mauka) of West Waiko Road. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights of way and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

The use of County lands and State lands and funds is a trigger for preparation of an Environmental Assessment (EA) pursuant to Chapter 343, HRS. As such, a Draft EA will be prepared for this project to address the technical characteristics, potential



Figure 1

Waiko Road Subdivision Sewer System

Regional Location Map

0 500 1000 2000 Feet

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

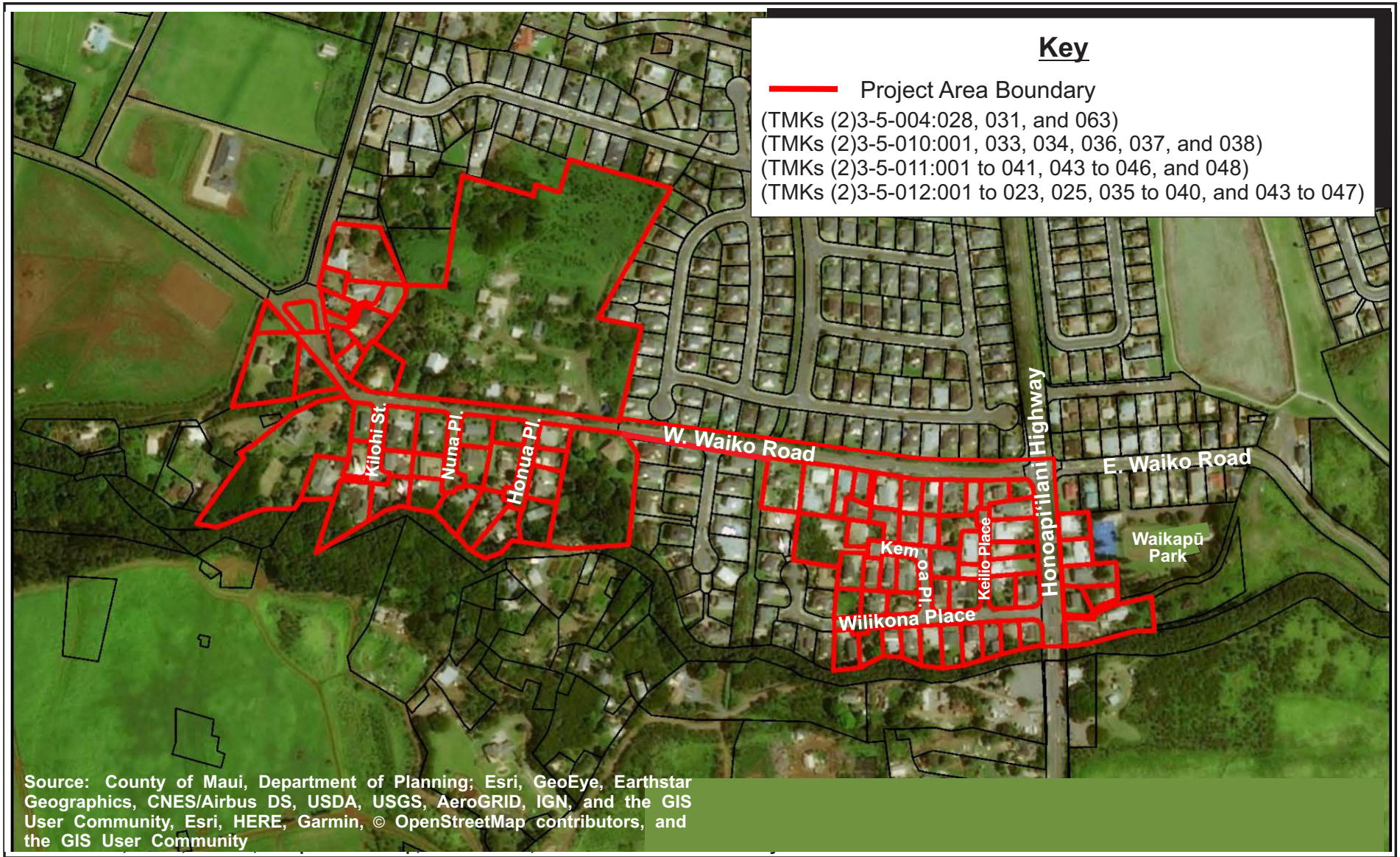


Figure 2

Waiko Road Subdivision Sewer System
Project Location Map

0 225 Feet
112.5 450

Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

environmental impacts and alternatives. State Revolving Funds (SRF) through the Environmental Protection Agency (EPA) will also be used for this project, therefore, the applicable federal crosscutters will be addressed in the Draft EA, as well as Section 106 of the National Historic Preservation Act (NHPA) and Section 7 of the Endangered Species Act (ESA). DEM will be the approving agency for the EA.

On behalf of DEM, we kindly request your early review and comment on the proposed project in accordance with the requirements of Chapter 11-200.1, Hawai'i Administrative Rules. We appreciate receiving any comments you may have by **August 19, 2022**. Please send your comments to the address listed below:

Munekiyo Hiraga
Attention: Emily Murai, Associate
305 High Street, Suite 104
Wailuku, Hawai'i 96793
OR
Email: planning@munekiyohiraga.com

Thank you for your participation in the Chapter 343, HRS environmental review process. Should you have any questions regarding this Chapter 343, HRS early consultation request, please do not hesitate to contact me at (808) 983-1233.

Very truly yours,



Emily Murai, Associate

EM:lh
Enclosures
cc: Juan Rivera, P.E., County of Maui, Department of Environmental Management (w/enclosures)
Derek Ono, P.E., Warren S. Unemori Engineering, Inc. (w/enclosures)
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\Revised ECL\Early Consultation Letter (revised Jan 2022).docx

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

September 10, 2025

Via email: Kyle.Higa@hawaiiantel.com

Kyle Higa, Network OSP Engineer
Hawaiian Telcom, Maui
Plan Review Department

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management's Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Higa:

On behalf of the County of Maui, Department of Environmental Management (DEM), thank you for your email dated August 4, 2022, regarding the proposed Waiko Road Subdivision Sewer System project. We acknowledge that Hawaiian Telcom has no comments to provide at this time.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Hawaiian Telcom, Plan Review Department (via email HT-PlanReviews@hawaiiantel.com)
Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\HWNTEL.docx

From: Travis Polido <trpolido@gmail.com>
Sent: Friday, July 23, 2021 7:21 AM
To: General eMail <planning@munekiyohiraga.com>; Emily Murai <emily@munekiyohiraga.com>
Cc: Waikapu Community Association <waikapuca@gmail.com>
Subject: Proposed Waiko Road Subdivision Sewer System.

July 22, 2021

Munekiyo Hiraga
Attention: Emily Murai, Associate
305 High Street, Suite 104
Wailuku, HI 96793

To All Concerned,

Waikapu residents have shared the following comments and concerns that they would like to see addressed regarding the proposed Waiko Road Subdivision Sewer System Project prior to the project progressing. Please find a compilation of all comments and questions below.

1. What is the projected cost for a household to connect to the newly constructed county sewer lines, and what are the anticipated sewer fees following hookup?

2. Will there be funding available from the County of Maui, or State of Hawaii, for residents to offset some of the cost, as most residents on the older Waikapu side (listed below) are elderly and are on a fixed income?

3. Will residents be able to tie in as the crews are fronting their property, to eliminate the roads of getting paved and all nice, to having it get all dug out and left all busted up, like we are seeing on Main St., Church St., Vineyard St., Lower Main St?

4. How is the timeframe from start to completion of the sewer line work, and when is the project scheduled to break ground?

5. Will the Department of Environmental Management be breaking down each section of the proposed project? West Waiko? East Waiko? Keilio place?

6. Will access to dead end roads like Keilio be open for residents to come and leave freely during the project work?

7. How will traffic be routed while work is being done?

8. What time of day will this work be conducted, Day or Night?

9. Why is it that Waikapu residents south of Waiko Road and west of Kilinoe Place are unable to connect to this proposed project (i.e. Lehuapueo Pl., Ololi Pl., Olo Pl., Honua Pl., Nuna Pl., Kilohi St. Old Government Rd., residents on the dirt road across Waikapu on 30.)?

10. What is the reasoning for including a portion of Wilikona Place in the project scope, but not all TMKs toward the top of Wilikona and along Oia Way?

11. Why doesn't the Department of Environmental Management push and make Waikapu Country Town build its Sewer Treatment Plant now and have that part of the infrastructure in before they build their subdivision?

12. Why isn't the Department of Environmental Management providing an incentive to Waikapu Country Town to build out their Sewer Treatment Plant if Waikapu residents are able to connect to it. Wouldn't the runs be shorter and less costly in the end?

13. Why is the County of Maui thinking of allowing another community to pump 3 miles to tie into the Waikapu Country Town Plant Facility, but not allow the existing Waikapu community that will be surrounding it, to tie in to the same facility.

Aloha,

Travis Polido
8082984680
trpolido@gmail.com
Waikapu Community Association President

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

September 10, 2025

Via email: ***waikapuca@gmail.com***

Jordan Helle, President
Waikapū Community Association

SUBJECT: Response to Early Consultation Comments Regarding the Proposed Department of Environmental Management Waiko Road Subdivision Sewer System; Waikapū, Maui, Hawai'i

Dear Mr. Helle:

On behalf of the County of Maui Department of Environmental Management (DEM), thank you for the Association's email dated July 22, 2021 providing comments from the Waikapū Community Association on the proposed Waiko Road Subdivision Sewer System. We offer the following information in response to the comments received.

Projected Cost to Residents

We acknowledge the comments requesting information on the projected cost and availability of financial assistance for homeowners within the project area. Per the Fiscal Year 2022 County Budget, the cost of connecting to the sewer system is expected to be between $3,000.00 and $15,000.00 per lot. As shared by the DEM, residential sewer fees for homes connected to the County water system consist of a base charge and a water usage charge with a usage ceiling charge cap. Residential sewer fees include a base charge of $35.00 per month with a charge of $4.50 per 1,000 gallons. Single family residences are charged for up to 9,000 gallons of water consumed per dwelling unit and multi-family residences are charged for up to 6,000 gallons of water consumed per dwelling unit. At this time, there is no County or State funded financial assistance available to residents for sewer connection. Residents may contact the County Wastewater Reclamation Division at (808) 270-7417 Monday-Friday between the hours of 7:45 a.m.-4:30 p.m. to inquire further.

Project Implementation

We acknowledge the comments requesting information regarding the project's construction timeline and implementation schedule. The DEM currently has funds for the design and permitting stage of the project. In the future, the DEM will be requesting construction funds, but there is no set date for construction or completion of the project. We also acknowledge the suggestion to efficiently connect lots to the sewer system to limit construction activity. The preliminary plan is to construct "County" laterals which will be terminated at the property line, so when the land owner connects to the sewer lateral, no road repair work is required. All proposed sewerline work will all be installed within the same project. The comments were shared with the design team for review and consideration in the preparation of the project plans.

Traffic

We acknowledge the comments and questions regarding traffic routing and resident access to roadways during construction. All efforts will be made to limit impacts to the flow of traffic and allow residents continued access to and from their homes to the maximum extent practical during construction. Construction work will primarily be conducted during daytime hours.

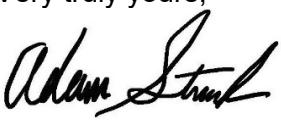
System Connections for Nearby Properties and Waikapū Country Town

We acknowledge the Association's comments and questions regarding neighboring community connections to the County sewer system and questions regarding the Waikapū Country Town's sewage treatment plant. It is DEM's goal to provide sewerage facilities to neighboring lots as sufficient funds become available within the County's budget. According to the County wastewater map, there are existing dry sewer manholes along Oia Way and portions of Wilikona Place that will be connected to the new sewer system. Areas mauka of Kilinoe Place may be connected to the County sewer system in a future project. We also acknowledge the request for information regarding the Waikapū Country Town sewer treatment plant. The County and Waikapū Country Town are continuing discussions about the terms and location of the new wastewater treatment facility. Their treatment facility is not yet built and is not expected to be constructed by the completion of this project. It is noted that the Central Maui Wastewater Reclamation Facility (WWRF) is anticipated to be operational in 2029. The project parcels are anticipated to be connected to the new WWRF in 2029.

Since the early consultation request, the DEM has coordinated with the Department of Water Supply (DWS) for the proposed waterline replacement work. The DWS improvements would be in the vicinity of the sewer improvements area and would be constructed in conjunction with the subject sewer system improvements project. DWS proposes to replace existing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline work will be indicated on project plans and discussed within the Draft 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 Environmental Assessment 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,



Adam Strubeck
Associate

AS:ab
cc: Juan Rivera, County of Maui, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Ch IX Cmts.Resp Ltrs\(1)RespLtrs\23. WCA.docx

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

X

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

The Draft EA for the subject action was filed and published in the Office of Planning and Sustainable Development, Environmental Review Program, The Environmental Notice on September 23, 2025. Letters received as well as responses to substantive comments are included in this chapter.

FEDERAL AGENCIES

1. Jason Hew, District Conservationist
   U.S. Department of Agriculture
   Natural Resources Conservation Service
   77 Hoʻokele Street, Suite 202
   Kahului, Hawaiʻi 96732

2. Jen Martin, Chief
   U.S. Army Engineer District, Honolulu
   U.S. Department of the Army
   Regulatory Branch, Building 230
   Fort Shafter, Hawaiʻi 96858-5440
   Via email**: CEPOH0-RO@usace.army.mil**

3. Chelsie Javar-Salas, Island Team Leader
   U. S. Fish and Wildlife Service
   300 Ala Moana Blvd., Rm. 3-122
   Honolulu, Hawaiʻi 96850
   Via email: pifwo_admin@fws.gov

STATE AGENCIES

4. Keith Regan, Comptroller
   State of Hawaiʻi
   Department of Accounting and General Services
   P.O. Box 119
   Honolulu, Hawaiʻi 96810-0119

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

6. Edwin H. Sniffen, Director
   State of Hawaiʻi
   Department of Transportation
   869 Punchbowl Street
   Honolulu, Hawaiʻi 96813-5097
   Via email: DOT.LandUse@hawaii.gov

7. State of Hawaiʻi
   Department of Land and Natural Resources
   State Historic Preservation Division, Maui
   130 Mahalani Street
   Wailuku, Hawaiʻi 96793
   Via email: dlnr@hawaii.gov

8. Stacy Kealohalani Ferreira, Chief Executive Officer (Ka Pouhana)
   State of Hawaiʻi
   Office of Hawaiian Affairs
   560 N. Nimitz Highway, Suite 200
   Honolulu, Hawaiʻi 96817

9. Mary Alice Evans, Director
   State of Hawaiʻi
   Office of Planning
   P. O. Box 2359
   Honolulu, Hawaiʻi 96804

MAUI COUNTY AGENCIES

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

11. Lori Tsuhako, Director
County of Maui
Department of Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawai‘i 96793

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

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

14. Kate Blystone, Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, Hawai‘i 96793

15. Jordan Molina, Director
County of Maui
Department of Public Works
200 South High Street, 4th Floor
Wailuku, Hawai‘i 96793

16. Marc Takamori, Director
County of Maui
Department of Transportation
110 Ala‘ihi Street, Suite #210
Kahului, HI 96732

17. John Stufflebean, P.E., Director
County of Maui
Department of Water Supply
200 South High Street, 5th Floor
Wailuku, Hawai‘i 96793

18. Amos Lonokailua-Hewett, Administrator
County of Maui
Emergency Management Agency
200 South High Street, 1st Floor
Wailuku, Hawai‘i 96793

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

20. Honorable Alice Lee, Council Chair
Maui County Council
200 South High Street, 8th Floor
Wailuku, Hawai‘i 96793

MAUI COUNTY ORGANIZATIONS

21. Hawaiian Telecon
Plan Review Department
Via email: HT-PlanReviews@hawaiiantel.com

22. Michael Grider, Manager of Engineering
Hawaiian Electric
P.O. Box 398
Kahului, Hawai‘i 96733

23. Spectrum
158 Ma‘a Street
Kahului, Hawai‘i 96732

24. Jordan Helle, President
Waikapu Community Association
P.O. Box 3046
Wailuku, Hawai‘i 96793
Via email: waikapuca@gmail.com

25. Glenn Adolpho
Waikapu Gardens Homeowners Association
P.O. Box 2390
Wailuku, Hawai‘i 96793
Via email: gncadolpho@hawaiiantel.net

26. Joseph G. Blackburn, II
Waiolani Community Association
P.O. Box 1067
Wailuku, Hawai‘i 96793

27. Joseph G. Blackburn,II
Waiolani Elua Community Association
P.O. Box 1067
Wailuku, Hawai‘i 96793

28. Joseph G. Blackburn, II
Waiolani Mauka Community Association
P.O. Box 1067
Wailuku, Hawai‘i 96793

OCT 06 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)25.144

OCT - 2 2025

Shayne Agawa, Director
County of Maui
Department of Environmental Management
200 South High Street
Kalana O Maui Building
Wailuku, Hawaii 96793

Dear Shayne Agawa:

Subject: Draft Environmental Assessment and Anticipated Finding of No Significant Impact for The Proposed Waiko Road Sewer System/Waterline Improvements Project at TMKs: (2)3-5-004:018, 028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047; County Roadways and a Portion of Honoapiilani Highway Waikapu, Maui, Hawaii

Thank you for the opportunity to review and 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 Delmond Won of the Planning Branch at (808) 586-0491.

Sincerely,

GORDON S. WOOD
Public Works Administrator

DW:
c: Adam Strubeck, Munekiyo Hiraga
Eric Agena, DAGS Acting 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

February 9, 2026

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

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Mr. Wood:

Thank you for your letter dated October 2, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management, we acknowledge that your Department does not have any comments to offer on the project.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DAGS.docx

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

October 30, 2025

Mr. Adam Strubeck
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, HI 96793

Re: Draft Environmental Assessment for the Waiko Road Sewer System/Waterline Improvements at Waikapu, Maui, Hawaii

Dear Mr. Strubeck:

Thank you for your letter dated September 19, 2025 and the opportunity to comment on the proposed Waiko Road Sewer System/Waterline Improvements (Project). The Hawaii State Department of Education reviewed the draft environmental assessment for the proposed Project and has no comments to offer at this time.

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

Sincerely,

Roy Ikeda
Acting Public Works Manager
Planning Section

RI:cc
c: Facilities Development Branch

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

February 9, 2026

Roy Ikeda, Acting Public Works Manager
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Mr. Ikeda:

Thank you for your letter dated October 30, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management, we acknowledge that your Department does not have any comments to offer on the project at this time.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DOE.docx

Subject: OHA Comments Re: DEA Waiko Rd Sewer System, Waikapū, Maui

From: Leialoha Makuanani <andream@oha.org>
Sent: Friday, October 10, 2025 2:29 PM
To: environmental.mgmt@co.maui.hi.us; General eMail <planning@munekiyohiraga.com>
Cc: Kamakana Ferreira <kamakanaf@oha.org>
Subject: OHA Comments Re: DEA Waiko Rd Sewer System, Waikapū, 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 e Mr. Agawa,

The Office of Hawaiian Affairs (OHA) is in receipt of your letter dated September 19, 2025, inviting us to comment on the September 2025 draft environmental assessment (DEA) for the proposed Waiko Rd subdivision sewer system improvements at Waikapū, Maui, encompassing portions of several TMKs.

The proposed project will include the construction of approximately 5,800 linear feet of gravity sewer line and service laterals to connect approximately 100 lots in the Waikapū area. Waterline replacement work will also be done in conjunction with the sewer system improvements. Installation of sewer and water lines will run beneath county roadways and a portion of the State Honoapi'ilani Highway. A finding of no significant impact is currently anticipated. OHA provides the following comments.

Archaeological Resources

OHA notes that the project was submitted to the State Historic Preservation Division (SHPD) for Hawaii Revised Statutes (HRS) Chapter 6E review. An archaeological monitoring plan (AMP) was proposed and SHPD concurred on February 9, 2024. The DEA includes the AMP, but SHPD acceptance is forthcoming. OHA recommends that the final environmental assessment (FEA) include documentation of SHPD's written concurrence and any additional conditions. We further emphasize that no construction should begin until SHPD acceptance is obtained.

Waikapū Stream

The DEA notes that the project area lies just North of Waikapū Stream, one of the four waters of Nā Wai Ehā, a region of enduring cultural importance to Native Hawaiians. As noted in the Cultural Impact Assessment (CIA), Waikapū Stream and its groundwater resources continue to support freshwater resource gathering and irrigation.

The CIA also documented concerns regarding the potential for sewer line breaks to contaminate Waikapū Stream or percolate into the groundwater system. OHA reiterates these concerns and underscores the importance of safeguarding clean and reliable freshwater resources, particularly as Maui continues to experience significant water-scarcity challenges.

While the DEA states that best management practices (BMPs) will be implemented during construction and that any damaged sewer lines will be repaired in compliance with applicable laws, OHA recommends that the project additionally include water-quality monitoring of Waikapū Stream and adjacent groundwater. Such monitoring would provide a meaningful safeguard against contamination risks and ensure that culturally and environmentally significant water resources are effectively protected.

Closing Remarks

We appreciate the County's early coordination with SHPD and other agencies. We respectfully request that the FEA include confirmation of SHPD's AMP acceptance and a strengthened analysis of potential water-quality and cultural impacts to Waikapū Stream, supported by specific mitigation and monitoring measures.

Mahalo for the opportunity to provide comments. Please feel free to contact me should you have any questions.

Mahalo,

A. Leialoha Mākuanani, J.D. (she/her/ʻo ia)
ʻAho Pueo Kiaʻi Kānāwai / Compliance Advocate
Office of Hawaiian Affairs
560 N. Nimitz Hwy, Honolulu, HI 96817
W: 808-582-0494 | C: 808-631-7226
andream@oha.org

www.oha.org

This message is intended only for the use of the individual or entity to which it is addressed and may contain information that is privileged, confidential and exempt from disclosure under applicable law. If the reader of this message is not the intended recipient, or the employee or agent responsible for delivering the message to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by e-mail or telephone, and return the original message. Mahalo!

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

February 9, 2026

A. Leialoha Mākuanani, J.D.
Office of Hawaiian Affairs
560 N. Nimitz Hwy.
Honolulu, Hawai'i 96817

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Ms. Mākuanani:

Thank you for your email with comments dated October 10, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

OHA notes that the project was submitted to the State Historic Preservation Division (SHPD) for Hawaii Revised Statutes (HRS) Chapter 6E review. An archaeological monitoring plan (AMP) was proposed and SHPD concurred on February 9, 2024. The DEA includes the AMP, but SHPD acceptance is forthcoming. OHA recommends that the final environmental assessment (FEA) include documentation of SHPD's written concurrence and any additional conditions. We further emphasize that no construction should begin until SHPD acceptance is obtained.

Response: An Archaeological Monitoring Plan (AMP) was prepared for the proposed project which includes mitigation measures related to archaeological resources. SHPD accepted the AMP on September 29, 2025 and requested minor revisions. A copy of the final AMP and acceptance letter are included in the Final Environmental Assessment.

Comment No. 2:

The DEA notes that the project area lies just North of Waikapū Stream, one of the four waters of Nā Wai Ehā, a region of enduring cultural importance to Native Hawaiians. As noted in the Cultural Impact Assessment (CIA), Waikapū Stream and its groundwater resources continue to support freshwater resource gathering and irrigation.

The CIA also documented concerns regarding the potential for sewer line breaks to contaminate Waikapū Stream or percolate into the groundwater system. OHA reiterates these concerns and underscores the importance of safeguarding clean and reliable freshwater resources, particularly as Maui continues to experience significant water-scarcity challenges.

While the DEA states that best management practices (BMPs) will be implemented during construction and that any damaged sewer lines will be repaired in compliance with applicable laws, OHA recommends that the project additionally include water-quality monitoring of Waikapū Stream and adjacent groundwater. Such monitoring would provide a meaningful safeguard against contamination risks and ensure that culturally and environmentally significant water resources are effectively protected.

Response: Thank you for the comment. We note that the minimum distance from Waikapu Stream to the proposed improvements is approximately 75 ft. The depth of the waterlines are 3.7 ft below existing grade while the depth of the sewer line ranges from about 5.5 ft. to 25 ft. below existing grade. It is noted that no wastewater would be present within the sewer lines during construction. Wastewater would only begin to enter the system after property owners connect to the newly installed sewer laterals. As such, there is minimal risk for wastewater to impact water resources during project construction. The new system improvements will be tested prior to any connections by the homeowners. It is noted that many of homes that will connect to the new County sewer improvements are currently on cesspool systems, which pose a greater risk of leakage and contamination to the environment. By providing the homeowners with the connections to the County sewer system, the potential for contamination to groundwater resources and the Waikapu Stream are anticipated to significantly reduced.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\OHA.docx

STATE OF HAWAIʻI
OFFICE OF PLANNING
& SUSTAINABLE DEVELOPMENT

JOSH GREEN, M.D.
GOVERNOR

SYLVIA LUKE
LT. GOVERNOR

MARY ALICE EVANS
DIRECTOR

235 South Beretania Street, 6th Floor, Honolulu, Hawaiʻi 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaiʻi 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: https://planning.hawaii.gov/

Coastal Zone Management Program

Environmental Review Program

Land Use Commission

Land Use Division

Special Plans Branch

State Transit-Oriented Development

Statewide Geographic Information System

Statewide Sustainability Branch

DTS 202510030943NA
Transmitted via email

October 21, 2025

Mr. Shayne Agawa, Director
County of Maui
Department of Environmental Management
200 South High Street
Kalana O Maui Building
Wailuku, Hawaiʻi 96793

Dear Mr. Agawa:

Subject: Comments on the Draft Environmental Assessment (DEA) for the Waiko Road Sewer System/Waterline Improvement Project

Thank you for providing the opportunity to comment on the DEA for the Waiko Road Sewer System/Waterline Improvement Project. We acknowledge the significant long-term environmental benefits this project provides by transitioning approximately 100 lots away from potentially degrading cesspools and septic systems to a centralized sewer system.

However, based on our review of the DEA, we submit the following comments and concerns regarding the project's short-term construction impacts and necessary mitigation measures, particularly in sensitive resource areas.

I. Cultural and Archaeological Resource Protection

The project site is within the culturally significant Waikapū Ahupuaʻa , and the required 6- to 8-foot depth of sewer line excavation raises serious concerns.

1. **Iwi Kūpuna (Ancestral Remains):** We strongly urge heightened vigilance and strict adherence to protocol regarding the potential discovery of iwi kūpuna. Given the historical context of the area, the DEA must confirm that a comprehensive Inadvertent Discovery Plan has been developed, and that all construction personnel are thoroughly trained on procedures for the immediate cessation of work and consultation with the State Historic Preservation Division and lineal descendants.

2. **Freshwater Resource Integrity:** We share the community's concern regarding the potential for a breach or leak in the new sewer lines could impact local freshwater resources. We request clarification on the specific measures and materials that will be used to ensure the long-term integrity and leak-proof nature of the sewer system, especially where it crosses or is adjacent to critical water sources.

II. Construction Management and Pollution Control

While temporary, the construction impacts require the implementation of robust Best Management Practices (BMPs).

1. **Erosion and Sediment Control:** We emphasize the need for immediate and complete stabilization of exposed soil, particularly near drainage pathways. The Storm Water Pollution Prevention Plan should detail regular monitoring and maintenance schedules for all erosion control devices (geotextiles, filter fabric, etc.).

2. **Hazardous Material Spills:** The DEA notes the need for a Hazardous Material Spill Clean-up Plan. We request confirmation that this plan includes on-site availability of spill kits, regular training for all equipment operators, and immediate notification procedures to relevant County and State agencies in the event of any petroleum or hazardous material release.

3. **Noise and Dust Mitigation:** We request that the DEA specify measures to minimize noise (e.g., restricted operating hours, using modern, well-maintained equipment) and dust (e.g., watering schedules, speed limits) to protect adjacent residences and maintain general air quality for the duration of the project.

If you have any questions regarding this comment letter, please contact Seiji Ogawa, Land Use Division, Seiji.ogawa@hawaii.gov, (808) 587-2898. Please reference DTS202510030943NA for all future correspondence regarding this comment letter.

Mahalo,

Mary Alice Evans

Mary Alice Evans
Director

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

February 9, 2026

Mary Alice Evans, Director
State of Hawai'i
Office of Planning & Sustainable Development
235 South Beretania Street, 6th Floor
Honolulu, Hawai'i 96813

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Ms. Evans:

Thank you for your comment letter dated October 21, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

> ***Iwi Kūpuna (Ancestral Remains):*** *We strongly urge heightened vigilance and strict adherence to protocol regarding the potential discovery of iwi kūpuna. Given the historical context of the area, the DEA must confirm that a comprehensive Inadvertent Discovery Plan has been developed, and that all construction personnel are thoroughly trained on procedures for the immediate cessation of work and consultation with the State Historic Preservation Division and lineal descendants.*

Response: An Archaeological Monitoring Plan (AMP) was prepared for the proposed project which includes mitigation measures related to archaeological resources. The State Historic Preservation Division (SHPD) accepted the AMP on September 29, 2025 and requested minor revisions. A copy of the final AMP and acceptance letter are included in the Final Environmental Assessment.

The AMP details mitigation measures for potential impacts to archaeological resources, including provisions and guidance that will be

followed in the event of an inadvertent discovery of a burial or non-burial historic property.

Comment No. 2:

Freshwater Resource Integrity: *We share the community's concern regarding the potential for a breach or leak in the new sewer lines could impact local freshwater resources. We request clarification on the specific measures and materials that will be used to ensure the long-term integrity and leak-proof nature of the sewer system, especially where it crosses or is adjacent to critical water sources.*

Response: The minimum distance from Waikapu Stream to the proposed improvements is approximately 75 ft. It is noted that no wastewater would be present within the sewer lines during construction. Wastewater would only begin to enter the system after property owners connect to the newly installed sewer laterals. As such there is minimal risk for wastewater to impact water resources during project construction. Following completion of construction, the imrovements would be tested for any potential leaks before the homeowners are permitted to connect to the system. It is noted that many of homes that will connect to the new County sewer improvements are currently on cesspool systems, which pose a greater risk of leakage and contamination to the environment. By providing the homeowners with the connections to the County sewer system, the potential for contamination to groundwater resources and the Waikapu Stream are anticipated to significantly reduced.

The project Contractor is required to prepare and submit a Site Specific Spill Prevention and Control Plan that is reviewed and approved by the Wastewater Reclamation Division prior to commencement of work.

Comment No. 3:

Erosion and Sediment Control: *We emphasize the need for immediate and complete stabilization of exposed soil, particularly near drainage pathways. The Storm Water Pollution Prevention Plan should detail regular monitoring and maintenance schedules for all erosion control devices (geotextiles, filter fabric, etc.).*

Response: The proposed project will incorporate measures to mitigate potential erosion and sediment control in the Best Management Practices (BMPs) Plan.

Comment No. 4:

Hazardous Material Spills: *The DEA notes the need for a Hazardous Material Spill Clean-up Plan. We request confirmation that this plan includes on-site availability of spill kits, regular training for all equipment operators,*

and immediate notification procedures to relevant County and State agencies in the event of any petroleum or hazardous material release.

Response: The proposed project will incorporate BMPs to limit potential hazardous material spills. The DEM will review and approve the required Site Specific Spill Prevention and Control Plan prepared by the Contractor prior to the commencement of work. Specification Section 01560 (Environmental Controls) requires the contractor to comply with all Federal, State and local laws and regulations which apply to water pollution and soil contamination. At no time shall the Contractor release or dump solvents, paints, gasoline or other fuels or oils into any portion of the sewers or process facilities.

In order to minimize the possibility of water or soil contamination due to spills of crankcase oil, gasoline and other fuels, the Contractor shall designate an area for the storage and handling of lubricants, fuels and other supplies which is acceptable to the Construction Manager. The Contractor shall comply with all applicable Federal, State and local rules and regulations related to the reporting and cleanup of spills.

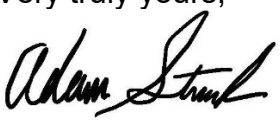
Comment No. 5:

Noise and Dust Mitigation: *We request that the DEA specify measures to minimize noise (e.g., restricted operating hours, using modern, well-maintained equipment) and dust (e.g., watering schedules, speed limits) to protect adjacent residences and maintain general air quality for the duration of the project.*

Response: The proposed project will comply with Department of Health (DOH) standards for noise. Homeowners will be notified prior to roadway work, and roadway work hours would be limited to 8:30 am and 3:30 pm., Monday through Friday. Work to take place in the State ROW along Honoapiʻilani Highway and must comply with State requirements, including work between 8:00 AM and 3:00 PM. The proposed project will incorporate BMPs to limit potential noise and fugitive dust impacts during construction.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\OPSD.docx

Subject: DOH CAB: Comments: Waiko Road Sewer System/Waterline Improvements - Draft EA (AFNSI)

From: DOH.CABPASS <DOH.CABPASS@doh.hawaii.gov>
Sent: Tuesday, September 23, 2025 10:13 AM
To: General eMail <planning@munekiyohiraga.com>
Subject: Comments: Waiko Road Sewer System/Waterline Improvements - Draft EA (AFNSI)

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.

Dear Adam Strubeck,
Munekiyo Hiraga

Thank you for the opportunity to review the Waiko Road Sewer System/Waterline Improvements - Draft EA (AFNSI) published in the September 23, 2025 edition of The Environmental Notice. Please visit the Clean Air Branch (CAB) website to download and reference our Standard Comments for Land Use Reviews. The link is provided below.

https://health.hawaii.gov/cab/clean-air-branch/standard-comments-for-land-use-reviews/

Mahalo,

Zach Parlee | *he/him*
Environmental Health Specialist | Clean Air Branch | Planning & Administrative Support Staff (PASS)
Hawai‘i State Department of Health | Ka ‘Oihana Olakino
2827 Waimano Home Road #130 | Pearl City, Hawaii 96782
Office: (808) 586-4200

CONFIDENTIALITY NOTICE: This mail message (and attachments) is for the sole use of the intended recipient(s). It may contain confidential and/or privileged information. It might also be protected from disclosure under the Hawai'i Uniform Information Practice Act (UIPA) or other laws and regulations. Review, use, disclosure, or distribution by unintended recipients is prohibited. If you are not the intended recipient, please contact the sender immediately in a separate e-mail and destroy the original message and any copies.

Standard Comments for Land Use Reviews
Clean Air Branch
Hawaii State Department of Health
July 3, 2024

All project activities shall comply with Hawaii Administrative Rules (HAR), Chapter 11-59 and 11-60.1.

If your proposed project:

Requires an Air Pollution Control Permit

- You must obtain an air pollution control permit from the Clean Air Branch and comply with all applicable conditions and requirements. If you do not know if you need an air pollution control permit, please contact the Permitting Section of the Clean Air Branch.
- Permit application forms can be found here: https://health.hawaii.gov/cab/permit-application- forms/

Has the potential to generate fugitive dust

- You must reasonably control the generation of all airborne, visible fugitive dust. Note that construction 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, visible fugitive dust. The plan, which does *not* require Department of Health approval, should help you recognize and minimize potential airborne, visible fugitive dust problems.
- Construction activities must comply with the provisions of Hawaii Administrative Rules, §11- 60.1-33 on Fugitive Dust. In addition, for cases involving mixed land use, it is strongly recommended that buffer zones be established, wherever possible, in order to alleviate potential dust concerns.
- You must provide reasonable measures to control airborne, visible fugitive dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:
    - Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
    - Providing an adequate water source at the site prior to start-up of construction activities;
    - Landscaping and providing rapid covering of bare areas, including slopes, starting from the initial grading phase;
    - Minimizing airborne, visible fugitive dust from shoulders and access roads;
    - Providing reasonable dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
    - Controlling airborne, visible fugitive dust from debris being hauled away from the project site.
- If you have questions about fugitive dust, please contact the Enforcement Section of the Clean Air Branch. Please also see fugitive dust fact sheet at: https://health.hawaii.gov/cab/files/2024/02/Hawaii-Fugitive-Dust-Fact-Sheet-February-2024.pdf.

Includes construction, demolition, or renovation activities that involve potential asbestos and lead containing materials

- Please contact the Indoor and Radiological Health Branch at (808) 586-4700 or visit: https://health.hawaii.gov/irhb/

Increases the population and potential number of vehicles in an area

- The creation of apartment buildings, complexes, and residential communities may increase the overall population in an area. Increasing the population in an area may inadvertently lead to more air pollution via vehicle exhaust. Vehicle exhaust releases pollutants in the air that can negatively impact human health and air quality, including lung irritants, carcinogens, and greenhouse gases.
- Ensure that drivers keep vehicle idling times to three (3) minutes or less.
- Consider and incorporate support for alternative transportation options such as bike racks and/or electric vehicle charging stations where possible.

If you have any questions, please contact the Clean Air Branch at (808) 586-4200 or at cab@doh.hawaii.gov.

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

February 9, 2026

Zach Parlee
State of Hawai'i
Department of Health, Clean Air Branch
2827 Waimano Home Road #130
Pearl City, Hawai'i 96782

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

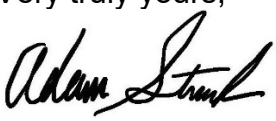
Dear Mr. Parlee:

Thank you for your email dated September 23, 2025 providing comments regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

The Standard Comments for Land Use Reviews have been shared with the DEM. The DEM acknowledges that the proposed project may have the potential to generate fugitive dust. The project will incorporate Best Management Practices (BMPs), as applicable, to mitigate the generation of all airborne, visible fugitive dust during construction of the proposed project.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DOH CAB.docx

RICHARD T. BISSEN, JR.
Mayor

JOSIAH K. NISHITA
Managing Director

BRADFORD K. VENTURA
Fire Chief

GAVIN L.M. FUJIOKA
Deputy Fire Chief



DEPARTMENT OF FIRE & PUBLIC SAFETY
COUNTY OF MAUI
313 Manea Place
Wailuku, Maui, Hawai‘i 96732
www.mauicounty.gov

October 29, 2025

Mr. Adam Strubeck, Associate
Munekiyo Hiraga
305 S. High St, Suite 104
Wailuku, HI 96793

SUBJECT: Waikapu Sewer & Waterline Improvements
TMKs (2)3-5- 004:018, 028, 031, 063; (2)3-5-010:001, 033, 034, 036, 037, 038; (2)3-5-011:001-041, 043-046, 048; (2)3-5-012:001-023, 025, 035-040, 043-047

Dear Mr. Strubeck,

Thank you for the opportunity to review your project. At this time, the Fire Prevention Bureau has no comments. Please feel free respond back should you want to identify or inquire about any specific fire-related public safety concerns for this or any additional future projects.

Sincerely,

Fire Plans Review
Fire Prevention Bureau
Maui Fire Department

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

February 9, 2026

Via email: Fire.PlanReview@co.maui.hi.us

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

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Chief Ventura:

Thank you for your letter dated October 29, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management, we acknowledge that your Department does not have any comments to offer on the project at this time.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\FIRE.docx

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

September 30, 2025

Adam Strubeck
Associate
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Mr. Strubeck:

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT (EA) FOR THE WAIKO SEWER SYSTEM/WATERLINE IMPROVEMENTS AT WAIKAPU, MAUI, HAWAI`I

Thank you for the notification of the availability of the Draft EA for 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,

LORI TSUHAKO, LSW, ACSW
Director of Human Concerns

xc: Shayne Agawa, Director, Department of Environmental Management

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

February 9, 2026

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

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Ms. Tsuhako:

Thank you for your letter dated September 30, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management, we acknowledge that your Department does not have any comments to offer on the project.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DHC.docx

RICHARD T. BISSEN, JR.
Mayor

KATE L. K. BLYSTONE
Director

ANA LILLIS
Deputy Director

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

October 22, 2025

Mr. Shayne Agawa
County of Maui
Department of Environmental Management
200 South High Street
Kalana O Maui Building
Wailuku, Hawaiʻi 96793

Mr. Adam Strubeck
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaiʻi 96793

Dear Mr. Agawa and Mr. Strubeck:

SUBJECT: REQUEST FOR COMMENT ON THE DRAFT ENVIRONMENTAL ASSESSMENT (DEA) FOR THE PROPOSED WAIKŌ ROAD SUBDIVISION SEWER SYSTEM/WATERLINE IMPROVEMENTS, LOCATED IN WAILUKU, MAUI, HAWAIʻI; TMKS INCLUDE BUT NOT LIMITED TO: (2) 3-5-010:001, 033, 034, 036, 037 AND 038, (2) 3-5-011:001 TO 041, 043, TO 046 AND 048, (2) 3-5-012:001 TO 023, 025 TO 040, AND 043 TO 047 (RFC2025-00165)

The Department of Planning (Department) is in receipt of your request for comment (RFC) dated September 19, 2025, regarding a DEA for the proposed Waikō Road Subdivision Sewer System/Waterline Improvements project, prepared pursuant to Hawaiʻi Revised Statutes (HRS), Chapter 343, and Hawaiʻi Administrative Rules, Title 11, Chapter 200.1.

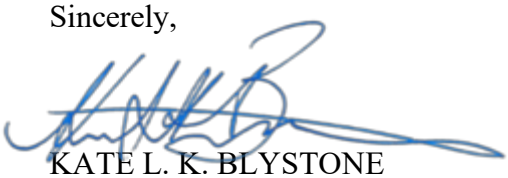
The proposed project involves the construction of approximately 5,800 linear feet of gravity sewer lines and service laterals to connect approximately 119 lots in the Waikapū area. The new sewer lines will be located within West Waikō Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street and connect to an existing manhole on East Waikō Road. The proposed project will be constructed within the roadway right-of-way and sewer connections will be installed at the boundaries of the lots. The proposed project will allow for the elimination of many cesspools and septic systems and their effects on the environment. The Department supports this effort.

The Department of Environmental Management (DEM) is the proposing and accepting agency for the DEA and expects an anticipated finding of no significant impact (DEA-AFONSI). The trigger for the DEA is the proposed use of State or County lands or the use of State or County funds.

The Department previously provided early review and comments on the project in a letter dated August 18, 2022 (RFC2022-00062). Based on review of the response dated September 10, 2025, and the DEA, the Department has no additional comments to provide in preparation of a Final Environmental Assessment.

Thank you for the opportunity to review and comment on the DEA for the proposed Waikō Road Subdivision Sewer System/Waterline Improvements project. If additional clarification is necessary, please contact Planner Denise Bradley at Denise.L.Bradley@co.maui.hi.us or at (808) 270-8272.

Sincerely,



KATE L. K. BLYSTONE
Director

cc: Danny A. Dias, Planning Program Administrator (PDF)
Kurt F. Wollenhaupt, Land Use Planning Supervisor (PDF)
Denise Bradley, Planner (PDF)
Shayne Agawa, Director, Department of Environmental Management (PDF)
Adam Strubeck, Associate, Munekiyo Hiraga (PDF)

KLKB:DLB:lp
K:\WP_DOCS\Planning\RFC\2025\00165_DEMWaikoRdSubSewerSystem\Response.pdf

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

February 9, 2026

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

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Ms. Takakura:

Thank you for your comment letter dated October 22, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we acknowledge that your department provided comments during the early consultation review and does not have additional comments to offer on the project.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DPL.docx

RICHARD T. BISSEN, JR.
Mayor

JOSIAH K. NISHITA
Managing Director

JOHN STUFFLEBEAN, P.E.
Director

JAMES A. LANDGRAF
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI
200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAIʻI 96793
http://www.mauicounty.gov/water

October 23, 2025

Munekiyo Hiraga
ATTN: Adam Strubeck
305 High Street, Suite 200
Wailuku, HI 96793

Dear Mr. Strubeck:

RE: : Draft Environmental Assessment and Anticipated Finding of No Significant Impact for the Proposed Waiko Road Sewer System/Waterline Improvements Project at TMKs (2 3-5-004:018, 028, 031, 063; 2 3-5-010:001, 033, 034, 036, 037, 038; (2 3-5-011:001-041, 043-046, 048; (2 3-5-012:001-023, 025, 035-040, 043-047); County roadways and a portion of Honoapiʻilani Highway, Waikapū, Maui, Hawaiʻi

The Department of Water Supply (DWS) appreciates the opportunity to comment on the proposed Waiko Road Sewer System/Waterline Improvements Project. The proposed area is served by our Central Maui System. Water sources from this system include groundwater wells within the 'Īao Aquifer and treated surface water diverted from the Wailuku River via the 'Īao Ditch.

MDWS Infrastructure
The DWS owns infrastructure in the vicinity of the proposed project as described below. Appropriate measures should be taken to ensure that drinking water infrastructure is protected.

- 12" and 8" Ductile Iron (DI) watermains run along West Waiko Road fronting the proposed subdivision. The 8" watermain connects to the 12" watermain at Hoʻolako Place.
- In addition, the 8" watermain down West Waiko Road connects at the intersection with Kilinoe Place to an 8" DI line that runs for ±1,000' before connecting to a section of 2-1/2" galvanized pipe and then to a 4" Cast Iron (CI) lines that loop around Kemoa Place and connect back to the 12" watermain on West Waiko Road. The 4" CI line also continues to run down Wilikona Place where this line is looped and connects to the 4" CI watermain down Honoapiʻilani Highway
- The 4" CI watermain running down Honoapiʻilani Highway fronts the subdivision and crosses Honoapiʻilani Highway at its intersection with West Waiko Road.
- A 1-1/2" galvanized iron pipeline connects to the 4" CI pipeline where it crosses Honoapiʻilani Highway and then connects to a 4" CI waterline, which runs down West Waiko Road for ± 2,000' and terminates at the intersection with Pakana Street.

- The same 1-1/2" waterline running down Honoapi‘ilani Highway continues from the intersection with West Waiko Road for ±260' down Honoapi‘ilani Highway to its intersection with Waiolu Street where it turns into a 2-1/2" galvanized iron pipe for ±500' before terminating at the end of West Waiolu Street.
- Another 1-1/2" waterline is connected perpendicularly to the 4" CI watermain across Honoapi‘ilani Highway at Waikapu Stream crossing before connecting to a 1" line running down the west side of Honoapi‘ilani Highway for ±150'.

Plans and construction documents must be reviewed by our DWS Engineering Division. The applicants are encouraged to contact our Engineering Division at (808) 270-7835 at their earliest convenience.

Wellhead Protection Overlay District
Approximately 3.75 acres of the project footprint are within the MDWS wells’ 10-year time of travel zone and Wellhead Protection Overlay District, as established in Maui County Code (MCC) Chapter 19.61. The following Best Management Practices (BMPs) from MCC 19.61.090(H)) are required for all construction activities:

- A designated person must be on-site responsible for supervising the use, storage, and handling of hazardous materials and taking appropriate mitigating actions for spills or fire.
- Hazardous materials left on-site when unsupervised must be inaccessible to the public (e.g., secured in locked sheds or behind locked fencing).
- Leaking construction vehicles or equipment must be removed from the site and the wellhead protection zone) or repaired in place with the leakage completely contained.
- Hazardous materials must not be allowed to enter stormwater systems.

Required Actions

1. Final DWS approval for water service connections will require the application to obtain a water service request and construction permit for all related work, which must be completed in compliance with DWS standards, specifications, and administrative rules at the time of permit submittal.
2. The DWS Engineering Division is responsible for reviewing construction documents. Any surface feature of the water system flush with the driving surface, such as water valve covers, shall be elevated as necessary to match the finish grade of the highway.
3. Any surface feature of the water system flush with the driving surface, such as a water valve covers, shall be elevated as necessary to match the finish grade of the highway.

Should you have any questions, please contact Staff Planner Geovanna Torres, Ed.D. in our Water Resources and Planning Division at 463-3104 or geovanna.torres@co.maui.hi.us or Yoash Tilles at (808) 270-7940 or via email at Yoash.Tilles@co.maui.hi.us.

Sincerely,

John Stufflebean
Digitally signed by John Stufflebean
Date: 2025.10.23 11:45:20 -10'00'

John Stufflebean, P.E.
Director of Water Supply

GT

cc: Department of Environmental Management; Engineering Division

S:\PLANNING\PERMIT_Review\Planning\EA-EIS\2_3_5_004_018 Waiko_Rd_Sewer_Waterline_Improvements

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

February 9, 2026

John Stufflebean, P.E, Director of Water Supply
Department of Water Supply
County of Maui
200 South High Street
Wailuku, Hawai'i 96793

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Mr. Stufflebean:

Thank you for your comment letter dated October 23, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

The DWS owns infrastructure in the vicinity of the proposed project as described below. Appropriate measures should be taken to ensure that drinking water infrastructure is protected.

- *12" and 8" Ductile Iron (DI) watermains run along West Waiko Road fronting the proposed subdivision. The 8" watermain connects to the 12" watermain at Ho'olako Place.*

- *In addition, the 8" watermain down West Waiko Road connects at the intersection with Kilinoe Place to an 8" DI line that runs for ±1,000' before connecting to a section of 2-1/2" galvanized pipe and then to a 4" Cast Iron (CI) lines that loop around Kemoea Place and connect back to the 12" watermain on West Waiko Road. The 4" CI line also continues to run down Wilikona Place where this line is looped and connects to the 4" CI watermain down Honoapi'ilani Highway.*

- *The 4" CI watermain running down Honoapi‘ilani Highway fronts the subdivision and crosses Honoapi‘ilani Highway at its intersection with West Waiko Road.*

- *A 1-1/2" galvanized iron pipeline connects to the 4" CI pipeline where it crosses Honoapi‘ilani Highway and then connects to a 4" CI waterline, which runs down West Waiko Road for 2,000' and terminates at the intersection with Pakana Street.*

- *The same 1-1/2" waterline running down Honoapi‘ilani Highway continues from the intersection with West Waiko Road for ±260' down Honoapi‘ilani Highway to its intersection with Waiolu Street where it turns into a 2-1/2" galvanized iron pipe for ±500' before terminating at the end of West Waiolu Street.*

- *Another 1-1/2" waterline is connected perpendicularly to the 4" CI watermain across Honoapi‘ilani Highway at Waikapu Stream crossing before connecting to a 1" line running down the west side of Honoapi‘ilani Highway for ±150'.*

Plans and construction documents must be reviewed by our DWS Engineering Division. The applicants are encouraged to contact our Engineering Division at (808) 270-7835 at their earliest convenience

Response: The DEM acknowledges the DWS-owned infrastructure in the vicinity of the project area. Best Management Practices (BMPs) will be implemented during construction to ensure that drinking water infrastructure is protected. Additionally, the project plans will be reviewed by DWS engineers prior to the start of construction as the proposed sewer line and water line improvements are being coordinated with DWS.

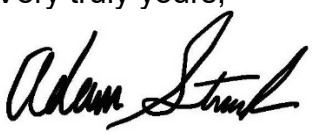
Comment No. 2:

During construction, efforts should be made to minimize noise, dust, and debris, and equipment should be securely stored when not in use. Project managers should also monitor and manage vehicle movement in and around the site.

Response: The Applicant will incorporate BMPs, as applicable, to mitigate potential noise, dust, debris, and vehicle movement impacts for the proposed project.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\DWS.docx

POLICE DEPARTMENT

COUNTY OF MAUI

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

JOHN PELLETIER
CHIEF OF POLICE

WADE M. MAEDA
DEPUTY CHIEF OF POLICE

October 14, 2025

Munekiyo Hiraga
Attention: Adam Strubeck, Associate
305 High Street, Suit 104
Wailuku, Hawaii 96793
Planning@munekiyohiraga.com

Re: Department Review – Waiko Road Sewer System / Waterline Improvements at Waikapu, Maui, Hawaii

Dear Mr. Strubeck,

Upon review of the submitted documents, concerns from a police perspective focus on pedestrian and vehicular safety.

It is recommended that **Crime Prevention Through Environmental Design (CPTED)** principles be applied where possible. Proper lighting, signage, landscaping, and clear walkways can improve visibility, reduce crime opportunities, and enhance overall safety. Groundcover should remain below 2 feet, tree canopies above 6 feet, and LED lighting is encouraged for better visibility and identification.

During construction, efforts should be made to minimize noise, dust, and debris, and equipment should be securely stored when not in use. Project managers should also monitor and manage vehicle movement in and around the site.

Conclusion:
No objections to the project at this time.

Sincerely,

Assistant Chief Keola Tom
for: JOHN PELLETIER
Chief of Police

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

February 9, 2026

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

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Chief Pelletier:

Thank you for your Department's comment letter dated October 14, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

It is recommended that Crime Prevention Through Environmental Design (CPTED) principles be applied where possible. Proper lighting, signage, landscaping, and clear walkways can improve visibility, reduce crime opportunities, and enhance overall safety. Groundcover should remain below 2 feet, tree canopies above 6 feet, and LED lighting is encouraged for better visibility and identification.

Response: The Applicant acknowledges the recommended principles provided by the Maui Police Department. It is noted that the proposed project improvements will mainly occur below ground; however, the applicant will incorporate CPTED principles as applicable to the proposed project.

Comment No. 2:

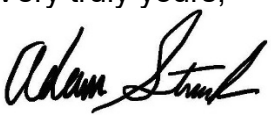
During construction, efforts should be made to minimize noise, dust, and debris, and equipment should be securely stored when not in use. Project

managers should also monitor and manage vehicle movement in and around the site.

Response: The DEM will require its contractor, once selected, to incorporate Best Management Practices (BMP), as applicable, to mitigate potential noise, dust, debris, and vehicle movement impacts for the proposed project.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\MPD.docx

Council Chair
Alice L. Lee

Vice-Chair
Yuki Lei K. Sugimura

Presiding Officer Pro Tempore
Tasha Kama

Councilmembers
Tom Cook
Gabe Johnson
Tamara Paltin
Keani N.W. Rawlins-Fernandez
Shane M. Sinenci
Nohelani U'u-Hodgins

Director of Council Services
David M. Raatz, Jr., Esq.

Deputy Director of Council Services
Richelle K. Kawasaki, Esq.

COUNTY COUNCIL
COUNTY OF MAUI
200 S. HIGH STREET
WAILUKU, MAUI, HAWAII 96793
www.MauiCounty.us

October 3, 2025

Mr. Shayne Agawa, P.E., Director
Department of Environmental Management
Attn: Juan Rivera
County of Maui
200 South High Street
Wailuku, Hawaii 96793

Via email: planning@munekiyohiraga.com

Dear Director Agawa:

SUBJECT: **DRAFT ENVIRONMENTAL ASSESSMENT FOR THE WAIKO ROAD SEWER SYSTEM/WATERLINE IMPROVMENTS PROJECT, WAIKAPU, MAUI**

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

I wholeheartedly support the initiative to extend the County's wastewater collection system to lots that are not currently served so that they no longer have to use their cesspools or septic systems. The treatment and disposal methods used at wastewater treatment facilities are more environmentally responsible than individual wastewater systems. Additionally there is an impending deadline for property owners to replace their cesspools, so this initiative provides owners with a superior and more cost-effective option than installing a septic system.

I also applaud the coordination between the Department of Environmental Management (DEM) and the Department of Water Supply (DWS) so that DWS can upgrade its waterlines in the vicinity at the same time that DEM is extending its sewer lines. I also support the DWS waterline upgrades that will improve fireflow capacity.

This discussion and these initiatives raise a few questions that could be answered in the Final Environmental Assessment:

1. Can you provide more detail on the anticipated improved fireflow capacity, *e.g.,* will new fire hydrants be installed to replace standpipes?

2. The document notes that collected wastewater will be conveyed to the existing Wailuku-Kahului Wastewater Reclamation Facility (WWRF). Can you discuss this facility's capacity, as well as the status of the proposed new Central Maui WWRF and whether it may eventually handle the wastewater generated from this project?

3. It appears that the scope of the project will install sewer lines up to two feet into each lot. Can you please note the estimated cost for each property owner to connect to these newly-installed sewer lines?

Again, I fully support DEM's initiative to expand sewer lines to areas currently served by individual wastewater systems, particularly cesspools that need to be replaced. I also support DEM's coordination with DWS and the improved fireflow capacity that will come with DWS's upgraded waterlines.

Thank you, in advance, for your attention to and consideration of this letter and its suggestions. If you have any questions or need further information, please do not hesitate to contact me.

Sincerely,



ALICE L. LEE
Council Chair

xc: Juan Rivera, Juan.River@co.maui.hi.us

chr:ltr:251002aWaikapuSewerDEAcomment

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

February 9, 2026

Alice Lee, Council Chair
Maui County Council
County of Maui
200 S. High Street, 7th Floor
Wailuku, HI 96793

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Council Chair Lee:

Thank you for your comment letter dated October 3, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we acknowledge your support of the project and offer the following information in response to the comments received.

Comment No. 1:

Can you provide more detail on the anticipated improved fireflow capacity, e.g., will new fire hydrants be installed to replace standpipes?

Response: The 8" waterlines that will be installed as part of the proposed project will enable the County to meet the current Department of Water Supply single family residential fire flow requirement of 1,000 gallons per minute. Fire hydrants will be installed in accordance with the current County fire hydrant spacing standards to replace the existing standpipes.

Comment No. 2:

The document notes that collected wastewater will be conveyed to the existing Wailuku-Kahului Wastewater Reclamation Facility (WWRF). Can you discuss this facility's capacity, as well as the status of the proposed new Central Maui WWRF and whether it may eventually handle the wastewater generated from this project?

Response: The Draft Environmental Impact Statement (DEIS) has been published with 60 percent designs for the Central Maui WWRF. The DEM anticipates construction to begin in 2027 for the new Central Maui WWRF. Both the existing Wailuku-Kahului WWRF and the planned Central Maui WWRF have the capacity to accommodate the proposed project. As the proposed Waikapu sewer and waterlines improvements project is anticipated to begin construction in 2026, the initial service is anticipated to be provided by the existing Wailuku-Kahului WWRF.

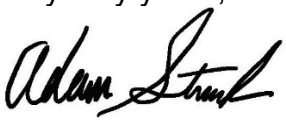
Comment No. 3:

It appears that the scope of the project will install sewer lines up to two feet into each lot. Can you please note the estimated cost for each property owner to connect to these newly-installed sewer lines?

Response: Connection costs will vary by property location, use and configuration of existing sewer system on the property. Additional factors affecting cost include trench depth, pipe length and material, soil conditions, and any obstacles that may affect excavation. For residential properties, fees are limited to permits and local facility charges, excluding work on the property (e.g., laying pipes or removing a cesspool).

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\Lee, Alice.docx

From: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>
Sent: Tuesday, September 23, 2025 9:42 PM
To: Debralee Esclito
Cc: Adam Strubeck; Karlynn Fukuda; HT-Plan Reviews; Corey Vianzos
Subject: RE: Draft Environmental Assessment for the Waiko Road Sewer System/Waterline Improvements at Waikapu, Maui, Hawai'i_HT-PR-25092301MA

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

Hi Debralee Esclito,

Thank you for your email. This has been assigned for review. Please let us know if you have any further questions.

Please have this HT APP ID # HT-PR-25092301MA for future refrence for this project.

Thanks,
MONISHKUMAR T A
Drafter II
email : monishkumar.ashok@hawaiiantel.com

From: Debralee Esclito <debralee@munekiyohiraga.com>
Sent: Tuesday, September 23, 2025 8:34 AM
To: HT-Plan Reviews <HT-PlanReviews@hawaiiantel.com>
Cc: Adam Strubeck <adam@munekiyohiraga.com>; Karlynn Fukuda <karlynn@munekiyohiraga.com>; Debralee Esclito <debralee@munekiyohiraga.com>
Subject: Draft Environmental Assessment for the Waiko Road Sewer System/Waterline Improvements at Waikapu, Maui, Hawai'i

To: Hawaiian Telcom
Plan Review Department

From: Adam Strubeck, Associate
Munekiyo Hiraga

ATTACHMENT

Date	Description
September 2025	Draft Environmental Assessment (EA) Letter

Message:

Aloha,

We are providing the attached letter containing the Draft EA link to the Waiko Road Sewer System/Waterline Improvements project for your review. Thank you!

cc: Karlynn Fukuda

Email: planning@munekiyohiraga.com
Maui: 305 High Street, Suite 104, Wailuku, Hawaii 96793 T: 808.244.2015
Oahu: 225 Queen Street, Suite 200, Honolulu, Hawaii 96813 T: 808.983.1233
Planning. Project Management. Sustainable Solutions. www.munekiyohiraga.com

CONFIDENTIAL AND PRIVILEGED COMMUNICATION: This message (including attachments) is intended for the use of the designated recipient(s) named above. The contents of this correspondence are considered privileged and confidential. If you have received this message in error, kindly notify us immediately by email or telephone, and delete this email from your computer system. Thank you.

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

February 9, 2026

Via Email: ***monishkumar.ashok@hawaiiantel.com***

Hawaiian Telcom
Plan Review Department

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Mr. Monishkumar:

Thank you for your email dated September 23, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

Thank you for your email. This has been assigned for review. Please let us know if you have further questions. Please have this HT APP ID # HT-PR-25092301MA for future reference for this project.

Response: The Applicant acknowledges that the project has been assigned for review and been issued the above reference number. The DEM looks forward to Hawaiian Telcom's review of the proposed project.

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 Final EA 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,

Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\Hawaiian Tel.docx

Subject: Waikapu Sewer Upgrade

From: Barry Helle <bhelle@waileagolf.com>
Sent: Thursday, October 9, 2025 10:24 AM
To: General eMail <planning@munekiyohiraga.com>
Subject: Waikapu Sewer Upgrade

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,
Thank you for the opportunity to provide comments on the Waiko Road Sewer System/Water Line Improvements. As a resident of Waikapu, I fully support this project. However, I would like to question the decision to exclude the 10 properties located at the top of Wilikona Place and Oia Way. I live at 105 Wilikona Place, which is one of the excluded properties. I would welcome the conversion to the County sewer system. What is the reason to make the conversion to County Sewer all the way up Wilikona Place, only to exclude the last 4 homes on Wilikona and the 6 residences on Oia Way?

I realize that our homes were part of a subdivision developed approximately 36+ years ago versus the other home sites that are considerably older, but it doesn't seem practical to exclude these last 10 homes.

Thank you again for your consideration.
Barry

BARRY HELLE
REAL ESTATE ASSET MANAGER | WAILEA GOLF & TENNIS CLUB
P: 808.875.5140 | C: 808.268.8901 | waileagolf.com
100 Wailea Golf Club Drive, Suite A | Wailea, Maui, HI 96753

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

February 9, 2026

Via Email: bhelle@waileagolf.com

Mr. Barry Helle

SUBJECT: Response to Draft Environmental Assessment Comments Regarding the Proposed Waiko Road Sewer System/Waterline Improvements Project, Waikapū, Maui, Hawai'i

Dear Mr. Helle:

Thank you for your email dated October 9, 2025 regarding the Draft Environmental Assessment (EA) for the Proposed Waiko Road Sewer System/Waterline Improvements Project. On behalf of the Department of Environmental Management (DEM), we offer the following information in response to the comments received.

Comment No. 1:

As a resident of Waikapu, I fully support this project. However, I would like to question the decision to exclude the 10 properties located at the top of Wilikona Place and Oia Way. I live at 105 Wilikona Place, which is one of the excluded properties. I would welcome the conversion to the County sewer system. What is the reason to make the conversion to County Sewer all the way up Wilikona Place, only to exclude the last 4 homes on Wilikona and the 6 residences on Oia Way? I realize that our homes were part of a subdivision developed approximately 36+ years ago versus the other home sites that are considerably older, but it doesn't seem practical to exclude these last 10 homes.

Response: The DEM appreciates your support of the proposed project and the questions related to the Waikapu Homesites Subdivision. The subdivision plans for the Waikapu Homesites indicate that provisions for sewer service to each of the lots were installed as part of the site improvements for the subdivision. However, since there was no connection to the County sewer system at that time, the improvements were not active. The proposed project will include a connection to the Waikapu Homesites Subdivision, such that the parcels in this subdivision will also be able to connect to the County sewer system.

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 Final EA 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,



Adam Strubeck
Associate

AS:de
cc: Juan Rivera, Department of Environmental Management
Rommel Yanos, Department of Environmental Management
Reed Ariyoshi, Warren S. Unemori Engineering, Inc.
K:\DATA\WUE\Waikapu Sewer Improvements\Applications\0Draft EA\Response\Helle, Barry.docx

REFERENCES XI

XI. REFERENCES

County of Maui, 2030 General Plan, Countywide Policy Plan, March 2010.

County of Maui, 2030 General Plan, Maui Island Plan, December 2012.

County of Maui, Department of Planning, Maui Island Digital Zoning Map V.4 under review by MPC October 12, 2021.

County of Maui, Department of Planning, Wailuku-Kahului Community Plan, 2002.

County of Maui, "Island of Maui TMK Parcels", [GIS Polygon Shapefile]. Created by Geographic Decision Systems International and County of Maui. 2010. Retrieved from http://hawaii.gov/dbedt/gis/download.htm.

County of Maui, Office of Economic Development, Maui County Data Book 2020.

County of Maui, Office of Economic Development, Maui County Data Book 2022.

Foote etal, U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of the Islands of Kauaʻi, Oʻahu, Maui, Molokaʻi, and Lānaʻi, State of Hawaiʻi. 1972.

Gershman, Brickner & Bratton, Inc., Integrated Solid Waste Management Overview 2009.

Hawaiʻi Climate Change Mitigation and Adaptation Commission, Sea Level Rise Vulnerability and Adaptation Report, December 2017.

IPCC, 2023: Summary for Policymakers. In: Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: 10.59327/IPCC/AR6-9789291691647.001.

Realtors Association of Maui, Market Statistics https://www.ramaui.com/, May 2024, Accessed April 23, 2025.

State of Hawaiʻi, Coastal Zone Management, Chapter 205A Hawaiʻi Revised Statutes.

State of Hawaiʻi, Department of Agriculture, Agriculture Functional Plan, 1991.

State of Hawaiʻi, Department of Agriculture. "Agricultural Lands of Important to the State of Hawaiʻi" [GIS Shapefile]. Digitized by State Office of Planning using ArcInfo version 6 from State Department of Agriculture's 1:24,000 blueline maps. Retrieved from http://hawaii.gov/dbedt/gis/download.htm.

State of Hawaiʻi, Department of Business, Economic Development, and Tourism, DBEDT News Release https://governor.hawaii.gov/newsroom/dbedt-news-release-hawaiis-unemployment-rate-at-4-2-percent-in-may/, June 16, 2022.

State of Hawaiʻi, Department of Business, Economic Development, and Tourism, Energy State Functional Plan, 1991.

State of Hawai‘i, Department of Business, Economic Development, and Tourism, Hawaii March Unemployment Rate at 2.9 Percent, https://files.hawaii.gov/dbedt/news/nr-25-13.pdf, April 17, 2025.

State of Hawai‘i, Department of Business, Economic Development, and Tourism, Tourism State Functional Plan, 1991.

State of Hawai‘i, Department of Education, Education State Functional Plan, 1989.

State of Hawai‘i, Department of Education, Maui District Directory, 2021.

State of Hawai‘i Department of Health, Clean Air Branch, Hawaii Greenhouse Gas Emissions Report for 2017,“Final Report”, https://health.hawaii.gov/cab/files/2021/04/2017Inventory_FinalReport_April-2021.pdf, Accessed December 2021.

State of Hawai‘i, Department of Health, Health State Functional Plan, 1989.

State of Hawai‘i, Department of Human Services, Human Services State Functional Plan, 1989.

State of Hawai‘i, Department of Labor and Industrial Relations. Employment State Functional Plan, 1990.

State of Hawai‘i Department of Labor and Industrial Relations. Hawai‘i’s Unemployment Rate at 8.5 Percent in April 2021. https://labor.hawaii.gov/wp-content/uploads/2021/05/20210520April-UI-Rate-PR.pdf

State of Hawai‘i, Department of Land and Natural Resources, Conservation Lands State Functional Plan, 1991.

State of Hawai‘i, Department of Land and Natural Resources, Historic Preservation Functional Plan, 1991.

State of Hawai‘i, Department of Land and Natural Resources, Recreation State Functional Plan,1991.

State of Hawai‘i, Department of Transportation, Transportation State Functional Plan, 1991.

State of Hawai‘i, Hawai‘i Housing Finance and Development Corporation, Housing State Functional Plan, 1989.

State of Hawai‘i, Hawai‘i State Planning Act, Chapter 226, Hawai‘i Revised Statutes.

State of Hawai‘i, State Land Use Commission. “State Land Use District Boundaries.” [GIS shapefile]. Digitized by State Office of Planning using Arclnfo 4, 5, and 6 from State Land Use Commission’s 1:24,000 mylar maps. (2010). Retrieved from http://hawaii.gov/dbedt/gis/download.htm.

State of Hawai‘i, University of Hawai‘i, Higher Education Functional Plan, 1984.

U.S. Department of Agriculture. “Soil Survey Geographic database for Island of Maui, Hawai‘i”. [GIS Shapefile]. Digitized by State Office of Planning using Arclnfo 7.1.2 from Department of Agriculture’s 7.5 minute quadrangles. Retrieved from http://hawaii.gov/dbedt/gis/download.htm.

U.S. Energy Information Administration, “Commercial Building Energy Consumption Survey”, “Table C14. Electricity consumption and expenditure intensities, 2012”, May 2016.

U.S. Environmental Protection Agency, “AVERT, U.S. national weighted average CO2 marginal emission rate, year 2019 data”, 2018, Accessed August 21, 2019.

U.S. Environmental Protection Agency, “GHG Reporting Program Data, 2020”, https://ghgdata.epa.gov/ghgp/main.do, Accessed December 2021.

University of Hawai‘i Economic Research Organization. Unemployment Rate. Maui Island, 2024. Accessed April 23, 2025. https://data.uhero.hawaii.edu/#/series?id=160405&sa=true&geo=MAUI&freq=A.

University of Hawai‘i, Land Study Bureau. “Land Study Bureau Detailed Land Classification” [GIS Shapefile]. Digitized by State Office of Planning using Arclnfo 7.1.1 from Land Study Bureau’s 1:24,000 topographic and orthophoto quads. Retrieved from http://hawaii.gov/dbedt/gis/download.htm.

WAIKO ROAD SUBDIVISION SEWER SYSTEM/WAIKAPU WATERLINE PROJECT PLANS

APPENDIX

A

Construction Plans for ...

WAIKO ROAD SUBDIVISION SEWER SYSTEM/ WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

WWRD JOB NO. WW21-07, DWS JOB NO. 24-03A

R 3-5-010 (HONOAPIILANI HIGHWAY)

R 3-5-011 (WILIKONA PLACE, KEILIO PLACE, KEMOA PLACE, WAIKO ROAD)

Prepared for . . .

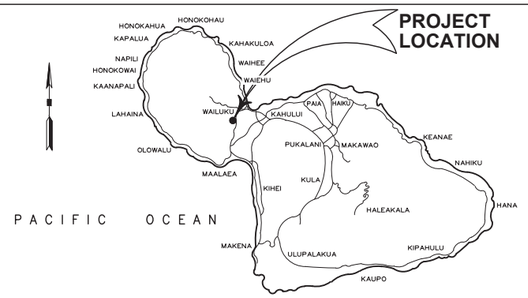
COUNTY OF MAUI
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AND DEPARTMENT OF WATER SUPPLY

Prepared by . . .

WARREN S. UNEMORI ENGINEERING, INC.
Civil & Structural Engineers - Land Surveyor
Wells Street Professional Center - Suite 403
2145 Wells Street -Wailuku, Maui, Hawaii 96793

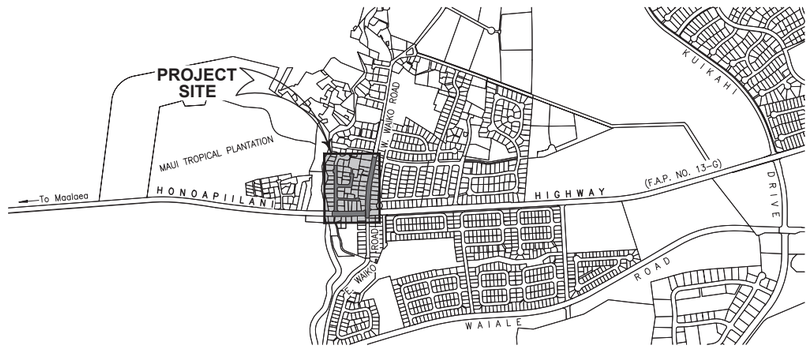
JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

VICINITY MAP



ISLAND OF MAUI
NOT TO SCALE

TRUE NORTH
SCALE: 1 IN. = 1000 FT.



INDEX OF DRAWINGS

SHT. NO.	DWG. NO.	DESCRIPTION
1	C-1	TITLE SHEET
2 - 3	C-2 - C-3	CONSTRUCTION NOTES
4	C-4	GENERAL PLAN
5	C-5	PLAN & PROFILE: SEWERLINE - HONOAPIILANI HIGHWAY
6	C-6	PLAN & PROFILE: SEWERLINE - WILIKONA PLACE
7	C-7	PLAN & PROFILE: SEWERLINE - KEILIO PLACE
8	C-8	PLAN & PROFILE: SEWERLINE - KEMOA PLACE
9	C-9	PLAN & PROFILE: SEWERLINE - WAIKO ROAD
10	C-10	SEWER DETAILS
11	C-11	WATER DETAILS

APPROVED

DIRECTOR, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT — DATE
COUNTY OF MAUI

DIRECTOR, DEPARTMENT OF PUBLIC WORKS — DATE
COUNTY OF MAUI

DIRECTOR, DEPARTMENT OF WATER SUPPLY — DATE
COUNTY OF MAUI

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE TITLE SHEET

RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-1 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
AS NOTED SCALE			

W:\Projdata\20PROJ\20038\dwg\coplans\TITLE00.dwg

CONSTRUCTION NOTES:

GENERAL NOTES:

1. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SUBSECTION 108.01 – SUBLETTING OF CONTRACT, WHICH REQUIRES HIM TO PERFORM WORK AMOUNTING TO NOT LESS THAN 50 PERCENT OF THE TOTAL CONTRACT COST LESS DEDUCTIBLE ITEMS. NONCOMPLIANCE WITH THIS SUBSECTION MAY BE GROUNDS FOR REJECTION OF BID.
2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FOLLOWING SECTIONS OF THE SPECIAL PROVISIONS; SUBSECTION 107.13 – PUBLIC CONVENIENCE AND SAFETY; SUBSECTION 107.21 – CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES; AND SECTION 645 – TRAFFIC CONTROL.
3. ALL LANES SHALL BE OPEN TO TRAFFIC DURING THE MORNING PEAK HOURS FROM 6:30 A.M. TO 8:30 A.M. DURING AFTERNOON PEAK HOURS FROM 3:30 P.M. TO 6:30 P.M. AND OFF WORK HOURS. ONLY ONE LANE OF SOUTH KIHEI ROAD SHALL BE CLOSED AT ANY OTHER TIME.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING, TWO (2) WEEKS PRIOR TO STARTING PAVING OPERATIONS.
5. AT THE END OF EACH DAYS WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND OTHER OBSTRUCTIONS TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC.
6. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, MANHOLES, MONUMENTS AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT THE ACCURACY IS NOT GUARANTEED. THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF WORK IS POSSIBLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH, SIZE AND TYPE OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING UTILITIES ON PLANS AND IN GROUND. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES INCURRED TO THE EXISTING FACILITIES AND/OR IMPROVEMENTS AS A RESULT OF HIS OPERATIONS.
7. PRIOR TO RESURFACING, THE EXISTING SURFACE SHALL BE CLEANED AS DESCRIBED IN SECTION 310 OF THE STANDARD SPECIFICATIONS AND AS AMENDED. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
8. ALL HOLES, DEPRESSIONS AND WHEEL RUTS SHALL BE FILLED AND COMPACTED WITH ASPHALTIC CONCRETE PAVEMENT, MIX NO. IV PRIOR TO RESURFACING. THIS WORK WILL BE PAID FOR UNDER ASPHALTIC CONCRETE PAVEMENT, MIX. NO. IV.
9. THE CONTRACTOR SHALL NOT LEAVE MORE THAN 1 1/2" DROP-OFF AT THE EDGE OF PAVEMENT, AT THE END OF EACH WORK DAY. THIS INCLUDES DROP-OFFS AT THE CENTERLINE AND AT THE OTHER EDGES OF THE TRAVEL LANE. WHENEVER THE CONTRACTOR LEAVES A 1 1/2" DROP-OFF, THE CONTRACTOR SHALL INSTALL DELINEATORS AND BARRICADES ALONG THE EDGE OF THE PAVEMENT. THIS WORK WHICH INCLUDES FURNISHING, INSTALLING, CLEANING, MAINTAINING CORRECT PLACEMENT AND REMOVING WHEN REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO ROADWAY EXCAVATION.
10. ALL SAW CUTTING WORK SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS OF WORK.
11. EXISTING DRAINAGE SYSTEM SHALL BE FUNCTIONAL AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS TO FURNISH MATERIALS, EQUIPMENT LABOR, TOOLS AND INCIDENTALS NECESSARY TO MAINTAIN FLOW. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
12. ALL CONSTRUCTION SIGNS SHALL BE LEFT IN PLACE UNTIL ALL CONSTRUCTION ITEMS HAVE BEEN COMPLETED. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE ENGINEER TO REMOVE CONSTRUCTION SIGNS. THIS WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
13. STREET SURVEY MONUMENTS SHOWN ON PLANS SHALL BE VERIFIED IN THE FIELD PRIOR TO ANY RESURFACING ACTIVITY. MONUMENTS THAT ARE SHOWN ON PLANS BUT ARE MISSING IN THE FIELD SHALL BE REESTABLISHED AND REINSTALLED BY THE CONTRACTOR. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM NO. 613.0300, ADJUSTING CENTERLINE SURVEY MONUMENTS.
14. STREET SURVEY MONUMENTS SHALL NOT BE DISTURBED DURING PAVEMENT RECONSTRUCTION. ADJUSTMENTS OF THESE MONUMENTS SHALL BE IN ACCORDANCE WITH APPLICABLE DETAILS AS SHOWN ON THE STANDARD PLANS.
15. SIGN POSTS SHALL BE SQUARE TUBE POSTS, EXCEPT FOR DESTINATION SIGN POSTS PER HAWAII DOT STANDARDS.
16. THE CONTRACTOR SHALL MAINTAIN ACCESS TO AND FROM ALL EXISTING SIDE ROADS, DRIVEWAYS AND STREETS AT ALL TIMES.
17. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION. SHOULD THERE BE OMISSIONS, CONTRACTOR SHALL PROVIDE AND INSTALL FITTINGS, APPURTENANCES AND MATERIALS AS REQUIRED TO PROVIDE A COMPLETE FUNCTIONAL UTILITY SYSTEM CONFORMING TO ALL APPLICABLE STANDARDS AND REQUIREMENTS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION.

EXISTING UTILITIES:

1. OVERHEAD AND UNDERGROUND UTILITIES MAY EXIST ALONG, ACROSS, AND IN THE VICINITY OF THE PROPOSED IMPROVEMENTS AND MAY NOT BE AS SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE COUNTY OR STATE AGENCIES, UTILITIES (INCLUDING WITHOUT LIMITATION HAWAIIAN ELECTRIC COMPANY, HAWAIIAN TELCOM, AND SPECTRUM CABLE), EXAMINING ANY AVAILABLE RECORD DRAWINGS, TONING OF UNDERGROUND UTILITIES, TEST PITS, AND CONFIRMING THE PRESENCE, LOCATION, DEPTH, SIZE, AND TYPE OF ANY EXISTING UTILITIES ALONG AND ACROSS THE PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION ACTIVITIES, AND ANY REQUIRED RELOCATION, WITH RESPECTIVE AGENCIES AND UTILITIES.
2. THE LOCATION, DEPTH AND TYPE OF THE VARIOUS EXISTING UTILITY LINES SHOWN ON THE CONSTRUCTION PLANS WERE DETERMINED ON THE BASIS OF THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH, SIZE, AND TYPE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING UTILITIES AS SHOWN ON THE CONSTRUCTION PLANS AND IN GROUND, AND NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE ENGINEER.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY ENGINEER IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERALS CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH MECO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED, TO THE SATISFACTION OF MECO AND WASTEWATER RECLAMATION DIVISION. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COSTS TO DOCUMENT NEW OR REVISED EASEMENTS.
5. ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS, IF DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, SHALL BE REPAIRED SOLELY AT HIS EXPENSE.

WASTEWATER NOTES:

1. ALL WASTEWATER LINES AND APPURTENANCES SHALL CONFORM TO STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI.
2. ALL SEWERLINE AND APPURTENANCES SHALL FOLLOW THE DESIGN STANDARDS OF THE WASTEWATER RECLAMATION DIVISION, CITY AND COUNTY OF HONOLULU, VOLUMES 1 & 2, DATED JULY 1993 AND JULY 1984 RESPECTIVELY, UNLESS OTHERWISE NOTED.
3. ALL WASTEWATER LINES AND APPURTENANCES INSTALLATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986. IF ANY CONFLICTS ARISE BETWEEN THE STANDARD DETAILS, DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS, THE STRICTEST STANDARD SHALL APPLY, UNLESS APPROVED OTHERWISE.
4. BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL SCHEDULE AND DOCUMENT A PRE-CONSTRUCTION MEETING WITH ALL AGENCIES HAVING UTILITIES AFFECTED BY THE WORK.
5. CONTRACTOR MUST HAVE A SITE SPECIFIC SPILL PREVENTION AND CONTROL PLAN (SSSPCP) APPROVED BY WWRD PRIOR TO SEWER LINE CONSTRUCTION AND/OR SEWER LATERAL CONNECTION TO EXISTING FACILITIES, OR ANY WORK WITHIN FIVE (5) FEET OF WASTEWATER SYSTEM IMPROVEMENTS.
6. THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, WASTEWATER RECLAMATION DIVISION, HAS THE RIGHT TO STOP CONSTRUCTION, SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED PLANS AND SPECIFICATIONS, OR DETRIMENTAL TO THE PUBLIC INTEREST.
7. ALL EXISTING WASTEWATER LINES, WHETHER OR NOT SHOWN ON THE PLANS, IF DAMAGED DURING CONSTRUCTION, SHALL BE REPAIRED BY THE CONTRACTOR AND THE CONTRACTOR SHALL PAY ALL EXPENSES.
8. THE CONTRACTOR SHALL NOTIFY THE WASTEWATER RECLAMATION DIVISION FIVE (5) WORKING DAYS PRIOR TO CONNECTION TO ANY EXISTING WASTEWATER LINES WITHIN THE COUNTY OF MAUI.
9. SHOULD THE CONTRACTOR EXCAVATE BEYOND THE TRENCH PAY WIDTH, AS SPECIFIED IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, AND SUCH ACTION RESULTS IN A GREATER LOAD TO THE PIPE, THE CONTRACTOR SHALL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HIGHER CLASS OF BEDDING MATERIAL THAT WILL WITHSTAND THE ADDED LOAD.
10. WASTEWATER LATERALS SHALL BE SIX (6) INCHES IN DIAMETER AT A 2% SLOPE, UNLESS APPROVED OTHERWISE.
11. AN ADVANCE RISER CONNECTION SHALL BE INSTALLED AT EACH NEW WASTEWATER LATERAL.
12. WHERE THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING UTILITY LINE IS LESS THAN EIGHTEEN (18) INCHES, THE WASTEWATER LINE SHALL BE PROTECTED WITH A REINFORCED CONCRETE JACKET IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, UNLESS OTHERWISE NOTED.
13. WHEN THE WASTEWATER MAINS ARE OF A DIFFERENT MATERIAL THAN THE LATERALS, THE CONTRACTOR SHALL INSTALL APPROVED ADAPTERS.
14. ALL BACKFILL FOR WASTEWATER TRENCHES SHALL BE COMPACTED IN ONE (1) FOOT LIFTS TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY.
15. WHERE CONSTRUCTION IS TO BE DONE IN PHASES OR INCREMENTS, EACH PHASE OR INCREMENT SHALL BE APPROVED BY WASTEWATER RECLAMATION DIVISION BEFORE THE NEXT PHASE OR INCREMENT IS STARTED.
16. ALL WASTEWATER MAINS SHALL PASS A MANDREL TEST AS A CONDITION OF ACCEPTANCE 30 DAYS AFTER COMPLETION AND BACKFILL. THE MANDREL DIAMETER SHALL BE 95% OR MORE OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED.
17. "AS_BUILT" DRAWINGS SHALL BE SUBMITTED AS A CONDITION FOR THE FINAL ACCEPTANCE OF THE PROJECT.
18. PRIOR TO INSPECTION BY CLOSED CIRCUIT TELEVISION (CCTV), ALL WASTEWATER LINES INSTALLED, INCLUDING LATERALS, SHALL BE FLUSHED WITH WATER AND ANY ACCUMULATED CONSTRUCTION DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED.
19. ALL MAIN WASTEWATER LINES WHICH WILL BE DEDICATED TO THE COUNTY OF MAUI SHALL BE INSPECTED BY CCTV IN STRICT ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY. CCTV RESULTS SHOULD BE SUBMITTED ON DVD PER MEMO DATED OCTOBER 22, 2015. SHOULD ANY OF THE SEWER LATERALS FAIL TO PASS A VISUAL INSPECTION, THEN A CCTV OF ALL LATERALS WILL ALSO BE REQUIRED.
20. ANY CONNECTION MADE UNDER THE WATER TABLE WILL REQUIRE CCTV AT HIGH TIDE TO DETERMINE WATER TIGHTNESS IN ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING THE GPS COORDINATES OF ALL BURIED AND CONCEALED WORK TO BE DEDICATED TO THE COUNTY, AND PROVIDE THE GPS DATA TO THE COUNTY PRIOR TO THE PROJECT'S FINAL ACCEPTANCE. AN ACCURATE GPS POINT EVERY (50) FEET ALONG THE MAIN LINE, AT UTILITY CROSSINGS, AND AT ANY INSTALLED APPURTENANCE (INCLUDING BUT NOT LIMITED TO MANHOLES, BENDS, CONCRETE JACKET, CLEANOUT, PIPE DEVIATIONS, CHANGE IN PIPE SIZE, CRITICAL JOINTS, ARV, ETC.). GPS DATA SHALL BE IN NAD 1983 STATE PLANE HAWAII ZONE 2 FIPS 5102 GRID, AND SHALL BE ACCURATE TO WITHIN ONE (1) FOOT. ACQUIRED GPS SURVEY DATA SHALL BE QUALITY CHECKED BY THE CONTRACTOR PRIOR TO SUBMISSION IN SHAPEFILE (.SHP) FORMAT, FOR COMPATIBILITY WITH MAINSTREAM GIS SOFTWARE SUCH AS ESRI ARCMAP.

WATER SYSTEM:

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. IF CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS WILL AFFECT DWS CONSUMERS, CONTRACTOR SHALL NOTIFY CONSUMERS BY RADIO/NEWSPAPER TWO (2) DAYS BEFORE AND ON DAY OF CONNECTION. CONTRACTOR SHALL ALSO NOTIFY CONSUMERS HOUSE-TO-HOUSE ONE (1) DAY BEFORE CONNECTION WORK.
3. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF DWS WATER SYSTEM STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARDS BEFORE COMMENCING CONSTRUCTION.
4. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
5. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE, FEDERAL LAWS, RULES AND REGULATIONS REGARDING THE HANDLING, REMOVAL AND DISPOSAL OF ASBESTOS PIPE.
6. CONTRACTOR SHALL PROTECT EXISTING WATERLINE DURING COURSE OF CONSTRUCTION AND SUPPORT EXPOSED WATERLINE TO PREVENT ANY MOVEMENT.
7. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING, RELOCATING OR ADJUSTING EXISTING WATERLINES, SERVICE LATERALS AND APPURTENANCES, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
8. PAVEMENT RESURFACING/RESTORATION:
   A. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DWS VALVES AND MANHOLES, WHEN AFFECTED BY THE WORK, PRIOR TO START OF CONSTRUCTION.
   B. ALL WATER VALVE AND WATER MANHOLE CONCRETE COLLARS WITHIN THE PROJECT LIMITS SHALL BE DEMOLISHED AND RECONSTRUCTED PER DWS STANDARD DETAIL V12 AND V23, RESPECTIVELY, AT THE CONTRACTOR'S EXPENSE.
   C. THE VALVE BOX RISER AND COVER OF ALL WATER VALVES WITHIN THE PROJECT LIMITS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
   D. CONTRACTOR SHALL ADJUST DWS SLIDING VALVE BOX ASSEMBLY AND MANHOLE FRAME AND COVER TO FINISHED GRADE.
   E. PRIOR TO PAVEMENT RESURFACING/RESTORATION WORK, THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH DWS.
9. ANY SLIDING VALVE BOX ASSEMBLY, MANHOLE COVER, OR CONCRETE COLLAR, WHETHER DISCOVERED DAMAGED OR NOT SPECIFIED ON THE PLANS TO BE ADJUSTED OR REPLACED, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL UTILITIES (I.E., WATER, SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
11. CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, SHOULDER DRESSING, STRIPING, AND SPEED HUMPS.
12. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
13. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF MANHOLE COVER SHALL BE THREE (3) FEET.
14. CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
15. CONNECTION TO DWS SYSTEM:
   A. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. CONTRACTOR SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   B. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   C. DWS PERSONNEL MAY BE REQUIRED TO BE PRESENT OR ASSIST WITH CONNECTIONS TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK.
   D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
16. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
17. CONTRACTOR SHALL ENSURE INSTALLATION OF WATERLINES, SERVICE LATERALS AND APPURTENANCES HAVE PROPER CLEARANCES FROM EXISTING TREES, WALLS, FENCES, ETC. IN ACCORDANCE WITH CURRENT DWS WATER SYSTEM STANDARDS.
18. CONTRACTOR SHALL VERIFY AND MAINTAIN 18" MINIMUM CLEARANCE WITH WATERLINE OR SERVICE LATERAL CROSSING OVER EXISTING SEWERLINE OR SERVICE LATERAL. INSTALL REINFORCED CONCRETE JACKET AROUND SEWERLINE WHERE SEWER IS ABOVE WATERLINE OR LESS THAN 18" BELOW WATERLINE. THE LENGTH OF JACKET REQUIRED SHALL BE AS SPECIFIED IN TABLE 100-5 OF THE DWS STANDARDS. PROVIDE 6" MINIMUM CLEARANCE FROM OUTSIDE JACKET TO WATERLINE OR SERVICE LATERAL. STANDARD CONCRETE JACKET DETAILS FOR SEWERLINE AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS STANDARDS SHALL BE FOLLOWED.
19. CONTRACTOR SHALL HAVE LICENSED SURVEYOR STAKE OUT WATERLINE BASELINE STATIONING, RIGHT-OF-WAY LIMITS, PROPERTY LINES, AND EASEMENT LINES TO ENSURE PROPER LOCATION OF WATER SYSTEM IMPROVEMENTS.
20. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
   A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
   B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO
   C. "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
   D. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".
   E. ALL HOT FORGED STAINLESS STEEL BOLTS ARE REQUIRED TO BE PASSIVATED PER ASTM A380. MANUFACTURER CERTIFICATES ARE REQUIRED FOR PROOF WITH EACH SHIPMENT.
21. CONTRACTOR SHALL FURNISH AND INSTALL DUCTILE IRON NIPPLES FOR COMPLETE INSTALLATION OF THE WATERLINE, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS, AT THE CONTRACTOR'S EXPENSE.
22. CONTRACTOR SHALL FURNISH TEMPORARY CLEANOUTS WHEN NECESSARY TO TEST, FLUSH, AND CHLORINATE THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
23. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PORTIONS OF ABANDONED WATERLINES THAT ARE EXPOSED OR WITHIN 12-INCHES BELOW THE GROUND SURFACE AT THE CONTRACTOR'S EXPENSE.
24. ALL BURIED METALS, INCLUDING COPPER PIPES, SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
25. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
26. CONTRACTOR SHALL PAINT AND NUMBER FIRE HYDRANT(S). NUMBERING TO BE FURNISHED BY DWS.
27. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
28. DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
29. CONTRACTOR SHALL SUBMIT ONE (1) SET OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN PDF FORMAT AT FULL PAGE SIZE (24" X 36") SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

CHLORINATION OF WATER SYSTEM PIPELINES:

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.
License Expires: April 30, 2026
SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE CONSTRUCTION NOTES

RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-2 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
AS NOTED SCALE			

V:\Projects\20PROJ\20038\dwg\conplans\note-sht-00.dwg

CONSTRUCTION NOTES:

CONSTRUCTION NOTES WITHIN COUNTY RIGHT-OF-WAY:

1. CONTRACTOR SHALL OBTAIN A ROADWAY PERMIT TO PERFORM WORK WITHIN THE COUNTY RIGHT-OF-WAY FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
2. STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
3. ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
4. IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
5. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
6. THE DIRECTOR PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
7. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
9. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
10. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
11. THE CONTRACTOR SHALL SUBMIT A PDF OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED, UNLESS OTHERWISE NOTED.
13. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
14. THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL OR THE COUNTY OF MAUI HAS SIGNED ITS ACCEPTANCE VIA A CONVEYANCE DOCUMENT RECORDED IN THE BUREAU OF CONVEYANCES OF THE STATE OF HAWAII IN COMPLIANCE WITH MAUI COUNTY CODE SECTION 3.44.015.
15. STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
16. WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
17. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
18. COMPACTION REQUIREMENTS
    - A. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
        - i. EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
        - ii. AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
        - iii. AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
        - iv. ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE; THREE (3) A.C. CORES FOR THICKNESS AN DENSITY TESTS PER PROJECT;
        - v. TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
    - B. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
    - C. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

MAUI ELECTRIC CO. (MECO) NOTES:

1. THE LOCATION OF MECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE DRAWINGS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND POWER LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD POWER LINES.
2. THE CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE HAWAII OCCUPATIONAL & HEALTH DIVISION (HIOSH).
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION OF MECO UTILITIES AND COORDINATING WITH MECO ALL WORK IN THE VICINITY OF THEIR UTILITIES. THE CONTRACTOR SHALL CALL MECO A MINIMUM OF 72 HOURS PRIOR TO WORK IN THE VICINITY OF UNDERGROUND POWER LINES FOR FIELD LOCATION.
4. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO MECO UTILITIES AND SHALL IMMEDIATELY REPORT SUCH DAMAGES TO MECO.
5. CONTRACTOR SHALL CONTACT MECO IN ADVANCE WHEN WORKING WITHIN 10' OF THE POWER POLES.

HAWAIIAN TELEPHONE CO. (HTCO) NOTES:

1. THE LOCATION OF EXISTING HAWAIIAN TELEPHONE COMPANY UNDERGROUND FACILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION OF HTCO UTILITIES AND COORDINATING WITH HTCO ALL WORK IN THE VICINITY OF THEIR UTILITIES. ANY DAMAGES TO THE UNDERGROUND FACILITIES AS A RESULT OF HIS OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR, AT THEIR OWN EXPENSE.
2. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELEPHONE COMPANY A MINIMUM OF 72 HOURS PRIOR TO THE START OF EXCAVATION FOR FIELD LOCATION OF HAWAIIAN TELEPHONE COMPANY UNDERGROUND FACILITIES.

EXISTING GRADE:

1. EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING FURTHER WITH ANY WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.

GRADING NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
2. THE CONTRACTOR AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS, AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
3. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL, AND WATER QUALITY STANDARDS AND THE COUNTY GRADING ORDINANCE.
4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED. CONTRACTOR SHALL GRASS AND MAINTAIN ALL EXPOSED SLOPES SUCH THAT 60% COVERAGE WILL BE ACHIEVED WITHIN 30 DAYS AND 85% COVERAGE WILL BE ACHIEVED WITHIN 60 DAYS AFTER PLANTING.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
6. THE CONTRACTOR SHALL PROVIDE DUST CONTROL, WITH SPRINKLERS, AND/OR WATERWAGONS AS NECESSARY, WEEKENDS AND HOLIDAYS INCLUDED. ALL GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND FOR THE WEEKEND.
7. ALL EXPOSED SLOPES SHALL BE PROTECTED WITH TEMPORARY DIVERSIONS, BERMS, AND SWALES AT THE TOP OF THE SLOPES.
8. EXISTING TOPOGRAPHIC INFORMATION SHOWN IS FROM "DATE" SURVEY MAP PREPARED BY "SURVEY". DUE TO THE EXTENDED LENGTH OF TIME WHICH HAS LAPSED FROM THE DATE OF SURVEY, THE CONTRACTOR SHOULD EXAMINE THE SITE AND TAKE WHATEVER MEASURES NECESSARY TO VERIFY CONDITIONS EXISTING IN THE FIELD.
9. EARTHWORK QUANTITIES SHOWN ARE APPROXIMATE AND ARE TO BE USED FOR OBTAINING A GRADING PERMIT ONLY. NO ADJUSTMENTS HAVE BEEN MADE FOR LOSSES DUE TO GRUBBING AND SHRINKAGE NOR FOR DIFFERING TOPOGRAPHIC CONDITIONS. THE CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS AND PREPARE HIS OWN ESTIMATE AND BID ACCORDINGLY.
10. THE CONTRACTOR SHALL PERFORM ALL GRADING IN CONFORMANCE WITH THE REQUIREMENTS SPECIFIED IN THE MAUI COUNTY GRADING ORDINANCE AND THIS PROJECT'S SPECIFICATIONS.
11. THE CONTRACTOR SHALL LIMIT THE LENGTH OF OPEN TRENCH OF THE SEWERLINE TO A MAXIMUM LENGTH OF 300 FT. AT THE END OF EACH WORK DAY.

EXCAVATION NOTES:

1. IN AREAS WHERE THE EXCAVATION IS AT OR BELOW THE WATER TABLE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ENOUGH EQUIPMENT (SUBMERSIBLE PUMPS, HOSES, TANK TRUCKS, TEMPORARY HOLDING TANKS, ELECTRIC GENERATOR, BACK-UPS, ETC.) AND QUALIFIED PERSONNEL TO KEEP THE EXCAVATION FREE OF WATER DURING CONSTRUCTION OPERATIONS.
2. THE CONTRACTOR SHALL PROPERLY DISPOSE OF THE GROUNDWATER AT A SUITABLE LOCATION AS DIRECTED BY THE PROJECT ENGINEER AT WWRD. THE CONTRACTOR IS RESPONSIBLE FOR SECURING PERMISSION OF LAND OWNER FOR THIS PURPOSE.
3. DISPOSAL OF GROUNDWATER (ESPECIALLY SALT WATER) INTO THE SEWER SYSTEM WILL NOT BE PERMITTED.
4. THE CONTRACTOR SHALL TAKE STEPS TO PREVENT THE EXCAVATION FROM SLOUGHING OFF AND "GROWING". PREVIOUS EXPERIENCE IN THIS AREA HAS SHOWN THAT THE SOILS MAY BE MOIST AND LOOSE. THE USE OF SHORING BOXES AND/OR SHEET PILES MAY BE REQUIRED TO PROVIDE STABILITY OF THE EXCAVATION. STEEL PLATES ALONE ARE NOT ACCEPTABLE TRENCH SUPPORTS FOR THIS PROJECT.
5. THIS SCOPE OF WORK WAS CREATED ASSUMING THE CONTRACTOR WOULD COMPLETE THE REPAIR UNDER WATER DURING A LOW TIDE PERIOD WITHOUT DEWATERING. IF THE CONTRACTOR CHOOSES TO UTILIZE A DEWATERING METHODOLOGY, THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ALL ASPECTS OF THIS WORK INCLUDING, BUT NOT LIMITED TO, ACQUISITION OF THE NPDES PERMIT AND ALL EQUIPMENT AND PERMISSION NECESSARY FROM APPROPRIATE AUTHORITIES. IF THE CONTRACTOR CHOOSES TO USE A DEWATERING METHODOLOGY, THE COUNTY WILL PROCESS A 180 CALENDAR DAY TIME EXTENSION TO ALLOW THE CONTRACTOR AMPLE TIME TO ACQUIRE NECESSARY PERMITS AND PERMISSION.
6. ALL EXCAVATED MATERIAL FROM THE TRENCHES SHALL BE HAULED AWAY AND SAND SHALL BE PLACED AROUND THE NEW SEWERLINE (12 INCHES ABOVE THE PIPE). IF THE SEWERLINE IS INSTALLED UNDERWATER, THE "BURRITO" METHOD SHALL BE USED. IF THE CONTRACTOR CHOOSES TO USE THE NATIVE MATERIAL, IT MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
7. OVERNIGHT LATERAL BYPASS PUMPING AS WELL AS TRUNK SEWER BYPASS PUMPING ARE NOT ALLOWED FOR THE DURATION OF THIS PROJECT, UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS. ALL SEWAGE BYPASSING MUST BE APPROVED BY THE DEPT. OF ENVIRONMENTAL MANAGEMENT WASTEWATER RECLAMATION DIVISION, AND SUBJECT TO APPROVAL OF A BYPASS PLAN AND SITE SPECIFIC SPILL PREVENTION AND CONTROL PLAN (SSSPCP).
8. CONTRACTOR SHALL NOTIFY PROJECT ENGINEER OF ANY AGREEMENTS MADE BETWEEN THE RESIDENTS AND CONTRACTOR PRIOR TO CONSTRUCTION IMPROVEMENTS.
9. THE CONTRACTOR SHALL KEEP EXCAVATIONS REASONABLY FREE FROM WATER DURING CONSTRUCTION. THE STATIC WATER LEVEL SHALL BE DRAWN DOWN A MINIMUM OF 1 FOOT BELOW THE BOTTOM OF EXCAVATIONS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL SOILS AND ALLOW THE PLACEMENT OF ANY FILL TO THE SPECIFIED DENSITY. DISPOSAL OF WATER SHALL MEET ALL PERMITTING REQUIREMENTS AS OBTAINED BY THE CONTRACTOR FOR SUCH WORK. DEWATERING SYSTEMS SHALL OPERATE CONTINUOUSLY UNTIL BACKFILL HAS BEEN COMPLETED TO 1 FOOT ABOVE THE NORMAL STATIC GROUNDWATER LEVEL.
10. GROUNDWATER SHALL BE CONTROLLED TO PREVENT SOFTENING OF THE BOTTOM OF EXCAVATIONS, OR FORMATION OF "QUICK" CONDITIONS. DEWATERING SYSTEMS SHALL NOT REMOVE NATURAL SOILS.
11. RELEASE OF GROUNDWATER TO ITS STATIC LEVEL SHALL BE CONTROLLED TO PREVENT DISTURBANCE OF THE NATURAL FOUNDATION SOILS OR COMPACTED FILL AND TO PREVENT FLOTATION OR MOVEMENT OF STRUCTURES OR PIPELINES.

EROSION CONTROL:

THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL EROSION DURING THE SITE DEVELOPMENT PERIOD:

1. MINIMIZE TIME OF CONSTRUCTION.
2. RETAIN EXISTING GROUND COVER UNTIL LATEST DATE TO COMPLETE CONSTRUCTION.
3. EARLY CONSTRUCTION OF DRAINAGE CONTROL FEATURES.
4. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
5. STATION WATER TRUCK ON SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES (WEEKENDS AND HOLIDAYS INCLUDED).
6. USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
7. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
8. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

ENVIRONMENTAL PROTECTION:

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENVIRONMENTALIST SHALL BE BORNE BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE, ALL IN ACCORDANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
3. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS OF THE PUBLIC HEALTH REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND THE COUNTY'S GRADING ORDINANCE.
4. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT APPROPRIATE SITES. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE SHALL ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.

LANDSCAPE RESTORATION NOTES:

1. AT TRENCH LOCATIONS TRAVERSING LANDSCAPED AREAS, ANY LARGE TREES THAT MUST BE DISPLACED ARE TO BE INVENTORIED, TRANSPORTED TO A SITE SELECTED BY THE GENERAL CONTRACTOR WHERE IT CAN BE TEMPORARILY TRANSPLANTED AND MAINTAINED. AFTER THE FORCE MAIN IS BACKFILLED AND TESTED, THE TREES SHOULD BE TRANSPORTED BACK AND REPLANTED AT ITS ORIGINAL SPOT UNDER THE SUPERVISION OF A QUALIFIED ARBORIST. GRASSED AREAS THAT MUST BE DISPLACED SHALL BE REPLACED BY GRASSED SOD RATHER THAN GRASSED SEEDLINGS TO ACCELERATE THE TIME OF RECOVERY.

   REPLANTED TREES AND SOD SHALL BE MAINTAINED UNTIL FIRMLY RE-ESTABLISHED IN PLACE AS SUBSTANTIATED BY THE ARBORIST OR OWNER.

POLYVINYL CHLORIDE (PVC) PIPE NOTES:

1. SANITARY SEWER PIPING SHALL BE SDR 26 OR SDR 35 PVC, CONFORMING TO SECTION 706.09 – "PVC PIPE FOR SEWER SYSTEM" OF THE 2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

NOISE:

1. CONTRACTOR SHALL OBTAIN NOISE VARIANCE FROM THE HAWAII STATE DEPARTMENT OF HEALTH (984-8230).

GENERAL NOTES FOR NIGHT WORK

TRAFFIC CONES

CONES SHALL BE 28 INCHES IN HEIGHT AND SHALL BE PREDOMINANTLY ORANGE IN COLOR. THEY SHALL BE KEPT CLEAN AND BRIGHT FOR MAXIMUM TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE THAT WILL DISPLAY THE SAME APPROXIMATE COLOR DAY OR NIGHT.

REFLECTORIZATION OF TUBULAR MARKER SHALL BE A MINIMUM OF TWO, THREE-INCH-WIDE WHITE BANDS PLACED A MAXIMUM OF TWO INCHES FROM THE TOP WITH A MINIMUM OF SIX INCHES BETWEEN THE BANDS. RETROREFLECTION OF CONES SHALL BE PROVIDED BY A MINIMUM SIX-INCH-WIDE WHITE BAND PLACED A MINIMUM OF THREE INCHES BUT NO MORE THAN FOUR INCHES FROM THE TOP. WHEN THE 28-INCH OR LARGER SIZE CONES ARE USED, THE STANDARD SIX-INCH BAND SHALL BE SUPPLEMENTED WITH AN ADDITIONAL FOUR-INCH WHITE BAND SPACED A MINIMUM OF TWO INCHES BELOW THE SIX-INCH BAND.

HISTORICAL PRESERVATION:

1. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
2. CONTRACTOR SHALL COMPLY WITH THE PROJECT ARCHAEOLOGICAL MONITORING PLAN (AMP) AND WORK WITH THE ARCHAEOLOGICAL MONITOR TO FOLLOW THE MONITORING PROCEDURES AND PROGRAM IN THE AMP.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL CONDUCT A COORDINATION MEETING WITH ALL PERTINENT PARTIES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION AND ARCHAEOLOGICAL PERSONNEL, TO INFORM OF THE MONITORING PROCEDURES AND PROVISIONS STIPULATED IN THE AMP, AS WELL AS THE ARCHAEOLOGICAL MONITOR'S AUTHORITY TO TEMPORARILY SUSPEND CONSTRUCTION ACTIVITIES IN THE VICINITY OF A FIND.

SPECIAL NOTES:

1. SHOULD THERE BE A CONFLICT BETWEEN THESE NOTES AND/OR THE PLANS AND/OR THE PROJECT SPECIFICATIONS, THE MORE STRINGENT CASE SHALL GOVERN UNLESS EXPLICITLY NOTED IN WRITING BY THE COUNTY PROJECT ENGINEER.

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE _____ DATE _____ License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS".

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE CONSTRUCTION NOTES

RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-3 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
AS NOTED SCALE			

V:\Projects\20PROJ\20038\dwg\conplans\note-sht-00.dwg

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

TRUE NORTH
SCALE: 1 IN. = 40 FT.

TO WAILUKU TOWN

UPPER WAIKO ROAD SEWER EXTENSION (BY OTHERS)

W A I K O R O A D

E A S T W A I K O R O A D

TO KUIHELANI HIGHWAY

H O N O A P I I L A N I H I G H W A Y (F.A.P. NO. 13-G)

W I L I K O N A P L A C E

K E M O A P L A C E

K E I L I O P L A C E

TO MAALAEA

T.M.K. (2) 3-5-16:01 Robert K. Shimizu, Jr. (Owner)

T.M.K. (2) 3-5-16:106 Roger Tesoro Trust (Owner)

T.M.K. (2) 3-5-16:105 Lehuamakanoe T. Verkerke J/Unabia-Verkerke B. Verkerke Trust (Owners)

T.M.K. (2) 3-5-16:104 Charles M. Hirata Trust Sandra K. Hirata (Owners)

T.M.K. (2) 3-5-16:103 Darryl K. and Wendy H. T. Munetake Trust (Owners)

T.M.K. (2) 3-5-16:102 David A. Wada, et al. (Owners)

T.M.K. (2) 3-5-16:101 Lyle S. and Wendy Y.K. Kobashigawa (Owners)

T.M.K. (2) 3-5-16:100 Edgar N. Nakama Trust (Owner)

T.M.K. (2) 3-5-16:99 Melvin & Debra Lorenzo Trust (Owners)

T.M.K. (2) 3-5-16:98 Andrew T/Bulawan, Mary F.M. Okimoto Trust (Owners)

T.M.K. (2) 3-5-16:97 Felix V. Layaoen, Jr. Milagros C. Layaoen (Owners)

T.M.K. (2) 3-5-16:96 Thomas M. Pascual (Owner)

T.M.K. (2) 3-5-10:05 Victor Bumanglag (Owner)

POINT OF CONNECTION EXT'G. SMH #KA20XM0400

POINT OF CONNECTION EXT'G. SMH #KA20XM0300

T.M.K. (2) 3-5-11 : 46 Jean-Paul K. Karlen (Owner)

T.M.K. (2) 3-5-11 : 45 Lovinia H. Teruya Trust Mildred T. Stevenson Family Trust (Owners)

T.M.K. (2) 3-5-11:19 Richard M. & Linda H. Yadao Trust, et al. (Owners)

T.M.K. (2) 3-5-11:43 Jose C. Villanueva Trust (Owner)

T.M.K. (2) 3-5-11:22 Isabel V. Campos, et al. (Owners)

T.M.K. (2) 3-5-11:48 Celeste C. Mollena Trust (Owner)

T.M.K. (2) 3-5-11:23 Nathan N. Pellazar, Sr./Nellie Pellazar Trust Estate (Owner)

T.M.K. (2) 3-5-11:01 Andrea Taclan (Owner)

T.M.K. (2) 3-5-11:33 Patricia L. and Dennis J. Alipio (Owners)

T.M.K. (2) 3-5-11:34 Emmitt J. K. Freitas Juanita A. Alipio (Owners)

T.M.K. (2) 3-5-11:35 Juanita Alipo (Owner)

T.M.K. (2) 3-5-10:02 Charles and Felicidad Kahakauwila (Owners)

T.M.K. (2) 3-5-11:20 Victor V. and Myrna J. Campos (Owners)

T.M.K. (2) 3-5-11:21 Alfredo V. Campos, Jr. Terie S. D. Campos (Owners)

T.M.K. (2) 3-5-11:36 Violeta B. Bolibol, et al. (Owners)

T.M.K. (2) 3-5-11:44 Errol W. and Betty Lynne L. M. S. Cadelinia (Owners)

T.M.K. (2) 3-5-11:24 Monica R. Rabara Trust Estrellita R. Tilton (Owners)

T.M.K. (2) 3-5-11:25 Robert I. Gomes (Owner)

T.M.K. (2) 3-5-11:26 Sunday D. and Cathy L. Cabrido (Owners)

T.M.K. (2) 3-5-11:37 Teresita Evangeline B. Marzan Carmelita Madriaga (Owners)

T.M.K. (2) 3-5-10:34 Marilyn I. Kaahanui (Owner)

T.M.K. (2) 3-5-11:18 Verne T. and Adina M. Murakami (Owners)

T.M.K. (2) 3-5-11:31 Ernesto P. Daba Trust (Owner)

T.M.K. (2) 3-5-11:38 Joseph A. & Vilma A. Manzano (Owners)

T.M.K. (2) 3-5-10:33 Darrel Gene/Kathryn Sue Hall Trust (Owners)

T.M.K. (2) 3-5-11:27 Enrique T. Salvador (Owner)

T.M.K. (2) 3-5-11:30 Rizalina M. and Lorenzo M. Alipio (Owners)

T.M.K. (2) 3-5-11:39 James A. Tackett, Jr. (Owner)

T.M.K. (2) 3-5-10:01 Allen Y. Ting, IV Richard Chong (Owners)

T.M.K. (2) 3-5-11:17 Micki N. Ly Trust (Owner)

T.M.K. (2) 3-5-11:16 Greg R. Chong Kee Trust (Owner)

T.M.K. (2) 3-5-11:15 Victoria R. Racoma Trust (Owner)

T.M.K. (2) 3-5-11:14 Leona Sanchez (Owner)

T.M.K. (2) 3-5-11:28 Roland R. Echalas Jr. Melissa S. Echalas (Owners)

T.M.K. (2) 3-5-11:29 Christian S. Kinzle (Owner)

T.M.K. (2) 3-5-11:40 Samuel W. Manzano Lori Wurzel (Owners)

T.M.K. (2) 3-5-11:41 Felix R. and Virgenia V. Esguerra (Owners)

T.M.K. (2) 3-5-10:36 Brent K. Lausterer Tricia L. Iwamoto (Owners)

T.M.K. (2) 3-5-11:13 US Bank Trust NA TTEE (Owner)

T.M.K. (2) 3-5-11:12 Elizabeth Vicente Trust (Owner)

T.M.K. (2) 3-5-11:11 Elizabeth Vicente Trust (Owner)

T.M.K. (2) 3-5-02:14 Waiko Baseyard, LLC (Owner)

Ext'g. Dry Sewer System (Not in Service)

T.M.K. (2) 3-5-11:10 Odiorne Family Trust (Owner)

T.M.K. (2) 3-5-11:09 Harold S. Serrano, et al. (Owners)

T.M.K. (2) 3-5-11:08 Scott H. Smith Hannah A. Lewis (Owners)

T.M.K. (2) 3-5-11:07 Rogers Sentani (Owner)

T.M.K. (2) 3-5-11:06 Oliveira Family Trust (Owner)

T.M.K. (2) 3-5-11:05 Eric Sentani (Owner)

T.M.K. (2) 3-5-11:04 Anthony S. Vertido, et al. (Owners)

T.M.K. (2) 3-5-11:03 Albert Alvarado Ruth A. Hook (Owners)

T.M.K. (2) 3-5-11:02 Elias A. Evangelista Trust Catalina G. Evangelista Trust (Owners)

T.M.K. (2) 3-5-11:01 Rogelio R. Cabebe, Jr. Lordean D. Kalehuawehe-Cabebe (Owners)

T.M.K. (2) 3-5-10:38 Jeffrey S. Provonsha (Owner)

TRUE NORTH
SCALE: 1 IN. = 500 FT.

TO MAALAEA
TO WAILUKU TOWN
HONOAPIILANI
HIGHWAY
TO Wailuku Town
TO Maalaea
KEMOA PL.
MILIKONA PL.
KEIKIO PL.
MOOHELE ST.
W. WAIKO ROAD
E. WAIKO ROAD

LOCATION MAP
SCALE: 1 IN. = 500 FT.

DRAFT
PROGRESS SET

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE _____ DATE _____ License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

LETTER	DESCRIPTION	DATE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

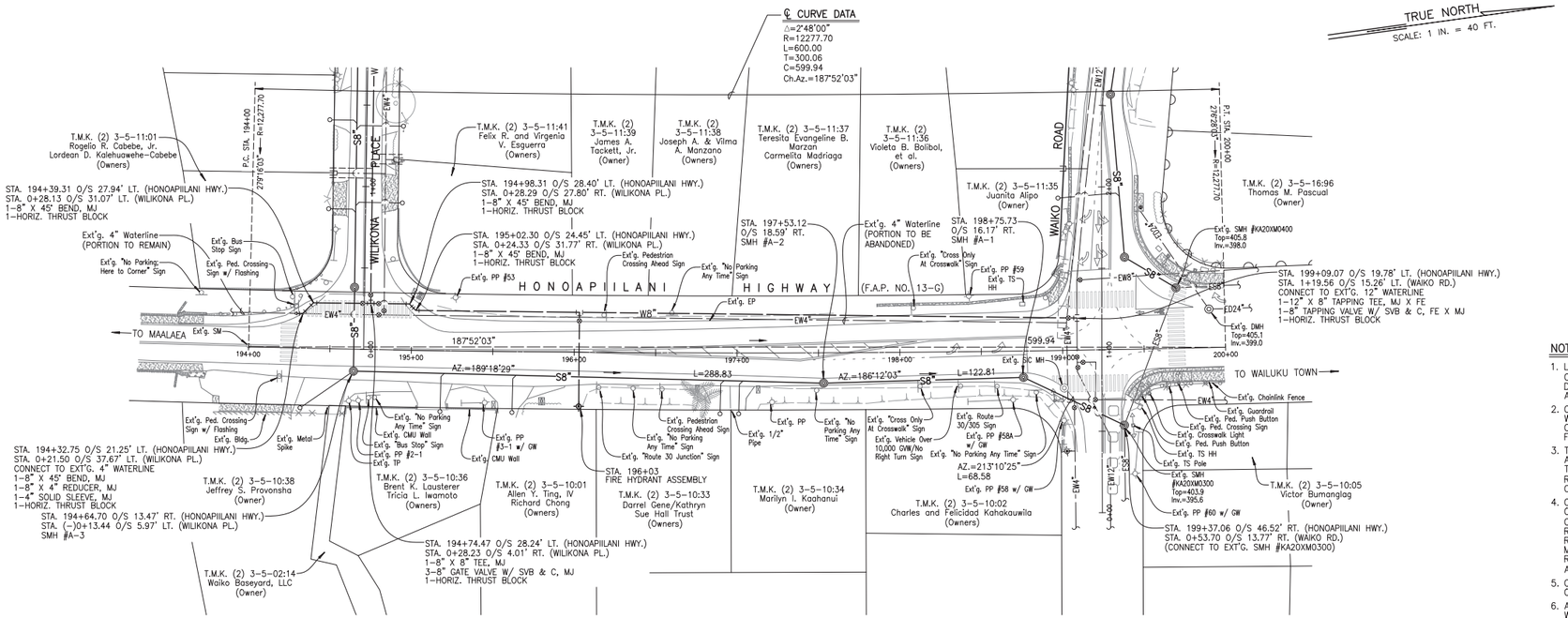
WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE GENERAL PLAN

RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-4 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

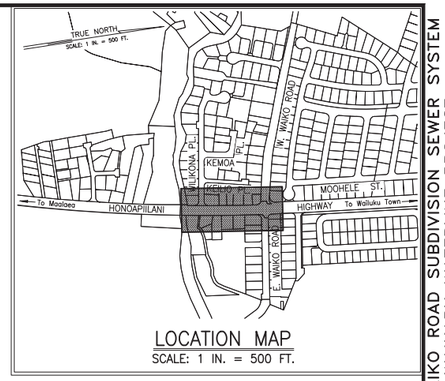
V:\Projdata\2DPROJ\20038\dwg\complans\GENPLAN000.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

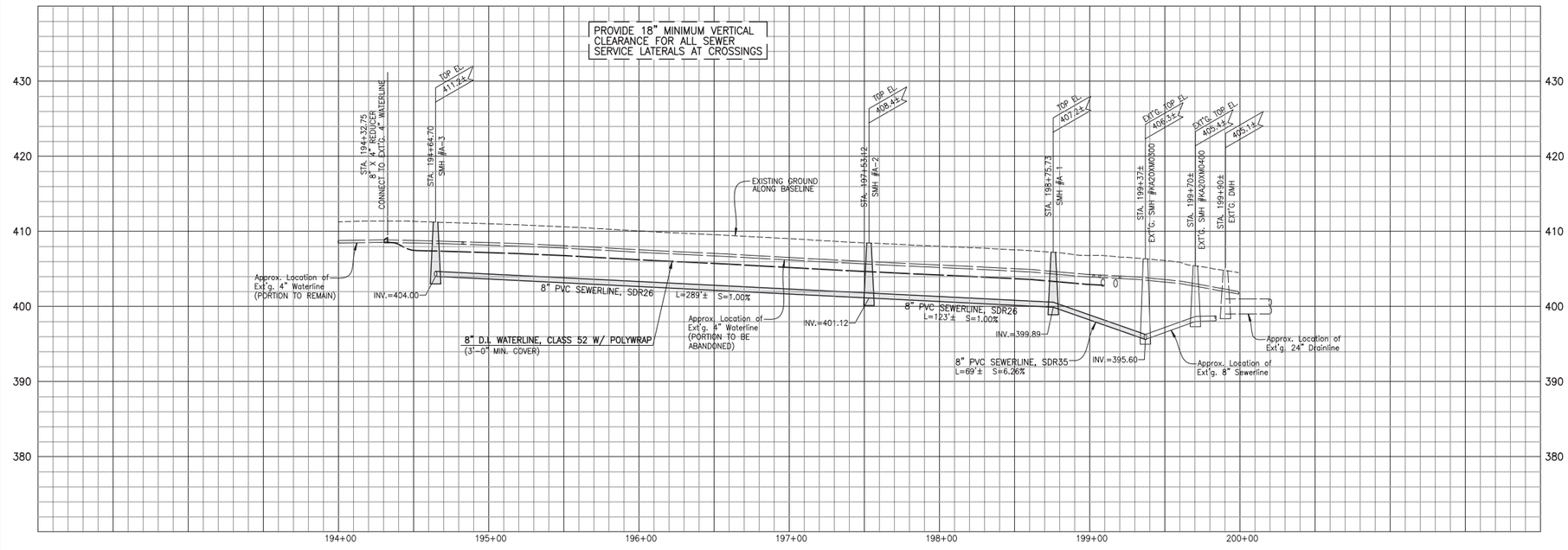
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.
7. TRAFFIC SIGNAL PROFILES NOT AVAILABLE ON RECORD DRAWINGS. CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN EXCAVATION WITHIN CLOSE PROXIMITY OF APPROXIMATE LOCATIONS OF UNDERGROUND CONDUITS SHOWN IN RECORD DRAWINGS. ANY DAMAGE TO EXISTING UTILITIES WILL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE COUNTY OF MAUI. CONTRACTOR SHALL NOTIFY OWNER'S REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE CANNOT BE PROVIDED.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE – HONOAPIILANI HIGHWAY

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT

PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE DATE License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

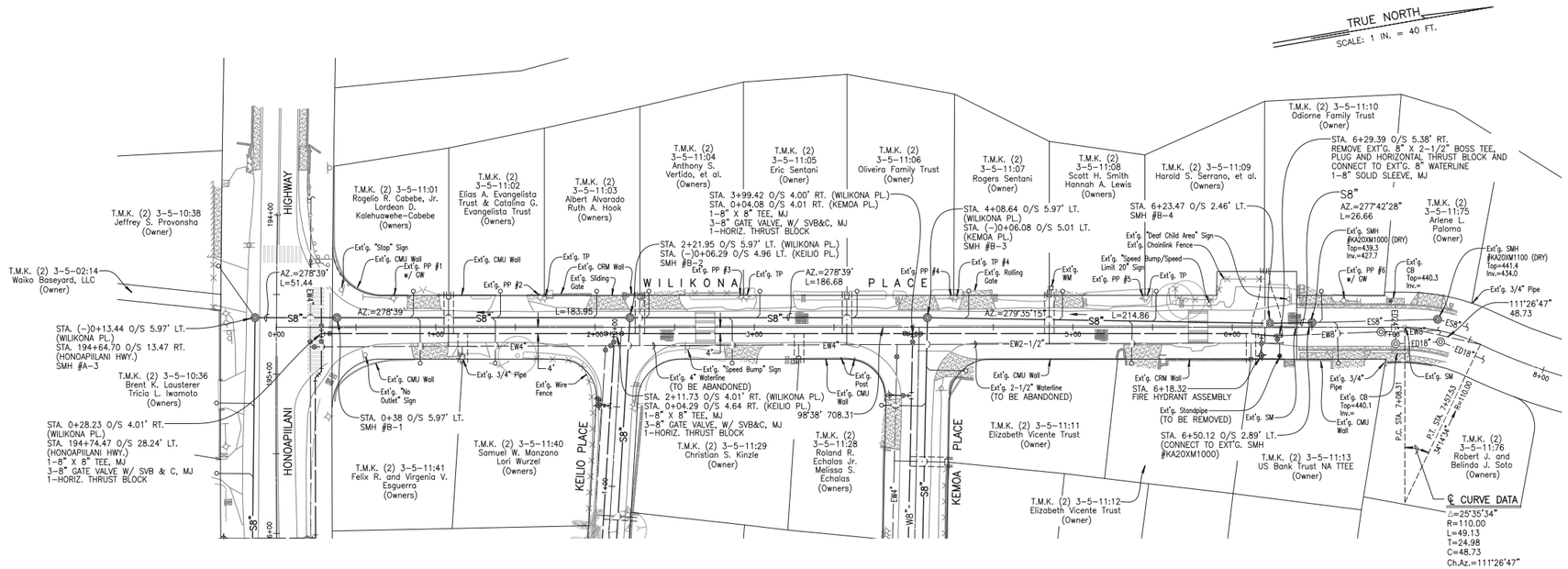
PLAN & PROFILE: SEWERLINE & WATERLINE –

TITLE HONOAPIILANI HIGHWAY

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 20038	SHEET: C-5
DRAWN BY: KAO	APPROVED BY: RMA	DATE: March 1, 2023	OF SHEETS
SCALE: 1 IN. = 40 FT.			

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

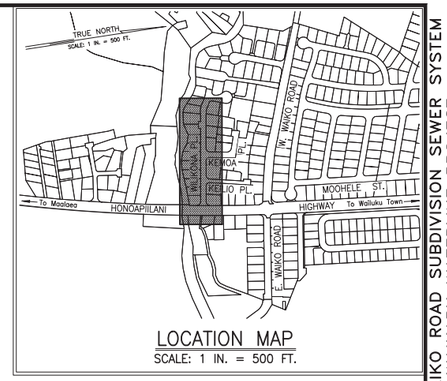
V:\Projdata\20PROJ\20038\dwg\conplans\PL-SL-WL-00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

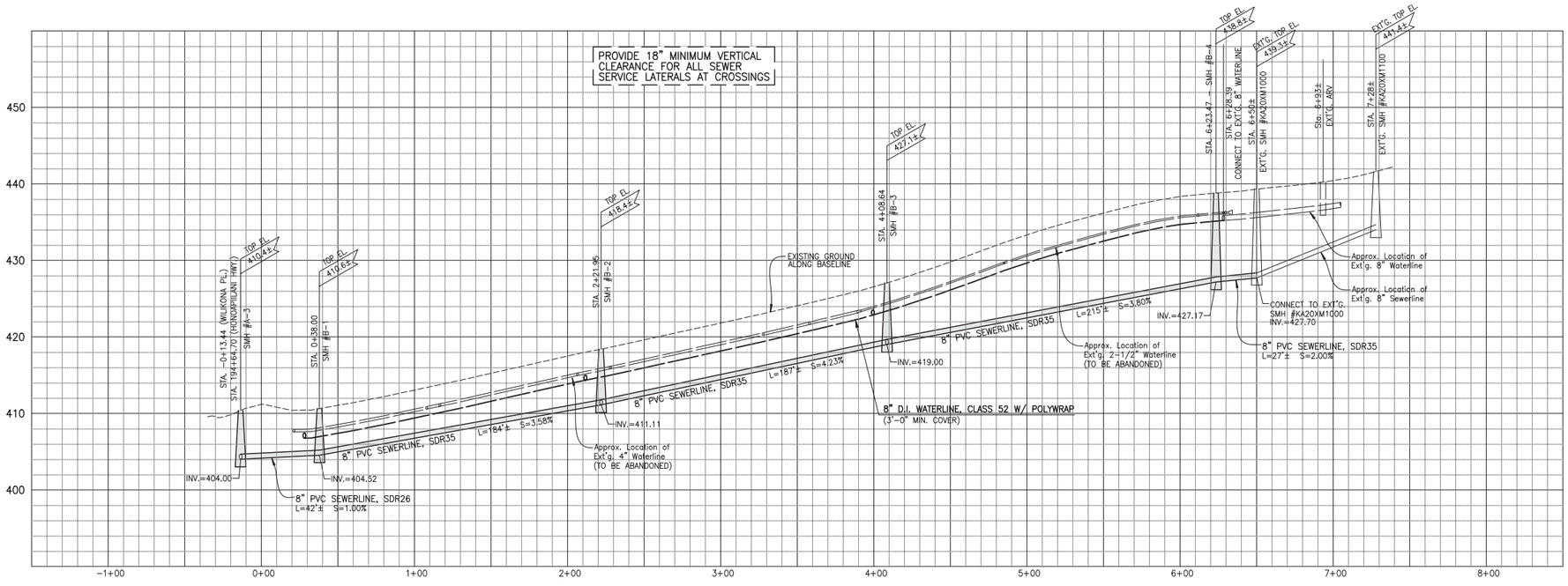
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE – WILIKONA PLACE

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT

PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS".

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

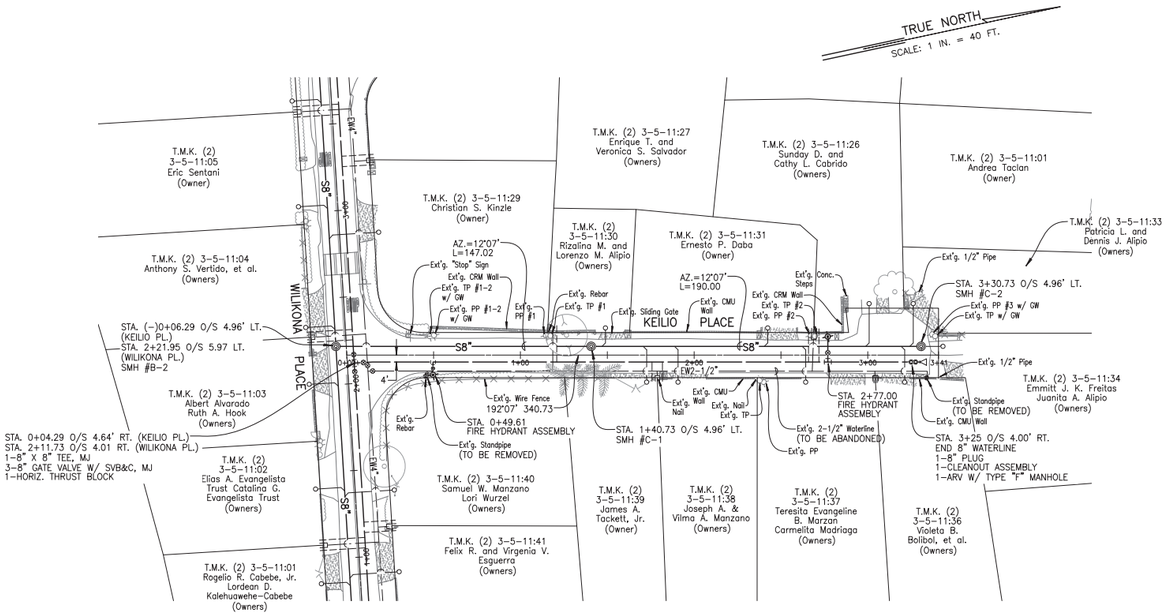
WAIKAPU, WAILUKU, MAUI, HAWAII

PLAN & PROFILE: SEWERLINE & WATERLINE – WILIKONA PLACE

RMA	RMA	20038	C-6
DESIGNED BY	CHECKED BY	JOB NUMBER	SHEET
KAO	RMA	March 1, 2023	OF SHEETS
DRAWN BY	APPROVED BY	DATE	
SCALE 1 IN. = 40 FT.			

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

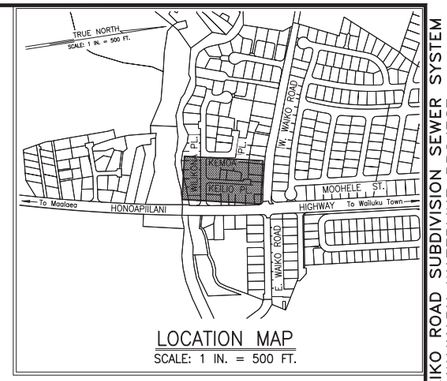
V:\Projdata\2DPROJ\20038\dwg\conplans\PL-SL-WL-00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

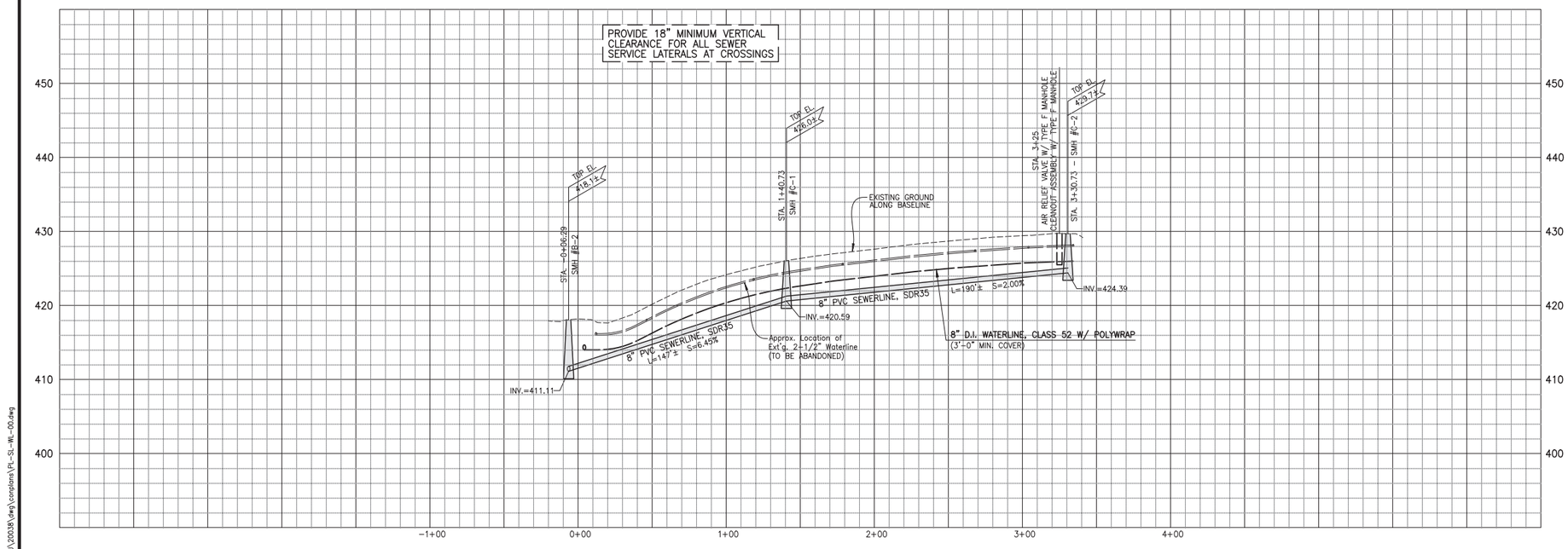
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

SEWER MANHOLE	EXISTING FIRE HYDRANT
NEW SEWER SERVICE LATERAL	EXISTING SIGN
S8" NEW SEWERLINE W/SIZE	EXISTING POWER POLE W/GUYWIRE
ES8" EXISTING SEWERLINE W/SIZE	EXISTING CATCH BASIN
ED24" EXISTING DRAINLINE W/SIZE	EXISTING GUARDRAIL
EW12" EXISTING WATERLINE W/SIZE	EXISTING FENCE
EXISTING SEWER MANHOLE	EXISTING BANK
EXISTING WATER MANHOLE	EXISTING STREET MONUMENT
EXISTING DRAIN MANHOLE	EXISTING MAILBOX
EXISTING WATER VALVE	EXISTING SINGLE SERVICE WATER LATERAL
EXISTING WATER METER	EXISTING TREES



PROFILE – KEILIO PLACE

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT

PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI LICENSED PROFESSIONAL ENGINEER NO. 5465-C HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

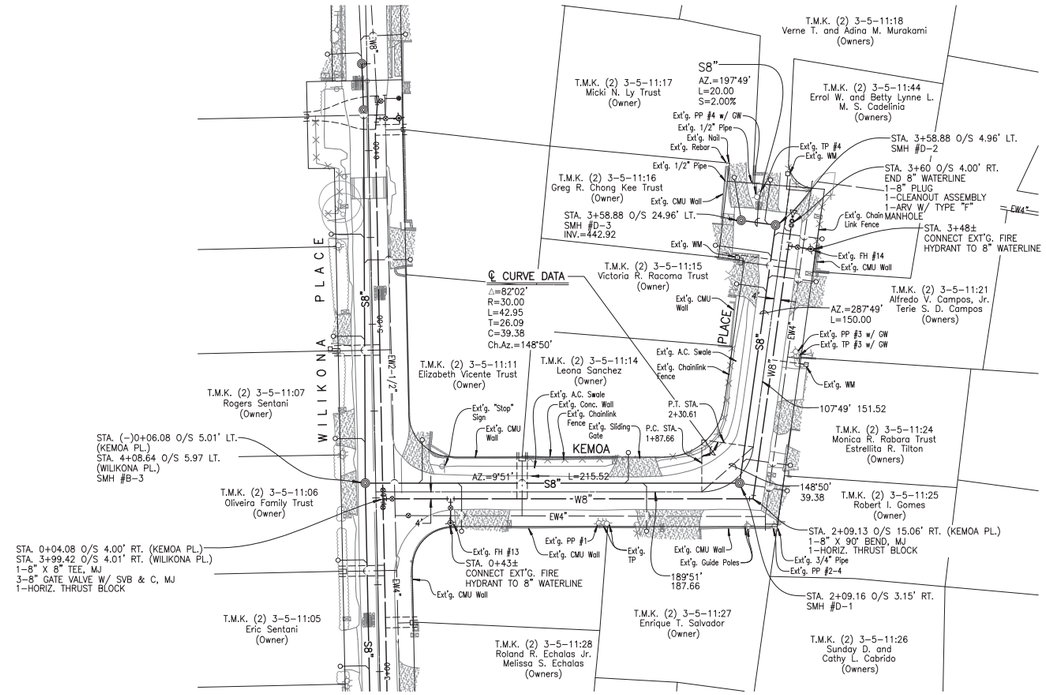
PLAN & PROFILE:

TITLE SEWERLINE & WATERLINE – KEILIO PLACE

RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-7 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

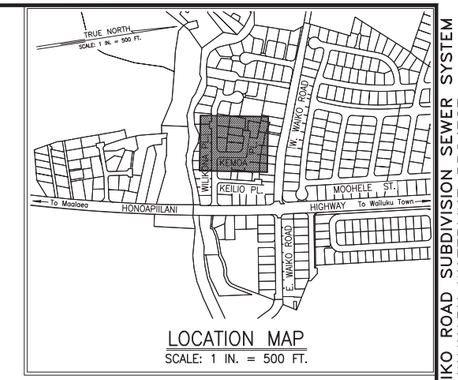
V:\Projdata\2DPROJ\20038\dwg\conplans\PL-SL-WL-00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

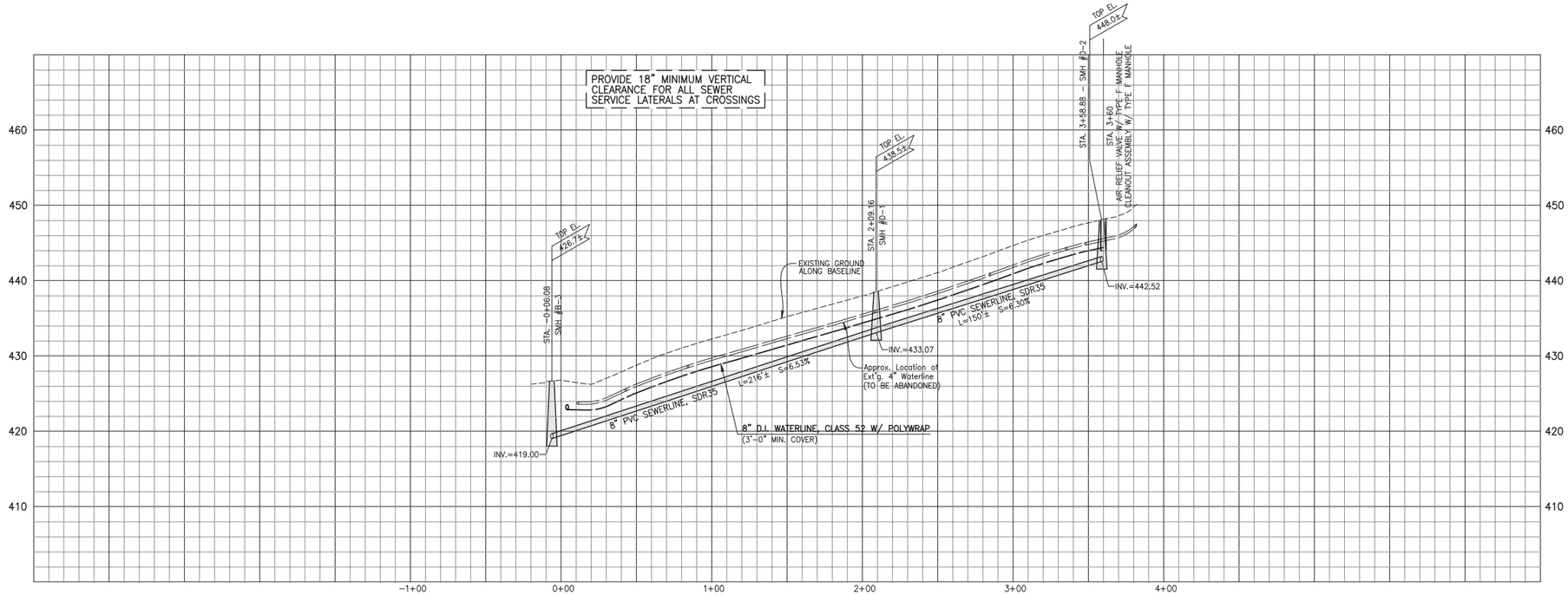
SCALE: 1 IN. = 500 FT.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.



PROFILE – KEMOA PLACE

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT

PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE — DATE — License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS."

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

PLAN & PROFILE:

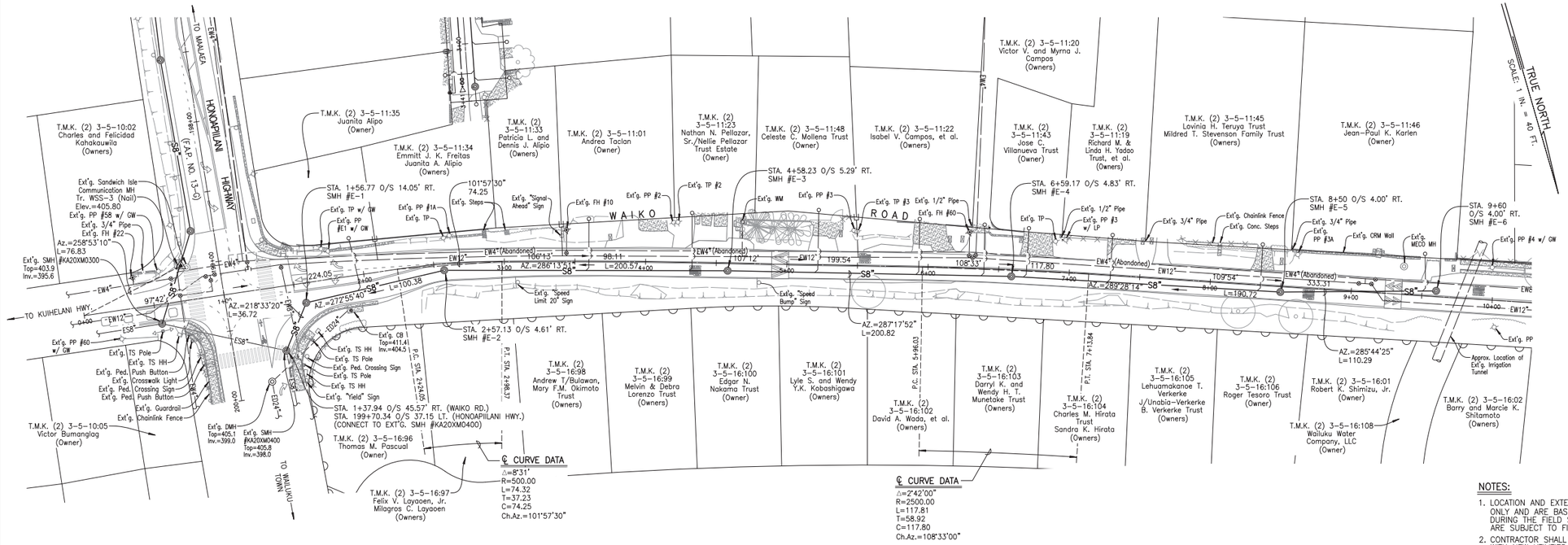
TITLE SEWERLINE & WATERLINE – KEMOA PLACE

DESIGNED BY	CHECKED BY	JOB NUMBER	SHEET
RMA	RMA	20038	C-8
DRAWN BY	APPROVED BY	DATE	OF SHEETS
KAO	RMA	March 1, 2023	

SCALE 1 IN. = 40 FT.

JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

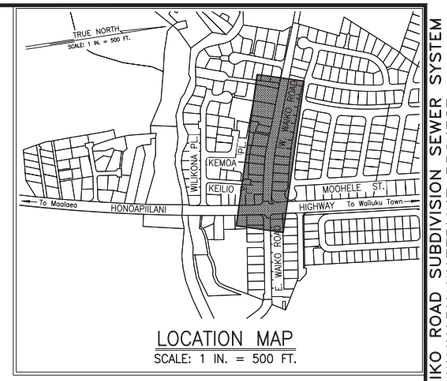
V:\Projdata\2DPROJ\20038\dwg\conplans\PL-SL-WL-00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

SCALE: 1 IN. = 500 FT.

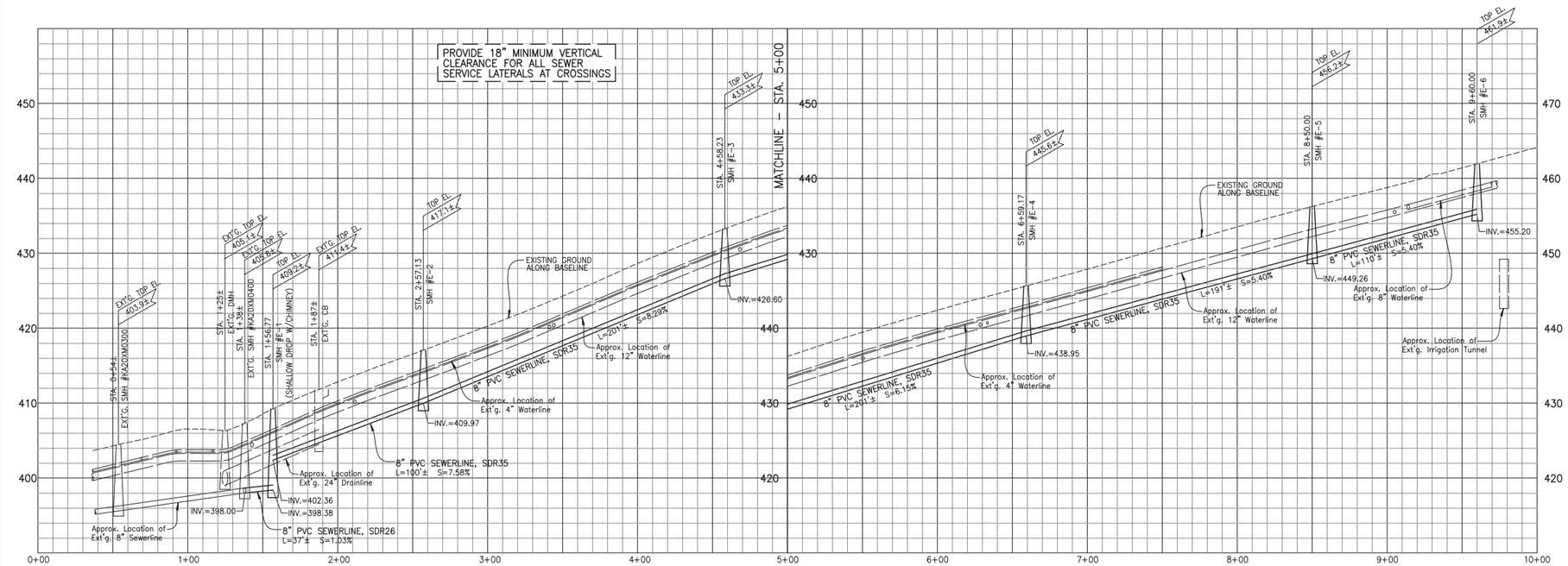
JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE – WAIKO ROAD

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE DATE License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

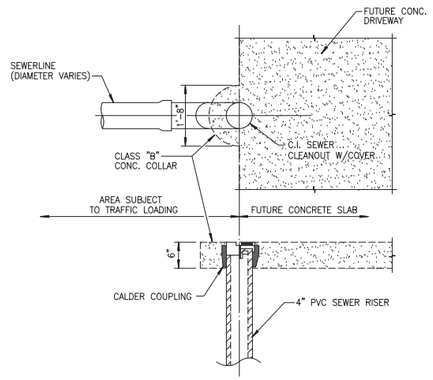
WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE PLAN & PROFILE: SEWERLINE – WAIKO ROAD

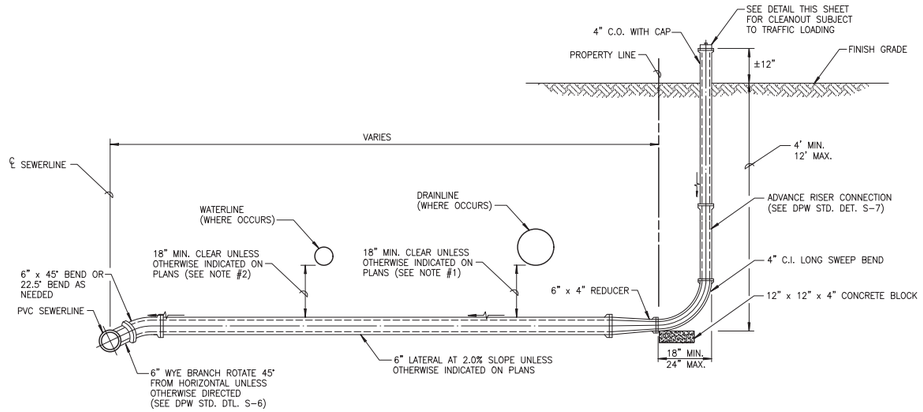
RMA DESIGNED BY	RMA CHECKED BY	20038 JOB NUMBER	C-9 SHEET
KAO DRAWN BY	RMA APPROVED BY	March 1, 2023 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

V:\Projects\20PROJ\20038\dwg\conplans\PL-SL-WL-00.dwg



DETAIL – SEWER CLEANOUT TO GRADE (TRAFFIC-RATED)

NOT TO SCALE

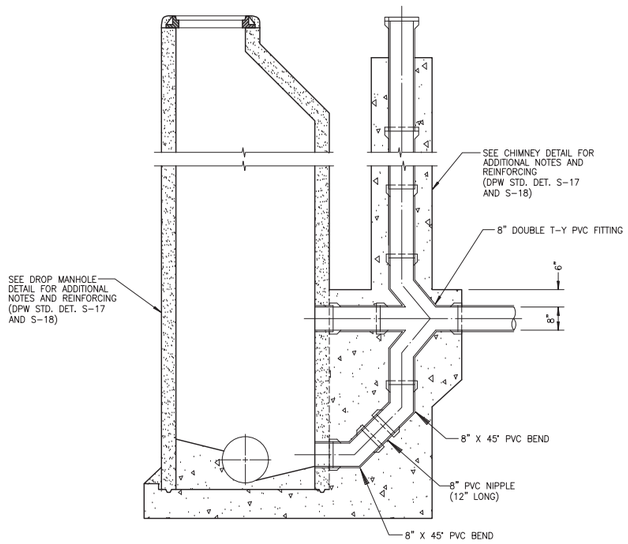


TYPICAL SEWER LATERAL DETAIL

SCALE: 1/2" = 1'-0"

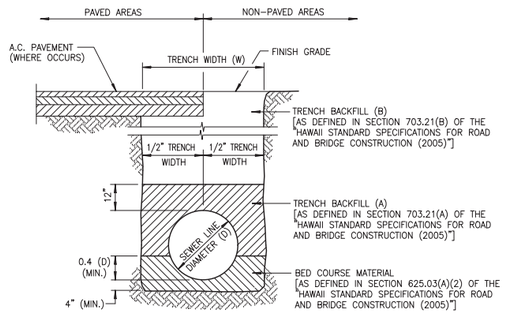
NOTES:

1. FOR ALL DRAINLINE AND SEWER LATERAL CROSSINGS, THE CONTRACTOR SHALL PROVIDE:
   A. REINFORCED CONCRETE JACKET ON SEWER LATERAL FOR VERTICAL CLEARANCE LESS THAN 1'-0"
   B. CONCRETE JACKET ON SEWER LATERAL FOR VERTICAL CLEARANCE GREATER THAN 1'-0" BUT LESS THAN 1'-6"
   BOTH TYPES OF CONCRETE JACKET SHALL BE 5'-0" LONG IF DRAINLINE IS 24" OR SMALLER AND I.D. + 5'-0" LONG IF DRAINLINE IS GREATER THAN 24".
2. FOR ALL WATERLINE AND SEWER LATERAL CROSSINGS THE CONTRACTOR SHALL PROVIDE A 10'-0" LONG REINFORCED CONCRETE JACKET ON THE SEWER LATERAL FOR VERTICAL CLEARANCE LESS THAN 18".
3. CONTRACTOR SHALL VERIFY CROSSINGS WITH UTILITY MAINS PRIOR TO INSTALLATION OF LATERALS.



DETAIL – SHALLOW DROP SEWER MANHOLE W/ CHIMNEY

NOT TO SCALE



NOTES:

1. TRENCH BACKFILL AND BED COURSE MATERIAL SHALL CONFORM TO SECTION 703 "AGGREGATES" OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
2. INSTALLATION OF SEWERLINES SHALL CONFORM TO SECTION 625, "SEWER SYSTEM" OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
3. TRENCH WIDTHS SHALL CONFORM TO TABLE 625.03-1 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
4. LOADS IMPOSED BY CONSTRUCTION VEHICLES WITH AXLE LOADS IN EXCESS OF THE AASHTO HS-20-44 VEHICLE (32,000 LBS./AXLE) SHOULD BE MINIMIZED BY DESIGNATED CONSTRUCTION VEHICLE CROSSINGS. ADDITIONAL FILL SHOULD BE PLACED OVER THE SEWERLINES AT THE DESIGNATED CONSTRUCTION VEHICLE CROSSINGS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR STRUTTING TO SUPPORT THE PIPE SHOULD BE PLACED IN ACCORDANCE WITH THE CURRENT "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)." ALL SEWERLINES DAMAGED BY CONSTRUCTION VEHICLE LOADING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

TYPICAL TRENCH SECTION PVC SEWERLINE

NOT TO SCALE

w:\data\dwg\tmcl\t004.dwg

STANDARD SEWER DETAILS

THE FOLLOWING DETAILS SHOWN IN THE MAUI COUNTY DEPT. OF PUBLIC WORKS "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", SEPTEMBER 1984 (AS AMENDED), ARE SPECIFICALLY REFERENCED WITHIN THESE PLANS AND SHALL BE CONSIDERED PART OF THE CONSTRUCTION DRAWINGS. (THIS SHALL NOT BE CONSTRUED TO RELIEVE THE CONTRACTOR FROM COMPLYING WITH ALL APPLICABLE STANDARDS OF THE DEPT. OF ENVIRONMENTAL MANAGEMENT, WASTEWATER RECLAMATION DIVISION).

PLATE	CONTENTS
S-5	CONCRETE JACKET
S-6	LATERALS
S-7	ADVANCE RISER CONNECTION
S-13	PRE-CAST CONCRETE PLAIN MANHOLE
S-17	PRE-CAST DROP MANHOLE
S-18	PRE-CAST CONCRETE DROP MANHOLE-SECTIONS
S-22	PRE-CAST CONCRETE ECCENTRIC MANHOLE CONE

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISON AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE SEWER DETAILS

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 20038	SHEET: C-10
DRAWN BY: KAO	APPROVED BY: RMA	DATE: March 1, 2023	OF SHEETS
SCALE: AS NOTED			

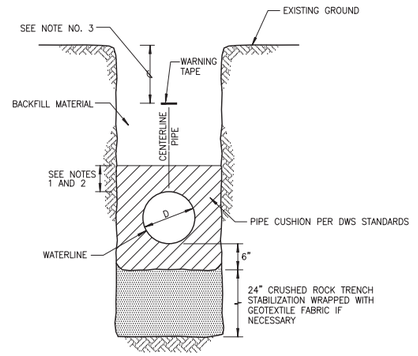
JOB NO. WW21-07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

V:\Projdata\20PROJ\20038\dwg\conplans\det-sewer-00.dwg

STANDARD WATER DETAILS

THE FOLLOWING DETAILS AS SHOWN ON "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION, STATE OF HAWAII, 2002", ARE SPECIFICALLY REFERENCED WITHIN THESE PLANS AND SHALL BE CONSIDERED PART OF THE CONSTRUCTION DRAWINGS. (THIS SHALL NOT BE CONSTRUED TO RELIEVE CONTRACTOR FROM COMPLYING WITH ALL PERTINENT PARTS OF THE AFOREMENTIONED LIST, STANDARD DETAILS AND STANDARDS.)

PLATE	CONTENTS
B1	REINFORCED CONCRETE JACKET – TYPICAL DETAIL
B2–B4	HORIZONTAL REACTION BLOCKS
B6–B8	TOP VERTICAL THRUST BLOCKS
FH6–FH9	FIRE HYDRANT CONNECTION
L25–L26, REV. 2021	SINGLE SERVICE LATERAL (TYPE "A", 5/8" METER)
L27–L28, REV. 2003	DOUBLE SERVICE LATERAL (TYPE "A–1", 5/8" METERS)
P10	TRENCH BACKFILL
V4	AIR RELIEF VALVE CONNECTION
V12	SLIDING VALVE BOX ASSEMBLY
V21	CLEANOUT
V23, REV. 2018	ARV INSTALLATION TYPE "F" MANHOLE

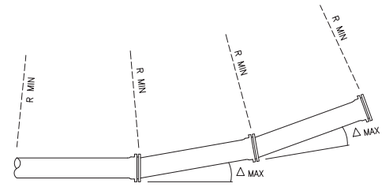


TYPICAL WATERLINE TRENCH SECTION (PER DWS STD. DET. P10)

NOT TO SCALE

NOTES:

1. 12" OF CUSHION MATERIAL SHALL BE PLACED OVER THE TOP OF PIPE FOR PIPES 16" OR LARGER. 6" CUSHION MATERIAL SHALL BE PLACED OVER THE TOP OF PIPE FOR PIPES 12" OR SMALLER AT LOCATIONS WHERE INVERT IS ABOVE 4–FOOT ELEVATION.
2. 12" OF CUSHION MATERIAL FOR ALL PIPE SIZES AT LOCATIONS WHERE THE INVERT IS AT OR BELOW THE 4–FOOT ELEVATION.
3. WARNING TAPE SHALL BE INSTALLED OVER THE CENTERLINE OF PIPES, BENDS, AND FITTINGS AT DEPTH OF 12" BELOW THE FINISHED GRADE OR DIRECTLY BELOW THE PAVEMENT STRUCTURE.
4. WHEN TRENCHING ACROSS EXISTING SIDEWALK, CONTRACTOR SHALL SAW CUT AT EXISTING SCORELINES AND REMOVE ALL SIDEWALK PANELS AFFECTED BY TRENCH.



NOTES:

1. CONTRACTOR SHALL LIMIT FULL LENGTH DEFLECTIONS (Δ MAX) FOR PUSH–ON TYPE JOINT & MECHANICAL JOINT PIPES TO 50% OF THE MAXIMUM ALLOWABLE DEFLECTIONS SPECIFIED BY THE MANUFACTURER, OR THE VALUES SPECIFIED AS FOLLOWS, WHICHEVER IS LESS :

SIZE OF PIPE	Δ MAX	O/S PER 18' LENGTH
12" & LESS	2° 30'	10"

DETAIL – HORIZ. & VERT. PIPE DEFELCTION

NOT TO SCALE

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465–C
HAWAII, U.S.A.

SIGNATURE _____ DATE _____ License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16–115–2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

WAIKO ROAD SUBDIVISION SEWER SYSTEM / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE WATER DETAILS

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 20038	SHEET: C–11
DRAWN BY: WaldS	APPROVED BY: RMA	DATE: March 1, 2023	OF SHEETS
SCALE: AS SHOWN			

JOB NO. WW21–07 WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24–03A WAIKAPU WATERLINE PROJECT

V:\Projdata\20PROJ\20038\dwg\conplans\det–water–00.dwg

UPPER WAIKO ROAD SEWER EXTENSION/WAIKAPU WATERLINE PROJECT PLANS

APPENDIX

B

Construction Plans for ...

UPPER WAIKO ROAD SEWER EXTENSION/ WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

WWRD JOB NO. WW23-08, DWS JOB NO. 24-03A

R 3-5-011 (WEST WAIKO ROAD, KILINOE PLACE, HONUA PLACE, NUNA PLACE, KILOHI STREET AND OLD WAIKAPU ROAD)

Prepared for . . .

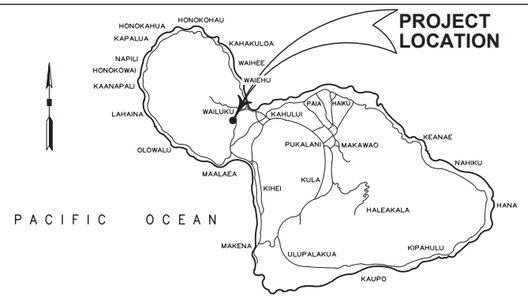
COUNTY OF MAUI
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
AND DEPARTMENT OF WATER SUPPLY

Prepared by . . .

WARREN S. UNEMORI ENGINEERING, INC.
Civil & Structural Engineers - Land Surveyor
Wells Street Professional Center - Suite 403
2145 Wells Street -Wailuku, Maui, Hawaii 96793

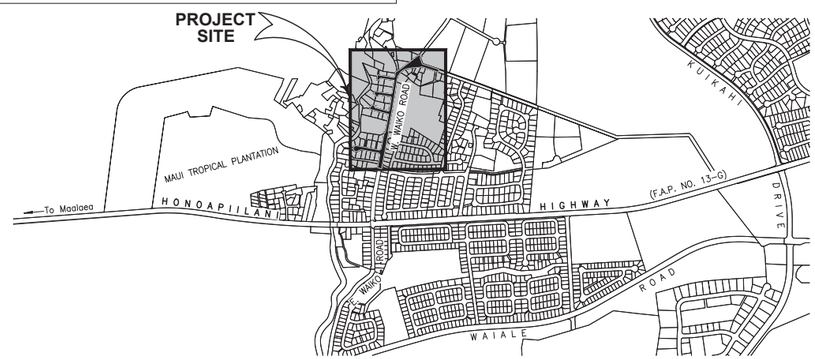
JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

VICINITY MAP



ISLAND OF MAUI
NOT TO SCALE

TRUE NORTH
SCALE: 1 IN. = 1000 FT.



INDEX OF DRAWINGS

SHT. NO.	DWG. NO.	DESCRIPTION
1	C-1	TITLE SHEET
2 – 3	C-2 – C-3	CONSTRUCTION NOTES
4	C-4	GENERAL PLAN
5 – 7	C-5 – C-7	PLAN & PROFILE: SEWERLINE – WEST WAIKO ROAD
8	C-8	PLAN & PROFILE: SEWERLINE – OLD WAIKAPU ROAD
9	C-9	PLAN & PROFILE: SEWERLINE – KILOHI PLACE
10	C-10	PLAN & PROFILE: SEWERLINE – HONUA PLACE AND NUNA PLACE
11	C-11	SEWER DETAILS
12	C-12	WATER DETAILS

APPROVED

DIRECTOR, DEPARTMENT OF ENVIRONMENTAL MANAGEMENT — DATE
COUNTY OF MAUI

DIRECTOR, DEPARTMENT OF PUBLIC WORKS — DATE
COUNTY OF MAUI

DIRECTOR, DEPARTMENT OF WATER SUPPLY — DATE
COUNTY OF MAUI

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE TITLE SHEET

RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-1 SHEET
KAO DRAWN BY	RMA APPROVED BY	Jan. 5, 2024 DATE	OF SHEETS
SCALE AS NOTED			

W:\Projdata\23PROJ\23040\dwg\coplans\TITLE00.dwg

CONSTRUCTION NOTES:

GENERAL NOTES

1. THE CONTRACTOR IS REMINDED OF THE REQUIREMENTS OF SUBSECTION 108.01 – SUBLETTING OF CONTRACT, WHICH REQUIRES HIM TO PERFORM WORK AMOUNTING TO NOT LESS THAN 50 PERCENT OF THE TOTAL CONTRACT COST LESS DEDUCTIBLE ITEMS. NONCOMPLIANCE WITH THIS SUBSECTION MAY BE GROUNDS FOR REJECTION OF BID.
2. THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FOLLOWING SECTIONS OF THE SPECIAL PROVISIONS; SUBSECTION 107.13 – PUBLIC CONVENIENCE AND SAFETY; SUBSECTION 107.21 – CONTRACTOR'S RESPONSIBILITY FOR UTILITY PROPERTY AND SERVICES; AND SECTION 645 – TRAFFIC CONTROL.
3. ALL LANES SHALL BE OPEN TO TRAFFIC DURING THE MORNING PEAK HOURS FROM 6:30 A.M. TO 8:30 A.M. DURING AFTERNOON PEAK HOURS FROM 3:30 P.M. TO 6:30 P.M. AND OFF WORK HOURS. ONLY ONE LANE OF LOWER HONOAPIILANI ROAD SHALL BE CLOSED AT ANY OTHER TIME.
4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING, TWO (2) WEEKS PRIOR TO STARTING PAVING OPERATIONS.
5. AT THE END OF EACH DAYS WORK, THE CONTRACTOR SHALL REMOVE ALL EQUIPMENT AND OTHER OBSTRUCTIONS TO PERMIT FREE AND SAFE PASSAGE OF PUBLIC TRAFFIC.
6. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES, MANHOLES, MONUMENTS AND STRUCTURES AS SHOWN ON THE PLANS ARE FROM THE LATEST AVAILABLE DATA BUT THE ACCURACY IS NOT GUARANTEED. THE ENCOUNTERING OF OTHER OBSTACLES DURING THE COURSE OF WORK IS POSSIBLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH, SIZE AND TYPE OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN EXISTING UTILITIES ON PLANS AND IN GROUND. THE CONTRACTOR SHALL BE HELD LIABLE FOR ANY DAMAGES INCURRED TO THE EXISTING FACILITIES AND/OR IMPROVEMENTS AS A RESULT OF HIS OPERATIONS.
7. PRIOR TO RESURFACING, THE EXISTING SURFACE SHALL BE CLEANED AS DESCRIBED IN SECTION 310 OF THE STANDARD SPECIFICATIONS AND AS AMENDED. PAYMENT SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
8. ALL HOLES, DEPRESSIONS AND WHEEL RUTS SHALL BE FILLED AND COMPACTED WITH ASPHALTIC CONCRETE PAVEMENT, MIX NO. IV PRIOR TO RESURFACING. THIS WORK WILL BE PAID FOR UNDER ASPHALTIC CONCRETE PAVEMENT, MIX. NO. IV.
9. THE CONTRACTOR SHALL NOT LEAVE MORE THAN 1 1/2" DROP-OFF AT THE EDGE OF PAVEMENT, AT THE END OF EACH WORK DAY. THIS INCLUDES DROP-OFFS AT THE CENTERLINE AND AT THE OTHER EDGES OF THE TRAVEL LANE. WHENEVER THE CONTRACTOR LEAVES A 1 1/2" DROP-OFF, THE CONTRACTOR SHALL INSTALL DELINEATORS AND BARRICADES ALONG THE EDGE OF THE PAVEMENT. THIS WORK WHICH INCLUDES FURNISHING, INSTALLING, CLEANING, MAINTAINING CORRECT PLACEMENT AND REMOVING WHEN REQUIRED, SHALL BE CONSIDERED INCIDENTAL TO ROADWAY EXCAVATION.
10. ALL SAW CUTTING WORK SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS OF WORK.
11. EXISTING DRAINAGE SYSTEM SHALL BE FUNCTIONAL AT ALL TIMES DURING CONSTRUCTION. THE CONTRACTOR IS TO FURNISH MATERIALS, EQUIPMENT LABOR, TOOLS AND INCIDENTALS NECESSARY TO MAINTAIN FLOW. THIS WORK SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
12. ALL CONSTRUCTION SIGNS SHALL BE LEFT IN PLACE UNTIL ALL CONSTRUCTION ITEMS HAVE BEEN COMPLETED. THE CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE ENGINEER TO REMOVE CONSTRUCTION SIGNS. THIS WORK SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE CONSIDERED INCIDENTAL TO VARIOUS CONTRACT ITEMS.
13. STREET SURVEY MONUMENTS SHOWN ON PLANS SHALL BE VERIFIED IN THE FIELD PRIOR TO ANY RESURFACING ACTIVITY. MONUMENTS THAT ARE SHOWN ON PLANS BUT ARE MISSING IN THE FIELD SHALL BE REESTABLISHED AND REINSTALLED BY THE CONTRACTOR. PAYMENT FOR THIS WORK SHALL BE MADE UNDER ITEM NO. 613.0300, ADJUSTING CENTERLINE SURVEY MONUMENTS.
14. STREET SURVEY MONUMENTS SHALL NOT BE DISTURBED DURING PAVEMENT RECONSTRUCTION. ADJUSTMENTS OF THESE MONUMENTS SHALL BE IN ACCORDANCE WITH APPLICABLE DETAILS AS SHOWN ON THE STANDARD PLANS.
15. SIGN POSTS SHALL BE SQUARE TUBE POSTS, EXCEPT FOR DESTINATION SIGN POSTS PER HAWAII DOT STANDARDS.
16. THE CONTRACTOR SHALL MAINTAIN ACCESS TO AND FROM ALL EXISTING SIDE ROADS, DRIVEWAYS AND STREETS AT ALL TIMES.
17. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO PROVIDE A COMPLETE INSTALLATION. SHOULD THERE BE OMISSIONS, CONTRACTOR SHALL PROVIDE AND INSTALL FITTINGS, APPURTENANCES AND MATERIALS AS REQUIRED TO PROVIDE A COMPLETE FUNCTIONAL UTILITY SYSTEM CONFORMING TO ALL APPLICABLE STANDARDS AND REQUIREMENTS. CONTRACTOR SHALL NOTIFY ENGINEER PRIOR TO INSTALLATION.

EXISTING UTILITIES:

1. OVERHEAD AND UNDERGROUND UTILITIES MAY EXIST ALONG, ACROSS, AND IN THE VICINITY OF THE PROPOSED IMPROVEMENTS AND MAY NOT BE AS SHOWN ON THE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE RESPECTIVE COUNTY OR STATE AGENCIES, UTILITIES (INCLUDING WITHOUT LIMITATION MAUI ELECTRIC COMPANY, LTD., VERIZON HAWAII INC., AND OCEANIC TIME WARNER CABLE OF HAWAII), EXAMINING ANY AVAILABLE RECORD DRAWINGS, TONING OF UNDERGROUND UTILITIES, TEST PITS, AND CONFIRMING THE PRESENCE, LOCATION, DEPTH, SIZE, AND TYPE OF ANY EXISTING UTILITIES ALONG AND ACROSS THE PROPOSED IMPROVEMENTS. CONTRACTOR SHALL NOTIFY AND COORDINATE CONSTRUCTION ACTIVITIES, AND ANY REQUIRED RELOCATION, WITH RESPECTIVE AGENCIES AND UTILITIES.
2. THE LOCATION, DEPTH AND TYPE OF THE VARIOUS EXISTING UTILITY LINES SHOWN ON THE CONSTRUCTION PLANS WERE DETERMINED ON THE BASIS OF THE BEST INFORMATION AVAILABLE. THE CONTRACTOR SHALL VERIFY EXACT LOCATION, DEPTH, SIZE, AND TYPE PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY DISCREPANCIES BETWEEN THE EXISTING UTILITIES AS SHOWN ON THE CONSTRUCTION PLANS AND IN GROUND, AND NOT PROCEED WITH ANY FURTHER WORK UNTIL WRITTEN NOTIFICATION IS RECEIVED FROM THE ENGINEER.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY ENGINEER IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERALS CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH MECO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED, TO THE SATISFACTION OF MECO AND WASTEWATER RECLAMATION DIVISION. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COSTS TO DOCUMENT NEW OR REVISED EASEMENTS.
5. ALL EXISTING UTILITIES WHETHER OR NOT SHOWN ON PLANS, IF DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR, SHALL BE REPAIRED SOLELY AT HIS EXPENSE.

WASTEWATER NOTES:

1. ALL WASTEWATER LINES AND APPURTENANCES SHALL CONFORM TO STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, OF THE DEPARTMENT OF PUBLIC WORKS, COUNTY OF MAUI.
2. ALL SEWERLINE AND APPURTENANCES SHALL FOLLOW THE DESIGN STANDARDS OF THE WASTEWATER RECLAMATION DIVISION, CITY AND COUNTY OF HONOLULU, VOLUMES 1 & 2, DATED JULY 1993 AND JULY 1984 RESPECTIVELY, UNLESS OTHERWISE NOTED.
3. ALL WASTEWATER LINES AND APPURTENANCES INSTALLATIONS SHALL CONFORM TO THE STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1986. IF ANY CONFLICTS ARISE BETWEEN THE STANDARD DETAILS, DESIGN STANDARDS AND THE STANDARD SPECIFICATIONS, THE STRICTEST STANDARD SHALL APPLY, UNLESS APPROVED OTHERWISE.
4. BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL SCHEDULE AND DOCUMENT A PRE_CONSTRUCTION MEETING WITH ALL AGENCIES HAVING UTILITIES AFFECTED BY THE WORK.
5. CONTRACTOR MUST HAVE A SITE SPECIFIC SPILL PREVENTION PLAN (SSSPP) APPROVED BY WWRD PRIOR TO SEWER LINE CONSTRUCTION AND/OR SEWER LATERAL CONNECTION TO EXISTING FACILITIES, OR ANY WORK WITHIN FIVE (5) FEET OF WASTEWATER SYSTEM IMPROVEMENTS.
6. THE DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, WASTEWATER RECLAMATION DIVISION, HAS THE RIGHT TO STOP CONSTRUCTION, SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED PLANS AND SPECIFICATIONS, OR DETRIMENTAL TO THE PUBLIC INTEREST.
7. ALL EXISTING WASTEWATER LINES, WHETHER OR NOT SHOWN ON THE PLANS, IF DAMAGED DURING CONSTRUCTION, SHALL BE REPAIRED BY THE CONTRACTOR AND THE CONTRACTOR SHALL PAY ALL EXPENSES.
8. THE CONTRACTOR SHALL NOTIFY THE WASTEWATER RECLAMATION DIVISION ONE (1) WEEK PRIOR TO CONNECTION TO ANY EXISTING WASTEWATER LINES WITHIN THE COUNTY OF MAUI.
9. SHOULD THE CONTRACTOR EXCAVATE BEYOND THE TRENCH PAY_WIDTH, AS SPECIFIED IN THE STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984, AND SUCH ACTION RESULTS IN A GREATER LOAD TO THE PIPE, THE CONTRACTOR SHALL PROVIDE, AT THE CONTRACTOR'S EXPENSE, A HIGHER CLASS OF BEDDING MATERIAL THAT WILL WITHSTAND THE ADDED LOAD.
10. WASTEWATER LATERALS SHALL BE SIX (6) INCHES IN DIAMETER AT A 2% SLOPE, UNLESS APPROVED OTHERWISE.
11. AN ADVANCE RISER CONNECTION SHALL BE INSTALLED AT EACH NEW WASTEWATER LATERAL.
12. WHERE THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING UTILITY LINE IS LESS THAN EIGHTEEN (18) INCHES, THE WASTEWATER LINE SHALL BE PROTECTED WITH A REINFORCED CONCRETE JACKET IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION, DATED SEPTEMBER 1984.
13. WHEN THE WASTEWATER MAINS ARE OF A DIFFERENT MATERIAL THAN THE LATERALS, THE CONTRACTOR SHALL INSTALL APPROVED ADAPTERS.
14. ALL BACKFILL FOR WASTEWATER TRENCHES SHALL BE COMPACTED IN ONE (1) FOOT LIFTS TO A MINIMUM OF 95% OF ITS MAXIMUM DENSITY.
15. WHERE CONSTRUCTION IS TO BE DONE IN PHASES OR INCREMENTS, EACH PHASE OR INCREMENT SHALL BE APPROVED BY WASTEWATER RECLAMATION DIVISION BEFORE THE NEXT PHASE OR INCREMENT IS STARTED.
16. ALL WASTEWATER MAINS SHALL PASS A MANDREL TEST AS A CONDITION OF ACCEPTANCE 30 DAYS AFTER COMPLETION AND BACKFILL. THE MANDREL DIAMETER SHALL BE 95% OR MORE OF THE INSIDE DIAMETER OF THE PIPE BEING TESTED.
17. "AS_BUILT" DRAWINGS SHALL BE SUBMITTED AS A CONDITION FOR THE FINAL ACCEPTANCE OF THE PROJECT.
18. PRIOR TO INSPECTION BY CLOSED CIRCUIT TELEVISION (CCTV), ALL WASTEWATER LINES INSTALLED, INCLUDING LATERALS, SHALL BE FLUSHED WITH WATER AND ANY ACCUMULATED CONSTRUCTION DEBRIS AND OTHER FOREIGN MATERIALS SHALL BE REMOVED.
19. ALL MAIN WASTEWATER LINES WHICH WILL BE DEDICATED TO THE COUNTY OF MAUI SHALL BE INSPECTED BY CCTV IN STRICT ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY. CCTV RESULTS SHOULD BE SUBMITTED ON DVD PER MEMO DATED OCTOBER 22, 2015. SHOULD ANY OF THE SEWER LATERALS FAIL TO PASS A VISUAL INSPECTION, THEN A CCTV OF ALL LATERALS WILL ALSO BE REQUIRED.
20. ANY CONNECTION MADE UNDER THE WATER TABLE WILL REQUIRE CCTV AT HIGH TIDE TO DETERMINE WATER TIGHTNESS IN ACCORDANCE WITH DEPARTMENT OF PUBLIC WORKS CCTV POLICY, EFFECTIVE DATE JULY 15, 2001. FINAL ACCEPTANCE OF THE SYSTEM SHALL BE CONTINGENT UPON THE PASSING OF ALL REQUIREMENTS OF THIS POLICY.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING THE GPS COORDINATES OF ALL BURIED AND CONCEALED WORK TO BE DEDICATED TO THE COUNTY, AND PROVIDE THE GPS DATA TO THE COUNTY PRIOR TO THE PROJECT'S FINAL ACCEPTANCE. AN ACCURATE GPS POINT EVERY (50) FEET ALONG THE MAIN LINE, AT UTILITY CROSSINGS, AND AT ANY INSTALLED APPURTENANCE (INCLUDING BUT NOT LIMITED TO MANHOLES, BENDS, CONCRETE JACKET, CLEANOUT, PIPE DEVIATIONS, CHANGE IN PIPE SIZE, CRITICAL JOINTS, ARV, ETC.). GPS DATA SHALL BE IN NAD 1983 STATE PLANE HAWAII ZONE 2 FIPS 5102 GRID, AND SHALL BE ACCURATE TO WITHIN ONE (1) FOOT. ACQUIRED GPS SURVEY DATA SHALL BE QUALITY CHECKED BY THE CONTRACTOR PRIOR TO SUBMISSION IN SHAPEFILE (.SHP) FORMAT, FOR COMPATIBILITY WITH MAINSTREAM GIS SOFTWARE SUCH AS ESRI ARCMAP.

WATER SYSTEM:

1. THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT OF WATER SUPPLY (DWS), IN WRITING, ONE (1) WEEK PRIOR TO COMMENCEMENT OF WORK.
2. IF CONSTRUCTION OF WATER SYSTEM IMPROVEMENTS WILL AFFECT DWS CONSUMERS, CONTRACTOR SHALL NOTIFY CONSUMERS BY RADIO/NEWSPAPER TWO (2) DAYS BEFORE AND ON DAY OF CONNECTION. CONTRACTOR SHALL ALSO NOTIFY CONSUMERS HOUSE-TO-HOUSE ONE (1) DAY BEFORE CONNECTION WORK.
3. ALL MATERIALS USED AND METHODS OF CONSTRUCTION OF WATER SYSTEM FACILITIES SHALL BE IN ACCORDANCE WITH THE LATEST REVISION OF DWS WATER SYSTEM STANDARDS. CONTRACTOR SHALL OBTAIN THE LATEST REVISIONS OF THE DWS STANDARDS BEFORE COMMENCING CONSTRUCTION.
4. ALL WATER SYSTEM WORK SHALL BE PERFORMED BY CONTRACTORS POSSESSING VALID STATE OF HAWAII CONTRACTOR'S LICENSES, REGARDLESS OF THE VALUE OF THE WORK.
5. CONTRACTOR SHALL FOLLOW ALL LOCAL, STATE, FEDERAL LAWS, RULES AND REGULATIONS REGARDING THE HANDLING, REMOVAL AND DISPOSAL OF ASBESTOS PIPE.
6. CONTRACTOR SHALL PROTECT EXISTING WATERLINE DURING COURSE OF CONSTRUCTION AND SUPPORT EXPOSED WATERLINE TO PREVENT ANY MOVEMENT.
7. THE EXACT DEPTH AND LOCATION OF EXISTING WATERLINES, SERVICE LATERALS AND OTHER UTILITIES ARE NOT KNOWN. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO LOCATE SAME PRIOR TO TRENCHING FOR THE NEW WATERLINE. THE COST OF LOWERING OR RELOCATING OF EXISTING WATERLINES, SERVICE LATERALS AND APPURTENANCES, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
8. PAVEMENT RESURFACING/RESTORATION:
   - A. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING DWS VALVES AND MANHOLES, WHEN AFFECTED BY THE WORK, PRIOR TO START OF CONSTRUCTION.
   - B. ALL WATER VALVE AND WATER MANHOLE CONCRETE COLLARS WITHIN THE PROJECT LIMITS SHALL BE DEMOLISHED AND RECONSTRUCTED PER DWS STANDARD DETAIL V12 AND V23, RESPECTIVELY, AT THE CONTRACTOR'S EXPENSE.
   - C. THE VALVE BOX RISER AND COVER OF ALL WATER VALVES WITHIN THE PROJECT LIMITS SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
   - D. CONTRACTOR SHALL ADJUST DWS SLIDING VALVE BOX ASSEMBLY AND MANHOLE FRAME AND COVER TO FINISHED GRADE.
   - E. PRIOR TO PAVEMENT RESURFACING/RESTORATION WORK, THE CONTRACTOR SHALL SCHEDULE INSPECTION WITH DWS.
9. ANY SLIDING VALVE BOX ASSEMBLY, MANHOLE COVER, OR CONCRETE COLLAR, WHETHER DISCOVERED DAMAGED OR NOT SPECIFIED ON THE PLANS TO BE ADJUSTED OR REPLACED, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
10. CONTRACTOR SHALL ADJUST TO FINISHED GRADES, ALL UTILITIES (I.E., WATER, SEWER, DRAIN, ETC.) AFFECTED BY THE WORK WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS AT THE CONTRACTOR'S EXPENSE.
11. CONTRACTOR SHALL RESTORE ALL ROAD IMPROVEMENTS DISTURBED OR DAMAGED DURING CONSTRUCTION IN ACCORDANCE WITH THE 2005 "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" AS AMENDED, TO THE SATISFACTION OF THE DEPARTMENT OF PUBLIC WORKS AT THE CONTRACTOR'S EXPENSE. ROAD IMPROVEMENTS INCLUDE, BUT ARE NOT LIMITED TO, PAVEMENT, PAVEMENT MARKERS, SHOULDER DRESSING, STRIPING, AND SPEED HUMPS.
12. CONCRETE FOR REACTION BLOCKS AND ANCHOR BLOCKS SHALL BE DWS CLASS 2500.
13. THE MAXIMUM DISTANCE BETWEEN VALVE NUT AND TOP OF MANHOLE COVER SHALL BE THREE (3) FEET.
14. CONTRACTOR SHALL SUBMIT A MATERIALS LIST TO DWS FOR APPROVAL PRIOR TO CONSTRUCTION.
15. CONNECTION TO DWS SYSTEM:
   - A. CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL NECESSARY FITTINGS AND OTHER MATERIALS AND EQUIPMENT REQUIRED FOR THE HOOK-UP. CONTRACTOR SHALL VERIFY THE EXACT LOCATION, DEPTH, TYPE, AND CONDITION OF THE EXISTING LINE BEFORE ORDERING MATERIALS FOR THE HOOK-UP. CONTRACTOR SHALL, HOWEVER, CHECK WITH DWS BEFORE EXCAVATING FOR VERIFICATION PURPOSES.
   - B. WHENEVER FEASIBLE, MECHANICAL JOINT FITTINGS SHALL BE USED FOR BURIED APPLICATIONS AND FLANGED JOINT FITTINGS SHALL BE USED FOR EXPOSED APPLICATIONS.
   - C. DWS PERSONNEL MAY BE REQUIRED TO BE PRESENT OR ASSIST WITH CONNECTIONS TO THE EXISTING WATER SYSTEM. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS INCURRED BY DWS FOR SAID WORK.
   - D. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL, EQUIPMENT AND LABOR FOR TRENCH EXCAVATION, BACKFILLING, CLEANING AND CHLORINATION, PAVING, AND OTHER WORK NECESSARY TO COMPLETE THE HOOK-UP, AS DIRECTED BY AND TO THE SATISFACTION OF DWS.
16. MINIMUM COVER OVER WATER MAIN, 6" DIAMETER OR LARGER, SHALL BE 3'-0". MINIMUM COVER FOR 4" DIAMETER SHALL BE 2'-6". MINIMUM COVER FOR DIAMETERS LESS THAN 4" SHALL BE 1'-6".
17. CONTRACTOR SHALL ENSURE INSTALLATION OF WATERLINES, SERVICE LATERALS AND APPURTENANCES HAVE PROPER CLEARANCES FROM EXISTING TREES, WALLS, FENCES, ETC. IN ACCORDANCE WITH CURRENT DWS WATER SYSTEM STANDARDS.
18. CONTRACTOR SHALL VERIFY AND MAINTAIN 18" MINIMUM CLEARANCE WITH WATERLINE OR SERVICE LATERAL CROSSING OVER EXISTING SEWERLINE OR SERVICE LATERAL. INSTALL REINFORCED CONCRETE JACKET AROUND SEWERLINE WHERE SEWER IS ABOVE WATERLINE OR LESS THAN 18" BELOW WATERLINE. THE LENGTH OF JACKET REQUIRED SHALL BE AS SPECIFIED IN TABLE 100-5 OF THE DWS STANDARDS. PROVIDE 6" MINIMUM CLEARANCE FROM OUTSIDE JACKET TO WATERLINE OR SERVICE LATERAL. STANDARD CONCRETE JACKET DETAILS FOR SEWERLINE AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS STANDARDS SHALL BE FOLLOWED.
19. CONTRACTOR SHALL HAVE LICENSED SURVEYOR STAKE OUT WATERLINE BASELINE STATIONING, RIGHT-OF-WAY LIMITS, PROPERTY LINES, AND EASEMENT LINES TO ENSURE PROPER LOCATION OF WATER SYSTEM IMPROVEMENTS.
20. BOLTS FOR EXPOSED FLANGED DUCTILE IRON PIPE JOINTS SHALL BE EITHER SILICON BRONZE BOLTS AND NUTS OR 316 STAINLESS STEEL BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED. T-BOLTS FOR DUCTILE IRON MECHANICAL JOINT (MJ) PIPE AND FITTING CONNECTIONS IN UNDERGROUND SITUATIONS SHALL BE ONE OF THE FOLLOWING SYSTEMS:
   - A. 316 STAINLESS STEEL T-BOLTS WITH THE HEAVY DUTY STAINLESS STEEL NUTS (ONLY) FURNISHED WITH TRIPAC 2000 BLUE COATING SYSTEM. ANTI-SEIZE SHALL NOT BE USED.
   - B. COR-TEN T-BOLTS AND NUTS WITH HIGH GRADE ZINC SACRIFICIAL ANODES, EQUIVALENT TO
   - C. "DURATRON" SACRIFICIAL "SAC-NUT" MODULES, INSTALLED ON THE NUTS FOR ALL STANDARD COR-TEN T-BOLTS.
   - D. COR-TEN T-BOLTS AND NUTS BOTH FACTORY COATED WITH TRIPAC 2000 BLUE COATING SYSTEM BY "TRIPAC FASTENERS".
   - E. ALL HOT FORGED STAINLESS STEEL BOLTS ARE REQUIRED TO BE PASSIVATED PER ASTM A380. MANUFACTURER CERTIFICATES ARE REQUIRED FOR PROOF WITH EACH SHIPMENT.
21. CONTRACTOR SHALL FURNISH AND INSTALL DUCTILE IRON NIPPLES FOR COMPLETE INSTALLATION OF THE WATERLINE, WHETHER SHOWN OR NOT SHOWN ON THE CONSTRUCTION PLANS, AT THE CONTRACTOR'S EXPENSE.
22. CONTRACTOR SHALL FURNISH TEMPORARY CLEANOUTS WHEN NECESSARY TO TEST, FLUSH, AND CHLORINATE THE WATERLINE AT THE CONTRACTOR'S EXPENSE.
23. CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL PORTIONS OF ABANDONED WATERLINES THAT ARE EXPOSED OR WITHIN 12-INCHES BELOW THE GROUND SURFACE AT THE CONTRACTOR'S EXPENSE.
24. ALL BURIED METALS, INCLUDING COPPER PIPES, SHALL BE WRAPPED WITH POLY-WRAP. FOR ALL BURIED INSTALLATIONS OF DUCTILE IRON PIPE AND FITTINGS, POLY-WRAP IS REQUIRED EXCEPT WITHIN CONCRETE JACKETS.
25. LUBRICATE HYDRANT NOZZLE THREADS WITH NON-TOXIC GREASE.
26. CONTRACTOR SHALL PAINT AND NUMBER FIRE HYDRANT(S). NUMBERING TO BE FURNISHED BY DWS.
27. WATER MAINS AND APPURTENANCES SHALL BE SUBJECT TO HYDROSTATIC TESTING IN ACCORDANCE WITH THE LATEST REVISION OF AWWA C600, UNDER THE "HYDROSTATIC TESTING" SECTION, TO A PRESSURE OF AT LEAST 1.5 TIMES THE WORKING PRESSURE. UNLESS OTHERWISE STATED IN THE CONSTRUCTION DOCUMENTS OR LIMITED BY THE PRESSURE RATING OF EQUIPMENT, THE PRESSURE TEST AND LEAKAGE TEST SHALL BE PERFORMED AT 225 POUNDS PER SQUARE INCH PRESSURE.
28. DEVELOPER SHALL SUBMIT A COST LIST ALONG WITH AN AFFIDAVIT FOR THE WATER SYSTEM PRIOR TO ACCEPTANCE.
29. CONTRACTOR SHALL SUBMIT ONE (1) SET OF RECORD DRAWINGS VIA A CONSULTANT PRIOR TO ACCEPTANCE OF THE WATER SYSTEM. AN ELECTRONIC IMAGE FILE IN PDF FORMAT AT FULL PAGE SIZE (24" X 36") SHALL BE PROVIDED TO THE DWS FOR ALL PROJECTS.

CHLORINATION OF WATER SYSTEM PIPELINES:

1. WATER MAINS AND APPURTENANCES SHALL BE DISINFECTED IN ACCORDANCE WITH AWWA C651. ALL PROCEDURES AND MATERIALS (LIQUID CHLORINE OR CALCIUM HYPOCHLORITE) USED FOR THE CHLORINATION OF THE PROJECT SHALL CONFORM TO AWWA REQUIREMENTS.
2. PRIOR TO CHLORINATION, THE PROJECT PIPELINES SHALL BE THOROUGHLY CLEANED. CLEANING OF LINES 8" AND LARGER SHALL BE BY PIGGING USING FOAM PIGS. SMALLER LINES CAN BE FLUSHED IN ACCORDANCE WITH AWWA REQUIREMENTS IF ADEQUATE WATER SUPPLY IS PROVIDED, OTHERWISE BY PIGGING. THE CONTRACTOR SHALL SUBMIT HIS PLAN FOR PIPELINE CLEANING, INCLUDING FITTING REQUIREMENTS FOR PIGGING, FOR APPROVAL PRIOR TO PROCEEDING.
3. THE INTERIOR SURFACES OF THE PROJECT SHALL BE EXPOSED TO THE CHLORINATING SOLUTION FOR A MINIMUM OF 24 HOURS AND THE CHLORINE RESIDUAL SHALL NOT BE LESS THAN 10 PPM AFTER SUCH TIME.
4. SHOULD CALCIUM HYPOCHLORITE BE USED, NO SOLID AND/OR UNDISSOLVED PORTION OF THE COMPOUND SHALL BE INTRODUCED INTO ANY SECTION OF THE PROJECT TO BE CHLORINATED.
5. AT THE END OF THE 24-HOUR DISINFECTION PERIOD, REPRESENTATIVE SAMPLES SHALL BE TAKEN AND ANALYZED TO ASSURE A CHLORINE RESIDUAL OF AT LEAST 10 PPM. MEASUREMENTS FOR CHLORINE RESIDUAL TESTS SHALL BE BY A TRAINED, QUALIFIED TESTER APPROVED BY THE DIRECTOR.
6. SHOULD THE RESULTS INDICATE ADEQUATE CHLORINATION, THE PROJECT SHALL BE THOROUGHLY FLUSHED AND FILLED WITH POTABLE WATER FROM THE EXISTING POTABLE WATER SYSTEM AND AGAIN TESTED FOR CHLORINE RESIDUAL. THE FLUSHING SHALL BE CONSIDERED ADEQUATE IF THE TEST RESULTS INDICATE THAT THE WATER IN THE PROJECT HAS A COMPARABLE CHLORINE RESIDUAL AS THE WATER IN THE EXISTING SYSTEM.
7. FOLLOWING THE ACCEPTABLE FLUSHING OF THE HIGH CONCENTRATION CHLORINE SOLUTION, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES SHALL BE TAKEN AT LEAST 24 HOURS APART FROM REPRESENTATIVE POINTS IN THE PROJECT AND SUBJECTED TO MICROBIOLOGICAL TESTS PERFORMED BY A CERTIFIED LABORATORY APPROVED BY THE DEPARTMENT OF HEALTH. AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED AND TESTED FROM EVERY 1,200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM THE END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH. POSITIVE RESULTS WILL NOT BE ACCEPTABLE AND THE ENTIRE CHLORINATION PROCESS WILL BE REPEATED.
8. ANALYSIS FOR RESIDUAL CHLORINE SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
9. MICROBIOLOGICAL TESTS SHALL BE MADE IN ACCORDANCE WITH "STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER", AMERICAN PUBLIC HEALTH ASSOCIATION, CURRENT EDITION.
10. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH ALL OF THE FOREGOING.

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.
SIGNATURE License Expires: April 30, 2026 DATE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE CONSTRUCTION NOTES

RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-2 SHEET
KAO DRAWN BY	RMA APPROVED BY		
AS NOTED SCALE		Jan. 5, 2024 DATE	OF SHEETS

V:\Projdata\23PROJ\23040\dwg\conplans\note-sht-00.dwg

CONSTRUCTION NOTES:

CONSTRUCTION NOTES WITHIN COUNTY RIGHT-OF-WAY:

1. CONTRACTOR SHALL OBTAIN A ROADWAY PERMIT TO PERFORM WORK WITHIN THE COUNTY RIGHT-OF-WAY FROM THE DEVELOPMENT SERVICES ADMINISTRATION TWO WEEKS PRIOR TO THE COMMENCEMENT OF WORK.
2. STANDARD DETAIL DRAWINGS AND STANDARD SPECIFICATIONS OF THE DEPARTMENT OF PUBLIC WORKS SHALL BE INCLUDED AS PART OF THE CONSTRUCTION PLANS.
3. ALL CONSTRUCTION WORK SHALL STRICTLY CONFORM TO THE LATEST VERSION OF THE HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE PUBLIC WORKS CONSTRUCTION, AND THE SEPTEMBER 1984 "STANDARD DETAILS" FOR PUBLIC WORKS CONSTRUCTION OF THE DEPARTMENT OF PUBLIC WORKS, AS AMENDED.
4. IF EXISTING UTILITIES, WHETHER OR NOT SHOWN ON PLANS, ARE DAMAGED DURING CONSTRUCTION, THE CONTRACTOR SHALL AT HIS OWN EXPENSE BE REQUIRED TO REPAIR SUCH UTILITIES.
5. CONTRACTOR SHALL PROVIDE, INSTALL AND MAINTAIN ALL NECESSARY SIGNS, LIGHTS, FLARES, BARRICADES, AND OTHER PROTECTIVE DEVICES FOR THE PROTECTION, SAFETY AND CONVENIENCE OF THE PUBLIC, ACCORDING TO THE LATEST VERSION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICE FOR STREETS AND HIGHWAYS", AND TO THE RULES AND REGULATIONS GOVERNING THE USE OF TRAFFIC CONTROL DEVICES AT WORKSITES AND/OR ADJACENT TO PUBLIC STREETS AND HIGHWAYS ADOPTED BY THE HIGHWAY SAFETY COORDINATOR AND THE U.S. FEDERAL HIGHWAY ADMINISTRATION "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY CONSTRUCTION AND MAINTENANCE OPERATIONS".
6. THE DIRECTOR PUBLIC WORKS AND/OR THE DIRECTOR OF THE DEPARTMENT OF WATER SUPPLY HAS THE RIGHT TO STOP CONSTRUCTION SHOULD ANY WORK BE FOUND CONTRARY TO THE APPROVED CONSTRUCTION PLAN OR DETRIMENTAL TO THE PUBLIC'S INTEREST.
7. THE CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE DEVELOPMENT SERVICES ADMINISTRATION FIVE (5) DAYS PRIOR TO COMMENCEMENT OF CONSTRUCTION.
8. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, KEEP THE PROJECT AREA AND SURROUNDING AREA FREE FROM DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND COUNTY GRADING ORDINANCE.
9. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS AND OTHER AREAS. THE COST INCURRED FOR ANY NECESSARY REMEDIAL ACTION ORDERED BY THE DIRECTOR OF PUBLIC WORKS SHALL BE PAID BY THE CONTRACTOR.
10. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE WORK SITE. THE CONTRACTOR SHALL INFORM THE DIRECTOR OF PUBLIC WORKS OF THE LOCATION OF THE DISPOSAL SITES. THE DISPOSAL SITE MUST FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
11. THE CONTRACTOR SHALL SUBMIT A PDF OF THE "AS-BUILT" DRAWINGS PRIOR TO THE FINAL APPROVAL OF THE IMPROVEMENTS.
12. IF THE CLEARANCE BETWEEN A WASTEWATER LINE AND A NEW OR EXISTING WATERLINE IS EIGHTEEN INCHES (18") OR LESS, THE WASTEWATER LINE SHALL BE CONCRETE-JACKETED IN ACCORDANCE WITH THE STANDARD DETAILS OF PUBLIC WORKS CONSTRUCTION DATED SEPTEMBER 1984, AS AMENDED.
13. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS, OR MOUNDS, OR REMAINS SUCH AS ARTIFACTS BURIALS, CONCENTRATION OF SHELL OR CHARCOAL BE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, WORK SHALL CEASE IMMEDIATELY IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR AND/OR LANDOWNER SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (692-8015), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
14. THE COUNTY OF MAUI IS NOT RESPONSIBLE FOR ANY PARK, ROADWAY, EASEMENT (INCLUDING BUT NOT LIMITED TO DRAINAGE, SEWER, ACCESS, RECLAIMED WATER, OR AVIGATION EASEMENT), OR ANY OTHER INTEREST IN REAL PROPERTY SHOWN ON THIS MAP OR SHOWN ON THESE PLANS, UNLESS THE MAUI COUNTY COUNCIL HAS ACCEPTED ITS DEDICATION BY A RESOLUTION APPROVED BY A MAJORITY OF COUNCIL MEMBERS AT A REGULAR OR SPECIAL MEETING OF THE MAUI COUNTY COUNCIL OR THE COUNTY OF MAUI HAS SIGNED ITS ACCEPTANCE VIA A CONVEYANCE DOCUMENT RECORDED IN THE BUREAU OF CONVEYANCES OF THE STATE OF HAWAII IN COMPLIANCE WITH MAUI COUNTY CODE SECTION 3.44.015.
15. STEEL PLATE WARNING SIGNS ARE REQUIRED FOR ALL STEEL PLATES IN THE RIGHT-OF-WAY.
16. WHEELCHAIR RAMP INSPECTION/CERTIFICATION FORMS SHALL BE REQUIRED FOR ALL NEWLY CONSTRUCTED RAMPS.
17. ALL STRIPING AND PAVEMENT MARKINGS SHALL BE OF THERMOPLASTIC MATERIAL.
18. COMPACTION REQUIREMENTS
    - A. TESTING OF MATERIALS SHALL BE CONDUCTED BY AN APPROVED INDEPENDENT TESTING AGENCY IN ACCORDANCE WITH ASTM STANDARD METHODS OR AS SPECIFIED BY THE DEPARTMENT OF PUBLIC WORKS, ENGINEERING DIVISION, AS FOLLOWS:
        - i. EMBANKMENT/SELECT BORROW AND SUBGRADE MATERIALS: ONE (1) COMPACTION TEST PER 600 SQUARE YARDS PER LIFT;
        - ii. AGGREGATE SUBBASE COURSE: ONE (1) COMPACTION TEST PER 400 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
        - iii. AGGREGATE BASE COURSE: ONE (1) COMPACTION TEST PER 300 SQUARE YARDS; ONE (1) GRADATION AND SAND EQUIVALENT TEST PER LIFT PER PROJECT;
        - iv. ASPHALT CONCRETE PAVEMENT OR ASPHALT TREATED BASE COURSE; THREE (3) A.C. CORES FOR THICKNESS AN DENSITY TESTS PER PROJECT;
        - v. TRENCH BACKFILL MATERIAL: ONE (1) TEST FOR EACH 300 LINEAL FEET OF TRENCH PER LIFT OF MATERIAL.
    - B. CONTRACTOR SHALL SUBMIT ALL TESTING REPORTS INCLUDING RESULTS TO THE COUNTY'S INSPECTION AGENCY FOR REVIEW AND APPROVAL PRIOR TO COUNTY'S ACCEPTANCE OF WORK.
    - C. THE CONTRACTOR SHALL BE REQUIRED TO NOTIFY THE COUNTY OF ANY TESTING FAILURES AND CORRECT EACH FAILURE PRIOR TO PROCEEDING TO THE NEXT PHASE OF CONSTRUCTION.

MAUI ELECTRIC CO. (MECO) NOTES:

1. THE LOCATION OF MECO'S OVERHEAD AND UNDERGROUND FACILITIES SHOWN ON THE DRAWINGS ARE FROM EXISTING RECORDS WITH VARYING DEGREES OF ACCURACY AND ARE NOT GUARANTEED AS SHOWN. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN WORKING IN THE VICINITY OF UNDERGROUND POWER LINES AND SHALL MAINTAIN ADEQUATE CLEARANCE WHEN OPERATING EQUIPMENT WITHIN OR UNDER ANY OVERHEAD POWER LINES.
2. THE CONTRACTOR SHALL COMPLY WITH ALL THE REQUIREMENTS OF THE HAWAII OCCUPATIONAL & HEALTH DIVISION (HIOSH).
3. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION OF MECO UTILITIES AND COORDINATING WITH MECO ALL WORK IN THE VICINITY OF THEIR UTILITIES. THE CONTRACTOR SHALL CALL MECO A MINIMUM OF 72 HOURS PRIOR TO WORK IN THE VICINITY OF UNDERGROUND POWER LINES FOR FIELD LOCATION.
4. THE CONTRACTOR SHALL BE LIABLE FOR ANY DAMAGES TO MECO UTILITIES AND SHALL IMMEDIATELY REPORT SUCH DAMAGES TO MECO.
5. CONTRACTOR SHALL CONTACT MECO IN ADVANCE WHEN WORKING WITHIN 10' OF THE POWER POLES.

HAWAIIAN TELEPHONE CO. (HTCO) NOTES:

1. THE LOCATION OF EXISTING HAWAIIAN TELEPHONE COMPANY UNDERGROUND FACILITIES SHOWN ON PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR VERIFYING THE LOCATION OF HTCO UTILITIES AND COORDINATING WITH HTCO ALL WORK IN THE VICINITY OF THEIR UTILITIES. ANY DAMAGES TO THE UNDERGROUND FACILITIES AS A RESULT OF HIS OPERATIONS SHALL BE REPAIRED BY THE CONTRACTOR, AT THEIR OWN EXPENSE.
2. THE CONTRACTOR SHALL NOTIFY HAWAIIAN TELEPHONE COMPANY A MINIMUM OF 72 HOURS PRIOR TO THE START OF EXCAVATION FOR FIELD LOCATION OF HAWAIIAN TELEPHONE COMPANY UNDERGROUND FACILITIES.

EXISTING GRADE:

1. EXISTING GRADES SHALL BE VERIFIED BY THE CONTRACTOR BEFORE PROCEEDING WITH GRADING WORK. SHOULD ANY DISCREPANCIES BE DISCOVERED IN THE EXISTING GRADES OR DIMENSIONS GIVEN ON THE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER BEFORE PROCEEDING FURTHER WITH ANY WORK, OTHERWISE HE WILL BE HELD RESPONSIBLE FOR ANY COST INVOLVED IN CORRECTION OF CONSTRUCTION PLACED DUE TO SUCH DISCREPANCIES.

GRADING NOTES:

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENGINEER SHALL BE PAYABLE BY THE CONTRACTOR.
2. THE CONTRACTOR AT HIS EXPENSE, SHALL KEEP THE PROJECT AREA AND SURROUNDING AREA FREE OF DUST NUISANCE. THE WORK SHALL BE IN CONFORMANCE WITH THE AIR POLLUTION CONTROL STANDARDS, AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH.
3. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS CONTAINED IN THE PUBLIC HEALTH REGULATIONS, STATE DEPARTMENT OF HEALTH, ON WATER POLLUTION CONTROL, AND WATER QUALITY STANDARDS AND THE COUNTY GRADING ORDINANCE.
4. ALL SLOPES AND EXPOSED AREAS SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED. CONTRACTOR SHALL GRASS AND MAINTAIN ALL EXPOSED SLOPES SUCH THAT 60% COVERAGE WILL BE ACHIEVED WITHIN 30 DAYS AND 85% COVERAGE WILL BE ACHIEVED WITHIN 60 DAYS AFTER PLANTING.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT AN APPROPRIATE SITE. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE MUST ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.
6. THE CONTRACTOR SHALL PROVIDE DUST CONTROL, WITH SPRINKLERS, AND/OR WATERWAGONS AS NECESSARY, WEEKENDS AND HOLIDAYS INCLUDED. ALL GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND FOR THE WEEKEND.
7. ALL EXPOSED SLOPES SHALL BE PROTECTED WITH TEMPORARY DIVERSIONS, BERMS, AND SWALES AT THE TOP OF THE SLOPES.
8. EXISTING TOPOGRAPHIC INFORMATION SHOWN IS FROM "DATE" SURVEY MAP PREPARED BY "SURVEY". DUE TO THE EXTENDED LENGTH OF TIME WHICH HAS LAPSED FROM THE DATE OF SURVEY, THE CONTRACTOR SHOULD EXAMINE THE SITE AND TAKE WHATEVER MEASURES NECESSARY TO VERIFY CONDITIONS EXISTING IN THE FIELD.
9. EARTHWORK QUANTITIES SHOWN ARE APPROXIMATE AND ARE TO BE USED FOR OBTAINING A GRADING PERMIT ONLY. NO ADJUSTMENTS HAVE BEEN MADE FOR LOSSES DUE TO GRUBBING AND SHRINKAGE NOR FOR DIFFERING TOPOGRAPHIC CONDITIONS. THE CONTRACTOR SHALL VERIFY EXISTING FIELD CONDITIONS AND PREPARE HIS OWN ESTIMATE AND BID ACCORDINGLY.
10. THE CONTRACTOR SHALL PERFORM ALL GRADING IN CONFORMANCE WITH THE REQUIREMENTS SPECIFIED IN THE MAUI COUNTY GRADING ORDINANCE AND THIS PROJECT'S SPECIFICATIONS.
11. THE CONTRACTOR SHALL LIMIT THE LENGTH OF OPEN TRENCH OF THE SEWERLINE TO A MAXIMUM LENGTH OF 300 FT. AT THE END OF EACH WORK DAY.

EXCAVATION NOTES:

1. IN AREAS WHERE THE EXCAVATION IS AT OR BELOW THE WATER TABLE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AND MAINTAINING ENOUGH EQUIPMENT (SUBMERSIBLE PUMPS, HOSES, TANK TRUCKS, TEMPORARY HOLDING TANKS, ELECTRIC GENERATOR, BACK-UPS, ETC.) AND QUALIFIED PERSONNEL TO KEEP THE EXCAVATION FREE OF WATER DURING CONSTRUCTION OPERATIONS.
2. THE CONTRACTOR SHALL PROPERLY DISPOSE OF THE GROUNDWATER AT A SUITABLE LOCATION AS DIRECTED BY THE PROJECT ENGINEER AT WWRD. THE CONTRACTOR IS RESPONSIBLE FOR SECURING PERMISSION OF LAND OWNER FOR THIS PURPOSE.
3. DISPOSAL OF GROUNDWATER (ESPECIALLY SALT WATER) INTO THE SEWER SYSTEM WILL NOT BE PERMITTED.
4. THE CONTRACTOR SHALL TAKE STEPS TO PREVENT THE EXCAVATION FROM SLOUGHING OFF AND "GROWING". PREVIOUS EXPERIENCE IN THIS AREA HAS SHOWN THAT THE SOILS MAY BE MOIST AND LOOSE. THE USE OF SHORING BOXES AND/OR SHEET PILES MAY BE REQUIRED TO PROVIDE STABILITY OF THE EXCAVATION. STEEL PLATES ALONE ARE NOT ACCEPTABLE TRENCH SUPPORTS FOR THIS PROJECT.
5. THIS SCOPE OF WORK WAS CREATED ASSUMING THE CONTRACTOR WOULD COMPLETE THE REPAIR UNDER WATER DURING A LOW TIDE PERIOD WITHOUT DEWATERING. IF THE CONTRACTOR CHOOSES TO UTILIZE A DEWATERING METHODOLOGY, THE CONTRACTOR IS COMPLETELY RESPONSIBLE FOR ALL ASPECTS OF THIS WORK INCLUDING, BUT NOT LIMITED TO, ACQUISITION OF THE NPDES PERMIT AND ALL EQUIPMENT AND PERMISSION NECESSARY FROM APPROPRIATE AUTHORITIES. IF THE CONTRACTOR CHOOSES TO USE A DEWATERING METHODOLOGY, THE COUNTY WILL PROCESS A 180 CALENDAR DAY TIME EXTENSION TO ALLOW THE CONTRACTOR AMPLE TIME TO ACQUIRE NECESSARY PERMITS AND PERMISSION.
6. ALL EXCAVATED MATERIAL FROM THE TRENCHES SHALL BE HAULED AWAY AND SAND SHALL BE PLACED AROUND THE NEW SEWERLINE (12 INCHES ABOVE THE PIPE). IF THE SEWERLINE IS INSTALLED UNDERWATER, THE "BURRITO" METHOD SHALL BE USED. IF THE CONTRACTOR CHOOSES TO USE THE NATIVE MATERIAL, IT MUST BE APPROVED BY THE OWNER'S REPRESENTATIVE.
7. OVERNIGHT LATERAL BYPASS PUMPING AS WELL AS TRUNK SEWER BYPASS PUMPING ARE NOT ALLOWED FOR THE DURATION OF THIS PROJECT.
8. CONTRACTOR SHALL NOTIFY PROJECT ENGINEER OF ANY AGREEMENTS MADE BETWEEN THE RESIDENTS AND CONTRACTOR PRIOR TO CONSTRUCTION IMPROVEMENTS.
9. THE CONTRACTOR SHALL KEEP EXCAVATIONS REASONABLY FREE FROM WATER DURING CONSTRUCTION. THE STATIC WATER LEVEL SHALL BE DRAWN DOWN A MINIMUM OF 1 FOOT BELOW THE BOTTOM OF EXCAVATIONS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL SOILS AND ALLOW THE PLACEMENT OF ANY FILL TO THE SPECIFIED DENSITY. DISPOSAL OF WATER SHALL MEET ALL PERMITTING REQUIREMENTS AS OBTAINED BY THE CONTRACTOR FOR SUCH WORK. DEWATERING SYSTEMS SHALL OPERATE CONTINUOUSLY UNTIL BACKFILL HAS BEEN COMPLETED TO 1 FOOT ABOVE THE NORMAL STATIC GROUNDWATER LEVEL.
10. GROUNDWATER SHALL BE CONTROLLED TO PREVENT SOFTENING OF THE BOTTOM OF EXCAVATIONS, OR FORMATION OF "QUICK" CONDITIONS. DEWATERING SYSTEMS SHALL NOT REMOVE NATURAL SOILS.
11. RELEASE OF GROUNDWATER TO ITS STATIC LEVEL SHALL BE CONTROLLED TO PREVENT DISTURBANCE OF THE NATURAL FOUNDATION SOILS OR COMPACTED FILL AND TO PREVENT FLOTATION OR MOVEMENT OF STRUCTURES OR PIPELINES.

EROSION CONTROL:

THE FOLLOWING MEASURES SHALL BE TAKEN TO CONTROL EROSION DURING THE SITE DEVELOPMENT PERIOD:

1. MINIMIZE TIME OF CONSTRUCTION.
2. RETAIN EXISTING GROUND COVER UNTIL LATEST DATE TO COMPLETE CONSTRUCTION.
3. EARLY CONSTRUCTION OF DRAINAGE CONTROL FEATURES.
4. USE TEMPORARY AREA SPRINKLERS IN NON-ACTIVE CONSTRUCTION AREAS WHEN GROUND COVER IS REMOVED.
5. STATION WATER TRUCK ON SITE DURING CONSTRUCTION PERIOD TO PROVIDE FOR IMMEDIATE SPRINKLING, AS NEEDED, IN ACTIVE CONSTRUCTION ZONES (WEEKENDS AND HOLIDAYS INCLUDED).
6. USE TEMPORARY BERMS AND CUT-OFF DITCHES, WHERE NEEDED, FOR CONTROL OF EROSION.
7. GRADED AREAS SHALL BE THOROUGHLY WATERED AFTER CONSTRUCTION ACTIVITY HAS CEASED FOR THE DAY AND ON WEEKENDS.
8. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.

ENVIRONMENTAL PROTECTION:

1. THE CONTRACTOR SHALL REMOVE ALL SILT AND DEBRIS RESULTING FROM HIS WORK AND DEPOSITED IN DRAINAGE FACILITIES, ROADWAYS, AND OTHER AREAS. THE COSTS INCURRED FOR ANY NECESSARY REMEDIAL ACTION BY THE CHIEF ENVIRONMENTALIST SHALL BE BORNE BY THE CONTRACTOR.
2. THE CONTRACTOR SHALL KEEP THE PROJECT AREA AND SURROUNDING AREAS FREE FROM DUST NUISANCE, ALL IN ACCORDANCE WITH THE AIR POLLUTION CONTROL STANDARDS AND REGULATIONS OF THE STATE DEPARTMENT OF HEALTH. ALL COSTS SHALL BE BORNE BY THE CONTRACTOR.
3. ALL GRADING OPERATIONS SHALL BE PERFORMED IN CONFORMANCE WITH THE APPLICABLE PROVISIONS OF THE WATER POLLUTION CONTROL AND WATER QUALITY STANDARDS OF THE PUBLIC HEALTH REGULATIONS OF THE STATE DEPARTMENT OF HEALTH AND THE COUNTY'S GRADING ORDINANCE.
4. ALL CUT AND FILL SLOPES SHALL BE SODDED OR PLANTED IMMEDIATELY AFTER GRADING WORK HAS BEEN COMPLETED.
5. CONSTRUCTION DEBRIS AND WASTES SHALL BE DEPOSITED AT APPROPRIATE SITES. THE CONTRACTOR SHALL INFORM THE ENGINEER OF THE LOCATION OF DISPOSAL SITES. THE DISPOSAL SITE SHALL ALSO FULFILL THE REQUIREMENTS OF THE GRADING ORDINANCE.

LANDSCAPE RESTORATION NOTES:

1. AT TRENCH LOCATIONS TRAVERSING LANDSCAPED AREAS, ANY LARGE TREES THAT MUST BE DISPLACED ARE TO BE INVENTORIED, TRANSPORTED TO A SITE SELECTED BY THE GENERAL CONTRACTOR WHERE IT CAN BE TEMPORARILY TRANSPLANTED AND MAINTAINED. AFTER THE FORCE MAIN IS BACKFILLED AND TESTED, THE TREES SHOULD BE TRANSPORTED BACK AND REPLANTED AT ITS ORIGINAL SPOT UNDER THE SUPERVISION OF A QUALIFIED ARBORIST. GRASSED AREAS THAT MUST BE DISPLACED SHALL BE REPLACED BY GRASSED SOD RATHER THAN GRASSED SEEDLINGS TO ACCELERATE THE TIME OF RECOVERY.

   REPLANTED TREES AND SOD SHALL BE MAINTAINED UNTIL FIRMLY RE-ESTABLISHED IN PLACE AS SUBSTANTIATED BY THE ARBORIST OR OWNER.

POLYVINYL CHLORIDE (PVC) PIPE NOTES:

1. SANITARY SEWER PIPING SHALL BE SDR 26 OR SDR 35 PVC, CONFORMING TO SECTION 706.09 – "PVC PIPE FOR SEWER SYSTEM" OF THE 2005 HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

NOISE:

1. CONTRACTOR SHALL OBTAIN NOISE VARIANCE FROM ED MIYABARA AT THE HAWAII STATE DEPARTMENT OF HEALTH (984-8230).

GENERAL NOTES FOR NIGHT WORK

TRAFFIC CONES

CONES SHALL BE 28 INCHES IN HEIGHT AND SHALL BE PREDOMINANTLY ORANGE IN COLOR. THEY SHALL BE KEPT CLEAN AND BRIGHT FOR MAXIMUM TARGET VALUE. FOR NIGHTTIME USE THEY SHALL BE REFLECTORIZED OR EQUIPPED WITH LIGHTING DEVICES FOR MAXIMUM VISIBILITY. REFLECTORIZED MATERIAL SHALL HAVE A SMOOTH, SEALED OUTER SURFACE THAT WILL DISPLAY THE SAME APPROXIMATE COLOR DAY OR NIGHT.

REFLECTORIZATION OF TUBULAR MARKER SHALL BE A MINIMUM OF TWO, THREE-INCH-WIDE WHITE BANDS PLACED A MAXIMUM OF TWO INCHES FROM THE TOP WITH A MINIMUM OF SIX INCHES BETWEEN THE BANDS. RETROREFLECTION OF CONES SHALL BE PROVIDED BY A MINIMUM SIX-INCH-WIDE WHITE BAND PLACED A MINIMUM OF THREE INCHES BUT NO MORE THAN FOUR INCHES FROM THE TOP. WHEN THE 28-INCH OR LARGER SIZE CONES ARE USED, THE STANDARD SIX-INCH BAND SHALL BE SUPPLEMENTED WITH AN ADDITIONAL FOUR-INCH WHITE BAND SPACED A MINIMUM OF TWO INCHES BELOW THE SIX-INCH BAND.

HISTORICAL PRESERVATION:

1. SHOULD HISTORIC SITES SUCH AS WALLS, PLATFORMS, PAVEMENTS AND MOUNDS, OR REMAINS SUCH AS ARTIFACTS, BURIALS, CONCENTRATION OF CHARCOAL OR SHELLS ARE ENCOUNTERED DURING CONSTRUCTION WORK, WORK SHALL CEASE IN THE IMMEDIATE VICINITY OF THE FIND AND THE FIND SHALL BE PROTECTED FROM FURTHER DAMAGE. THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE STATE HISTORIC PRESERVATION DIVISION (243-5169), WHICH WILL ASSESS THE SIGNIFICANCE OF THE FIND AND RECOMMEND AN APPROPRIATE MITIGATION MEASURE, IF NECESSARY.
2. CONTRACTOR SHALL COMPLY WITH THE PROJECT ARCHAEOLOGICAL MONITORING PLAN (AMP) AND WORK WITH THE ARCHAEOLOGICAL MONITOR TO FOLLOW THE MONITORING PROCEDURES AND PROGRAM IN THE AMP.
3. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, CONTRACTOR SHALL CONDUCT A COORDINATION MEETING WITH ALL PERTINENT PARTIES, INCLUDING BUT NOT LIMITED TO CONSTRUCTION AND ARCHAEOLOGICAL PERSONNEL, TO INFORM OF THE MONITORING PROCEDURES AND PROVISIONS STIPULATED IN THE AMP, AS WELL AS THE ARCHAEOLOGICAL MONITOR'S AUTHORITY TO TEMPORARILY SUSPEND CONSTRUCTION ACTIVITIES IN THE VICINITY OF A FIND.

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.
License Expires: April 30, 2026
SIGNATURE DATE
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE CONSTRUCTION NOTES

RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-3 SHEET
KAO DRAWN BY	RMA APPROVED BY	Jan. 5, 2024 DATE	OF SHEETS
AS NOTED SCALE			

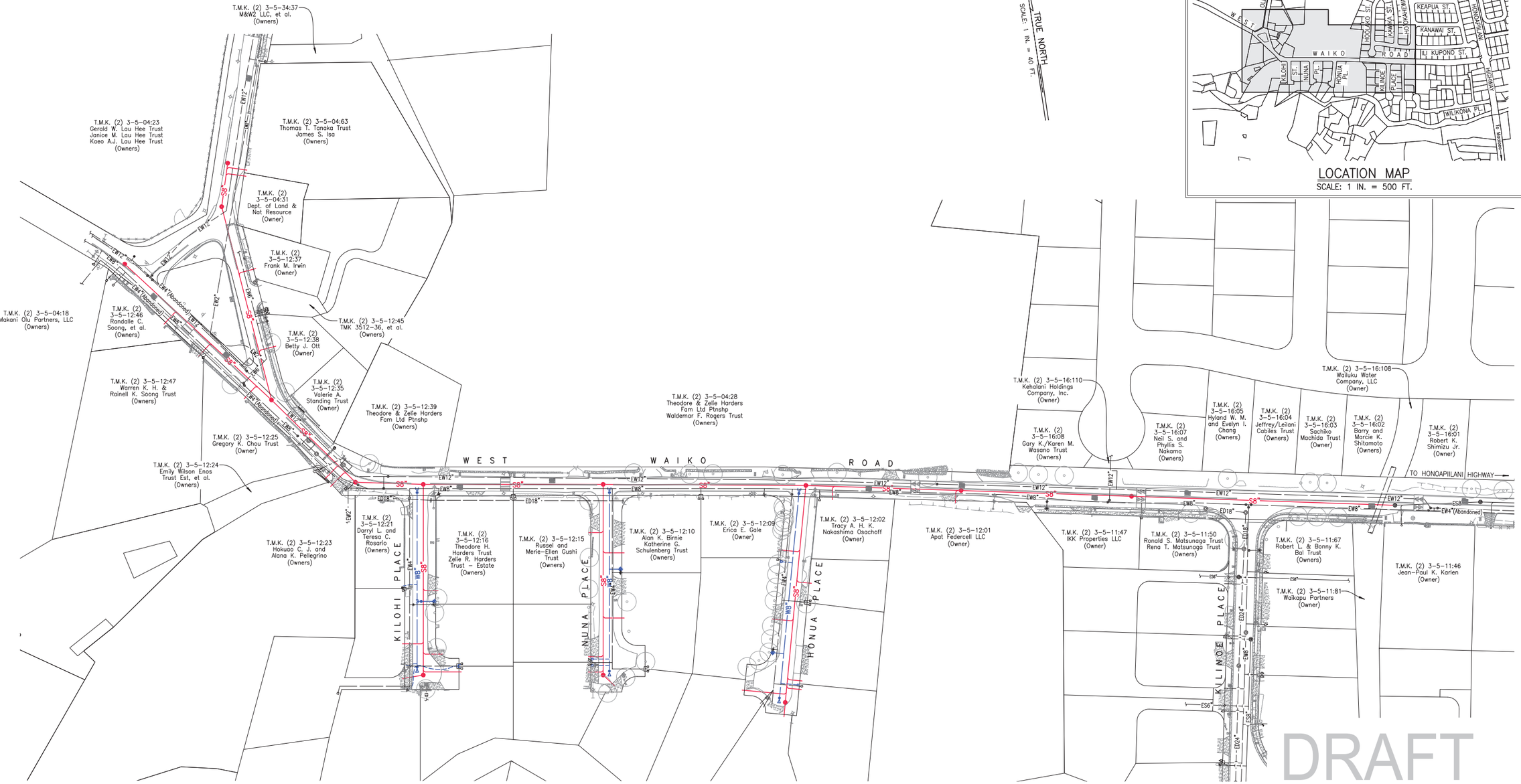
V:\Projects\23PROJ\23040\dwg\conplans\note-plt-00.dwg

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT



LOCATION MAP
SCALE: 1 IN. = 500 FT.

TRUE NORTH
SCALE: 1 IN. = 40 FT.



DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE _____ DATE _____ License Expires: April 30, 2026

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

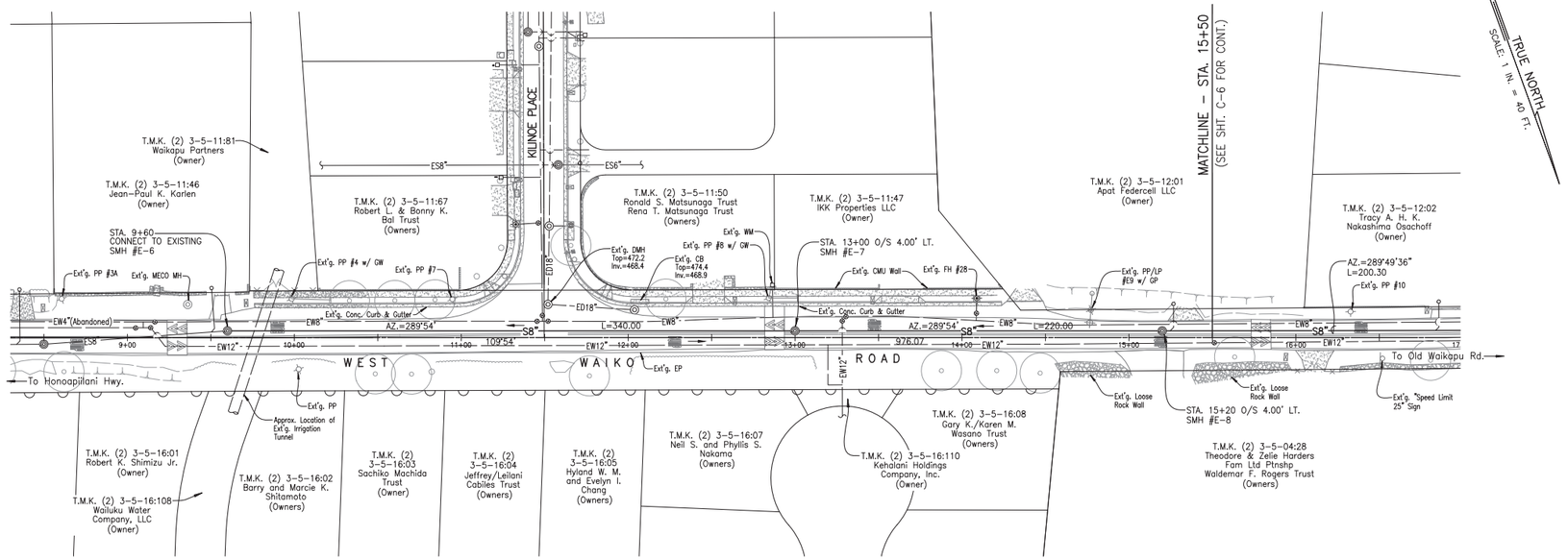
WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE GENERAL PLAN

RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-4 SHEET
KAO DRAWN BY	RMA APPROVED BY	Jan. 5, 2024 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

W:\Projdata\23PROJ\23040\dwg\coroplans\GENPLAN00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

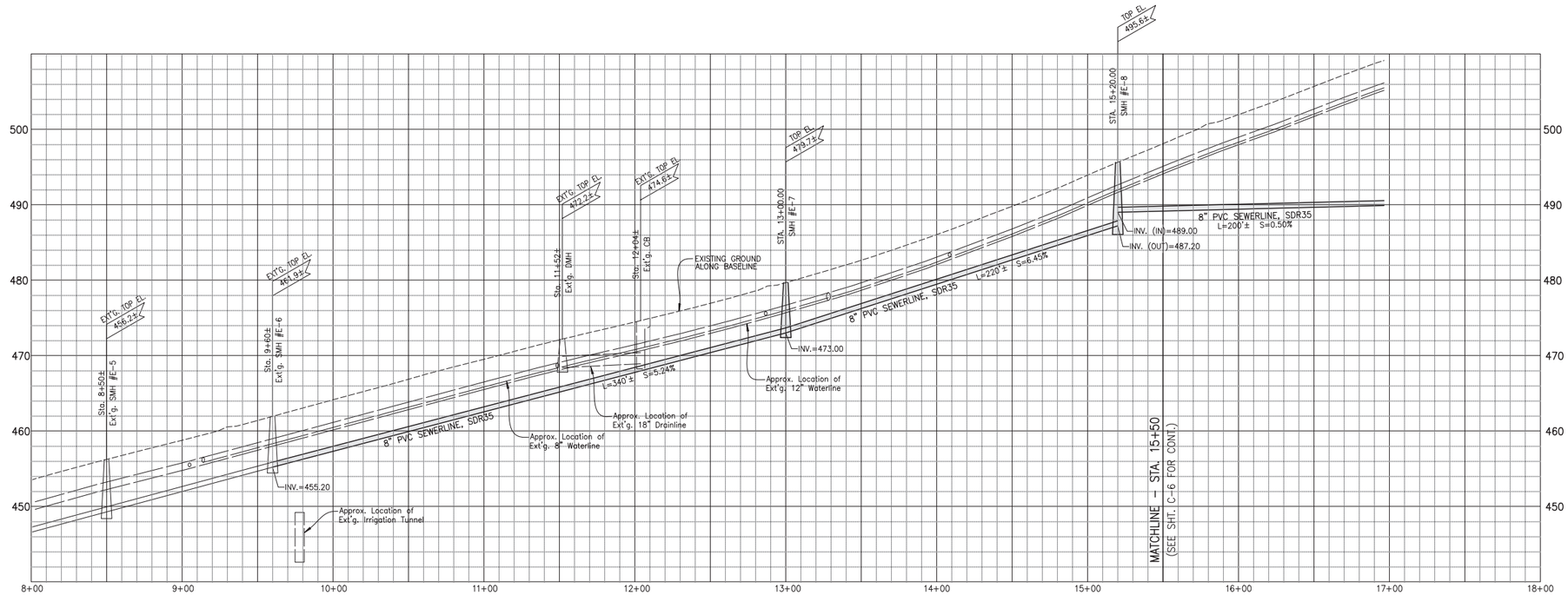
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE - WEST WAIKO ROAD

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

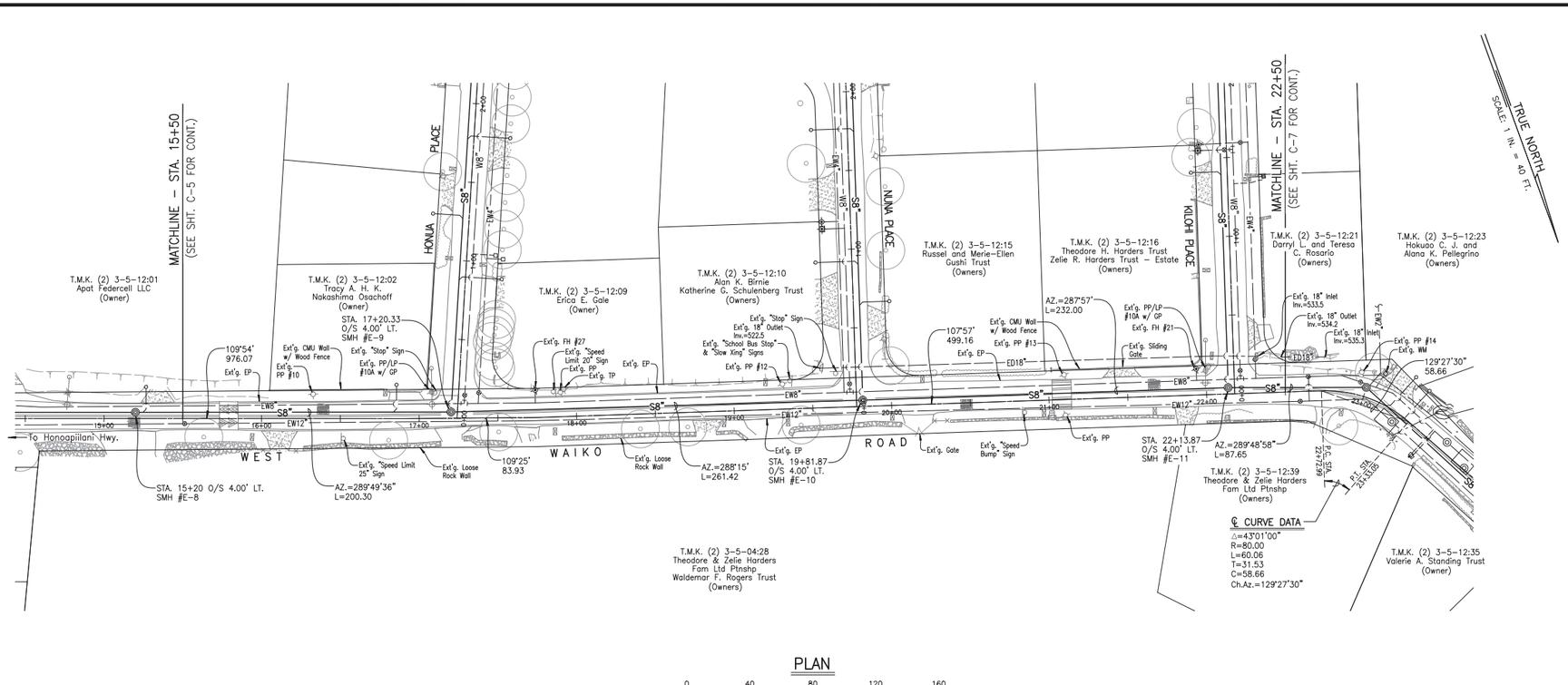
WAIKAPU, WAILUKU, MAUI, HAWAII

PLAN & PROFILE:
TITLE SEWERLINE - WEST WAIKO ROAD

DESIGNED BY: RMA	CHECKED BY: RMA	23040 JOB NUMBER	C-5 SHEET
DRAWN BY: KAO	APPROVED BY: RMA	Jan. 5, 2024 DATE	OF SHEETS
SCALE: 1 IN. = 40 FT.			

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

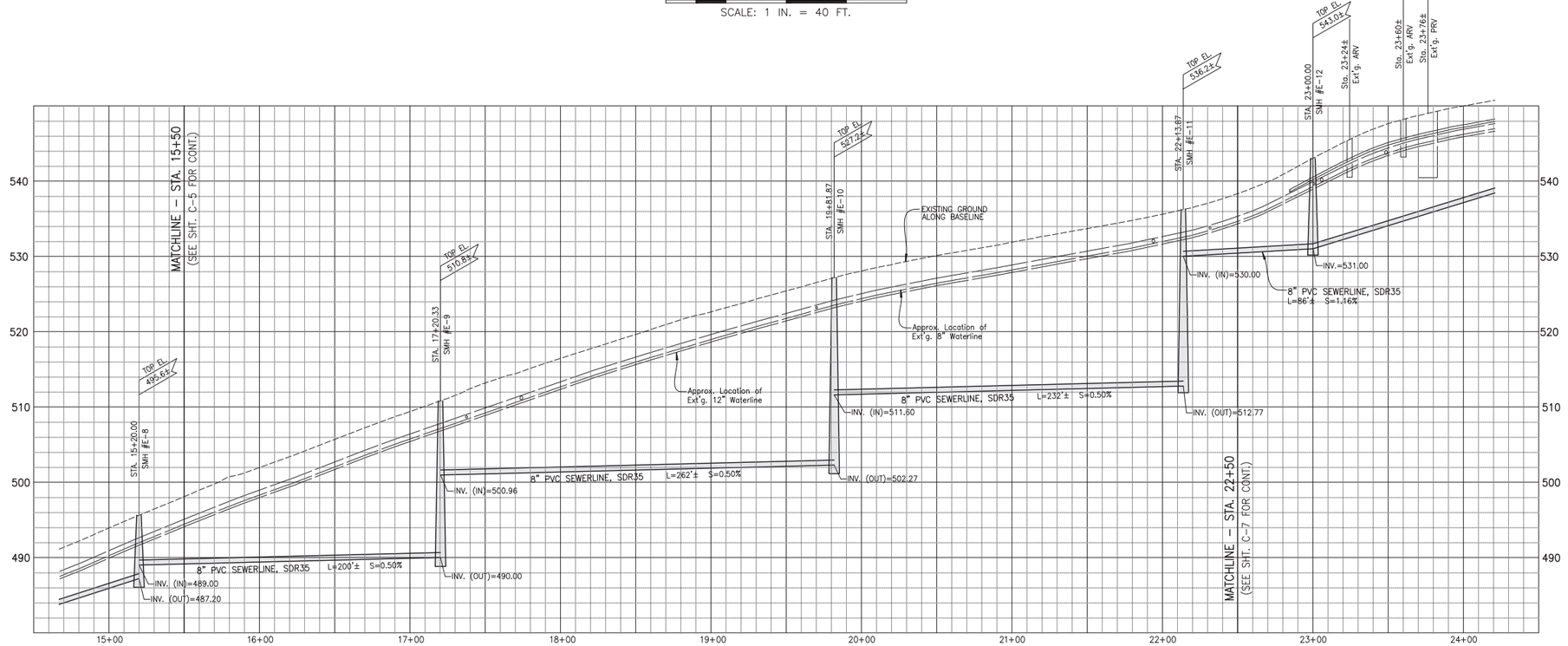
V:\Projdata\23PROJ\23040\dwg\conplans\PL-SL-WL-WAIKO-00.dwg



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



PROFILE – WEST WAIKO ROAD

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.



LOCATION MAP

SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" NEW SEWERLINE W/SIZE
- ES8" EXISTING SEWERLINE W/SIZE
- ED24" EXISTING DRAINLINE W/SIZE
- EW12" EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES

DRAFT

PROGRESS SET

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE License Expires: April 30, 2026 DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

LETTER	DESCRIPTION	DATE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

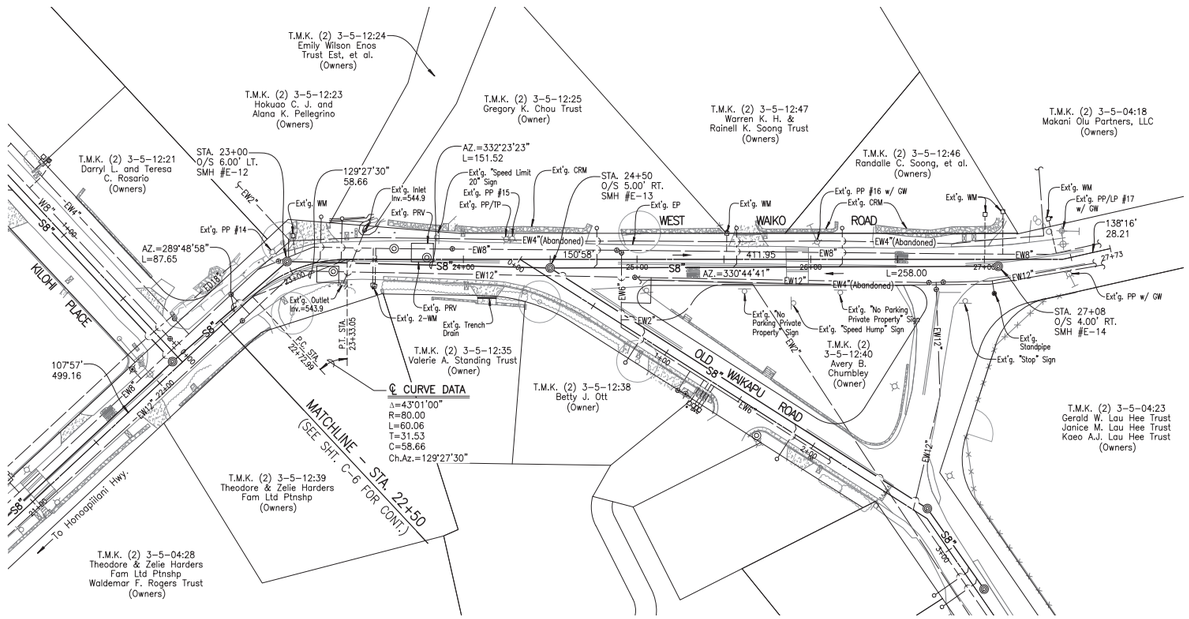
WAIKAPU, WAILUKU, MAUI, HAWAII

PLAN & PROFILE:
TITLE SEWERLINE – WEST WAIKO ROAD

RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-6 SHEET
KAO DRAWN BY	RMA APPROVED BY	Jan. 5, 2024 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

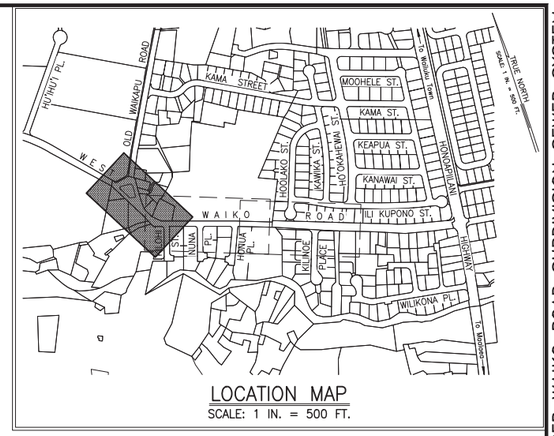
JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

V:\ Projdata \23PROJ\23040\dwg\conplans\PL-SL-WL-WAIKO-00.dwg



PLAN

SCALE: 1 IN. = 40 FT.



LOCATION MAP

SCALE: 1 IN. = 500 FT.

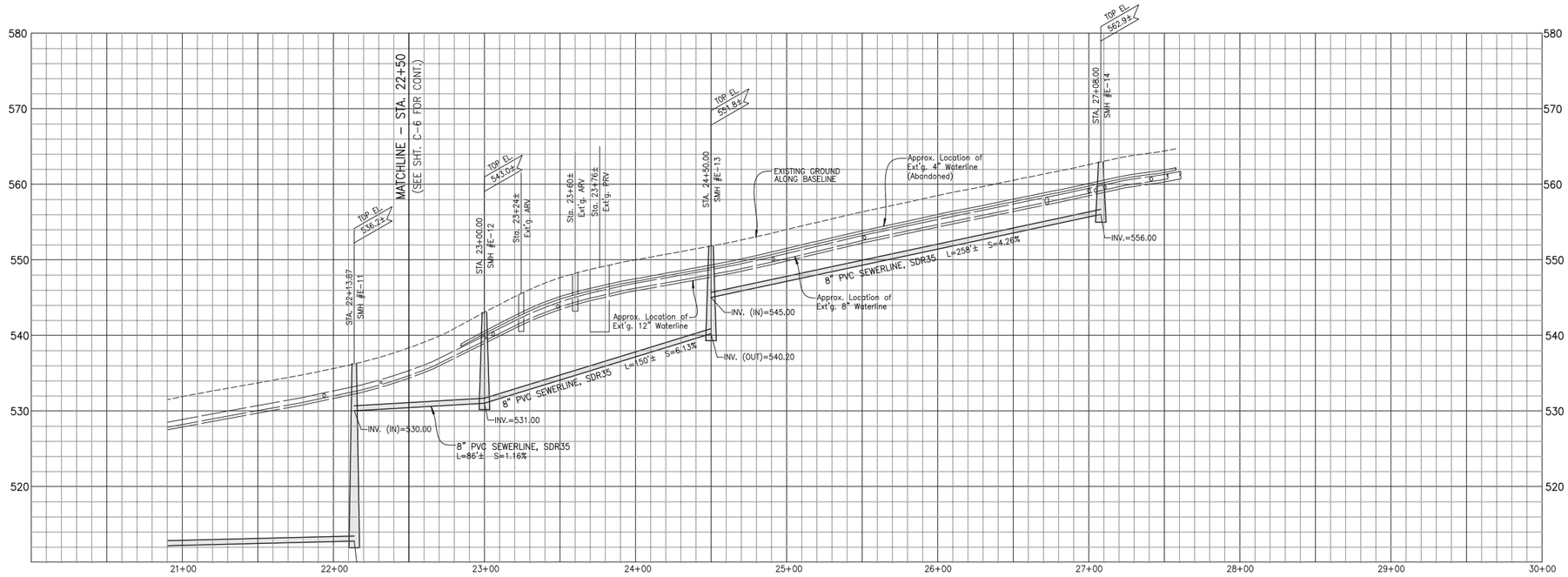
LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- SS" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT



PROFILE – WEST WAIKO ROAD

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

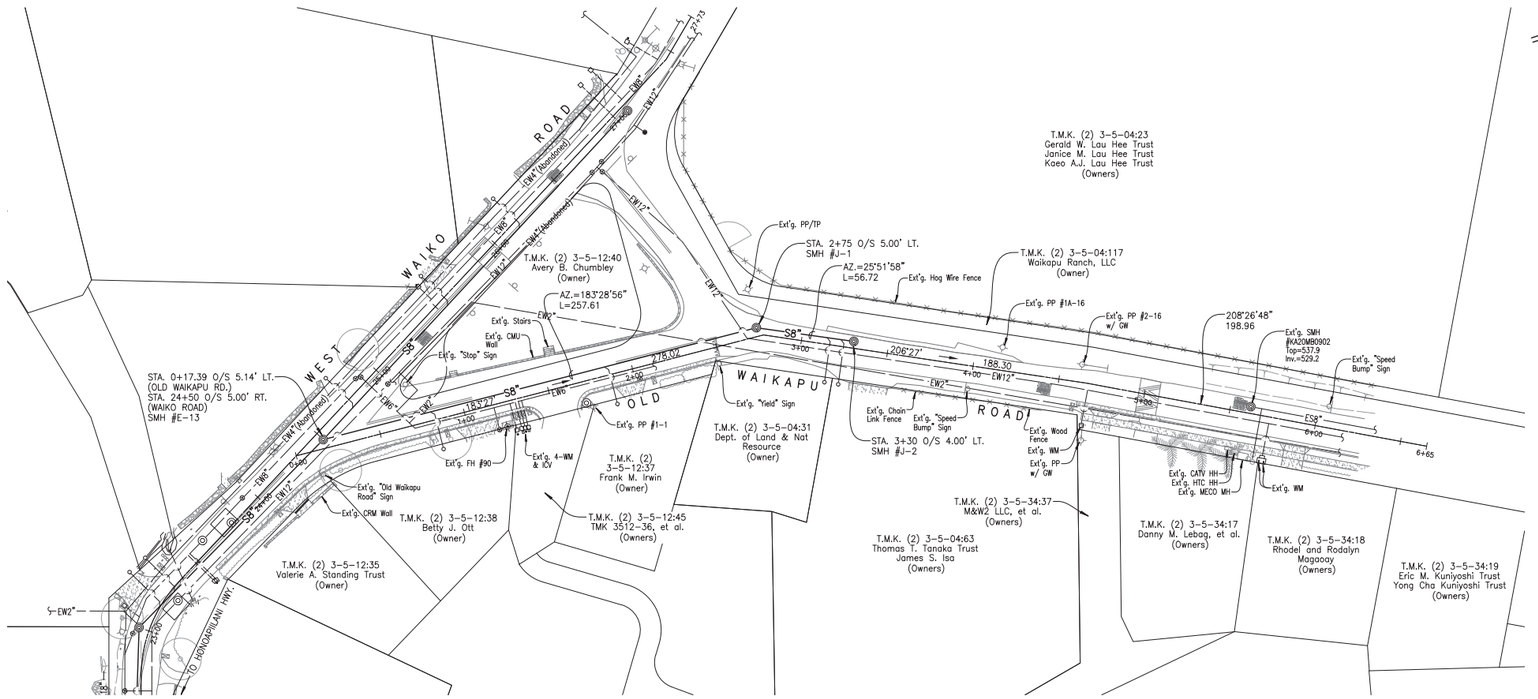
PLAN & PROFILE:

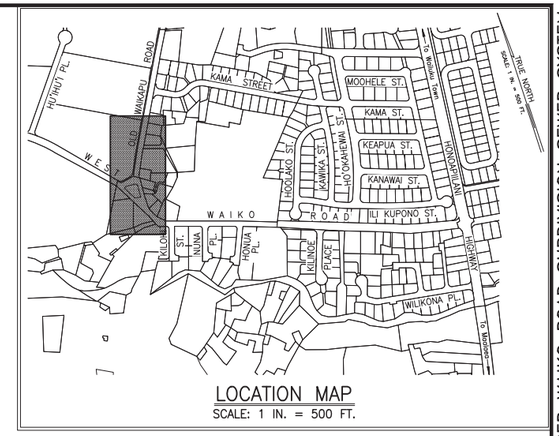
TITLE SEWERLINE – WEST WAIKO ROAD

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 23040	SHEET: C-7
DRAWN BY: KAO	APPROVED BY: RMA	DATE: Jan. 5, 2024	OF SHEETS
SCALE: 1 IN. = 40 FT.			

V:\Projdata\23PROJ\23040\dwg\conplans\PL-SL-WL-WAIKO-00.dwg

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT



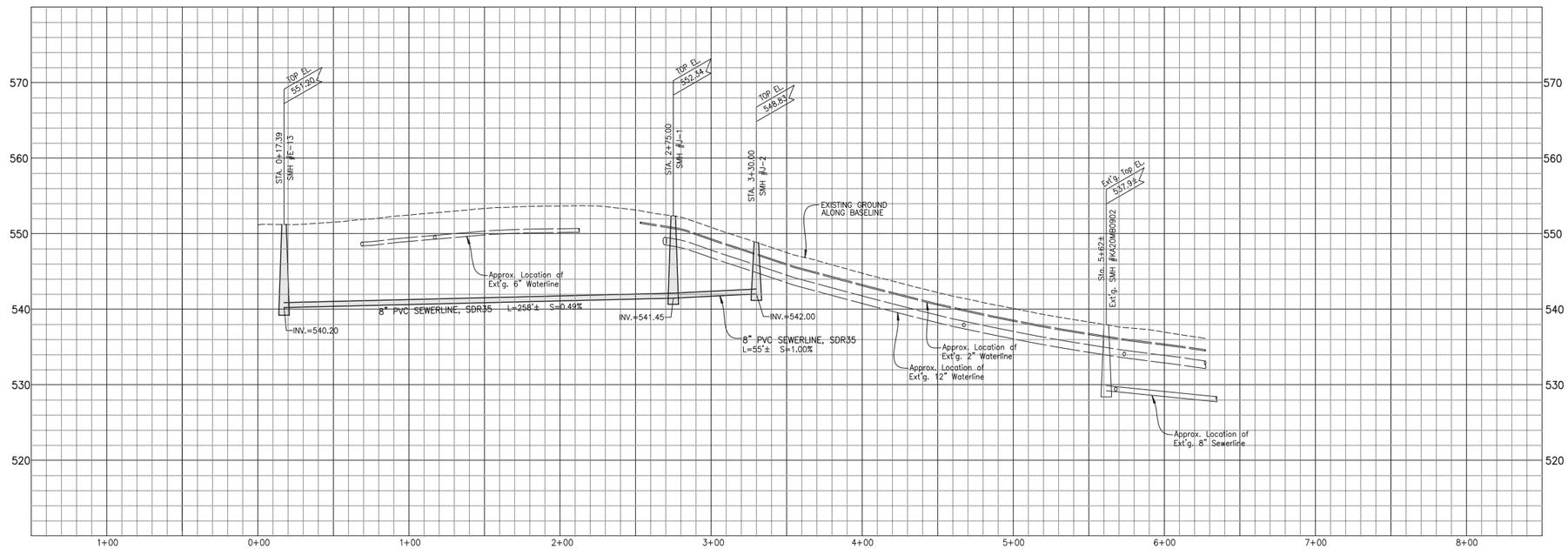


NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" NEW SEWERLINE W/SIZE
- ES8" EXISTING SEWERLINE W/SIZE
- ED24" EXISTING DRAINLINE W/SIZE
- EW12" EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE – OLD WAIKAPU ROAD

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT
PROGRESS SET

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.
License Expires: April 30, 2026
SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS".

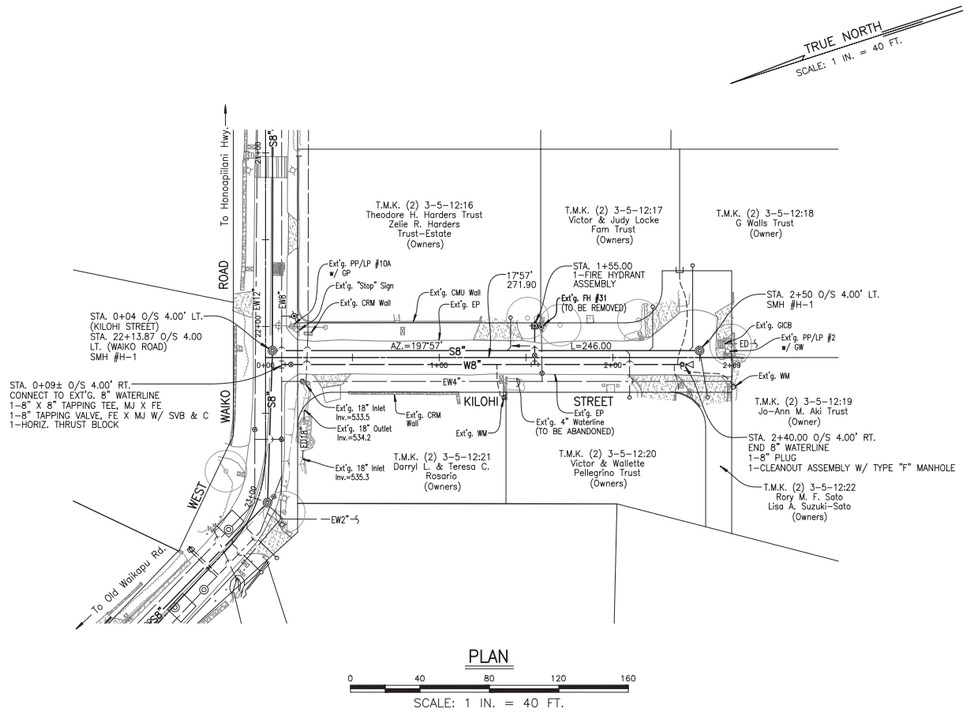
LETTER	DESCRIPTION	DATE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII
PLAN & PROFILE:
TITLE SEWERLINE – OLD WAIKAPU ROAD

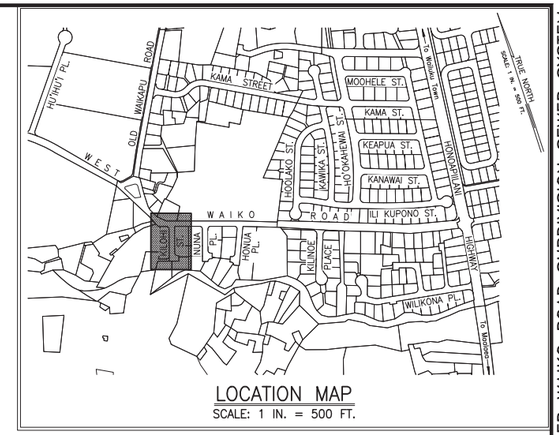
RMA DESIGNED BY	RMA CHECKED BY	23040 JOB NUMBER	C-8 SHEET
KAO DRAWN BY	RMA APPROVED BY	Jan. 5, 2024 DATE	OF SHEETS
SCALE 1 IN. = 40 FT.			

V:\Projects\23PROJ\23040\dwg\conplans\PL-SL-WL-00a.dwg



LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" — NEW SEWERLINE W/SIZE
- ES8" — EXISTING SEWERLINE W/SIZE
- ED24" — EXISTING DRAINLINE W/SIZE
- EW12" — EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES

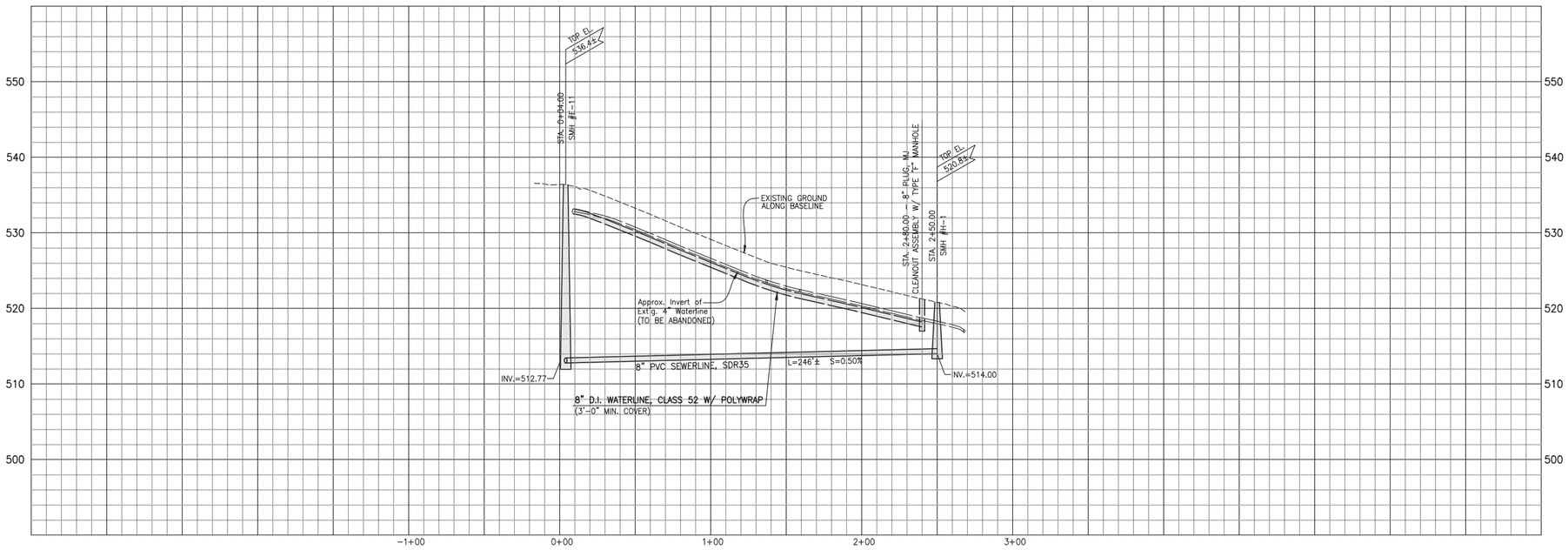


LOCATION MAP
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONSTRUCTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT



PROFILE – KILOHI PLACE
SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.
SIGNATURE — DATE — License Expires: April 30, 2026

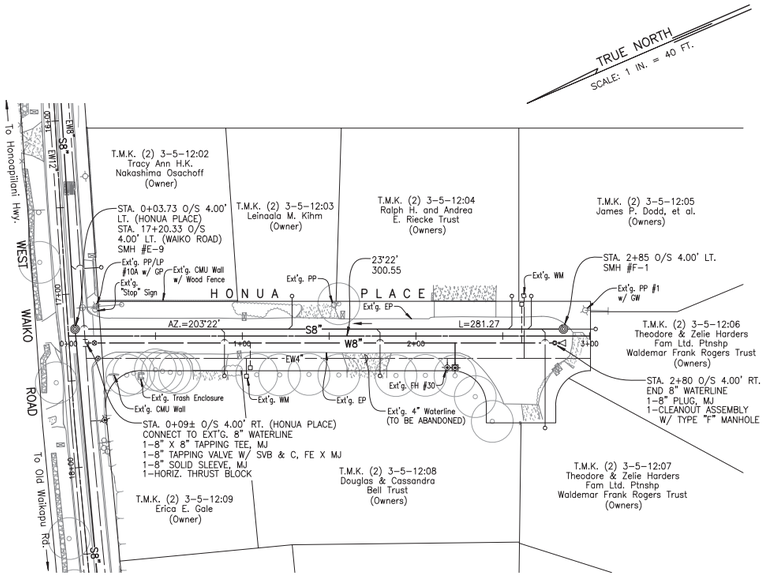
THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT
WAIKAPU, WAILUKU, MAUI, HAWAII
PLAN & PROFILE:
TITLE SEWERLINE & WATERLINE – KILOHI PLACE

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 23040	SHEET: C-9
DRAWN BY: KAO	APPROVED BY: RMA	DATE: Jan. 5, 2024	OF SHEETS
SCALE: 1 IN. = 40 FT.			

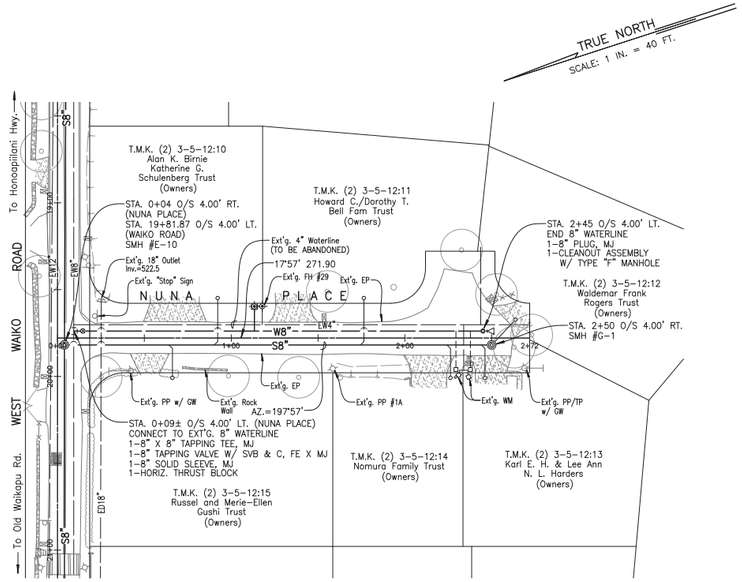
V:\Projdata\23PROJ\23040\dwg\conplans\PL-SL-WL-00.dwg



PLAN

0 40 80 120 160

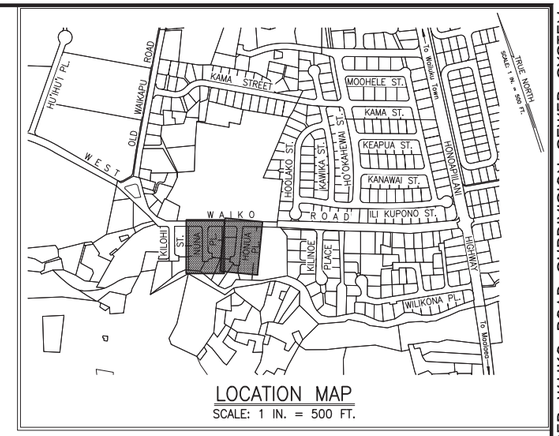
SCALE: 1 IN. = 40 FT.



PLAN

0 40 80 120 160

SCALE: 1 IN. = 40 FT.



LOCATION MAP

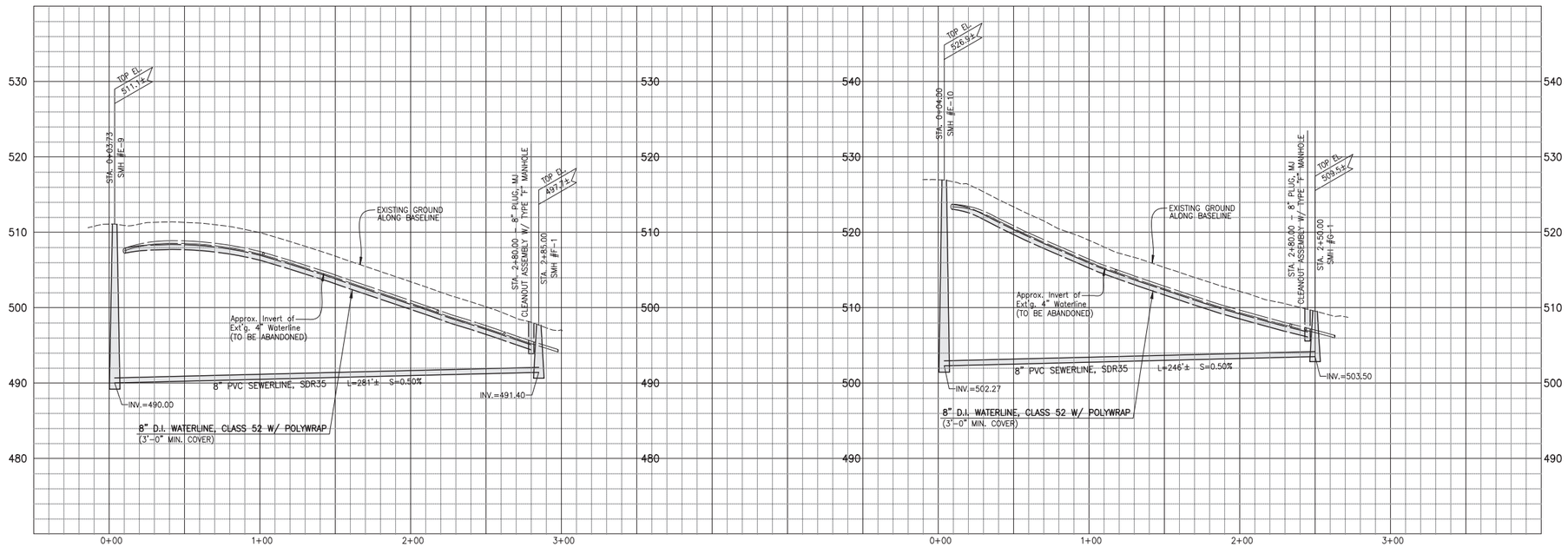
SCALE: 1 IN. = 500 FT.

NOTES:

1. LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES SHOWN ON PLAN ARE APPROXIMATE ONLY AND ARE BASED ON AVAILABLE CONSTRUCTION PLANS AND/OR VISIBLE FEATURES LOCATION DURING THE FIELD SURVEY. THE EXACT LOCATION AND EXTENT OF EXISTING UNDERGROUND UTILITIES ARE SUBJECT TO FIELD VERIFICATION.
2. CONTRACTOR SHALL CONFIRM LOCATION AND DEPTH OF EXISTING UTILITIES AT CONNECT OR CROSSING WITH NEW UTILITIES PRIOR TO COMMENCEMENT OF WORK. SHOULD ANY DISCREPANCIES OCCUR, CONTRACTOR SHALL IMMEDIATELY NOTIFY OWNERS REPRESENTATIVE BEFORE PROCEEDING WITH ANY FURTHER WORK.
3. THE DEPTHS AND LOCATION OF EXISTING UTILITY CROSSINGS SHOWN ON THE PROFILE ARE APPROXIMATE. CONTRACTOR SHALL EXERCISE INCREASED CAUTION DURING CONTRACTION ACTIVITIES TO PREVENT DAMAGE TO EXISTING UTILITY LATERALS. CONTRACTOR SHALL NOTIFY OWNERS REPRESENTATIVE IN ADVANCE IF ADEQUATE CLEARANCE AT WATERLINE/SEWER LATERAL CROSSINGS CANNOT BE PROVIDED.
4. CONTRACTOR SHALL EXERCISE DUE CAUTION WHEN WORKING CLOSE TO EXISTING POWER POLES AND OVERHEAD LINES AND SHALL CLOSELY COORDINATE ALL WORK WITH HAWAIIAN ELECTRIC CO. CONTRACTOR SHALL RELOCATE AND/OR ADJUST EXISTING POWER POLE AND/OR GUY WIRES AS REQUIRED TO THE SATISFACTION OF HECO AND COUNTY OF MAUI. CONTRACTOR SHALL BE RESPONSIBLE FOR IMPLEMENTING TEMPORARY BRACING FOR THE POWER POLE OR ANY OTHER MEASURES REQUIRED TO SAFELY STABILIZE THE POWER POLE. CONTRACTOR SHALL BE SOLELY RESPONSIBLE TO PAY FOR ANY COSTS RELATED TO TEMPORARY POLE BRACING, RELOCATION OF POLE ANCHORS/GUY WIRES, AND ANY COST TO DOCUMENT NEW OR REVISED EASEMENTS.
5. CONTRACTOR SHALL CONTACT HAWAIIAN ELECTRIC CO. IN ADVANCE WHEN WORKING WITHIN 10 FEET OF THE POWER POLES.
6. AT ALL SEWERLINE AND WATER SERVICE LINE OR WATERLINE CROSSINGS, WATER SERVICE LINE AND WATERLINE SHALL BE LOCATED ABOVE SEWERLINE AND MINIMUM VERTICAL CLEARANCE OF 18 INCHES IS NOT POSSIBLE, CONCRETE JACKET SEWERLINE AND MAINTAIN VERTICAL CLEARANCE OF 6 INCHES.

LEGEND:

- SEWER MANHOLE
- NEW SEWER SERVICE LATERAL
- S8" NEW SEWERLINE W/SIZE
- ES8" EXISTING SEWERLINE W/SIZE
- ED24" EXISTING DRAINLINE W/SIZE
- EW12" EXISTING WATERLINE W/SIZE
- EXISTING SEWER MANHOLE
- EXISTING WATER MANHOLE
- EXISTING DRAIN MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING FIRE HYDRANT
- EXISTING SIGN
- EXISTING POWER POLE W/GUYWIRE
- EXISTING CATCH BASIN
- EXISTING GUARDRAIL
- EXISTING FENCE
- EXISTING BANK
- EXISTING STREET MONUMENT
- EXISTING MAILBOX
- EXISTING SINGLE SERVICE WATER LATERAL
- EXISTING TREES



PROFILE – HONUA PLACE

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

PROFILE – NUNA PLACE

SCALE: HORIZ. 1 IN. = 40 FT.
VERT. 1 IN. = 8 FT.

DRAFT

PROGRESS SET

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

License Expires: April 30, 2026

SIGNATURE DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

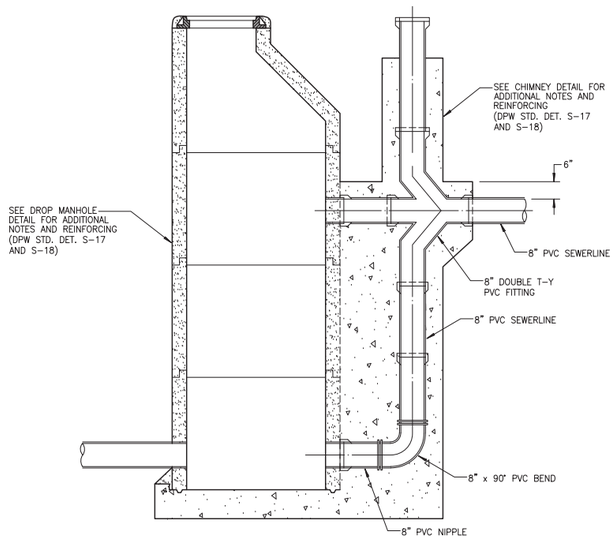
TITLE PLAN & PROFILE: SEWERLINE & WATERLINE – HONUA PLACE & NUNA PLACE

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 23040	SHEET: C-10
DRAWN BY: KAO	APPROVED BY: RMA	DATE: Jan. 5, 2024	OF SHEETS
SCALE: 1 IN. = 40 FT.			

LETTER	DESCRIPTION	DATE

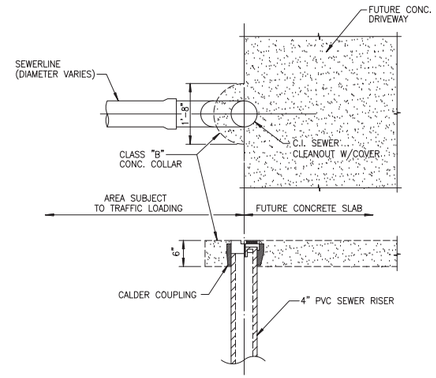
JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT

V:\Projdata\23PROJ\23040\dwg\conplans\PL-SL-WL-00.dwg



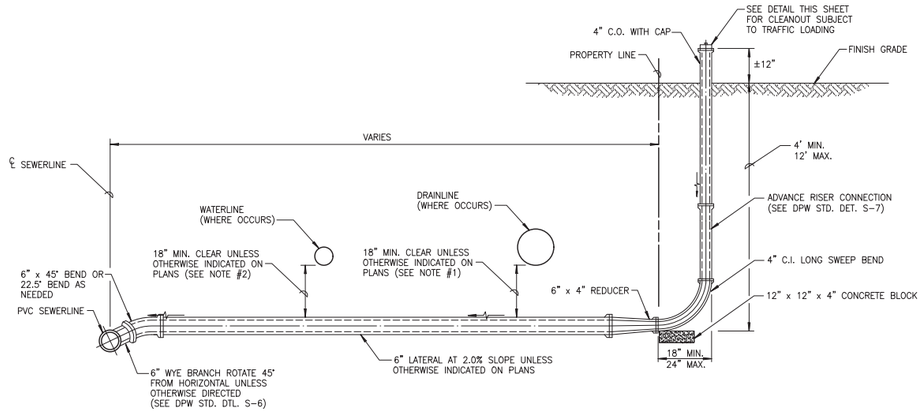
DETAIL – DROP SEWER MANHOLE W/ CHIMNEY FOR DROP BETWEEN 2 FEET AND 5 FEET

NOT TO SCALE



DETAIL – SEWER CLEANOUT TO GRADE (TRAFFIC-RATED)

NOT TO SCALE



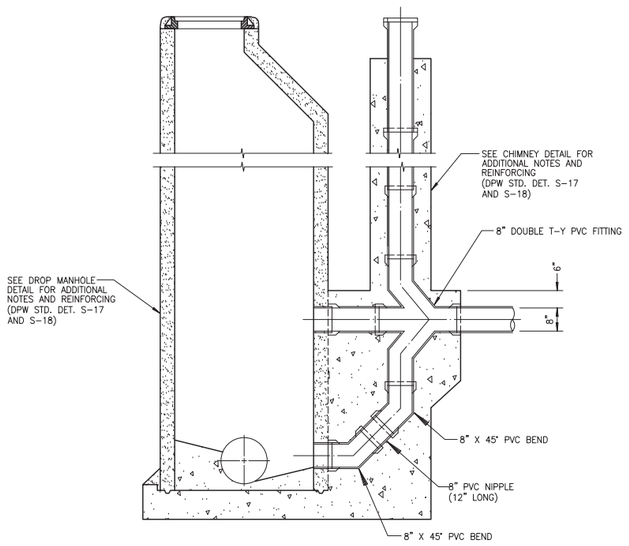
TYPICAL SEWER LATERAL DETAIL

SCALE: 1/2" = 1'-0"

NOTES:

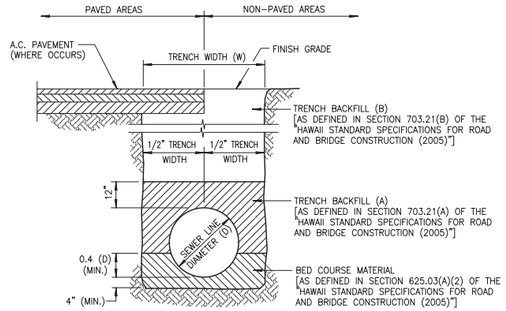
1. FOR ALL DRAINLINE AND SEWER LATERAL CROSSINGS, THE CONTRACTOR SHALL PROVIDE:
   A. REINFORCED CONCRETE JACKET ON SEWER LATERAL FOR VERTICAL CLEARANCE LESS THAN 1'-0"
   B. CONCRETE JACKET ON SEWER LATERAL FOR VERTICAL CLEARANCE GREATER THAN 1'-0" BUT LESS THAN 1'-6"
   BOTH TYPES OF CONCRETE JACKET SHALL BE 5'-0" LONG IF DRAINLINE IS 24" OR SMALLER AND I.D. + 5'-0" LONG IF DRAINLINE IS GREATER THAN 24".
2. FOR ALL WATERLINE AND SEWER LATERAL CROSSINGS THE CONTRACTOR SHALL PROVIDE A 10'-0" LONG REINFORCED CONCRETE JACKET ON THE SEWER LATERAL FOR VERTICAL CLEARANCE LESS THAN 18".
3. CONTRACTOR SHALL VERIFY CROSSINGS WITH UTILITY MAINS PRIOR TO INSTALLATION OF LATERALS.

JOB NO. WW23-08 UPPER WAIKO ROAD SUBDIVISION SEWER SYSTEM
DWS JOB NO. 24-03A WAIKAPU WATERLINE PROJECT



DETAIL – SHALLOW DROP SEWER MANHOLE W/ CHIMNEY

NOT TO SCALE



NOTES:

1. TRENCH BACKFILL AND BED COURSE MATERIAL SHALL CONFORM TO SECTION 703 "AGGREGATES" OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
2. INSTALLATION OF SEWERLINES SHALL CONFORM TO SECTION 625, "SEWER SYSTEM" OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
3. TRENCH WIDTHS SHALL CONFORM TO TABLE 625.03-1 OF THE "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)."
4. LOADS IMPOSED BY CONSTRUCTION VEHICLES WITH AXLE LOADS IN EXCESS OF THE AASHTO HS-20-44 VEHICLE (32,000 LBS./AXLE) SHOULD BE MINIMIZED BY DESIGNATED CONSTRUCTION VEHICLE CROSSINGS. ADDITIONAL FILL SHOULD BE PLACED OVER THE SEWERLINES AT THE DESIGNATED CONSTRUCTION VEHICLE CROSSINGS IN STRICT ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS, OR STRUTTING TO SUPPORT THE PIPE SHOULD BE PLACED IN ACCORDANCE WITH THE CURRENT "HAWAII STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2005)." ALL SEWERLINES DAMAGED BY CONSTRUCTION VEHICLE LOADING SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

TYPICAL TRENCH SECTION PVC SEWERLINE

NOT TO SCALE

w:\details\dets\tmx0104.dwg

STANDARD SEWER DETAILS

THE FOLLOWING DETAILS SHOWN IN THE MAUI COUNTY DEPT. OF PUBLIC WORKS "STANDARD DETAILS FOR PUBLIC WORKS CONSTRUCTION", SEPTEMBER 1984 (AS AMENDED), ARE SPECIFICALLY REFERENCED WITHIN THESE PLANS AND SHALL BE CONSIDERED PART OF THE CONSTRUCTION DRAWINGS. (THIS SHALL NOT BE CONSTRUED TO RELIEVE THE CONTRACTOR FROM COMPLYING WITH ALL APPLICABLE STANDARDS OF THE DEPT. OF ENVIRONMENTAL MANAGEMENT, WASTEWATER RECLAMATION DIVISION).

PLATE	CONTENTS
S-5	CONCRETE JACKET
S-6	LATERALS
S-7	ADVANCE RISER CONNECTION
S-13	PRE-CAST CONCRETE PLAIN MANHOLE
S-17	PRE-CAST DROP MANHOLE
S-18	PRE-CAST CONCRETE DROP MANHOLE-SECTIONS
S-22	PRE-CAST CONCRETE ECCENTRIC MANHOLE CONE

DRAFT
PROGRESS SET

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE — License Expires: April 30, 2026 — DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

LETTER	DESCRIPTION	DATE

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

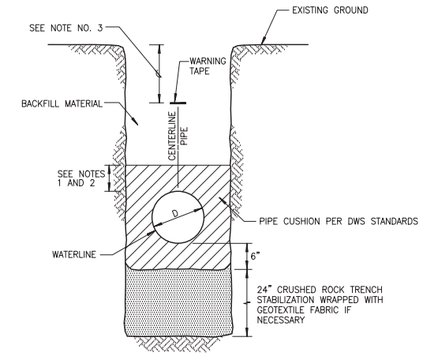
TITLE SEWER DETAILS

RMA	DESIGNED BY	RMA	CHECKED BY
KAO	DRAWN BY	RMA	APPROVED BY
AS NOTED	SCALE	Jan. 5, 2024	DATE

23040 JOB NUMBER

C-11 SHEET OF SHEETS

V:\Projdata\23PROJ\23040\dwg\conplans\det-sewer-00.dwg



TYPICAL WATERLINE TRENCH SECTION (PER DWS STD. DET. P10)

NOT TO SCALE

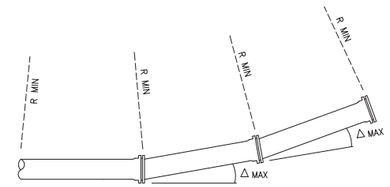
NOTES:

1. 12" OF CUSHION MATERIAL SHALL BE PLACED OVER THE TOP OF PIPE FOR PIPES 16" OR LARGER. 6" CUSHION MATERIAL SHALL BE PLACED OVER THE TOP OF PIPE FOR PIPES 12" OR SMALLER AT LOCATIONS WHERE INVERT IS ABOVE 4-FOOT ELEVATION.
2. 12" OF CUSHION MATERIAL FOR ALL PIPE SIZES AT LOCATIONS WHERE THE INVERT IS AT OR BELOW THE 4-FOOT ELEVATION.
3. WARNING TAPE SHALL BE INSTALLED OVER THE CENTERLINE OF PIPES, BENDS, AND FITTINGS AT DEPTH OF 12" BELOW THE FINISHED GRADE OR DIRECTLY BELOW THE PAVEMENT STRUCTURE.
4. WHEN TRENCHING ACROSS EXISTING SIDEWALK, CONTRACTOR SHALL SAW CUT AT EXISTING SCORELINES AND REMOVE ALL SIDEWALK PANELS AFFECTED BY TRENCH.

STANDARD WATER DETAILS

THE FOLLOWING DETAILS AS SHOWN ON "APPROVED MATERIAL LIST AND STANDARD DETAILS FOR WATER SYSTEM CONSTRUCTION, STATE OF HAWAII, 2002", ARE SPECIFICALLY REFERENCED WITHIN THESE PLANS AND SHALL BE CONSIDERED PART OF THE CONSTRUCTION DRAWINGS. (THIS SHALL NOT BE CONSTRUED TO RELIEVE CONTRACTOR FROM COMPLYING WITH ALL PERTINENT PARTS OF THE AFOREMENTIONED LIST, STANDARD DETAILS AND STANDARDS.)

PLATE	CONTENTS
B1	REINFORCED CONCRETE JACKET – TYPICAL DETAIL
B2–B4	HORIZONTAL REACTION BLOCKS
B6–B8	TOP VERTICAL THRUST BLOCKS
FH6–FH9	FIRE HYDRANT CONNECTION
L25–L26, REV. 2021	SINGLE SERVICE LATERAL (TYPE "A", 5/8" METER)
L27–L28, REV. 2003	DOUBLE SERVICE LATERAL (TYPE "A-1", 5/8" METERS)
P10	TRENCH BACKFILL
V4	AIR RELIEF VALVE CONNECTION
V12	SLIDING VALVE BOX ASSEMBLY
V21	CLEANOUT
V23, REV. 2018	ARV INSTALLATION TYPE "F" MANHOLE



NOTES:

1. CONTRACTOR SHALL LIMIT FULL LENGTH DEFLECTIONS (Δ MAX) FOR PUSH-ON TYPE JOINT & MECHANICAL JOINT PIPES TO 50% OF THE MAXIMUM ALLOWABLE DEFLECTIONS SPECIFIED BY THE MANUFACTURER, OR THE VALUES SPECIFIED AS FOLLOWS, WHICHEVER IS LESS :

SIZE OF PIPE	Δ MAX	O/S PER 18' LENGTH
12" & LESS	2° 30'	10"

DETAIL – HORIZ. & VERT. PIPE DEFELCTION

NOT TO SCALE

DRAFT
PROGRESS SET

LETTER	DESCRIPTION	DATE

REED M. ARIYOSHI
LICENSED PROFESSIONAL ENGINEER
NO. 5465-C
HAWAII, U.S.A.

SIGNATURE License Expires: April 30, 2026 DATE

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT WILL BE UNDER MY OBSERVATION "AS DEFINED IN SECTION 16-115-2 OF THE HAWAII ADMINISTRATIVE RULES FOR PROFESSIONAL ENGINEERS, ARCHITECTS, LAND SURVEYORS AND LANDSCAPE ARCHITECTS"

WARREN S. UNEMORI ENGINEERING, INC.
CIVIL & STRUCTURAL ENGINEERS/LAND SURVEYORS
WELLS STREET PROFESSIONAL CENTER, SUITE 403
2145 WELLS STREET, WAILUKU, MAUI, HAWAII 96793

UPPER WAIKO ROAD SEWER EXTENSION / WAIKAPU WATERLINE PROJECT

WAIKAPU, WAILUKU, MAUI, HAWAII

TITLE WATER DETAILS

DESIGNED BY: RMA	CHECKED BY: RMA	JOB NUMBER: 23040	SHEET: C-12
DRAWN BY: KAO	APPROVED BY: RMA		
SCALE: AS SHOWN		DATE: Jan. 5, 2024	OF SHEETS

V:\Projdata\23PROJ\23040\dwg\conplans\set-water-00.dwg

2021 BIOLOGICAL RESOURCES SURVEY

APPENDIX C-1

BIOLOGICAL RESOURCES SURVEY

for the

WAIKŌ ROAD SUBDIVISION SEWER SYSTEM PROJECT

WAIKAPŪ, MAUI

by

ROBERT W. HOBDY
ENVIRONMENTAL CONSULTANT
Kokomo, Maui
May 2021

Prepared for:
County of Maui
Department of Environmental Management

BIOLOGICAL RESOURCES SURVEY
WAIKŌ ROAD SUBDIVISION SEWER SYSTEM PROJECT
WAIKAPŪ, MAUI

INTRODUCTION

The Waikō Road Subdivision Sewer System Project lies along roadways on the west side of Honoapi`ilani Highway in Waikapū Town in Central Maui. This biological survey was initiated for the County of Maui in compliance with environmental requirements of the planning process.

SITE DESCRIPTION

The project corridor lies along portions of Honoapi`ilani Highway and West Waikō Road and the entire lengths of Wilikona Place, Keilio Place and Kemoa Place. These roadways include asphalt road surfaces as well as vegetated narrow road borders extending to private property boundaries within this dense residential community. Vegetation consists mostly of roadside grasses, ornamental plantings and weeds. Soils are characterized as Iao clay, 3-7% slopes and Iao Cobbly Silty clay, 3-7% slopes both of which are deep, well-drained alluvial soils (Foote et al, 1972). Rainfall averages between 25 and 30 inches per year (Armstrong, 1983).

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Waikō Road Subdivision Sewer System Project which was conducted in May 2021. The objectives of the survey were to:

1. Document what plant and animal species may occur on the property or may likely occur in the existing habitat.

2. Determine the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.

4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

FLORA SURVEY REPORT

SURVEY METHODS

A walk-through flora survey method was used following the proposed roadway corridor. Notes were made on plant species, distribution and abundance. A special effort was made to identify any native Hawaiian species and any of these that may be federally Endangered or Threatened plants (U.S.F.W.S. 2021) requiring special consideration.

DESCRIPTION OF THE VEGETATION

The vegetation on the borders of the road varied between manicured grasses with some ornamental shrubs or small trees, some unmanaged sections that are occasionally mowed, and some areas that were totally unmaintained. A total of 45 plant species were recorded during the survey. These included nine species of grasses, twenty-one ornamental species of shrubs and small trees, and fifteen species of hardy roadside weeds.

One species was common, Guinea grass (*Megathyrsus maximus*). Another nine species were uncommon: Manila palm (*Veichia merrillii*), centipede grass (*Eremochloa ophiuroides*), reticulate false eranthemum (*Pseuderanthemum carruthersii* var. *reticulatum*), straggler daisey (*Calyptocarpus vialis*), koa haole (*Leucaena leucocephala*), cheeseweed (*Malva parviflora*), false mallow (*Malvastrum coromandelianum*), bracted fanpetals (*Sida ciliaris*), and bougainvillea (*bougainvillea spectabilis*). Thirty-five plant species were of rare occurrence.

One common native tree, kou (*Cordia subcordata*), was found to have been planted as an ornamental flowering specimen.

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project corridor is comprised almost entirely of non-native species that are of no special interest or conservation concern. The one indigenous Hawaiian plant species, the kou tree, is common throughout Hawaii and is of no particular conservation concern.

No federally Endangered or Threatened plant species (USFWS 2021) were found in the project area, nor were any found that are candidates for such status. No special plant habitats were found here either. No Wetlands as defined by the U.S. Army Corps of Engineers occur on or near the project area.

Because of the above existing conditions there is little of botanical concern, with regards to the project area, and the proposed project is not expected to have a significant negative impact on the botanical resources in this part of Maui. No recommendations regarding the flora on this project area are deemed necessary or appropriate.

FLORA SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner et al. (1999) and Staples & Herbst (2005).

For each species, the following information is provided:

1. Scientific name with author citation.

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

   Polynesian = all those plants brought to Hawaii by the Polynesians during the course of their migrations.

   non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

   abundant = forming a major part of the vegetation within the project area.

   common = widely scattered throughout the area or locally abundant within a portion of it.

   uncommon = scattered sparsely throughout the area or occurring in a few small patches.

   rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
ARECACEAE (Palm Family)			
Hyophorbe lagenicaulis (Bailey) Moore	bottle palm	non-native	rare
Veitchia merrillii (Becc.) Moore	Manila palm	non-native	uncommon
Wodyetia bifurcata A.K. Irvine	foxtail palm	non-native	rare
CYPERACEAE (Sedge Family)			
Cyperus gracilis R. Brown	McCoy sedge	non-native	rare
POACEAE (Grass Family)			
Bothriochloa pertusa (L.) A Camus	pitted beardgrass	non-native	rare
Cenchrus ciliaris L.	buffelgrass	non-native	rare
Chloris barbata (L.) Sw.	swollen fingergrass	non-native	rare
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	rare
Eleusine indica (L.) Gaertn.	wiregrass	non-native	rare
Eragrostis pectinacea L.	Carolina lovegrass	non-native	rare
Eremochloa ophiuroides (Munro) Hackel	centipede grass	non-native	uncommon
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	common
Stenotaphrum secundatum (Walter) Kuntze	St. Augustine grass	non-native	rare
STRELITZIACEAE (Bird of paradise Family)			
Strelitzia reginae Dryander	bird-of-paradise	non-native	rare
DICOTS			
ACANTHACEAE (Acanthus Family)			
Barleria repens Nees	pink ruellia	non-native	rare
Pseuderanthemum carruthersii (Seem.) Guille var. *atropurpureum*	purple	non-native	rare
Pseuderanthemum carruthersii (Seem.) Guille var. *reticulatum*	yellow-veined	non-native	uncommon
ANACARDIACEAE (Mango Family)			
Schinus terebinthifolius Raddi	Christmas berry	non-native	rare
APOCYNACEAE (Dogbane Family)			
Catharanthus roseus (L.) G. Don	periwinkle	non-native	rare
Plumeria obtusa L.	Singapore plumeria	non-native	rare
Plumeria rubra	temple plumeria	non-native	rare
ASTERACEAE (Sunflower Family)			
Calyptocarpus vialis Less.	straggler daisy	non-native	uncommon
Sonchus oleraceus L.	pualele	non-native	rare
Tridax procumbens L.	coat buttons	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
BORAGINACEAE (Borage Family)			
Cordia subcordata Lam.	kou	indigenous	rare
Heliotropium amplexicaule Vahl.	summer heliotrope	non-native	rare
CLUSIACEAE (Mangosteen Family)			
Clusia rosea Jacq.	autograph tree	non-native	rare
CONVOLVULACEAE (Morning Glory Family)			
Ipomoea obscura (L.) Ker-Gawl.	obscure morning glory	non-native	rare
CUCURBITACEAE (Gourd Family)			
Momordica charantia L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)			
Codiaeum variegatum (L.) Blume	croton	non-native	rare
Euphorbia hirta L.	hairy spurge	non-native	rare
FABACEAE (Pea Family)			
Cajanus cajan (L.) Huth	pigeon pea	non-native	rare
Lablab purpureus (L.) Sweet	pāpapa bean	non-native	rare
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	uncommon
LAURACEAE (Laurel Family)			
Persea americana Mill.	avocado	non-native	rare
MALVACEAE (Mallow Family)			
Hibiscus rosa-sinensis L.	Chinese red hibiscus	non-native	rare
Malva parviflora L.	cheese weed	non-native	rare
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	uncommon
Sida ciliaris L.	bracted fanpetals	non-native	uncommon
MYRTACEAE (Myrtle Family)			
Syzygium cumini (L.) Skeels	Java plum	non-native	rare
NYCTAGINACEAE (Four-o'clock Family)			
Bougainvillea spectabilis Willd.	bougainvillea	non-native	uncommon
PHYLLANTHACEAE (Phyllanthus Family)			
Breynia disticha J.R. & G. Forster	snowbush	non-native	rare
PLUMBAGINACEAE (Leadwort Family)			
Plumbago auriculata Lam.	blue plumbago	non-native	rare
RUTACEAE (Citrus Family)			
Murraya paniculata (L.) W. Jack	mock orange	non-native	uncommon
SAPINDACEAE (Soapberry Family)			
Harpulia pendula F. Mueller	tulipwood	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the flora survey. All parts of the project area within the corridor were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities, and location as well as observations of trails, tracks, scat and signs of feeding. In addition, an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Endangered `Ōpe`ape`a or Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

No mammal species were observed during the survey.

While not seen during the survey, rats (Rattus spp.) mice (*Mus domesticus*), domestic cats (*Felis catus*) and domestic dogs (*Canis familiaris*) would be expected to occur on the project area. Rats and mice feed on fruits, seeds and herbaceous vegetation, while cats and mongoose would hunt for these rodents and birds. Taxonomy and nomenclature follow Tomich (1986).

A special effort was made to detect any occurrence of the Hawaiian hoary bat by conducting an evening survey at two locations in the area. A bat detecting device (Batbox IIID) was employed, set to the frequency of 27,000 Hertz that these bats are known to use when echolocating for flying nocturnal insects. No bats were detected with the use of this device.

BIRDS

Birds were very uncommon in both species diversity as well as in total numbers within this dense residential community. Just three non-native species were observed during two site visits. Taxonomy and nomenclature follow American Ornithological Society (2021). The house sparrow (*Passer domesticus*), the common myna (*Acridotheres tristis*) and the zebra dove (*Geopelia striata*) were all of uncommon occurrence. A few other non-native species such as the house finch (*Haemorhous mexicanus*), northern cardinal (*Cardinalis cardinalis*) and Japanese white-eye (*Zosterops japonicus*) might occasionally be seen in the project area, but the habitat is unsuitable for any native forest birds, waterbirds, seabirds or nēnē geese.

INSECTS

Insect species were seen only in very small numbers in the project area. Taxonomy and nomenclature follow Nishida et al (1992). The cabbage butterfly (*Pieris rapae*) was uncommon and the sleepy orange butterfly (*Eurema niccipe*) was rare. No other insects were seen, including any native insect species.

DISCUSSION AND RECOMMENDATIONS

The fauna occurring within the project area was very sparse and included only non-native species that are of no environmental concern. No endangered or threatened fauna were recorded here and none are likely int his habitat.

The proposed project is not expected to have a significant negative impact on the fauna resources in this part of Maui. No recommendations regarding the fauna resources are deemed necessary.

FAUNA SPECIES LIST

Following is a checklist of the fauna species inventoried during the field work. Species are arranged in descending abundance within two groups: Birds and Insects. For each species the following information is provided:

1. Common name.

2. Scientific name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and also to one or more other geographic area(s).

   non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

   migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii, the migratory birds are usually in the overwintering/non- breeding phase of their life cycle.

4. Abundance of each species within the project area:

   abundant = many flocks or individuals seen throughout the area at all times of day.

   common = a few flocks or well scattered individuals throughout the area.

   uncommon = only one flock or several individuals seen within the project area.

   rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MAMMALS			
None			
BIRDS			
COLUMBIDAE (Dove Family)			
Geopelia striata L.	zebra dove	non-native	uncommon
PASSERIDAE (Sparrow Family)			
Passer domesticus L.	house sparrow	non-native	uncommon
STURNIDAE (Starling Family)			
Acridotheres tristis L.	common myna	non-native	uncommon
INSECTS			
Order LEPIDOPTERA - butterflies, moths			
PIERIDAE (White and Sulphur Butterfly Family)			
Eurema niccipe Cramer	sleepy orange butterfly	non-native	rare
Pieris rapae L.	cabbage butterfly	non-native	uncommon

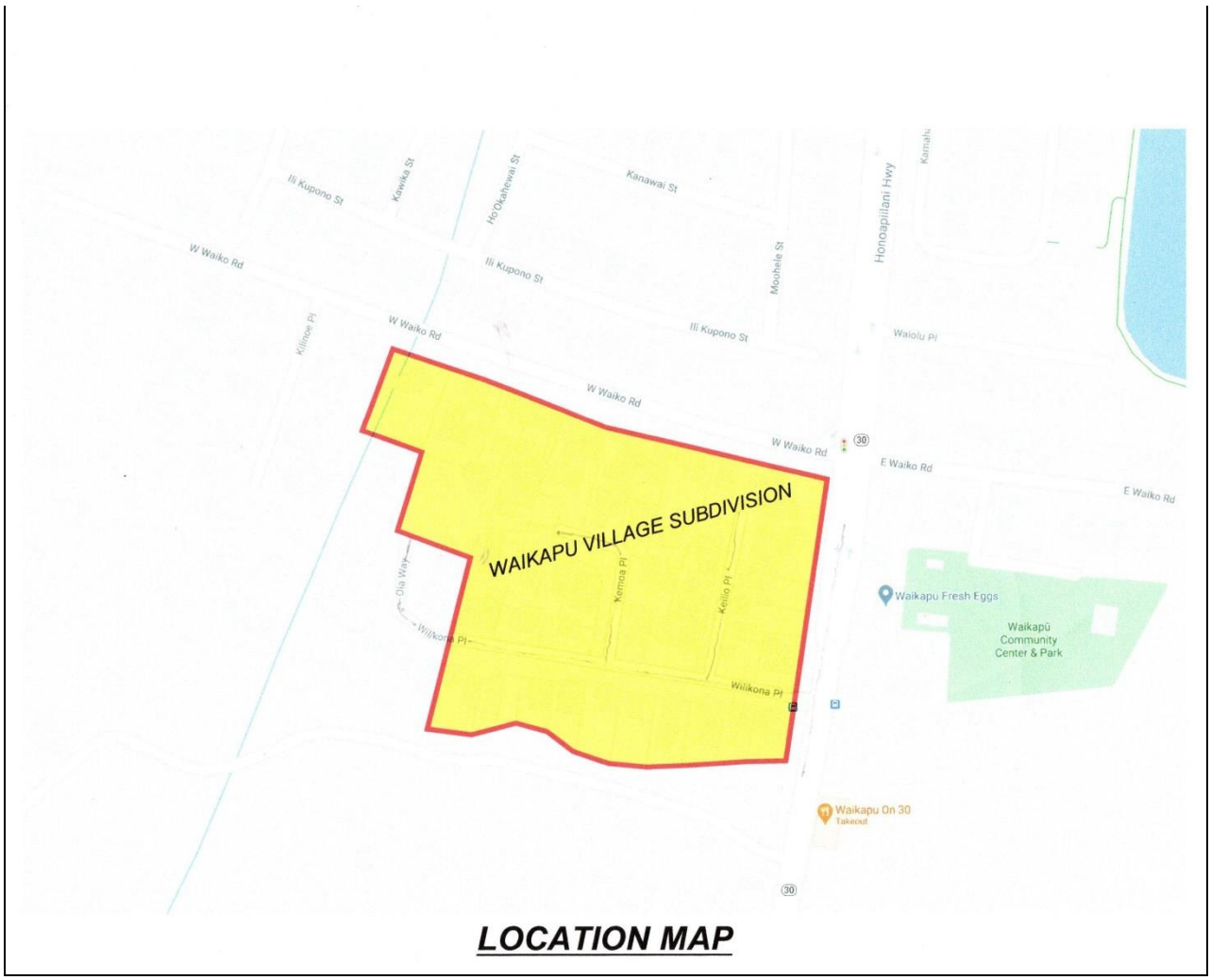


Figure 1. Waikō Road Subdivision Sewer System Project

Literature Cited

American Ornithological Society, 2021. Checklist of North American Birds. 7th edition. American Ornithological Society. Washington D.C.

Armstrong, R. W. (ed.), 1983. Atlas of Hawaii. (2nd. ed.) University of Hawaii Press.

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens, 1972. Soil survey of the islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. U.S. Dept. of Agriculture, Soil Conservation Service. Washington, D.C.

Nishida, G.M., G.A. Samuelson, J.S. Strazanac, K.S. Kami, 1992. Hawaiian Terrestrial Anthropod Checklist. Hawaiian Biological Survey.

Staples, G.W. and D.R. Herbst, 2005. A Tropical Garden Flora, Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press.

Tomich, P.Q. 1986. Mammals in Hawaii. Bishop Museum Press, Honolulu.

U.S. Fish and Wildlife Service, 2021. Endangered and Threatened Wildlife and Plants. Listings and Occurrences for Hawaii. www.fws.gov/endangered

Wagner, W. L., D.R. Herbst, and S. H. Sohmer, 1999. Manual of the Flowering Plants of Hawaii. University of Hawaii Press and Bishop Museum Press. Honolulu.

2022 BIOLOGICAL RESOURCES SURVEY

APPENDIX

C-2

BIOLOGICAL RESOURCES SURVEY

for the

WAIKŌ ROAD SEWER SYSTEM EXTENSION PROJECT

WAIKAPŪ, MAUI

by

Robert W. Hobdy
Environmental Consultant
Kokomo, Maui
August 2022

Prepared for:
County of Maui
Department of Environmental Management

BIOLOGICAL RESOURCES SURVEY
WAIKŌ ROAD SEWER SYSTEM EXTENSION PROJECT
WAIKAPŪ, MAUI

INTRODUCTION

The Waikō Road Sewer System Extension Project lies along the West Waikō Road and four adjacent lateral cul-de-sac's in Wakapū, Maui (see Figure 1). This project represents an extension to a planned project along lower West Waikō Road and a portion of Honoapi`ilani Highway that involves the upgrading of wastewater treatment in this community. This survey of the flora and fauna resources along these road corridors was initiated by the County of Maui in compliance with environmental requirements of the planning process.

SITE DESCRIPTION

The project corridor lies along the middle of West Waikō Road and includes Honua Place, Nuna Place, Kilohi Street and a short connection with the Old Waikapū Road for a total project length of 3,000 feet. These roadways include two-lane asphalt surfaces as well as narrow vegetated shoulders that extend to adjacent private property borders. Vegetation consists of grasses, weeds, and a few ornamental trees. The soil is characterized as Wainee extremely stony silty clay, 3 – 7% slopes (WyC) (Foot et al, 1972) which is a deep well-drained alluvial soil. Rainfall averages between 25 and 30 inches per year (Armstrong, 1983).

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed Waikō Road Sewer System Extension Project which was conducted in August 2022. The objectives of the survey were to:

1. Document what plant and animal species may occur on the property or may likely occur in the existing habitat.

2. Determine the status and abundance of each species.

3. Determine the presence or likely occurrence of any native flora and fauna, particularly any that are Federally listed as Threatened or Endangered. If such occur, identify what features of the habitat may be essential for these species.

4. Determine if the project area contains any special habitats which if lost or altered might result in a significant negative impact on the flora and fauna in this part of the island.

FLORA SURVEY REPORT

SURVEY METHODS

A walk-through flora survey method was used following the project roadway corridor. Notes were made on plant species, distribution, and abundance. A special effort was made to identify any native Hawaiian species and any of these that may be federally Endangered or Threatened plants (U.S.F.W.S. 2022) requiring special consideration.

DESCRIPTION OF THE VEGETATION

The vegetation on the borders of the road varied between manicured lawn grasses, ornamental trees and some weedy unmanaged areas that are occasionally mowed. Twenty-nine plant species were found during the survey. Two grass species were common, Bermuda grass (*Cynodon dactylon*) and Guinea grass (*Megathyrsus maximus*). Six species were uncommon: kou (*Cordia subcordata*), coat buttons (*Tridax procumbens*), summer heliotrope (*Heliotropium amplexicaule*), creeping indigo (*Indigofera spicata*), koa haole (*Leucaena leucocephala*) and scarlet spiderling (*Boerhavia coccinea*). Twenty-one species were of rare occurrence. Two native plant species were found during the survey, the kou tree, which had been planted as an ornamental street tree, and the 'uhaloa (*Waltheria indica*), a common shrub.

DISCUSSION AND RECOMMENDATIONS

The vegetation throughout the project corridor is comprised almost entirely of non-native species that are of no special interest or conservation concern. Two indigenous Hawaiian plant species, the kou and the 'uhaloa are both common throughout Hawaii and other Pacific islands and are of no particular conservation concern.

No federally Endangered or Threatened plant species (USFWS 2022) were found in the project area, nor were any found that are candidates for such status. No special plant habitats were found here either. No Wetlands as defined by the U.S. Army Corps of Engineers occur on or near the project area.

Because of the above existing conditions there is little of botanical concern, with regards to the project area, and the proposed project is not expected to have a significant negative impact on the botanical resources in this part of Maui. No recommendations regarding the flora on this project area are deemed necessary or appropriate.

FLORA SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within two groups: Monocots and Dicots. Taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner et al. (1999) and Staples & Herbst (2005).

For each species, the following information is provided:

1. Scientific name with author citation.

2. Common English or Hawaiian name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to the Hawaiian Islands; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and to one or more other geographic area(s).

   Polynesian = all those plants brought to Hawaii by the Polynesians during their migrations.

   non-native = all those plants brought to the islands intentionally or accidentally after western contact.

4. Abundance of each species within the project area:

   abundant = forming a major part of the vegetation within the project area.

   common = widely scattered throughout the area or locally abundant within a portion of it.

   uncommon = scattered sparsely throughout the area or occurring in a few small patches.

   rare = only a few isolated individuals within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MONOCOTS			
POACEAE (Grass Family)			
Cynodon dactylon (L.) Pers.	Bermuda grass	non-native	common
Eleusine indica (L.) Gaertn.	wiregrass	non-native	rare
Megathyrsus maximus (Jacq.) Simon & Jacobs	Guinea grass	non-native	common
Melinis repens (Willd.) Zizka	Natal redtop	non-native	rare
DICOTS			
ANNONACEAE (Custard Apple Family)			
Cananga odorata (Lam.) J.D. Hooker & Thompson	ylang ylang	non-native	rare
APOCYNACEAE (Dogbane Family)			
Calotropis procera (W. Aiton) W.T. Aiton	small crown flower	non-native	rare
ASTERACEAE (Sunflower Family)			
Calyptocarpus vialis Less.	straggler daisy	non-native	rare
Conyza bonariensis (L.) Cronq.	hairy horseweed	non-native	rare
Senecio madagascariensis Poiret	Madagascar fireweed	non-native	rare
Tridax procumbens L.	coat buttons	non-native	uncommon
BORAGINACEAE (Borage Family)			
Cordia subcordata Lam.	kou	indigenous	uncommon
Heliotropium amplexicaule Vahl.	summer heliotrope	non-native	uncommon
Heliotropium procumbens Mill.	four-spike heliotrope	non-native	rare
CUCURBITACEAE (Gourd Family)			
Momordica charantia L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)			
Euphorbia hirta L.	hairy spurge	non-native	rare
Euphorbia prostrata Aiton	prostrate spurge	non-native	rare
Ricinus communis L.	Castor bean	non-native	rare
FABACEAE (Pea Family)			
Indigofera spicata Forssk.	creeping indigo	non-native	uncommon
Leucaena leucocephala (Lam.) de Wit	koa haole	non-native	uncommon
Macroptilium atropurpureum (DC) Urb.	siratro	non-native	rare
Neonotonia wightii (Wight & Arnott) Lackey	glycine	non-native	rare
Samanea saman (Jacq.) Merr.	monkeypod	non-native	rare
MALVACEAE (Mallow Family)			
Abutilon grandifolium (Willd.) Sweet	hairy abutilon	non-native	rare
Malvastrum coromandelianum (L.) Garcke	false mallow	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
Sida ciliaris L.	bracted fanpetals	non-native	rare
Thespesia populnea (L.) Sol. ex Correa	milo	Polynesian	rare
Waltheria indica L.	'uhaloa	indigenous	rare
MORACEAE (Mulberry Family)			
Ficus microcarpa L.f.	Chinese banyan	non-native	rare
NYCTAGINACEAE (Four-o'clock Family)			
Boerhavia coccinea Mill.	scarlet spiderling	non-native	uncommon

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the flora survey. All parts of the project area within the corridor were covered. Field observations were made with the aid of binoculars and by listening to vocalizations. Notes were made on species, abundance, activities, and location as well as observations of trails, tracks, scat, and signs of feeding. In addition, an evening visit was made to the area to record crepuscular activities and vocalizations and to see if there was any evidence of occurrence of the Endangered 'Ōpe'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*) in the area.

RESULTS

MAMMALS

No mammal species were observed during the survey.

While not seen during the survey, rats (Rattus spp.) mice (*Mus domesticus*), mongoose (*Herpestes auropunctatus*), domestic cats (*Felis catus*) and domestic dogs (*Canis familiaris*) would be expected to occur on the project area. Rats and mice feed on fruits, seeds, and herbaceous vegetation, while cats and mongoose would hunt for these rodents and birds. Taxonomy and nomenclature follow Tomich (1986).

A special effort was made to detect any occurrence of the Hawaiian hoary bat by conducting an evening survey at two locations in the area. A bat detecting device (Batbox IIID) was employed, set to the frequency of 27,000 Hertz that these bats are known to use when echolocating for flying nocturnal insects. No bats were detected with the use of this device.

BIRDS

Birds were very uncommon in both species diversity as well as in total numbers within this dense residential community. Just four common non-native species were observed during two site visits, the house sparrow (*Passer domesticus*), the common myna (*Acridotheres tristis*), the zebra dove (*Geopelia striata*) and the spotted dove (*Streptopelia chinensis*). A few other non-native species such as the house finch (*Haemorhous mexicanus*), northern cardinal (*Cardinalis cardinalis*) and Japanese white-eye (*Zosterops japonicus*) might occasionally be seen in the project area, but the habitat is unsuitable for any native forest birds, waterbirds, seabirds or nēnē geese.

INSECTS

Insect species were quite sparse in occurrence in this residential community. Just three common non-native species were found during two site visits. Taxonomy and nomenclature follow Nishda et al (1992). Small numbers of the long-tailed blue butterfly (*Lampides boeticus*), the monarch butterfly (*Danaus plexippus*) and the short-horned grasshopper (*Oedaleus abruptus*) were found.

DISCUSSION AND RECOMMENDATIONS

The fauna occurring within the project area were very sparse and included only non-native species that are of no environmental concern. No endangered or threatened fauna were recorded here, and none are likely in this habitat.

The proposed project is not expected to have a significant negative impact on the fauna resources in this part of Maui. No recommendations regarding the fauna resources are deemed necessary.

FAUNA SPECIES LIST

Following is a checklist of the fauna species inventoried during the field work. Species are arranged in descending abundance within two groups: Birds and Insects. For each species the following information is provided:

1. Common name.

2. Scientific name.

3. Bio-geographical status. The following symbols are used:

   endemic = native only to Hawaii; not naturally occurring anywhere else in the world.

   indigenous = native to the Hawaiian Islands and to one or more other geographic area(s).

   non-native = all those animals brought to Hawaii intentionally or accidentally after western contact.

   migratory = spending a portion of the year in Hawaii and a portion elsewhere. In Hawaii, the migratory birds are usually in the overwintering/non- breeding phase of their life cycle.

4. Abundance of each species within the project area:

   abundant = many flocks or individuals seen throughout the area at all times of day.

   common = a few flocks or well scattered individuals throughout the area.

   uncommon = only one flock or several individuals seen within the project area.

   rare = only one or two seen within the project area.

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
MAMMALS			
None			
BIRDS			
COLUMBIDAE (Dove Family)			
Geopelia striata L.	zebra dove	non-native	common
Streptopelia chinensis Scopoli	spotted dove	non-native	uncommon
PASSERIDAE (Sparrow Family)			
Passer domesticus L.	house sparrow	non-native	uncommon
STURNIDAE (Starling Family)			
Acridotheres tristis L.	common myna	non-native	uncommon
INSECTS			
Order LEPIDOPTERA - butterflies, moths			
LYCAENIDAE (Gossamer-winged Butterfly Family)			
Lampides boeticus L.	long-tailed blue butterfly	non-native	uncommon
NYMPHALIDAE (Brush-footed Butterfly Family)			
Danaus plexippus L.	monarch butterfly	non-native	rare
Order ORTHOPTERA - grasshoppers, crickets			
ACRIDIDAE (Grasshopper Family)			
Oedaleus abruptus Thunberg	short-horned grasshopper	non-native	rare



Figure 1. Waikō Road Subdivision Sewer System Extension project area

Literature Cited

American Ornithological Society, 2022. Checklist of North American Birds. 7th edition. American Ornithological Society. Washington D.C.

Armstrong, R. W. (ed.), 1983. Atlas of Hawaii. (2nd. ed.) University of Hawaii Press.

Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens, 1972. Soil survey of the islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. U.S. Dept. of Agriculture, Soil Conservation Service. Washington, D.C.

Nishida, G.M., G.A. Samuelson, J.S. Strazanac, K.S. Kami, 1992. Hawaiian Terrestrial Anthropod Checklist. Hawaiian Biological Survey.

Staples, G.W. and D.R. Herbst, 2005. A Tropical Garden Flora, Plants Cultivated in the Hawaiian Islands and Other Tropical Places. Bishop Museum Press.

Tomich, P.Q. 1986. Mammals in Hawaii. Bishop Museum Press, Honolulu.

U.S. Fish and Wildlife Service, 2022. Endangered and Threatened Wildlife and Plants. Listings and Occurrences for Hawaii. www.fws.gov/endangered

Wagner, W. L., D.R. Herbst, and S. H. Sohmer, 1999. Manual of the Flowering Plants of Hawaii. University of Hawaii Press and Bishop Museum Press. Honolulu.

HRS 6E-8 SUBMITTAL PACKAGE

APPENDIX D-1

MICHAEL P. VICTORINO
Mayor

ERIC A. NAKAGAWA, P.E.
Director

ROBERT SCHMIDT
Deputy Director

MICHAEL KEHANO, P.E.
Solid Waste Division

SCOTT R. ROLLINS, P.E.
Wastewater Reclamation Division

TAMARA L. FARNSWORTH
Environmental Protection &
Sustainability Division

COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2145 KAOHU STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793

October 4, 2022

Dr. Alan S. Downer, Administrator
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Bldg., Suite 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Subject: Request for State Historic Preservation Division Initial Hawai'i Revised Statutes 6E-8 Historic Preservation Review for the Waiko Road Subdivision Sewer System Project, Waikapū Ahupua'a, Pū'ali Komohana District, Maui, TMKs: [2] 3-5-004:028, 031, and 063; [2] 3-5-010:001, 033, 034, 036, 037, and 038; [2] 3-5-011:001 to 041, 043 to 046, and 048; [2] 3-5-012:001 to 023, 025, 035 to 040, and 043 to 047.

Dear Dr. Downer:

The County of Maui Department of Environmental Management (DEM) is submitting the subject project to the State Historic Preservation Division (SHPD) for review under Hawai'i Revised Statutes 6E-8.

Scope of Work

DEM proposes the construction of approximately 5,800 linear feet (1,768 m) of gravity wastewater line and service laterals connecting approximately 119 lots in the Waikapū area (Figure 1 and Figure 2). The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. Project-related ground disturbance will include the approximately 5,800 linear feet (1,768 m) of trenching along with the excavation of service laterals to connect to approximately 119 house lots.

Summary of Identification Efforts

A review of previous archaeological studies within Waikapū Ahupua'a indicates that the current project area has not been subject to an archaeological inventory survey (AIS) or previous archaeological study (Figure 3 and Figure 4).

The nearest previous study was a preliminary archaeological survey (Kennedy 1988) and subsequent archaeological subsurface testing (Kennedy 1989) of portions of the Waikapū Master Plan area along the northern boundary of the current project area (see Figure 3). At the time of the preliminary study in 1988, one portion of the study area remained under cultivation for pineapples while the remainder contained fallow agricultural fields that were possibly used for sugarcane cultivation. Cane haul roads and a portion of an irrigation ditch (Waiheʻe Ditch) were noted but not assessed as historic properties. The 1988 study recommended systematic subsurface testing within the boundaries of former land commission awards (LCAs) within the area. In 1989, a total of six backhoe test excavations were completed with no findings. Kennedy (1989:4) noted:

> The results of this testing were negative. It is possible that trench placement missed existing deposits but this, in my opinion is unlikely. More than 22 lineal [linear] meters were removed within a single trace of materials that one would associate with traditional or early historic habitation sites.
> It is our opinion that sugarcane and other recent activities have been extensive enough in this area to [have] obliterated any subsurface deposits that may have once existed. [Kennedy 1989:4]

To the south of the project area, an AIS for the proposed Waikapū Country Town Project, conducted by Archaeological Services Hawaii, LLC in 2017, included a 100 percent coverage pedestrian inspection and 150 backhoe-assisted test excavations (Guerriero et al. 2017) (see Figure 3). Four historic properties were identified during the surface survey that included: SIHP #s 50-50-04-07881 through -07884. SIHP # -07881 consisted of 18 component features associated with historic commercial sugarcane irrigation (e.g., concrete-lined ditches and headwalls, dirt culverts, and sluice gates). SIHP # -07882 was a remnant L-shaped retaining wall. SIHP # -07883 was interpreted as a WWII bunker. SIHP # -07884 consisted of three discrete scatters of historic materials including ceramic sherds and glass bottle fragments. Additionally, previously identified SIHP # -05197, the Waiheʻe Ditch, extended through the northwestern portion of the study area.

While no previous archaeological studies have been conducted within the current project area, a review of historic properties on the Hawaiʻi Register of Historic Places (HRHP) indicates that the project area includes the Waikapū Protestant Church (Waikapū Stone Church), which was added to the HRHP on 4 August 1990 and assigned SIHP # 50-50-04-01605.

Summary of Geotechnical Testing Results

In consultation with the SHPD, archaeological observation of geotechnical borings for the current project was conducted between 13 and 18 January 2022 by CSH archaeologist Jennifer Frey, B.A., under the direction of Principal Investigators Josephine Yucha, M.S., and Hallett H. Hammatt, Ph.D. This work required approximately 3 person-days to complete.

A total of six geotechnical bores were completed (B-1 through B-6) throughout the project area to depths of approximately 6.0 m (20.0 ft) below surface (Figure 5). Two borings were placed along Wilikona Place, one along Kemoa Place, and three along West Waiko Road. In general, the observed stratigraphy included asphalt and associated base course material overlying previously disturbed fill sediment, natural loamy or clay-based alluvial soils, and bedrock. Of interest was a layer of waterworn pebbles and cobbles within B-5 and B-6 that appears to be indicative of a

former stream channel or meander of the adjacent Waikapū Stream. No cultural materials or historic properties were observed during geotechnical testing.

Evaluation of Project's Effects

The current project area has not been subject to an AIS or previous archaeological study. A review of nearby previous archaeological studies and the HRHP indicates that the project area minimally includes SIHP # 50-50-04-01605, the Waikapū Protestant Church, and a small portion of SIHP # -05197, the Waihe'e Ditch, at its crossing beneath Waiko Road. The proposed project is anticipated to have "no effect" on these significant historic properties since they are located outside of the areas proposed for project-related ground disturbance.

Based on all available information, a project effect determination of "no historic properties affected" may be appropriate, however, since the project area has not been previously subject to an archaeological study, DEM believes that there may be insufficient information to determine the potential for the project to adversely impact significant subsurface historic properties within the project area at this time.

Request for Concurrence

DEM requests SHPD concurrence with archaeological monitoring for identification purposes for all project-related ground disturbance. Per Hawai'i Administrative Rules (HAR) §13-279-3, archaeological monitoring for identification will entail archaeological observation of, and possible intervention with, on-going activities which may adversely affect historic properties.

Sincerely,

cn=Robert Schmidt, o=Deputy Director, ou=Dept of Environmental Management, email=Robert.Schmidt@co.maui.hi.us, c=US
2022.10.04 15:45:16 -10'00'

for Eric Nakagawa, P.E.
Director of Environmental Management

Cc: Trevor Yucha, Cultural Surveys Hawai'i (w/attachments)

Derek Ono, Warren S. Unemori Engineering, Inc. (w/attachments)

Emily Murai, Munekiyo Hiraga (w/attachments)

References Cited

Guerriero, Diane, Andre'e Conley-Kapoi, and Jeffrey Pantaleo
2017 *Archaeological Inventory Survey Report for Several Parcels of Land Situated within Waikapū Ahupua`a; Wailuku District Pū`ali Komohana Moku Located at TMK: [2] 3-6-002:003; 3-6-004:003; and 3-6-005:007; Island of Maui*. Archaeological Services Hawaii, LLC, Pu`unene, Hawai'i.

Kennedy, Joseph
1988 Preliminary Archaeological Survey of Phase IA of the Waikapu Master Plan TMK 3-5-04:por. 25.

1989 Archaeological Subsurface Testing Results at Phase 1A of the Waikapu Master Plan TMK 3-5-04: por. 25.

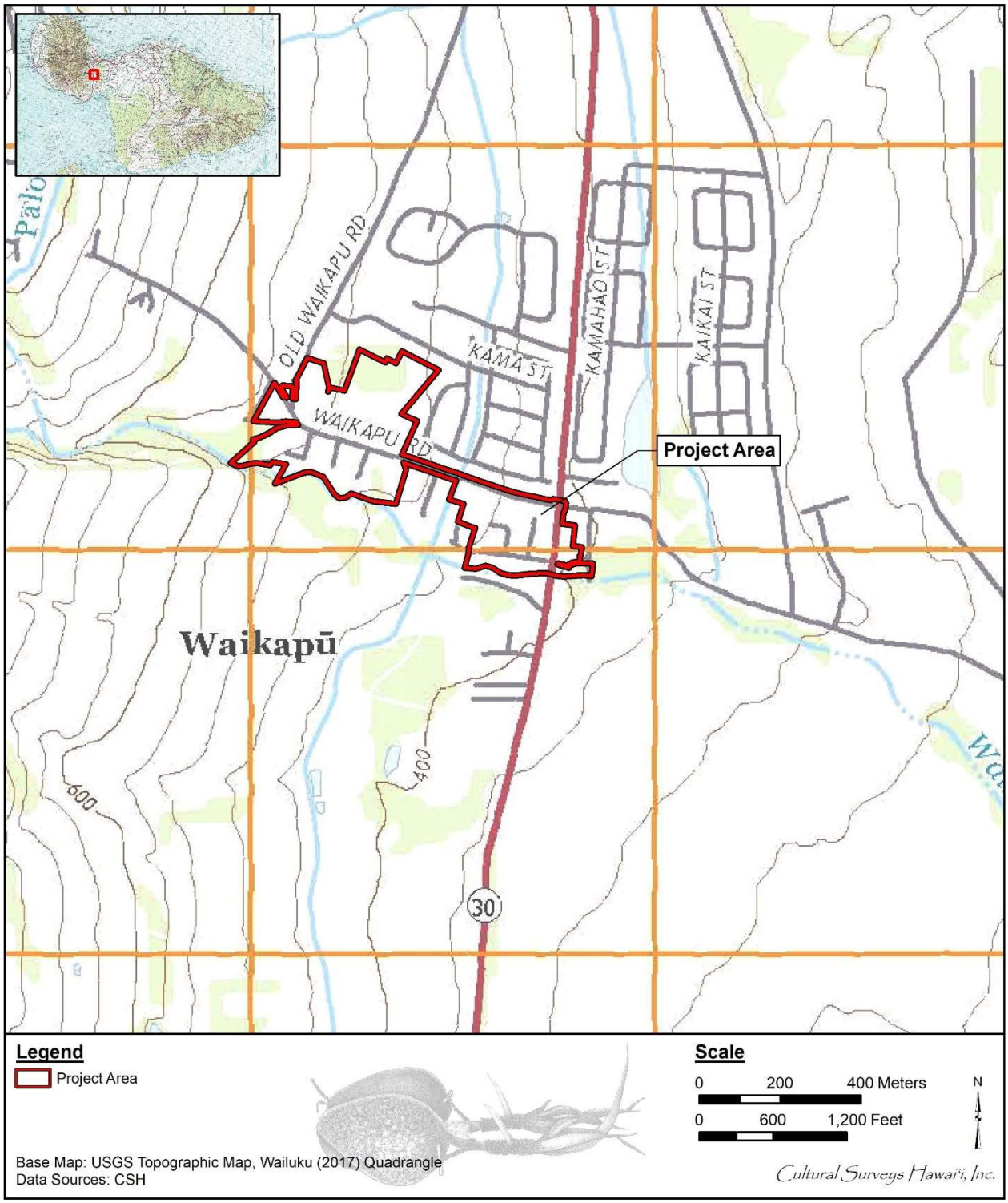


Figure 1. Portion of the 2017 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting the location of the project area

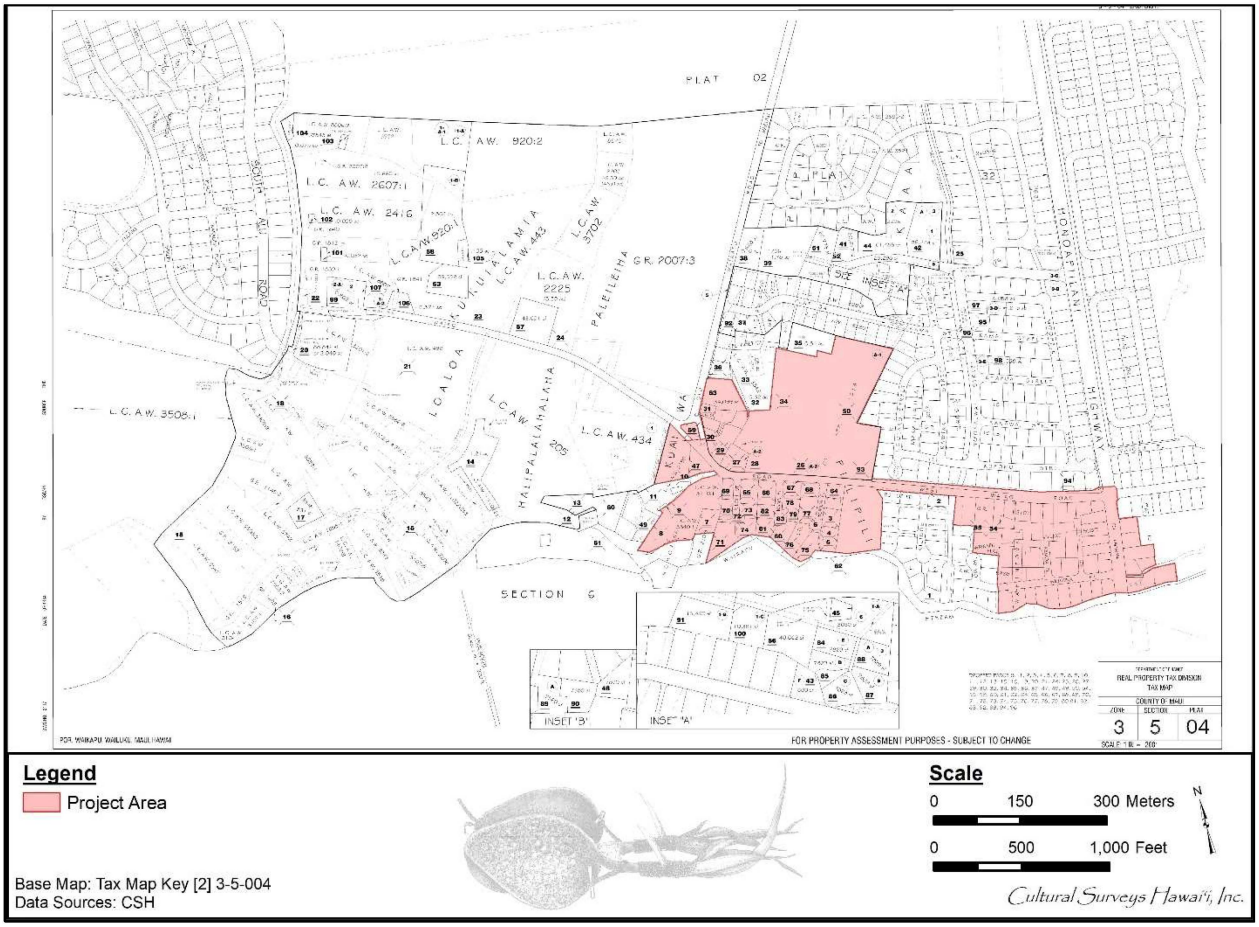


Figure 2. Tax Map Key (TMK) [2] 3-5-004 depicting the current project area

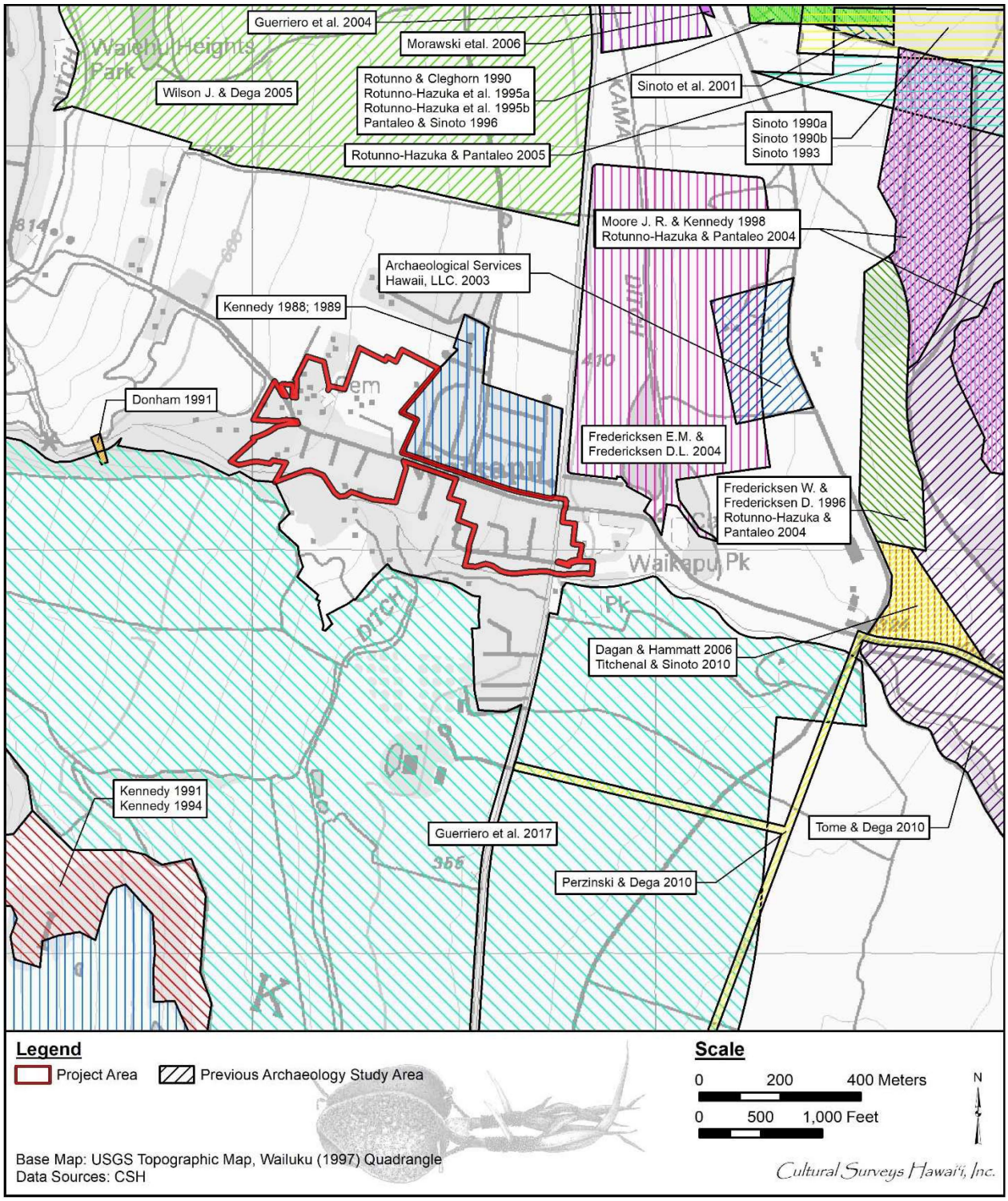


Figure 3. Portion of the 1997 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting previous archaeological studies conducted in the vicinity of the project area

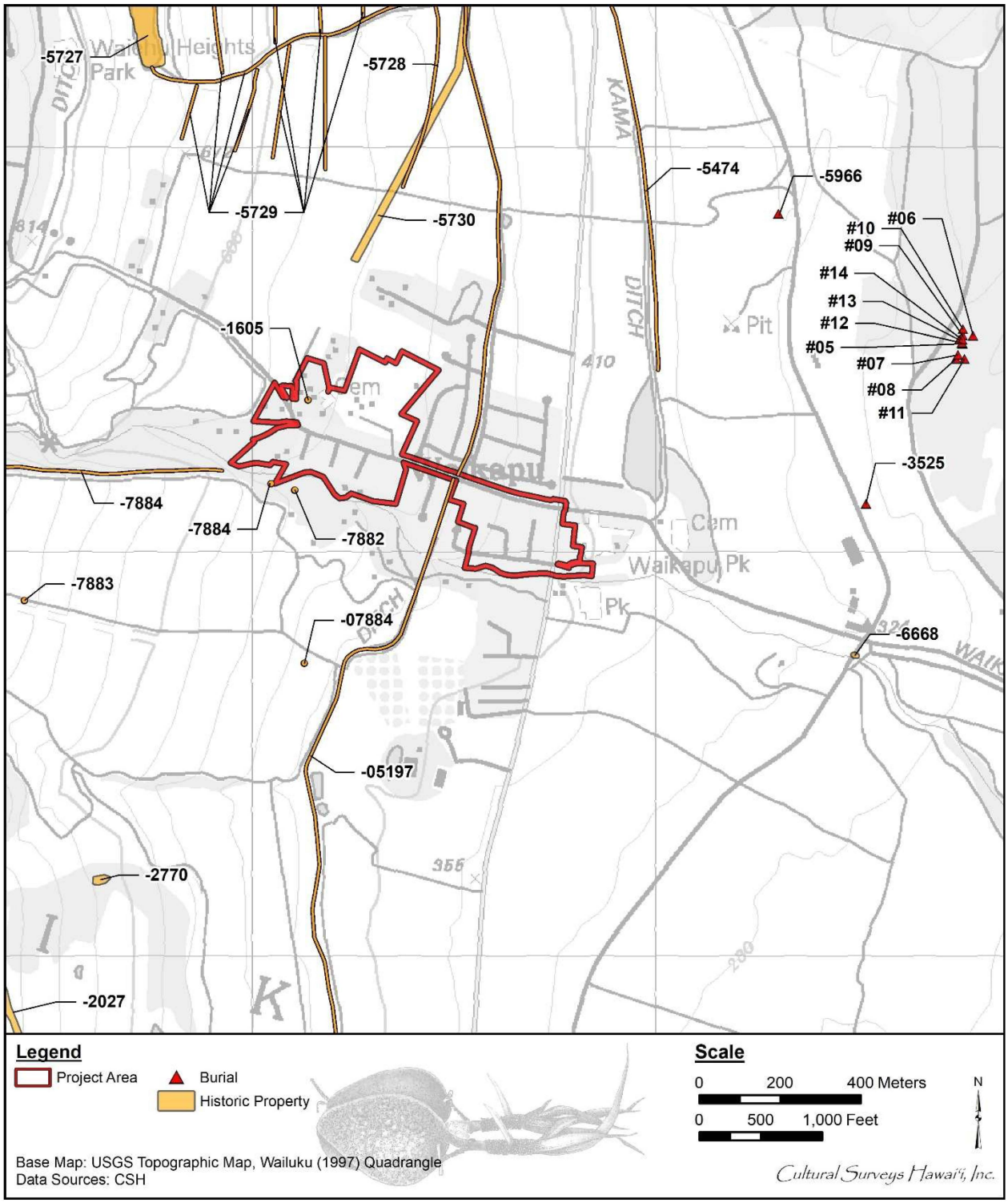


Figure 4. Portion of the 1997 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting previously documented historic properties within and near the current project area (SIHP # 50-50-04-)



Figure 5. 2018 aerial image depicting the location of geotechnical test bores completed within the current project area

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

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | 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

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

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING 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

February 9, 2024

IN REPLY REFER TO:
Project No. 2021PR01130
Doc. No. 2402NM02
Archaeology

Shayne Agawa, P.E., Director
County of Maui
Department of Environmental Management
2145 Kaohu Street, Suite 102
Wailuku, Maui, Hawaii 96793
Email: environmental.mgmt@co.maui.hi.us

Dear Shayne Agawa:

SUBJECT: **Chapter 6E-8 Historic Preservation Review –**
Waiko Road Subdivision Sewer System Project
Request for Concurrence with Project Effect Determination
Waikapū Ahupua'a, Pū'ali Komohana District, Island of Maui
TMK: (2) 3-5-004:028, 031, and 063; (2) 3-5-010:001, 033, 034, 036, 037, and 038;
(2) 3-5-011:001-041, 043-046, and 048; (2) 3-5-012:001-023, 025, 035-040, 043-047
(East Waiko Road, West Waiko Road, Honoapi'ilani Highway, Wilikona Place,
Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street ROWs)

This letter provides the State Historic Preservation Division's (SHPD's) review of the County of Maui Department of Environmental Management's (DEM) Waiko Road Subdivision Sewer System Project. SHPD received the current submission on March 6, 2023, along with a copy of the 50% complete construction plans, a cover letter from an End-of-Fieldwork letter report from Cultural Surveys Hawai'i, Inc. (CSH) regarding geotechnical testing preformed for the project (Yucha, February 2022), an HRS 6E Form, and a letter from the County of Maui requesting the SHPD's concurrence with archaeological monitoring for identification purposes during all ground disturbance work associated with the subject project.

DEM proposes the construction of approximately 5,800 linear feet (1,768 m) of gravity wastewater line and service laterals connecting approximately 119 lots within a 0.06-acre project area. The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street Right-of-Ways (ROWs).

CSH was on-site during the geotechnical borings conducted in surpport of the subject project. CSH observed the boring soil samples which identified the presence of natural alluvial soils, including a potenial former stream channel, beach asphalt, base course gravel, and disturbed fill sediment. Additionally, the Land Commission Award (LCA) 5228:3 (to H. Kuihelani) occurs within the current project area. Yucha (February 2022) recommends the project proceed with archaeological monitoring for identification purposes.

At this time, SHPD has insufficient information to determine the potential for the project to adversely impact significant subsurface historic properties. Therefore, **SHPD concurs with County of Maui's request that the project proceed with archaeological monitoring for identification purposes** in order to adequately identify if any archaeological historic properties are present and, if so, to determine potential impacts to them and, if necessary, to ensure that appropriate mitigation is implemented.

SHPD looks forward to receiving for review and acceptance an archaeological monitoring plan (AMP) meeting the requirements of HAR §13-279-4 prior to permit issuance. Please submit the requested AMP and associated filing review fee to HICRIS Project No. 2021PR01130 using the Project Supplement option.

SHPD will notify the County of Maui when the archaeological monitoring plan has been reviewed and accepted, and the project initiation process may continue.

Please contact ʻIolani Kauhane, Historic Preservation Archaeologist III, at Iolani.Kauhane@hawaii.gov for any questions regarding this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Dr. Janet Six, janet.six@co.maui.hi.us
Noelani Hessler, nhessler@culturalsurveys.com
Emily Murai, emily@munekiyohiraga.com
Karlynn Fukuda, karlynn@munekiyohiraga.com
Derek Ono, dono@wsue.com
Juan Rivera, juan.Rivera@co.maui.hi.us
Trevor Yucha, tyucha@culturalsurveys.com

APPENDIX

D-2

ARCHAEOLOGICAL MONITORING PLAN

Final

Archaeological Monitoring Plan for the Waiko Road Subdivision Sewer System/ Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: (2) 3-5-004:018, 028, 031, & 063; (2) 3-5-010:001, 033, 034, & 036–038; (2) 3-5-011:001–041, 043–046 & 048; (2) 3-5-012:001–023, 025, 035–040, & 043–047

Prepared for
Munekiyo Hiraga
and
County of Maui Department of Environmental Management

Prepared by
Josephine M. Yucha, M.S.,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Wailuku, Hawai‘i
(Job Code: WAIKAPU 29)

September 2025

O‘ahu Office
P.O. Box 1114
Kailua, Hawai‘i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
1860 Main St.
Wailuku, Hawai‘i 96793
Ph.: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	Archaeological Monitoring Plan for the Waiko Road Subdivision Sewer System/ Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: (2) 3-5-004:018, 028, 031, & 063; (2) 3-5-010:001, 033, 034, & 036–038; (2) 3-5-011:001–041, 043–046 & 048; (2) 3-5-012:001–023, 025, 035–040, & 043–047 (Yucha and Hammatt 2025)
Date	September 2025
Project Numbers	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: WAIKAPU 29; Hawai‘i Cultural Resource Information System (HICRIS): 2021PR01130
Investigation Permit Number	CSH will likely complete the archaeological monitoring fieldwork under archaeological fieldwork permit number 25-04, issued by the Hawai‘i State Historic Preservation Division (SHPD) per Hawai‘i Administrative Rules (HAR) §13-13-282.
Agencies	SHPD; County of Maui Department of Environmental Management (DEM)
Land Jurisdiction	County of Maui
Project Funding	County of Maui
Project Location	The project area consists of a portion of West Waiko Road, from Old Waikapū Road to the east to the intersection with Honoapi‘ilani Highway to the west. It includes the residential communities immediately south of West Waiko Road including Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street, as well as an area north of West Waiko Road which is bounded by Old Waikapu Road to the east, Kama Street to the north, and Hoolako Place to the west. It also includes a portion of Honoapi‘ilani Highway south of the intersection with West and East Waiko Road, as well as a smaller area which is bounded by Honoapi‘ilani Highway to the west, East Waiko Road to the north, and the Waikapū Community Center and Park to the east. The project area is depicted on a portion of the 2024 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle.
Project Description and Related Disturbance	The proposed project includes the construction of approximately 5,800 linear feet (1.76 km) of gravity wastewater line and service laterals connecting approximately 119 lots in the Waikapū area. The project will also include coordination with the County of Maui Department of Water Supply (DWS) to install 8-inch waterlines within the existing project area. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place,

	Kemoa Place, Keilio Place, Honua Place, Nuna Place, Old Waikapu Road and Kilohi Street. This project will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements will be located within the roadway rights-of-way, and sewer connections will extend 2.0 ft (0.6 m) into the boundaries of privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.
Project Acreage	The project area is approximately 41.18 acres (16.66 hectares).
Historic Preservation Regulatory Context	In January 2022, CSH observed six geotechnical test bores throughout the eastern half of the project area and submitted a letter report dated 28 February 2022 on the interim archaeological documentation for the Waiko Road Subdivision Sewer System Project (Yucha 2022). In general, the observed stratigraphy included asphalt and associated base course material overlying previously disturbed fill sediment, natural loamy or clay-based alluvial soils, and bedrock. Two locations contained water-worn pebbles and cobbles indicative of a former stream channel or meander of the adjacent Waikapū Stream channel. CSH recommended on-site archaeological monitoring for identification purposes for all project-related ground disturbance. In a letter dated 4 October 2022, the DEM submitted the project to the SHPD for review under Hawai‘i Revised Statutes (HRS) §6E-8 and requested SHPD concurrence with archaeological monitoring for identification purposes for all project-related ground disturbance. In a letter dated 9 February 2024, the SHPD provided a review of the DEM project submission and concurred with the request that the project proceed with archaeological monitoring for identification purposes (Project No. 2021PR01130; Doc. No. 2402NM02). This AMP is intended to support the proposed project’s historic preservation review under HRS §6E-8 and HAR §13-13-275. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the SHPD, this document fulfills the requirements of HAR §13-13-279-4.
Historic Properties Potentially Affected	Three historic properties are located within or immediately adjacent to the project area, however, the proposed project is anticipated to have “no effect” on these significant historic properties since they are located outside of the areas proposed for project-related ground disturbance. State Inventory of Historic Places (SIHP) # 50-50-04-01605 is an architectural historic property designated to the Waikapū Protestant

	Church for the National Register of Historic Places (NRHP) in 1990. SIHP # -01605 was assessed as significant per NRHP Criteria “a” (be associated with events that have made an important contribution to the broad patterns of our history) and “c” (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value). The Waikapū Protestant Church is no longer intact or in use. SIHP # 50-50-04-05197 is a small portion of the Waihe‘e Ditch at its crossing beneath Waiko Road. It has previously been documented by Wilson and Dega (2005) and Guerriero et al. (2017). SIHP # -05197 was assessed as significant per HAR §13-284-6 Criterion “d” (have yielded, or is likely to yield, information important for research on prehistory or history). SIHP # 50-50-04-07884 contains three discrete scatters of historic cultural deposits including ceramic sherds and glass bottle fragments. The cultural deposit was identified by Guerriero et al. (2017). SIHP # -07884 was assessed as significant per HAR §13-284-6 Criterion “d” (have yielded, or is likely to yield, information important for research on prehistory or history).
Summary of Monitoring Provisions	On-site archaeological monitoring for identification purposes shall be conducted during all project-related ground disturbing activities. One archaeological monitor will be assigned to each piece of ground-disturbing equipment in operation at all times and in all locations throughout the project area. Any departure from this will occur only after consultation with and written concurrence from the SHPD.

Table of Contents

Management Summary ..... **i**

Section 1 Introduction **1**

1.1 Project Background 1
1.2 Historic Preservation Regulatory Context 1
1.3 Environmental Setting 6
1.3.1 Natural Environment 6
1.3.2 Built Environment 9

Section 2 Background Research **10**

2.1 Traditional and Historical Background 10
2.1.1 Traditional Accounts 10
2.1.2 Early Historical Period 18
2.1.3 The Māhele and the Kuleana Act 20
2.1.4 Mid- to Late 1800s 22
2.1.5 1900s 36
2.1.6 Contemporary Land Use 36
2.2 Previous Archaeological Research 41
2.2.1 Kennedy (1988, 1989) 41
2.2.2 Haun (1989); Brisbin et al. (1991) 41
2.2.3 Rotunno and Cleghorn (1990) 49
2.2.4 Sinoto (1990a, 1990b, 1993) 50
2.2.5 Kennedy (1991) 50
2.2.6 Donham (1991) 51
2.2.7 Rotunno-Hazuka, Somer, Clark, et al. (1995) 51
2.2.8 Rotunno-Hazuka, Somer, Flood, et al. (1995) 52
2.2.9 Pantaleo and Sinoto (1996) 52
2.2.10 Fredericksen and Fredericksen (1996) 53
2.2.11 Moore and Kennedy (1998) 53
2.2.12 Sinoto et al. (2001) 54
2.2.13 Archaeological Services Hawaii (2003) 54
2.2.14 Guerriero et al. (2004) 54
2.2.15 Fredericksen and Fredericksen (2004) 55
2.2.16 Rotunno-Hazuka and Pantaleo (2004) 55
2.2.17 Rotunno-Hazuka and Pantaleo (2005) 55
2.2.18 Wilson and Dega (2005) 56
2.2.20 Dagan and Hammatt (2006) 56
2.2.21 Tome and Dega (2010) 57
2.2.22 Perzinski and Dega (2010) 57
2.2.23 Titchenal and Sinoto (2010) 58
2.2.24 Guerriero et al. (2017) 58
2.2.25 Yucha and Hammatt (2021) 58
2.2.26 Yucha et al. (2023) 59

Section 3 Archaeological Monitoring Provisions **60**

Section 4 References Cited **64**

Appendix A SHPD Correspondence..... 74

List of Figures

Figure 1. Portion of the 2024 Wailuku USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 2024) 2
Figure 2. Tax Map Key (TMK) (2) 3-5-004 showing the project area (Hawaii TMK Service 1934) 3
Figure 3. Eagleview (2023) pictometry aerial image depicting the location of the project area 4
Figure 4. Aerial image showing the six test bore (B-1 through B-6) locations in the project area (Eagleview 2023) 5
Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; U.S. Department of Agriculture 2001) indicating soil types within and surrounding the project area 7
Figure 6. Newspaper clipping from the 7 January 1927 edition of the *Honolulu Advertiser* describing an 1841 discovery of human skeletal remains in the Sand Hills of Maui (The Honolulu Advertiser 1927) 19
Figure 7. Early photograph of Waikapū Valley, *lo‘i*, *‘auwai*, and dispersed homes (Waikapu Community Association 2018) 21
Figure 8. Portion of Dodge (1885) map showing current project area near Waikapu Sugar Company lands 23
Figure 9. LCAs and Land Grants in the vicinity of the current project area depicted on portion of the 2024 Wailuku USGS 7.5-minute topographic quadrangle (U.S. Geological Survey 2024) 24
Figure 10. Monsarrat (1882) map of Waikapū showing *kuleana* awards in the vicinity of the current project area 25
Figure 11. Historic photograph of Waikapū Congregational Church, Waiko Road, and the surrounding community (Waikapu Community Association 2018) 27
Figure 12. Waikapū Congregational Church after having it’s steeple removed during WWII (Waikapu Community Association 2018) 27
Figure 13. Waikapu Sugar Company mill, ca. 1890 (Waikapu Community Association 2018) 28
Figure 14. Waikapu Sugar Mill (Maui Historical Society, n.d.) 28
Figure 15. Colonel William H. Cornwell in attire of the Hawaiian Royal Court (Unknown 1893) 30
Figure 16. Newspaper announcement for the arrival of Kamehameha V visit to W.H. Cornwell on Maui for the King’s birthday (Evening Bulletin 1888) 30
Figure 17. Portion of Baldwin (1930) Waikapū Ahupua‘a map showing “Waikapu Village” (Waikapu Camp) in the vicinity of the project area 32
Figure 18. Portion of the 1924 Kihei, Mā‘alaea, Paia, and Wailuku USGS topographic quadrangles showing the current project area and HC&S ditches, roads, and labor camps in the vicinity (U.S. Geological Survey 1924) 34
Figure 19. Wall (1929) map of Maui showing the project area and development in the vicinity such as railroad tracks, roads, and unimproved roads 35
Figure 20. Portion of Hawaiian Commercial & Sugar Co. (1953) map showing the project area and pasture lands east of the sugar plantation 37

Figure 21. Portion of the 1955 Wailuku USGS topographic quadrangle showing development around the project area (U.S. Geological Survey 1955) 38
Figure 22. Portion of 1977 Wailuku orthophotoquad showing the current project area surrounded by agricultural (sugarcane and pasture) lands (U.S. Geological Survey 1977) 39
Figure 23. Portion of the 1997 Wailuku USGS topographic quadrangle showing development around the project area (U.S. Geological Survey 1997) 40
Figure 24. Portion of the 2024 Wailuku USGS topographic quadrangle showing previous archaeological studies in the vicinity of the current project area (U.S. Geological Survey 2024) 47
Figure 25. Portion of the 2024 Wailuku topographic quadrangle showing the locations of burials and other historic properties in the vicinity of the current project area (U.S. Geological Survey 2024) 48

List of Tables

Table 1. Place name translations in the vicinity of the project area 12
Table 2. Previous archaeological studies within and surrounding the project area 42

Section 1 Introduction

1.1 Project Background

At the request of Munekiyo Hiraga, and on behalf of the County of Maui Department of Environmental Management (DEM), Cultural Surveys Hawai‘i, Inc. (CSH) has prepared this archaeological monitoring plan (AMP) for the Waiko Road Subdivision Sewer System/ Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: (2) 3-5-004:018, 028, 031, & 063; (2) 3-5-010:001, 033, 034, & 036–038; (2) 3-5-011:001–041, 043–046 & 048; (2) 3-5-012:001–023, 025, 035–040, & 043–047. The project area is approximately 41.18 acres (16.66 hectares) and includes approximately 5,800 linear feet (1.76 km) of gravity wastewater line and service laterals to connect approximately 119 lots in the Waikapū area. The project will also include coordination with the County of Maui Department of Water Supply (DWS) to install 8-inch waterlines within the existing project area. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Old Waikapu Road, and Kilohi Street. The project area is depicted on a portion of the 2024 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle (Figure 1), a tax map plat (Figure 2), and a 2023 aerial image (Figure 3).

This project will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements will be located within the roadway rights-of-way, and sewer connections will extend 2.0 ft (0.6 m) into the boundaries of privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

1.2 Historic Preservation Regulatory Context

This AMP is intended to support the proposed project’s historic preservation review under Hawai‘i Revised Statutes (HRS) §6E-8 and Hawai‘i Administrative Rules (HAR) §13-13-275. It is also intended to support any project-related historic preservation consultation with stakeholders, such as state and county agencies and interested Native Hawaiian Organizations (NHOs) and community groups. In consultation with the Hawai‘i State Historic Preservation Division (SHPD), this document fulfills the requirements of HAR §13-13-279-4.

In January 2022, CSH observed six geotechnical test bores throughout the eastern half of the project area and submitted a letter report dated 28 February 2022 on the interim archaeological documentation for the Waiko Road Subdivision Sewer System Project (Yucha 2022) (Figure 4). In general, the observed stratigraphy included asphalt and associated base course material overlying previously disturbed fill sediment, natural loamy or clay-based alluvial soils, and bedrock. Two locations contained water-worn pebbles and cobbles indicative of a former stream channel or meander of the adjacent Waikapū Stream channel. CSH recommended on-site archaeological monitoring for identification purposes for all project-related ground disturbance.

In a letter dated 4 October 2022, the DEM submitted the project to the SHPD for review under HRS §6E-8 and requested SHPD concurrence with archaeological monitoring for identification

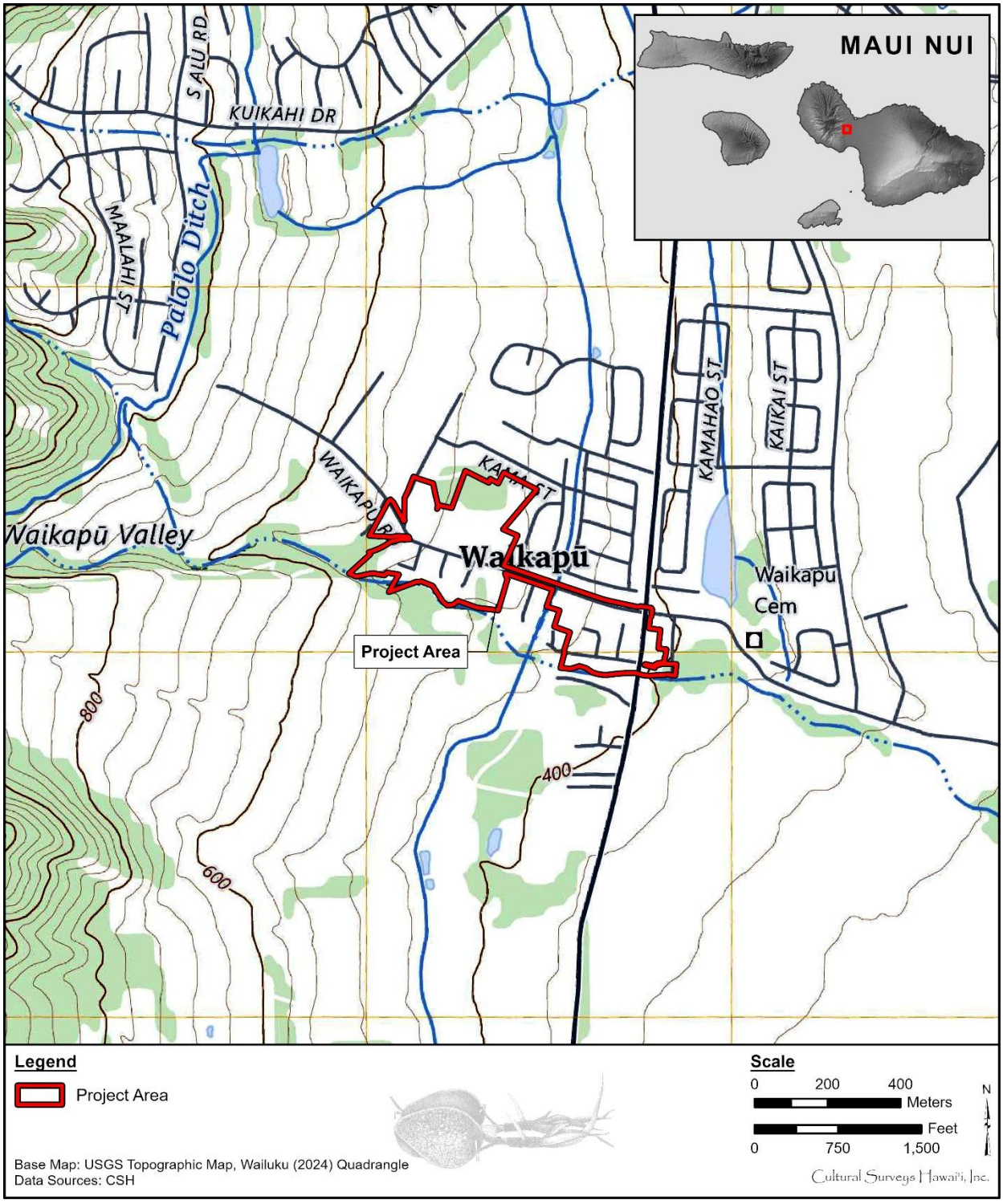


Figure 1. Portion of the 2024 Wailuku USGS 7.5-minute topographic quadrangle showing the location of the project area (U.S. Geological Survey 2024)

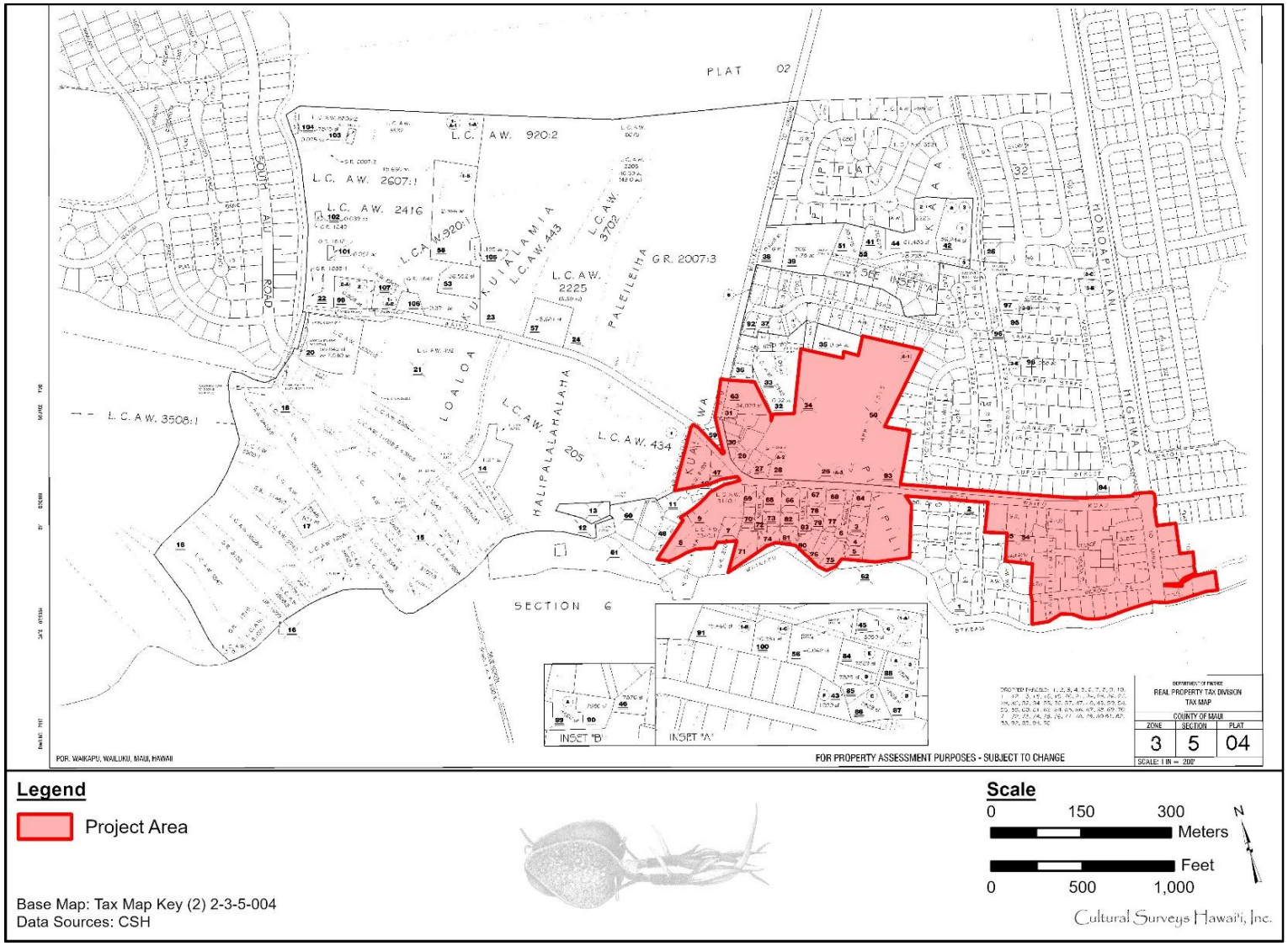


Figure 2. Tax Map Key (TMK) (2) 3-5-004 showing the project area (Hawaii TMK Service 1934)



Figure 3. Eagleview (2023) pictometry aerial image depicting the location of the project area

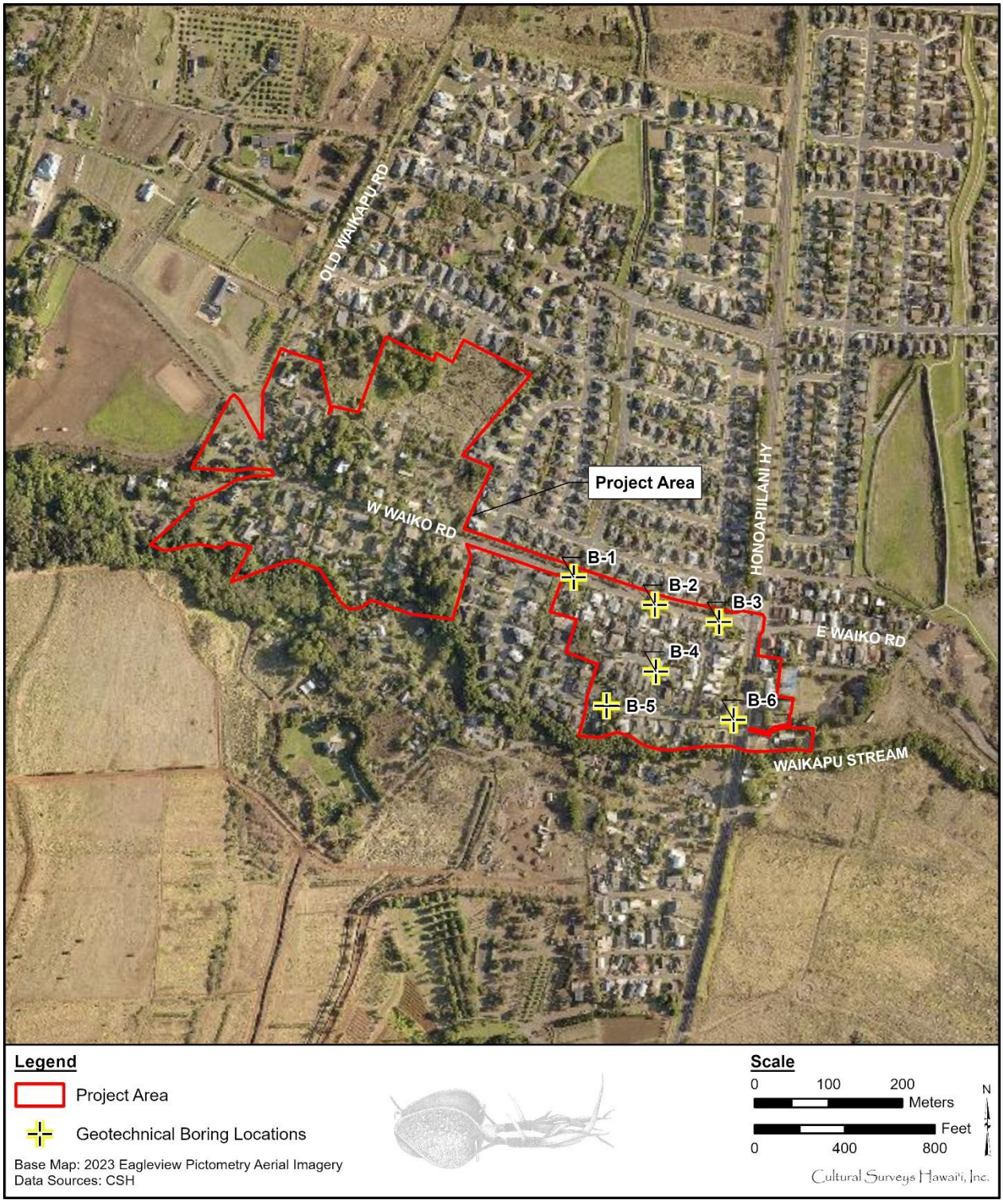


Figure 4. Aerial image showing the six test bore (B-1 through B-6) locations in the project area (Eagleview 2023)

purposes for all project-related ground disturbance (Appendix A). In a letter dated 9 February 2024, the SHPD provided a review of the DEM project submission and concurred with the request that the project proceed with archaeological monitoring for identification purposes (Project No. 2021PR01130; Doc. No. 2402NM02; see Appendix A).

1.3 Environmental Setting

1.3.1 Natural Environment

The current project area is located at the center of Maui's central isthmus, approximately 5.0 km (3.12 mi) inland from the north shore at Kahului Harbor and about 6.3 km (3.92 mi) inland from the shore at Ma‘alaea Harbor to the south. The topography of the region is gently sloping eastward, and the elevation of the project area ranges between approximately 123.4 m (405 ft) above mean sea level (AMSL) near the eastern end to 173.7 m (570 ft) at the western end.

In 2014, the average annual air temperature for the current project area was 22.77°C (73.0°F) (Giambelluca et al. 2014). The average monthly air temperature was between 20.72°C (70.4°F) in January and February and 25.74°C (76.5°F) in August. According to the University of Hawai‘i 2011 *Rainfall Atlas of Hawaii*, the project area received a mean annual rainfall of 670.8 mm (26.41 inches) between 1978 and 2007 (Giambelluca et al. 2013). The mean monthly rainfall varied between 7.3 mm (0.29 inches) in June to 130.5 mm (5.14 inches) in January.

According to the U.S. Department of Agriculture (USDA) (2001) Soil Survey Geographic (SSURGO) database, and soil survey data gathered by Foote et al. (1972), soils within the project area include Iao cobbly silty clay, 3 to 7 percent slopes (IbB), Iao clay, 7 to 15 percent slopes (IcB), Wailuku silty clay, 3 to 7 percent slopes (WvB), and rough broken land (rRR) (Figure 5).

Soils of the Iao Series are described as follows:

> This series consists of well-drained soils on valley fill and alluvial fans. These soils developed in alluvium derived from basic igneous rock. They are nearly level to moderately sloping. Elevations range from 100 to 500 feet. …
>
> These soils are used for sugarcane. Small acreages are used for pasture and homesites. The natural vegetation consists of bermudagrass, feather fingergrass, koa haole, lantana, and Natal redtop. [Foote et al. 1972:46]

Iao clay, 3 to 7 percent slopes (IcB) comprises the majority of the project area, extending eastward from the central portion of the project area and across the Honoapi‘ilani Highway.

> This soil is on smooth alluvial fans and valley fill. …
>
> In a representative profile the surface layer is dark-brown clay about 15 inches thick. The subsoil, about 45 inches thick, is very dark brown, dark-brown, and very dark grayish-brown clay and silty clay. The substratum is clayey alluvium. The soil is neutral in the surface layer and subsoil.
>
> Permeability is moderately slow. Runoff is medium, and the erosion hazard is slight to moderate. The available water capacity is about 1.7 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 5 feet or more.

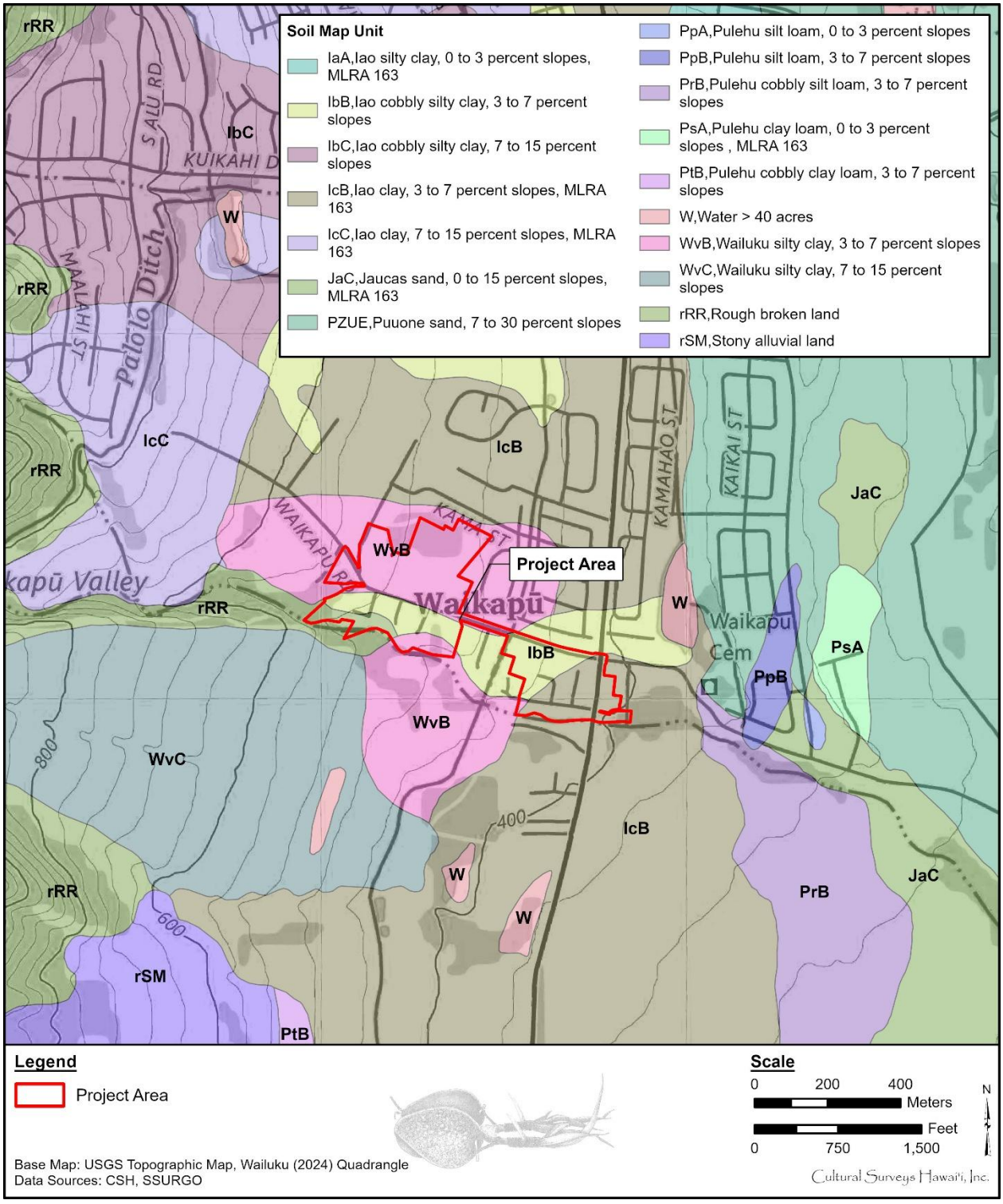


Figure 5. Overlay of *Soil Survey of the State of Hawaii* (Foote et al. 1972; U.S. Department of Agriculture 2001) indicating soil types within and surrounding the project area

> This soil is used for sugarcane and homesites. (Capability classification IIe if irrigated, IIIc if nonirrigated; sugarcane group 1; pasture group 3) [Foote et al. 1972:46]

Iao cobbly silty clay, 3 to 7 percent slopes (IbB) comprises the northwestern half of the project area.

> This soil has a profile like that of Iao clay, 3 to 7 percent slopes, except for the texture of the surface layer and the content of cobblestones.
>
> This soil is used for sugarcane and homesites. [Foote et al. 1972:47]

Soils of the Wailuku Series are described as follows:

> This series consists of well-drained soils on alluvial fans on the island of .Maui. These soils developed in alluvium derived from weathered basic igneous rock. They are gently to moderately sloping. Elevations range from 50 to 1,000 feet. …
>
> These soils are used for sugarcane, pasture, and homesites. The natural vegetation consists of bermudagrass, guineagrass, koa haole, lantana, and Natal redtop. [Foote et al. 1972:133]

Wailuku silty clay, 3 to 7 percent slopes (WvB) comprises a small area in the southwest corner of the project area, near Oia Way and Wilikona Place.

> This soil has a profile like that of Wailuku silty clay,7 to 15 percent slopes, except for the slope. Runoff is slow, and the erosion hazard is slight.
>
> This soil is used for sugarcane and homesites. [Foote et al. 1972:133]

Rough broken land (rRR) is described as follows:

> Rough broken land (rRR) consists of very steep land broken by numerous intermittent drainage channels. In most places it is not stony. It occurs in gulches and on mountainsides on all the Islands except Oahu. The slope is 40 to 70 percent. Elevations range from nearly sea level to about 8,000 feet. The local relief is generally between 25 and 500 feet. Runoff is rapid, and geologic erosion is active. The annual rainfall amounts to 25 to more than 200 inches.
>
> These soils are variable. They are 20 to more than 60 inches deep over soft, weathered rock. In most places some weathered rock fragments are mixed with the soil material. Small areas of rock outcrop, stones, and soil slips are common. Included in mapping were areas of colluvium and alluvium along gulch bottoms.
>
> This land type is used primarily for watershed and wildlife habitat. In places it is used also for pasture and woodland. The dominant natural vegetation in the drier areas consists of guava, lantana, Natal redtop, bermudagrass, koa haole, and molassesgrass. Ohia, kukui, koa, and ferns are dominant in the wetter areas. Puakeawe, aalii, and sweet vernalgrass are common at the higher elevations. [Foote et al. 1972:119]

Currently, the natural vegetation is sparse and consists primarily of decorative landscaping plants and trees used for landscaping among various grasses, shrubs, and trees. Flora known to grow within or adjacent to the project area includes royal palms (*Roystonea regia*), areca palms (*Dypsis lutescens*), mango trees (*Mangifera indica*), *kiawe* (*Prosopis pallida*), *koa haole* (*Leucaena leucocephala*), bougainvillea (*Bougainvillea* sp.), hibiscus (*Hibiscus* sp.), and crotons (*Codiaeum variegatum*).

1.3.2 Built Environment

The project area primarily consists of residential development located to the south of West Waiko Road and to the west of Honoapi‘ilani Highway including Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Kilohi Street, and Old Waikapu Road as well as an area north of West Waiko Road which includes the remnants of the Waikapū Protestant Church, designated as State of Hawai‘i Inventory of Historic Places (SIHP) # 50-50-04-01605. It also includes a smaller residential development located to the east of Honoapi‘ilani Highway, south of East Waiko Road, and west of Waikapū Community Center and Park. The lands to the south of the project area are minimally developed residential plots and agricultural lands that were previously used for sugarcane production.

Section 2 Background Research

2.1 Traditional and Historical Background

The division of Maui's lands into political districts occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna* (chief), Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in 12 districts, or *moku*, during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā‘anapali, and Lāhainā. The current project area is located in Waikapū Ahupua‘a in the Wailuku Moku on the isthmus of Central Maui between the northwest slopes of Haleakalā and the southeast slopes of Mauna Kahalawai (West Maui Mountains).

Wailuku and Waikapū Ahupua‘a share an east-west boundary and collectively constitute the entirety of the central isthmus of Maui, which is bounded by ‘Īao Valley to the west, Kahului Harbor to the north, Pā‘ia and Hāli‘imaile to the east, and Mā‘alaea Harbor to the south. These combined lands encompass a total of approximately 43,779 acres. The *ahupua‘a* of both Wailuku and Waikapū extend across the isthmus of Maui to meet the traditional land boundaries of Hamakuapoko and Kula Moku. These two land divisions were of primary importance due to their location across "the whole of the central isthmus so as to cut off half of the lands in the district of Kula from access to the sea," and were sometimes referred to as Na Poko (W.D. Alexander in Sterling 1998:63).

Waikapū is one of four *ahupua‘a* that traditionally comprise the *‘okana* (sub-district) of Maui known as "Nā Wai ‘Ehā," or "The Four Waters," named for the four major deep-valley streams emanating from the West Maui Mountains (Handy et al. 1991:469; Moffat and Fitzpatrick 1995:23). Geographically and culturally, Nā Wai ‘Ehā consisted of four deep valley streams (Waikapū, Wailuku, Waiehu, and Waihe‘e) that watered four distinct areas of taro land that spread out fanwise to the shoreline (Handy et al. 1991:272).

2.1.1 Traditional Accounts

In ancient times, Waikapū and Wailuku were agriculturally abundant lands that were known for their extensive *lo‘i*, or wetland taro cultivation (Handy et al. 1991:497). In an excerpt from C.T. Cheever (in Sterling 1998:75) describes the remnants of the pre-Contact cultivation of ‘Īao Valley in Wailuku:

> As you get into the valley and vega of Wailuku, you see numerous remains of old kihapais, or cultivated lots, and divisions of land now waste, showing how much more extensive formerly was the cultivation, and proportionately numerous the people, than now…
>
> The whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty to one that has a position a little above it. (C.T. Cheevers in Sterling 1998:75)

Similar observations were made regarding the deep valley of Waikapū, lying immediately southwest of the paramount valley of the West Maui range in Wailuku. Writing his observations

from long after the period of active *lo‘i* cultivation, E.S.C. Handy (in Sterling 1998) documented the following:

> Spreading north and south from the base of Waikapu to a considerable distance below the valley are the vestiges of extensive wet plantations, now almost obliterated by sugar cane cultivation; a few here and there are preserved in plantation camps and under house garden sites along the roads. … Far on the north side, just above the main road and at least half a mile below the entrance to the canyon, an extensive truck garden on old terrace ground shows the large area and the distance below and away from the valley that was anciently developed in terraced taro culture. On the south side there are likewise several sizeable *kuleana* where terraces are now used for truck gardening. (E.S.C. Handy in Sterling 1998:94)

Handy et al. (1991) in *Native Planters in Old Hawaii Their Life, Lore, and Environment*, describes Waikapū Stream as land bound, as opposed to emptying into the ocean, with the water diverted into *lo‘i* and the overflow dissipating on the dry plains of the central isthmus between West and East Maui (Handy et al. 1991:496) feeding the wetland of Keālia. Though there has been some speculation on the establishment of small fishing settlements with cultivation of sweet potatoes in the sandy soil or red *lepo* (dirt) near the shore, E.S.C. Handy stated that

> … From Waihee to Waikapu there is much good land below and bounding the ancient terrace area on the *kula* and in the lower valleys which would be ideal for sweet potato culture, but it is said that little was grown in this section because there was so much taro. (Sterling 1998:63)

2.1.1.1 Place Names of Wailuku

In the preface of Place Names of Hawaii (Pukui et al. 1974:x), Samuel Elbert states that

> 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 [the ancient names] now. (Pukui et al. 1974:x)

Inherent in the statements of Elbert is the knowledge that the oldest place names held meaning and told the story of an area prior to European contact. Literal translations of place names for land areas and divisions near the project area are listed in Table 1 and may provide some insight to the condition of this area prior to Western contact. Unless otherwise noted, translations are by Pukui et al. (1974).

2.1.1.1.1 The Plains of Kama‘oma‘o

Ke Kula o Kama‘oma‘o, or the Plains of Kama‘oma‘o, is the name given to a region of sandy plains spanning portions of Wailuku and Waikapū Ahupua‘a (Emerson 1993) including the current project area.

Table 1. Place name translations in the vicinity of the project area

Name	Translation
Ahuakolea [‘Ili]	*Lit*., “plover’s hill” (Thrum 1922:625); note *‘ili* is a land division within an *ahupua‘a*
Aikanaha [‘Ili]	*Lit*., “possession by forties” (Thrum 1922:626); Kanahā is also a fishpond in Wailuku Ahupua‘a, name of which has been translated by Pukui et al. (1974) as “the shattered [thing]”
Hanaula [‘Ili]	*Lit*., “red bay”
Haleki‘i [Heiau]	*Lit*., “image house”; a *heiau* (Walker Site 44) located in Wailuku at the site of Pihana Heiau along the meander of ‘Īao Stream
‘Īao [Stream]	*Lit*., “cloud supreme”; the ‘Īao Stream brings the water of the ‘Īao Valley to the ocean at Paukūkalo, a point just northwest of Kahului Harbor
Ka‘a [Point]	*Lit*., “rolling”; a shoreline promontory just east of Kahului Bay
Kaalaea [‘Ili]	*Lit*., “the ocherous earth”
Kahului	*Lit*., “the winning”; native name for the Kahului region is “Kaihuwa‘a” (Sterling 1998)
Kaiwaloa [Ridge]	*Lit*., “the long fern”; *‘iwa* is a native fern (*Asplenium horridum*) with narrow, feather-shaped fronds (Pukui and Elbert 1986:104), may also refer to the flight of the *‘iwa* bird (*Fregata minor palmerstoni*)
Kalialinui [Gulch]	Possible literal translation: “large tree or plant used for medicine” (Pukui and Elbert 1986); Kalialinui Gulch is 11 miles long, beginning on the upper slopes of Haleakalā, across Wailuku Ahupua‘a, terminating on the flat plains of Kahului just south of Kanahā Pond
Kanahā [Pond]	Star name (Pukui and Elbert 1986); salt was gathered at Kanahā: “When the sea rose the hollows in the rocks were filled” (Sterling 1998)
Ka‘ōpala	*Lit*., “the rubbish”; a dividing line between Pūlehu Nui Ahupua‘a and Waikapū Ahupua‘a
Kapalaalaea [‘Ili]	*Lit*., “daubed with reddish soil” (Thrum 1922:644)
Kapilau [Ridge]	*Lit*., “the stench”
Kapili iki [gulch]	“Pili” is a type of grass (*Heteropogon contortus*) used in the thatching of traditional *hale* (house) construction; “*iki*” translates to short, or small; possibly meaning “short pili [grass]”
Kapūhau (var. Pukau, Pūhau) [‘Ili]	Pūhau—*Lit*., “the ice spring”; pū is short for puna (spring)
Kapukaulua	*Lit*., “the fish hole”; located in the coastal region of Pā‘ia, at the most seaward portion of Spreckelsville; close to the reported location of Papanene Heiau (Walker Site 56); the reference to the fishing area concerns the *ulua* (crevalle, jack, pompano) fish
Keana [‘Ili]	*Lit*., “the cave” (Pukui et al. 1974:103)
Kuaiwa [‘Ili]	*Lit*., “nine times” (Thrum 1922:653) or nine generations

Name	Translation
Loaloa (var. Kaloaloa) [‘Ili]	“Elongated garden plot, as for sweet potatoes (so used in 1848 land claims)” (Pukui and Elbert 1986:209)
Luapua‘a (var. Kaluapuaa) [‘Ili]	*Lit*., “hog pit”
Mā‘alaea	Perhaps a contraction of Maka‘alaea (Ocherous earth beginning)
Mauna Kahalawai	*Lit*., “the gathering of waters”; the West Maui Mountains (Pellegrino 2009)
Mau‘oni [Pond]	One of the two fishponds located at the shore of Kanahā
Noho‘ana [‘Ili]	*Lit*., “way of life” (Pukui and Elbert 1986:269)
‘Ōhi‘a [‘Ili]	Two kinds of trees, *‘ōhi‘a‘ai* (*Eugenia malaccensis*/mountain apple) (Pukui and Elbert 1986:277) and *‘ōhi‘a lehua* (*Metrosideros macropus, M. collina polymorpha*) (Pukui and Elbert 1986:199); found in the forested regions, the fruit of the *‘ōhi‘a‘ai* was prepared by splitting and drying it in the sun (Pukui and Elbert 1986:277); the wood of the *‘ōhi‘a lehua* is hard and once used for images, spears, and mallets (Pukui and Elbert 1986:199)
Palama [‘Ili]	*Lit*., “lama wood enclosure”; Lama wood (*Diospyros sanwicensis*), whose name translates to “light” or “lamp” was a type of hardwood used in *hale* (house) construction (Abbott 1992:68); Lama wood was also an integral part of hula ceremony where a block from the tree would be wrapped in yellow *kapa* (Hawaiian cloth) and scented with *‘ōlena* (*Curcuma longa*) to represent Laka, the goddess of hula, sister and wife of Lono (Abbott 1992:117)
Palolo [Ditch]	*Lit*., “clay”
Papa‘ula	*Lit*., “red flats”; the region just inland of this promontory is presently a portion of the modern Maui Country Club golf course
Paukūkalo	*Lit*., “taro piece”; present-day shoreline community located at the northernmost region of Kahului Harbor; the ‘Īao Stream reaches the ocean at Paukūkalo, a region formerly heavily planted in *kalo* (taro; *Colocasia esculenta*)
Pihana [Heiau]	*Lit*., “fullness”; stories of this Wailuku Heiau include it being built in a single night by the legendary race of *menehune* (legendary small people) who brought the stones from Paukūkalo beach; also the construction of this *heiau* has been attributed to the Maui chief, Kahekili; listed as Walker Site 43
Pūlehu Nui [Ahupua‘a]	Large *pūlehu* where *pūlehu* is literally translated as “broiled”; this *ahupua‘a* abuts Wailuku and Waikapū and constitutes much of the central isthmus
Pu‘u Lio [Hill]	*Pu‘u* is the word for hill and *li‘o* may be in reference to the bird named for the sound they make; place name possibly related to the *li‘o* bird, which is the same as the *‘a‘o* (*Puffinus auricularis newelli*) (Pukui and Elbert 1986:207)

Name	Translation
Pu‘unēnē	*Lit*., “goose hill”; cinder cone once located inland of Papa‘ula, mined for its gravel during WWII to construct the runways at NAS Kahului
Wai‘ale [Reservoir]	*Lit*., “rippling water”; reservoir located in Wailuku, fed by waters of the Spreckels Ditch
Waikapū [Ahupua‘a]	*Lit*., “water of the conch”; reference to the conch shell formerly found in a cave at Waikapū, until it was stolen by a supernatural dog, named Puapualenalena; also, the scene of a great battle, fought between Kahekili, king of Maui, and Kalani‘opu‘u, king of Hawai‘i Island, at Waikapū Commons
Wailuku [Ahupua‘a]	*Lit*., “water of destruction”; possibly a reference to the battle which took place at ‘Īao between the forces of Kamehameha I and the Maui chiefs; Sterling (1998) states that Pukui et al. (1974) believes the name is older than the famous battle; Westervelt (1910) makes special reference to the waters of Wailuku in ‘Īao emptying into the Kahului Harbor

An early legend associated with this area is told of Hi‘iaka, sister of the volcano goddess Pele, as she travelled through the Hawaiian Islands. When Hi‘iaka’s companion, Wahine‘ōma‘o complains of hunger during their travels along a *kaha* (hot dry shore) portion of northern Maui, Hi‘iaka offers a chant of supplication for nourishment from the local residents. Hi‘iaka and Wahine‘ōma‘o were met with little hospitality after their appeal for food was largely ignored by the areas residents (Emerson 1993:74). Hi‘iaka then offered another chant making “known her wish, concluding her appeal with ominous threats against the life of the king, in case her demands were not met” (Emerson 1993:75). A portion of this chant reads:

...Haki kepakepa na moku;	What wailing and beating of breast!
Pa‘iauma ka aina;	Wild anguish of child and of ghost
Uwē kamali‘i, uwē ka hanehane —	O‘er the sandy plain of Kama‘o.
Ke uwē la i ka pili,	The districts are frenzied with grief
I ke kula o Ka-ma‘o-ma‘o;	Tearing of hair and breaking of teeth
Ka‘a kumakena o Maui, e!	One wail that lifts to heaven.
la wai Maui?	Who shall be heir to this Maui land?

(Emerson 1993:75-76)

Ke Kula o Kama‘oma‘o was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970), a place where dead spirits waited for a friendly escort, perhaps a family *‘aumakua* (guardian spirit embodying an animal form), to show them the way to eternity:

> The worst fate that can befall a soul is to be abandoned by its aumakua and left to stray, a wandering spirit (kuewa) in some barren and desolate place, feeding upon spiders and night moths. Such spirits are believed to be malicious and to take delight in leading travelers astray; hence the wild places which they haunt on each island are feared and avoided. Such are the plains of Kama‘oma‘o on the island of Maui. (Beckwith 1970:154)

According to Helen P. Hoyt (1976), Kama‘oma‘o is also a region where the “Marchers of the Night,” or *Ka huaka‘i o ka Po*, are sometimes heard and seen. When these spiritual “Night Marchers” appear, according to Beckwith (1932:199), “It is said that such a sight is fatal unless one has a relative among the dead to intercede for him.”

> The marchers carried candlenut torches which burned brightly even on a rainy night. They might even be seen in broad daylight and were followed by whirlwinds such as come one after another in columns. They cried “Kapu o moe!” as a warning to stragglers to get out of the way or to prostrate themselves with closed eyes until the marchers passed. (Beckwith 1932:199)

Ms. Holt-Padilla, Cultural Historian for the Maui Arts and Cultural Center, explains that the central isthmus was a dry, hot place with trails leading west toward Waikapū and east along the Kīhei coastline. She stated that the guardian spirits of men, the *‘aumakua* spirits, were known to wander on the lower, sandy plains of Waikapū. Ke Kula o Kama‘oma‘o is also described as a

special place for the souls of the soldiers killed at Kakanilua, or the Battle of Wailuku Common (Hokulani Holt Padilla in Hill et al. 2006).

2.1.1.1.2 The Naming of Wailuku and Waikapu

The place name "Waikapū", according to (Pukui et al. 1974:223), literally translate to "Water of the Conch." This is due to a cave within Waikapū Valley that supposedly housed a supernatural conch shell (named Kīhapū, blessed with the breath on Lono) that resided there until it was stolen by a supernatural dog named Puapualenalena. This conch shell, when blown, was said to resound throughout all the Hawaiian Islands (Beckwith 1970:349; Pukui et al. 1974:223). According to W.K. Kaualililehua (in Sterling 1998:93):

> On the left side of the stream is a cave and in the cave was the conch. It sounded all the time, unseen by the public…
>
> On the northeast side of the stream on the opposite side of the conch that sounded, on the cliff, was a dog named Puapualenalena. Because he heard it he sought diligently to find it but did not succeed. Those who guarded the conch were very watchful. …
>
> The owners of the conch did not believe, perhaps, that a supernatural being would succeed in taking it away, so they tried to be a little careless. It was not taken, but on the day that Puapualenalena did get it away, they had been utterly careless. After he took it, it sounded no more to this day. (W.K. Kaualililehua in Sterling 1998:93)

Elspeth Sterling (1998) provides several additional accounts of the naming of the waters of Nā Wai ‘Ehā, specifically Wailuku and Waikapū, that have a grounding in the affairs of the Hawaiian people. According to H.T. Cheever (in Sterling 1998:63), the waters of Nā Wai ‘Ehā were named after successive events during a famous, albeit unnamed, battle:

> …Waikapu—The water where the conch was blown, and the engagement began. Waiehu—The water where the combatants smoked with dust and perspiration. Wailuku—The water of destruction, where the battle began to be fierce and fatal. Waihee—The water of total rout and defeat, where the army melted away. (H.T. Cheever in Sterling 1998:63)

C.W. Stoddard expanded on this interpretation of the place names Waikapū and Wailuku in Nā Wai ‘Ehā by relating them to the landing of Kamehameha I at Kalepolepo in the late 1700s (Sterling 1998:63) by relating that

> Kamehameha landed at Kalepolepo and a *kapu* [taboo] was put upon the nearest stream. It became sacred to royalty, as was the custom and is known as Waikapu to this hour—that is, forbidden water.
>
> Presently the monarch began his march; and at the second stream a great battle raged, so those waters were called Luku—"to slaughter, to slay as in war, the destruction of many at once." (C.W. Stoddard in Sterling 1998:63)

The names and legends of the region may have their origins in one, or many, notable events that occurred in the time before Western contact. Though opinions vary, the central isthmus of Maui was nonetheless utilized by forces entering these battles.

2.1.1.2 Warfare in the Sand Hills of Nā Wai ‘Ehā

As a political center for the chiefly class (*ali‘i*) of Hawaiian society, several large battles took place in the general vicinity of Wailuku, many of which entailed the marching of foreign armies through the *ahupua‘a* of Waikapū after landing their canoes on the leeward shores of the central isthmus, near Kealia. One example was the Battle of Waikapū Common, or the *Ahulau ka pi‘ipi‘i i Kakanilua*. This battle entailed the clash of invading Hawai‘i Island forces, headed by Kalaniopu‘u, with the Maui forces under Chief Kahekili in 1776. According to (Fornander 1969:153), following the plunder of the leeward east Maui coastline, Kalaniopu‘u landed his invading troops at Mā‘alaea. The following account describes the battle on the sand hills south of Wailuku:

> The landing being effected early in the day, it was resolved to push forward at once, and ‘on to Wailuku!’ where Kahekili was residing, became the war cry of the day. The detachment or regiment known as the Alapa, mustering with several hundred men, was selected for this hazardous expedition, and with high courage they started across the isthmus of Kamaomao, known as the Waikapu common, determined, as the legend says, ‘to drink the waters of the Wailuku that day.’ This regiment was considered to be the bravest and best. …They are said to have all been of equal stature and their spears of equal length; and the legend represents their appearance—with their feather cloaks reflecting the sunshine and the plumes of their helmets tossing in the wind—as a gorgeous and magnificent spectacle.
>
> Little did this gallant troop apprehend the terrible fate that awaited them. Little did Kalaniopuu know the wily warrior with whom he was contending. Offering no resistance to the enemy while crossing the common, Kahekili distributed his forces in various directions of the Wailuku side of the common and fell upon the [Alapa] as it was entering among the sandhills southeast of Kalua, near Wailuku. The gallant and devoted Alapa were literally annihilated; only two out of the eight hundred escaped alive. (Fornander 1969:153)

According to Ms. Holt-Padilla, the outcome of the battle for Kakanilua was not decided on the first day. The day following the “Slaughter of the Pi‘ipi‘i at Kakanilua,” the remaining forces of Kalani‘ōpu‘u were again sent to battle Kahekili’s forces, which were expected to be in Wailuku (Hokulani Holt Padilla in Hill et al. 2006). Following the humiliating defeat, Kalaniopu‘u consulted his remaining fighters and his war leaders, including his favorite, the young Kamehameha. After this Kalaniopu‘u and his forces proclaimed “Tomorrow we will drink the waters of Wailuku and rest in the shade of Hekuawa” (Speakman 1978:13). In response to the invader’s renewed vigor for battle:

> Ka-hekili and his ally and nephew, the ruling chief of O‘ahu, prepared another fish net [ambush], and the fish [Hawai‘i Island warriors] swam into it. Ka-hekili’s men rose before dawn and took their stand in the sand hills, some toward the Waikapu turn. The invading force from Hawai‘i found a divided front from which the spears poured down on them “like a swift rainstorm.” The terrified soldiers were surrounded and fled. (Speakman 1978:13-14)

The Big Island army was ambushed at an area close to Waikapū and was destroyed by the army of Kahekili on the plains of Kama‘oma‘o (Hokulani Holt Padilla in Hill et al. 2006). This second day of fighting was known as the Battle of Kamoku‘ilima (Kamakau 1992:132). Kalaniopu‘u never succeeded in taking Wailuku, and he died shortly after the Battle of Wailuku Common. Upon the death of Kalaniopu‘u, and the death of his sons, the young Kamehameha became the ruling chief of Hawai‘i and the mortal enemy of the now aged Kahekili (Speakman 1978:12). Kamehameha would return to Wailuku and succeed where Kalaniopu‘u had failed. By 1786, Kahekili controlled Maui, Moloka‘i, Lāna‘i, and O‘ahu. This undisputed political control lasted for only a short period of time. In 1790, the last great conflict on Maui – the Battle of Kepaniwai – was fought in ‘Īao Valley in Wailuku. The Battle of Kepaniwai marked the end of the reign of Kahekili and the beginning of the early historic period and a politically unified Hawai‘i (Pukui et al. 1974).

An 1841 account of Commodore Charles Wilkes of the American Navy published in the 7 January 1927 edition of the *Honolulu Advertiser* provides an early description of “a mound of human bones” thought to be the bodies of fallen warriors in the Sand Hills of Wailuku (Figure 6). The article refers to accounts of past battles fought in Central Maui.

2.1.2 Early Historical Period

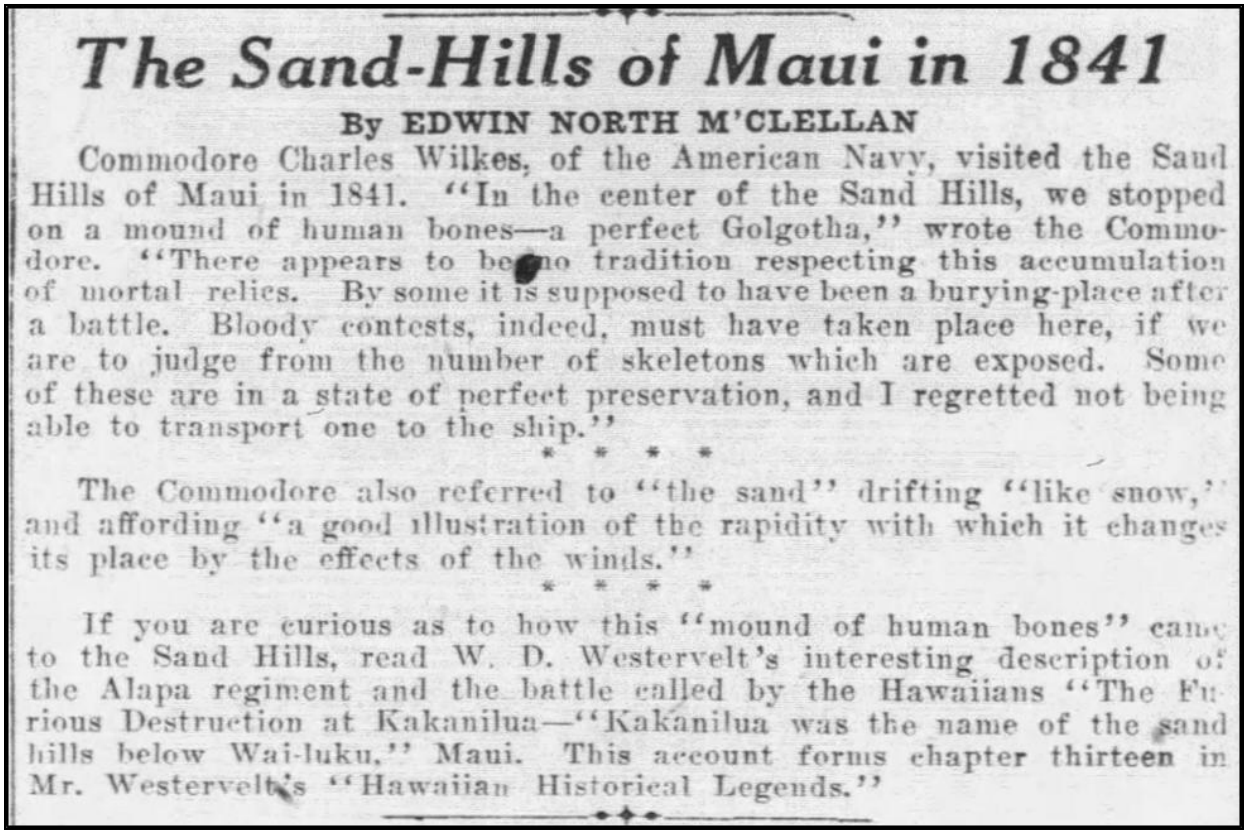
The nineteenth century brought to Maui a multitude of commercial, demographic, social, and religious changes encouraged by the burgeoning foreign influx. In 1819, the first whaling ships arrived in Hawaiian waters and Lāhainā Harbor became a primary port of call for provisioning ships in the Islands. Closely following the arrival of the first whaling ships, the first Protestant missionaries and their families arrived in Lāhainā in 1823 (Bingham 1824). One of the first records regarding population statistics in the regions of Wailuku and Waikapū was compiled by the early missionaries who settled there. In 1829, Protestant missionaries recorded school attendance figures for the out-stations of Wailuku as consisting of 612 students, with an additional 329 students in Waikepu (Waikapu Community Association) (Richards 1831). Just a few years later, the mission census data of 1831-1832 records the population of Waikapū at 733 inhabitants (Schmitt 1973:18).

Use of the northern coastline landing at Kahului by early Europeans proved difficult, for far more records exist of early explorers and merchant ships at anchor off the southern, more protected coastline of Maui than along the exposed, northern coast. An account by the American missionary Rufus Anderson (1865) portrays the obstacle of landing in Wailuku District:

> We were bound to Wailuku, situated near the western side of the isthmus connecting West and east Maui. After crossing the channel the wind increased, and so rough was the sea that our landing seemed not quite safe. Mr. Alexander met us on the shore, but in such a stand-storm that we were obliged to veil our faces. We breasted the gale for a dozen miles, and near Wailuku were wet to the skin by a storm of rain. (Anderson 1865:176)

A landing on the leeward coast of the central isthmus meant that the people and commerce that reached European ships came through the trails that transect the Plains of Kama‘oma‘o.

During the early and mid-1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around the developing



The Sand-Hills of Maui in 1841

By EDWIN NORTH M'CLELLAN

Commodore Charles Wilkes, of the American Navy, visited the Sand Hills of Maui in 1841. "In the center of the Sand Hills, we stopped on a mound of human bones—a perfect Golgotha," wrote the Commodore. "There appears to be no tradition respecting this accumulation of mortal relics. By some it is supposed to have been a burying-place after a battle. Bloody contests, indeed, must have taken place here, if we are to judge from the number of skeletons which are exposed. Some of these are in a state of perfect preservation, and I regretted not being able to transport one to the ship."

* * * *

The Commodore also referred to "the sand" drifting "like snow," and affording "a good illustration of the rapidity with which it changes its place by the effects of the winds."

* * * *

If you are curious as to how this "mound of human bones" came to the Sand Hills, read W. D. Westervelt's interesting description of the Alapa regiment and the battle called by the Hawaiians "The Furious Destruction at Kakanilua—"Kakanilua was the name of the sand hills below Wai-luku," Maui. This account forms chapter thirteen in Mr. Westervelt's "Hawaiian Historical Legends."

Figure 6. Newspaper clipping from the 7 January 1927 edition of the *Honolulu Advertiser* describing an 1841 discovery of human skeletal remains in the Sand Hills of Maui (The Honolulu Advertiser 1927)

port towns. Traditional Hawaiian populations lived in a largely dispersed settlement pattern. Although royal centers and areas of concentrated population existed, these areas never came close to rivaling the populations of historic port towns that developed along Hawai‘i’s shorelines during the 1800s. Foreign commercialism initially came to Waikapū in the form of sugar processing and coffee production (Wyllie 1854). A man by the name of Antone (Anthony) Catalena was running a cane syrup factory at Waikapū ca. 1823 and is credited with being the founder of the industry in Hawai‘i (Thrum 1874) while Antonio Silva set up a plantation and a mill in Waikapū ca. 1828 (Thurston 1906). At about the same time, Antonio was also engaged in coffee agriculture with trees that reportedly produced above 20 pounds annually (Wyllie 1854). The Reverend Hiram Bingham (1824) wrote the following description about an excursion he took with the Reverend William Richards, in a letter sent to the American Board of Commissioners of Foreign Missions (ABCFM) in Boston, dated 30 August 1823:

> The principal plantation in this district, called Waikapu (Wy-kah-poo) lies about midway between the two bays, watered by a small stream, descending in a south-eastern direction from the lofty mountains, that lie between Lahinah [sic] and that place. At this plantation which belongs to Cox [Kahekili Ke‘eaumoku] and Kaahoomanoo [Ka‘ahumanu], there are about 100 houses, six head of neat cattle, and eight horses. This is the most important, and almost the only inland settlement that I have seen in the islands. Its situation is very pleasant. You stand upon the bank of this little rivulet in the midst of the bananas, sugarcane, and taro; and the plains that lie upon the two bays spread upon your right and left, containing perhaps 100 or 150 square miles. Before you, at the distance of 15. (Bingham 1824:111)

These early commercial developments along with the establishment of the branch station of the ABCFM at Wailuku in November 1831 (Edwards 1832:403) would alter the traditional lifeways of Nā Wai ‘Ehā and Waikapū in a manner best described by Kuykendall (1938), noting that 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)

Following this trend in the commercialization of agricultural pursuits across all islands, the remnants of indigenous agriculture either fell into disrepair or were absorbed by the developing plantations. Vestiges of extensive *lo‘i* cultivation, which spread to the north and south from the base of Waikapū to a considerable distance below the valley remained through the 1930s. Although most of the *lo‘i* terraces in Waikapū had been plowed under by the expansion of commercial sugarcane cultivation, a few of the ancient terraces were preserved in plantation camps and under house sites (Figure 7) as well as reused as garden sites, among which, and in addition to Hawaiian wet-taro, included Japanese dry-taro, truck gardens, and lotus for their seeds (Handy et al. 1991:497).

2.1.3 The Māhele and the Kuleana Act

The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. On 27 January 1848, the

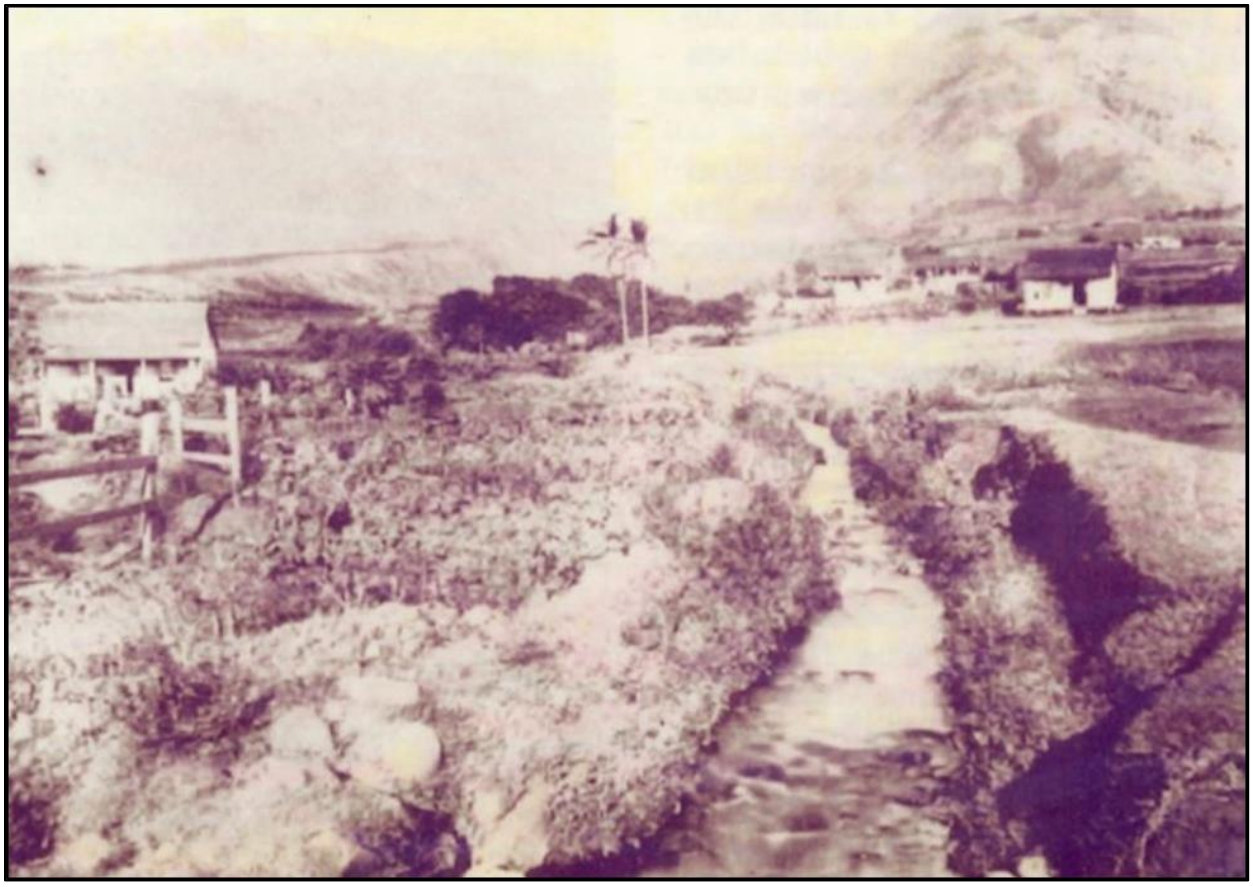


Figure 7. Early photograph of Waikapū Valley, *lo‘i*, *‘auwai*, and dispersed homes (Waikapu Community Association 2018)

Crown and *ali‘i* began to receive their land titles as *konohiki* (overseer of an *ahupua‘a*) awards. For *konohiki* lands, a claim first had to be approved by the Land Commissioners. Upon confirmation of the claim, a certificate was awarded to the claimant. This certificate was called a Land Commission Award (LCA), which confirmed the claim of an individual for a parcel.

The awardee could then obtain a Royal Patent (RP) from the Minister of the Interior, which indicated the government's interest in the land had been settled by the payment of a commutation fee. Commutation means "an exchange, or replacement." The commutation fee was usually set at a maximum of one-third of the value of the unimproved land. The fee could be settled by the exchange of cash but was usually settled by the return of one-third of the lands (or cumulative value of the lands) originally awarded to the claimant (Chinen 1958:13).

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).

During the Māhele, the lands surrounding Waikapū Commons were sold by the Department of Education in ten parcels, each amounting to more than 1,317 acres. Royal Patents were issued for the sales in 1854. Later, all ten of these Royal Patents were surrendered and cancelled, and the land was quit-claimed back to the Board of Education in August 1860. In 1875, the Board of Education sold at auction the "Land known as the ahupuaa of Waikapu, saving grants hitherto made within said ahupuaa, or sales by the board of education" to Mr. Henry Cornwell; these lands extended out from Waikapū Valley to the northwestern boundary of Pulehunui Ahupua‘a. (The Pacific Commercial Advertiser 1879:5). Cornwell acquired the lands in fee-simple under Royal Patent No. 3152. The lands purchased by Cornwell were added to the holdings of the Waikapū Sugar Plantation (Figure 8), originally started by Henry Cornwell and James Louzada on Grant 2951, before the plantation was sold in 1876.

The current project area is situated within portions of Land Grants 1673, 2107, and 2474 and portions of LCA 2522, 3110, 3296, 3340, and 5228 (Figure 9 and Figure 10). There are several other LCAs and land grants located in the immediate vicinity. These awards are concentrated within the watershed area of Waikapū Stream, west of the project area and Honoapi‘ilani Highway. Land use associated with these grants and LCAs includes house lots, *lo‘i*, potato, *hala* (*pandanus*) trees, banana, *kula* (pasture), sugarcane, *‘auwai* (ditch), reservoir, fish, and livestock (Guerriero et al. 2017).

2.1.4 Mid- to Late 1800s

With the passage of Hawaiian lands into the Western model of privatization, coupled with the decline of the indigenous population, the wet valleys on Nā Wai ‘Ehā began to shift away from

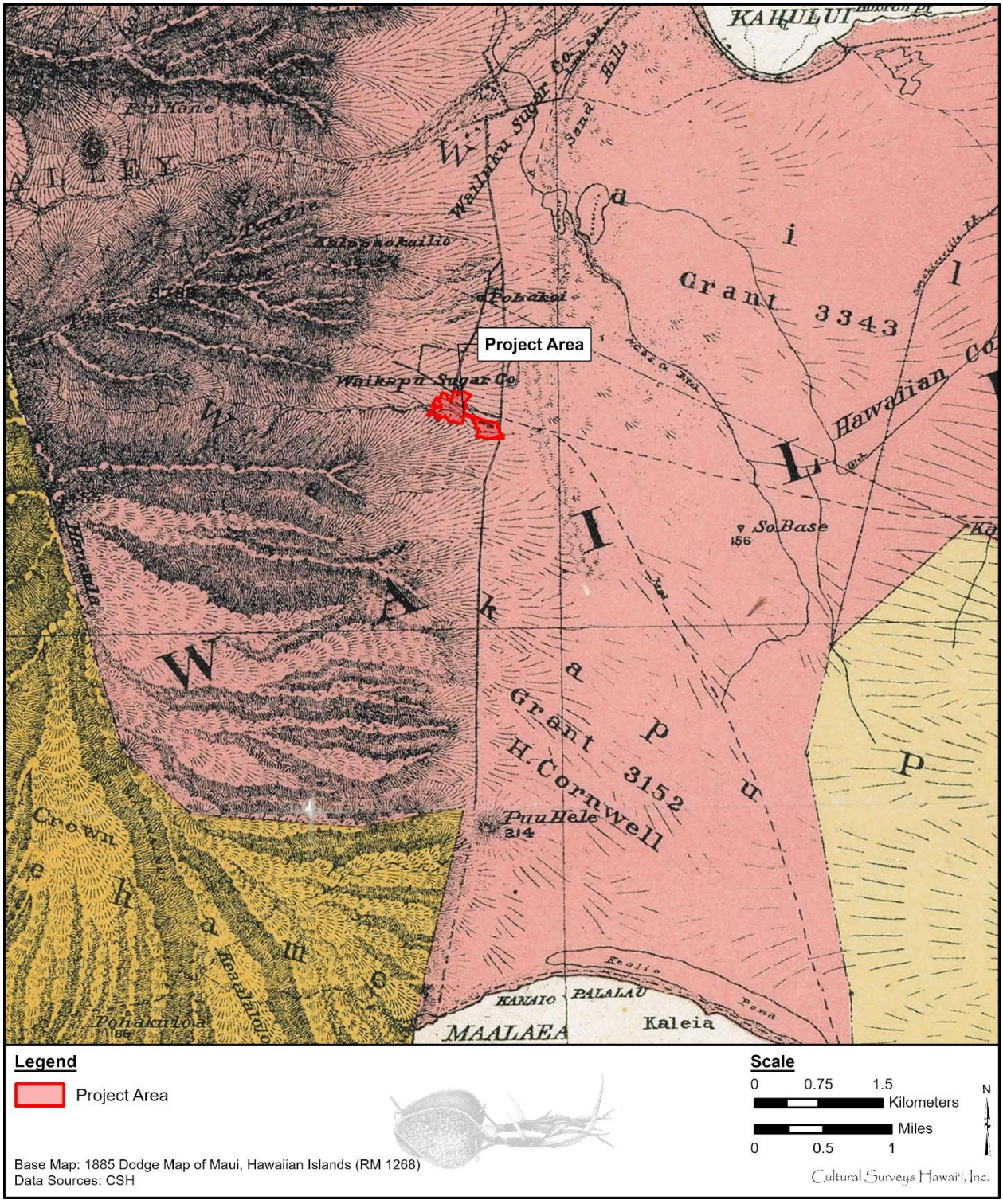


Figure 8. Portion of Dodge (1885) map showing current project area near Waikapu Sugar Company lands

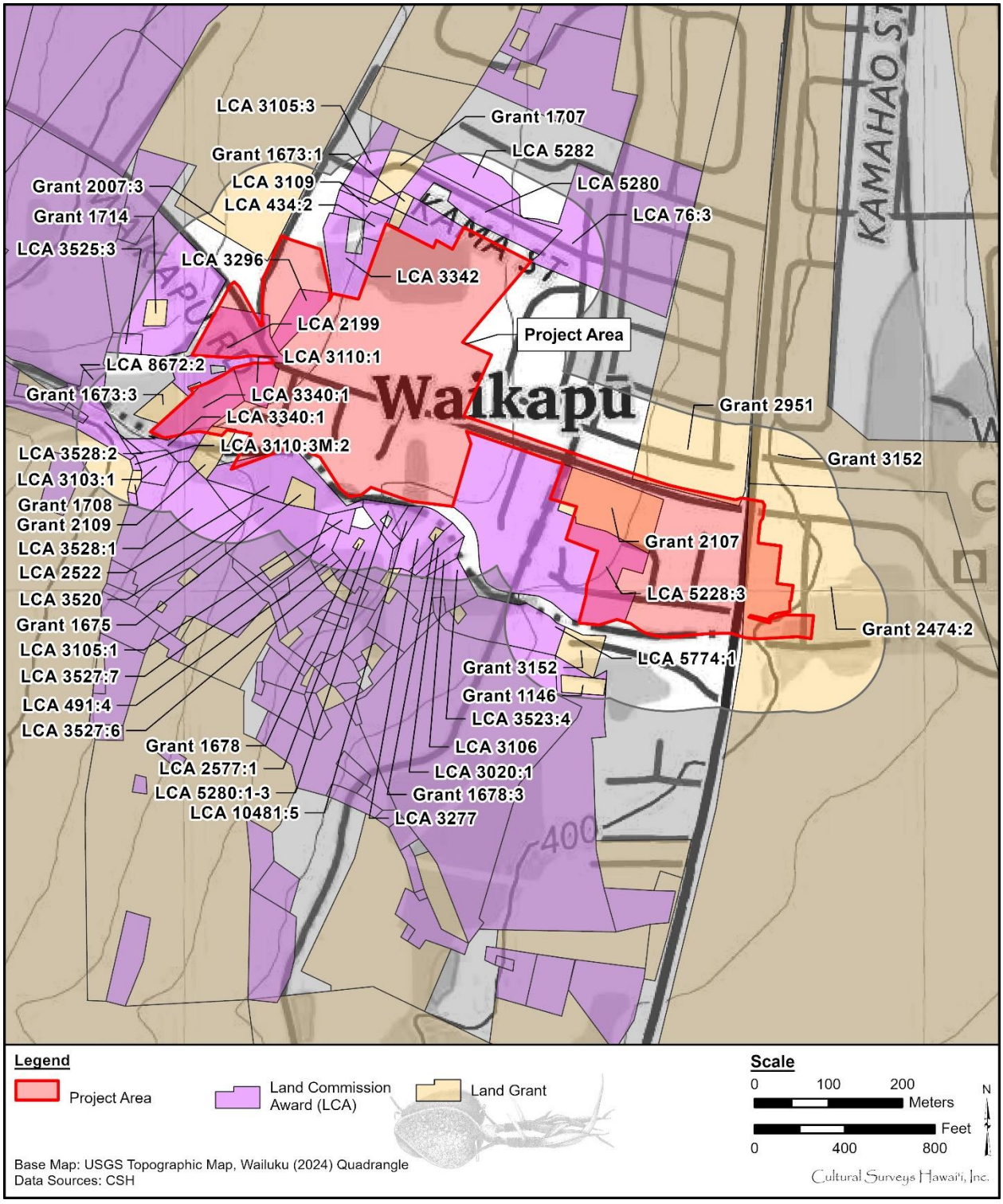


Figure 9. LCAs and Land Grants in the vicinity of the current project area depicted on portion of the 2024 Wailuku USGS 7.5-minute topographic quadrangle (U.S. Geological Survey 2024)

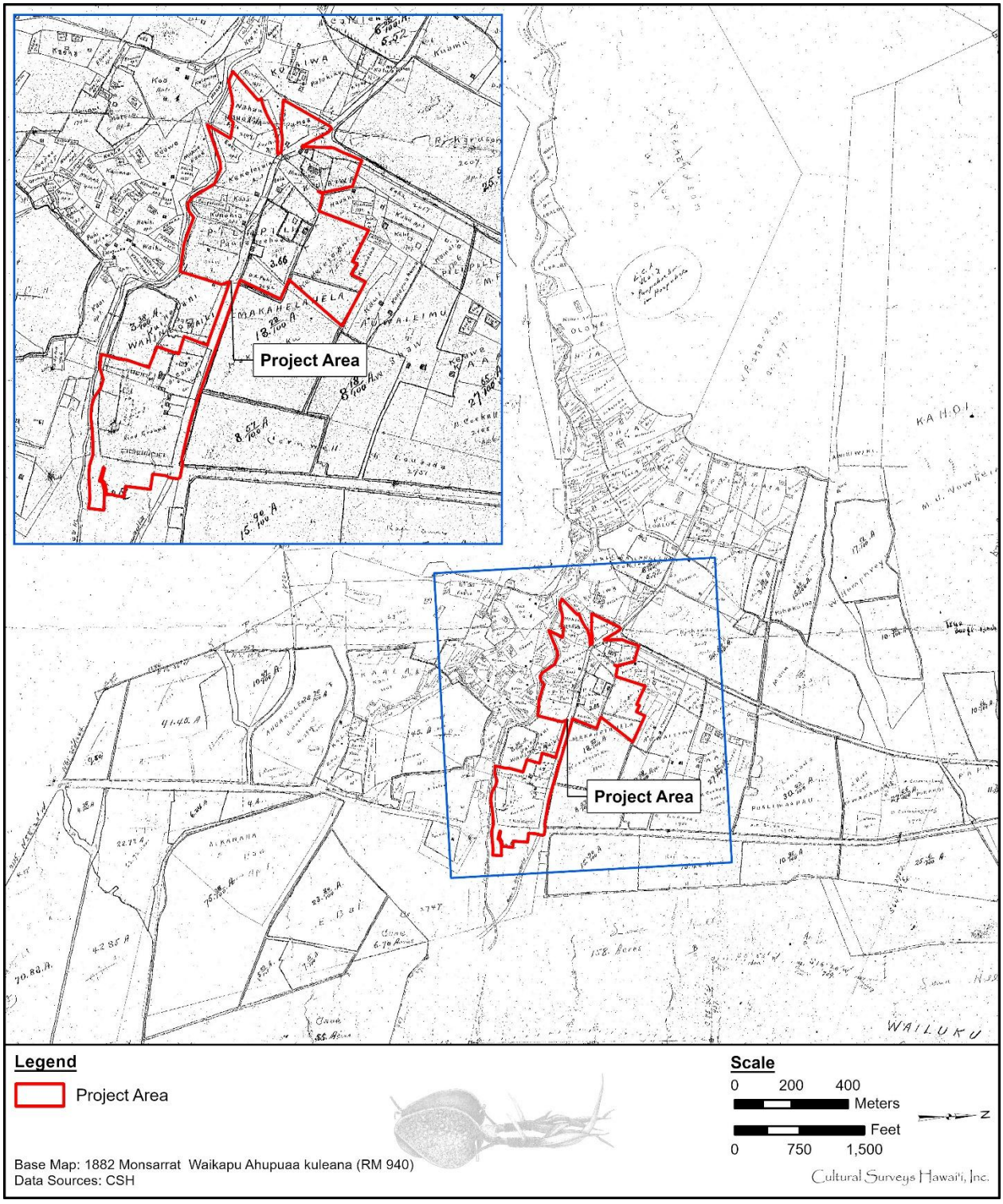


Figure 10. Monsarrat (1882) map of Waikapū showing *kuleana* awards in the vicinity of the current project area

subsistence farming toward plantation style sugarcane cultivation. The fertility of the river valleys of Nā Wai ‘Ehā were readily observed by visitors of the period. While traveling from Ma‘alaea to Waikapū, a late nineteenth century observer describes the following scenic views:

> It took us about an hour to drive from Maalaea to Waikapu and we began to see some indications of the beauty which the inhabitants of Maui ascribe to their
>
> beloved isle. The mountain mass that seemed shapeless is rent by a series of deep gorges—each, we were told, a scene of bewildering beauty, both in rock-scenery and foliage. (Cummings 1881)

Most agriculturally fertile lands of Waikapū Ahupua‘a likely did not extend beyond the alluvial sediments of the stream valley, given that lower elevations leading into the central isthmus of Maui are dominated by windswept Pleistocene sand dune deposits (Foote et al. 1972:48, 115).

2.1.4.1 Waikapū Congregational Church

Prior to the surge in commercial sugarcane cultivation, Waikapū was inhabited by dominantly Hawaiian homes with nearby taro patches feeding from the waters of Waikapū Valley. The small community residing here established the Waikapū Congregational Church in 1838 as a home-based Christian service, sometimes utilizing the facilities of the distant Ka‘ahumanu Church in Wailuku. In 1868, the community was able to erect and dedicate a permanent structure (Figure 11). Residents moving to the region in 1908 recalled that “we used to have ‘hoikes’ (rally days) there and folk from all Central Maui used to attend.” According to residents, both the Wednesday night prayer services and Sunday all-day services would fill the church building to capacity (Head 1960).

During WWII, Waikapū Congregational Church was turned over to the military and used as a surgical hospital. The church building was used as a ward with a ‘nurses quarters’ built off to the side of the main structure. It was during this period that the church had its steeple removed (Figure 12) for being too clear a target for potential marauding enemy submarine gunners. Although the steeple was re-erected after the war, it continuously leaked and was again removed from the building. As sugarcane cultivation began to dominate the region in the early to mid-twentieth century, residential dwellings dwindled, as did the attendees of the Waikapū Congregational Church. As full-time pastors became unnecessary, the church members voted to merge with the Kahului Church, and the Waikapū Congregational Church was abandoned to the sugarcane fields that surround it (Head 1960).

2.1.4.2 Development of Commercial Sugar in Waikapū

Henry Cornwell arrived on Maui from New York and started the Waikapu Sugar Company with James Louzada (his brother-in law) in 1864. The two partners constructed a steam-powered sugar mill situated on a 17-acre parcel in Waikapū that was part of Land Grant 2951 that they had purchased (Wilcox 1996:61) (Figure 13 and Figure 14).

In 1876, Henry Cornwell retired and the remaining plantation lands were sold to the new partners Colonel William H. Cornwell and Colonel G.W. Macfarlane (The Honolulu Advertiser 1903:8). Henry Cornwell, originally born on Long Island in 1815, died in Waikapū in 1886 and was buried at Nu‘uanu Valley Cemetery on O‘ahu (The Honolulu Advertiser 1886:3).

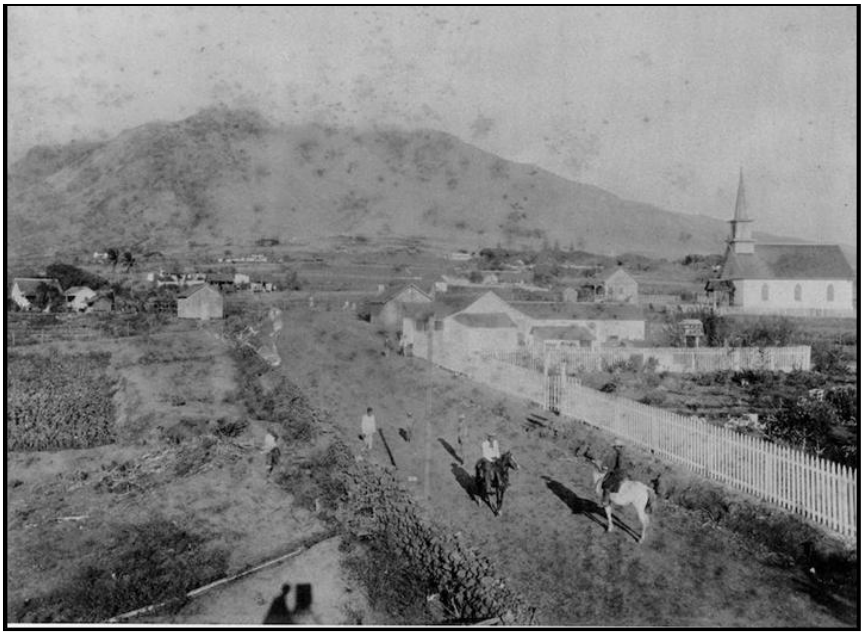


Figure 11. Historic photograph of Waikapū Congregational Church, Waiko Road, and the surrounding community (Waikapu Community Association 2018)

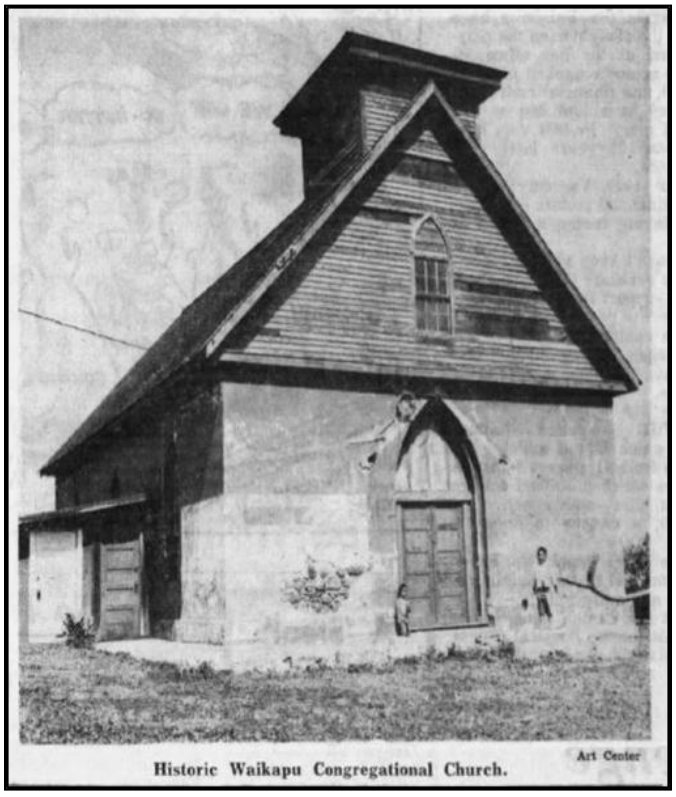


Figure 12. Waikapū Congregational Church after having it’s steeple removed during WWII (Waikapu Community Association 2018)



Figure 13. Waikapu Sugar Company mill, ca. 1890 (Waikapu Community Association 2018)

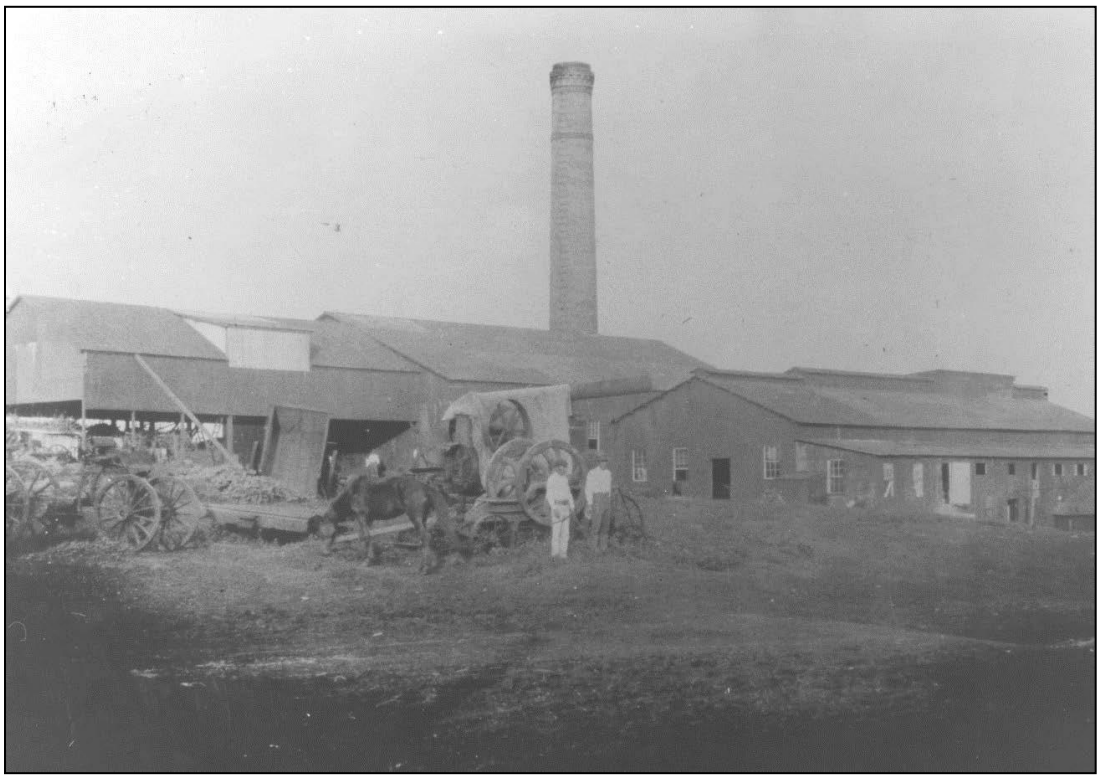


Figure 14. Waikapu Sugar Mill (Maui Historical Society, n.d.)

In 1878, Claus Spreckels bought an undivided interest in 12,000 acres of the Waikapū Commons from Col. W.H. Cornwell and leased an additional 24,000 acres of adjacent Wailuku Commons crown lands from the government (Wilcox 1996:61). These lands would form a large portion of Hawaiian Commercial and Sugar Company (HC&S). The economic boom resulting from the passage of the Reciprocity Treaty in 1876 encouraged sugar baron Spreckels and other Hawaiian sugar planters to invest heavily in capital improvements such as irrigation systems, mills,and railroads. The reciprocity agreement with the United States brought down the heavy cost of high tariffs on sugar.

During his time at the head of the Waikapū Plantation, Col. Cornwell nourished a healthy relationship with Hawaiian Royalty (Figure 15). As a close friend of King Kalakaua (Kamehameha V) and Queen Regent Liliuokalani, Col. Cornwell hosted events for the monarchs on his Maui properties, including celebrations for Kalakaua's birthday that entailed festivities and horse races (Evening Bulletin 1888:3) (Figure 16). Kalakaua's annual celebrations on November 16 would be remembered well into the early twentieth century for the excitement of the horse races and the occasional after-race polo match (The Honolulu Advertiser 1916). Col. Cornwell also was appointed a member of the king's staff in the Revolution of 1887, elected to a four-year term as a member in the House of Nobles in 1890, and served a very short stint as the Minister of Finance in the cabinet of Queen Regent Liliuokalani (The Honolulu Advertiser 1903:8).

2.1.4.3 Organization of the Wailuku Sugar Company

Most of the Waikapu Commons and across the isthmus was covered with sugarcane by the mid-nineteenth century. Waikapu Sugar Company operated from 1862 to 1894, when it was purchased and incorporated into the holdings of Wailuku Sugar Company (Kaukali and Subica 2010).

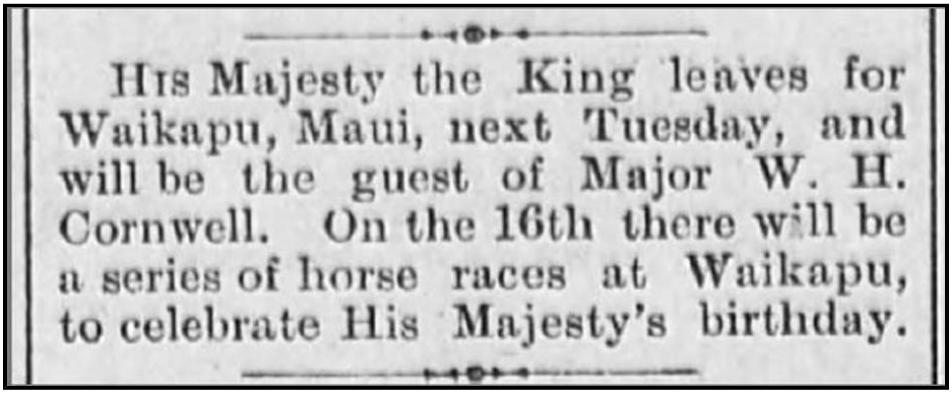
A Chinese planter, Hungtai, is reputed to have operated the first sugar mill at Wailuku in 1823. As early as 1840, the first sugar venture organized by the Kingdom of Hawaii was begun by Kamehameha III (Kauikeaouli), at Wailuku (Moffat and Fitzpatrick 2004:54). The king's Wailuku plantation and mill were described by the Protestant missionary, Richard Armstrong, in these terms:

> The King has given out small lots of land, from one to two acres, to individuals for the cultivation of cane. When the cane is ripe, the king finds all the apparatus for manufacturing and when manufactured takes the half. Of his half, one fifth is regarded as the tax due to the aupuni (Hawaii Department of Survey) & the remaining four fifths is his compensation for the manufacture. These cane cultivators are released from all other demands of every description on the part of the chiefs [from Hawaiian Mission Children's Society Wailuku Station Report 1839]. (MacLennan 1997:33)

The modern plantation framework for the Wailuku Sugar Company began in the 1850s by the Protestant missionary Edward Bailey and one of his sons. Their early water-run mill was eventually merged with sugar cultivation performed by Bal and Adams. These pioneer sugar partners later began the Wailuku Sugar Company. In 1862, the partners of the Wailuku Sugar Company grew to include James Robinson & Company, Thomas Cummins, and J. Fuller (Wilcox 1996:122). In 1863, Charles Brewer became a major partner in the operation of the Wailuku Sugar



Figure 15. Colonel William H. Cornwell in attire of the Hawaiian Royal Court (Unknown 1893)



His Majesty the King leaves for Waikapu, Maui, next Tuesday, and will be the guest of Major W. H. Cornwell. On the 16th there will be a series of horse races at Waikapu, to celebrate His Majesty's birthday.

Figure 16. Newspaper announcement for the arrival of Kamehameha V visit to W.H. Cornwell on Maui for the King's birthday (Evening Bulletin 1888)

Company. By 1867, the Wailuku Sugar Company had 2,250 acres planted in cane. The Wailuku Sugar Company became incorporated in 1875 and began to profit. In 1877, the Baileys were bought out (Nellist 1925:70).

2.1.4.4 The Waikapū Division of the Wailuku Sugar Company

The Waikapū sugar lands became a part of the Wailuku Sugar Company in 1894. Beginning in 1880, the Waikapū plantation lands began to merge with those of the Wailuku and Waihe‘e plantations. During the 1880s, F.L. Hoogs was named the head overseer of the Waikapu Division of the Wailuku Sugar Company. In 1887, American sugar growers revolted against the Hawaiian Monarchy and demanded a more liberal Constitution, which was granted, under duress, by Kalākaua. In 1905, a new sugar mill was constructed in Wailuku to accommodate the sugar brought in from the new outlying plantations, including Waikapū (Kaukali and Subica 2010:98).

The economic progress of the Wailuku Sugar Company required the importation of foreign labor. The increase in the labor population at the plantations required larger laborer camps. In the 1880s, immigrants from South America began to settle in Waikapū. They worked the sugar fields and brought their love of horseracing to the plantation culture of Maui (Kaukali and Subica 2010:98). By the 1890s, a network of plantation housing camps had been established at the Waikapu Division of the Wailuku Sugar Company. These included Hopoi Camp, located at the Hopoi Reservoir, upland of the Waiale Reservoir; Waikapu Camp, located downslope of the Palolo Ditch and the south side Waikapū Ditch, on the Waikapū Stream; Hyashi Camp, located just west of Waikapu Camp, toward the Pu‘u Hele cinder cone; Kimura Camp, located further west from Hyashi Camp; Pu‘u Hele Camp, located at the base of a cinder cone downslope of the Pohakea Gulch, where today the North Kīhei Road meets the Honoapi‘ilani Highway and the Pu‘u Hele Cemetery. Waikapu Camp, labeled as “Waikapu Village” on a Baldwin (1930) map (Figure 17), expanded into the residentially and commercially developed area now known as Waikapu.

The traditional *konohiki* system of water division was evident at the Waikapu Division of the Wailuku Sugar Company. In an 1896 lawsuit (Cornwell v. Wailuku Sugar Company), testimony was entered regarding the destruction of traditional *kuāuna* (embankments of taro patches). This testimony established that, along with the growing of cane in the region, the traditional farming of taro had continued based on the customary rights of landowners under the old Hawaiian tenure. The Wailuku Sugar Company brought the action to stop traditional landowners from diverting irrigation water for raising taro (Hawaii Supreme Court 1896).

In 1959, the Wailuku Sugar Company constructed a hydroseparator in an area between the Wailuku offices and the mill location. While this invention aided in the water consumption of the plantation, it also allowed the plantation to collect the solid debris (Giambelluca et al. 2014) that accumulated in the irrigation system canals. Previously all the solids that accumulated from the system were dumped into the Wailuku River, and by extension, the ocean. This new device utilized an inverted cone-shaped basin that used suction to transport the waterlogged sediment back to fields that needed the soil and nutrients. The hydroseparator installed in Wailuku, and the ‘settlings’ extracted from the system, were used to build up the soils in the sandy sediments of Waikapū fields (Coll Jr. 1954:12). The Wailuku Sugar Co. also funded the construction of the first traffic signal on the Island of Maui, located at the intersection of Waikapū Road and an unnamed plantation dirt road, to handle the increasingly heavy traffic on Waikapū Road and allow the cane

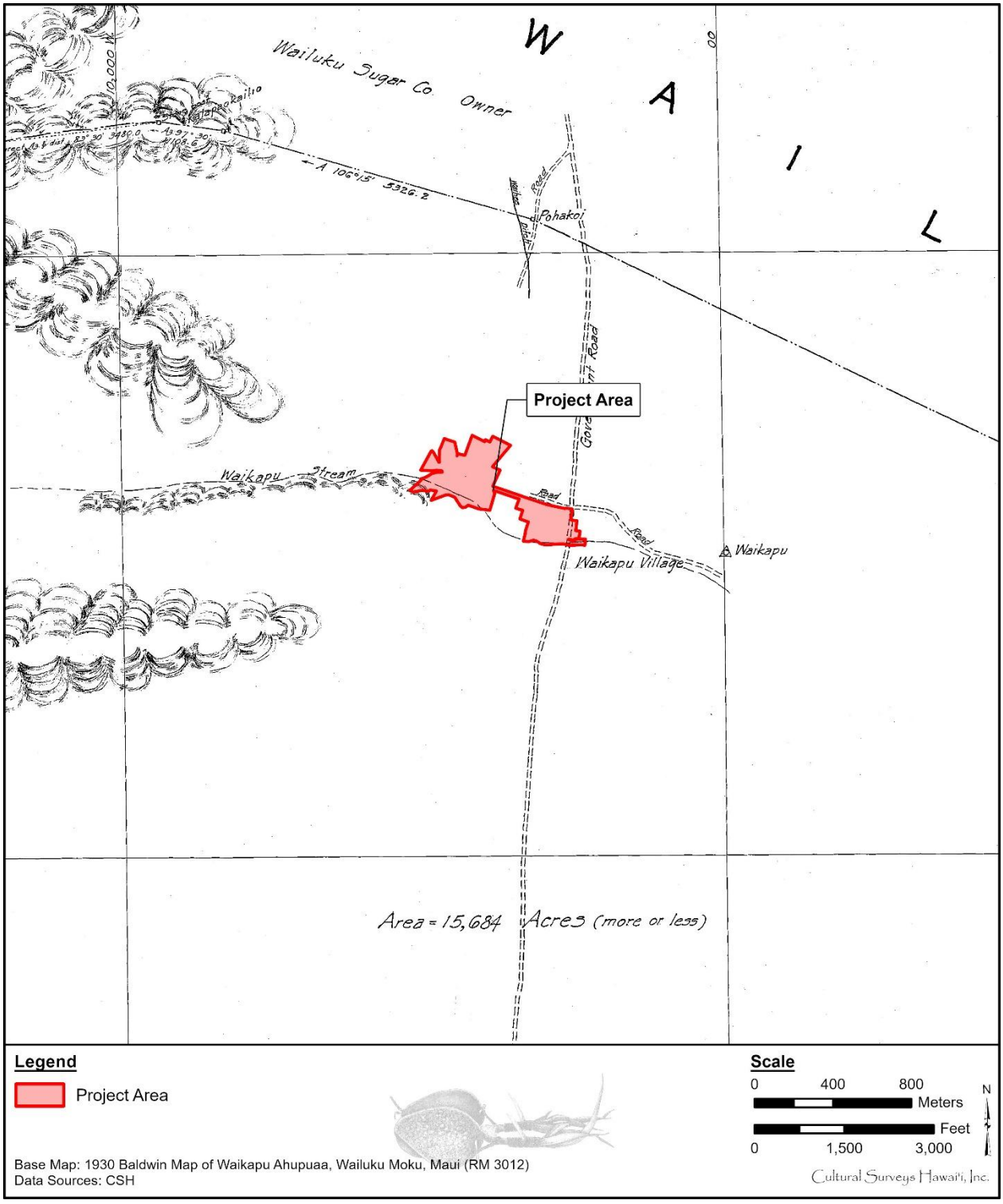


Figure 17. Portion of Baldwin (1930) Waikapū Ahupua‘a map showing “Waikapu Village” (Waikapu Camp) in the vicinity of the project area

hauling trucks to avoid the customary routes that took them through Wailuku Town (The Honolulu Advertiser 1949:17).

2.1.4.5 Hawaiian Commercial and Sugar in the Central Isthmus

The success of sugar grown in the region resulted in a second large plantation, in Waihe‘e, producing over 757 tons of sugar and 45,000 gallons of molasses in 1865. The Waihe‘e mill manager was Samuel T. Alexander, and the mill’s head foreman was Henry P. Baldwin, both of whom would resign in the late 1860s to establish a small sugar enterprise of their own in upper Pā‘ia (Gilmore 1936).

In 1869, on land located directly west of Pā‘ia, a small *kuleana* of 11.94 acres was purchased by S.T. Alexander and his business partner H.P. Baldwin, both descended from Lāhainā missionary families, who were eager to apply their agricultural experience to their own plantation. This initial land purchase was the beginning of the development of the entire central isthmus for sugar cultivation. In rapid succession, Alexander & Baldwin expanded its operations by purchasing other small *kuleana*, setting up a mill, and attracting more investment capital (Dean 1950).

In 1876, a treaty signed between the Kingdom of Hawai‘i and the United States, the Reciprocity Treaty, opened larger and more lucrative markets for Hawaiian sugar. Plans were immediately drawn up by Alexander & Baldwin to finance a ditch to bring water from the Hāna region of East Maui to the arid plains of Pā‘ia. The Kingdom of Hawai‘i issued a lease for the construction right-of-way, and in 1879, the successful venture delivered millions of gallons of water to the central isthmus via the Hamakua Ditch (Wilcox 1996).

Competition was supplied by Claus Spreckels who engineered a similar irrigation ditch from Honomanū in East Maui to lands located just inland of Kahului, where the Spreckelsville Mill and plantation camp were built. Spreckels invested three million dollars in the Hawaiian Commercial & Sugar Company, and competed for sugar lands, wharf and warehouse space, railway lines, and shipping schedules with Alexander & Baldwin (Dorrance and Morgan 2000).

In 1882, Spreckels, following his success in building the Honomanu Ditch linking East Maui water sources with his sugar fields in the central isthmus, further capitalized on that success to engineer the Waihe‘e Ditch (also named the Spreckels Ditch) in West Maui. The 15-mile-long ditch started at the 435-foot elevation of Waihe‘e Stream, and carried 60 million gallons of water (per 24-hour day) to the Wai‘ale Reservoir at the 214-foot elevation of Wailuku. Spreckels became the first plantation owner to irrigate his fields by water from both Haleakalā and the West Maui mountains (Wilcox 1996). By 1888, the Spreckels’ plantation covered 28,000 acres, making it the largest sugar plantation in the world. Financial pressures forced Spreckels to give up control of Hawaiian Commercial & Sugar Company (HC&S) to Alexander & Baldwin in 1898 after a long and fierce battle (Dean 1950). A 1924 Maalaea USGS map shows the extent of HC&S sugar lands and the associated sugar plantation infrastructure, such as labor camps, irrigation ditches, roads, and sugarcane railroad (Figure 18). A Wall (1929) map also depicts the railroad along with developing roads in the area (Figure 19).

In 1899, HC&S determined that cultivating the Pu‘unēnē plains required far more water than the original Hamakua Ditch could provide. The Lowrie Ditch project, completed in 1900, was



Figure 18. Portion of the 1924 Kihei, Mā‘alaea, Paia, and Wailuku USGS topographic quadrangles showing the current project area and HC&S ditches, roads, and labor camps in the vicinity (U.S. Geological Survey 1924)

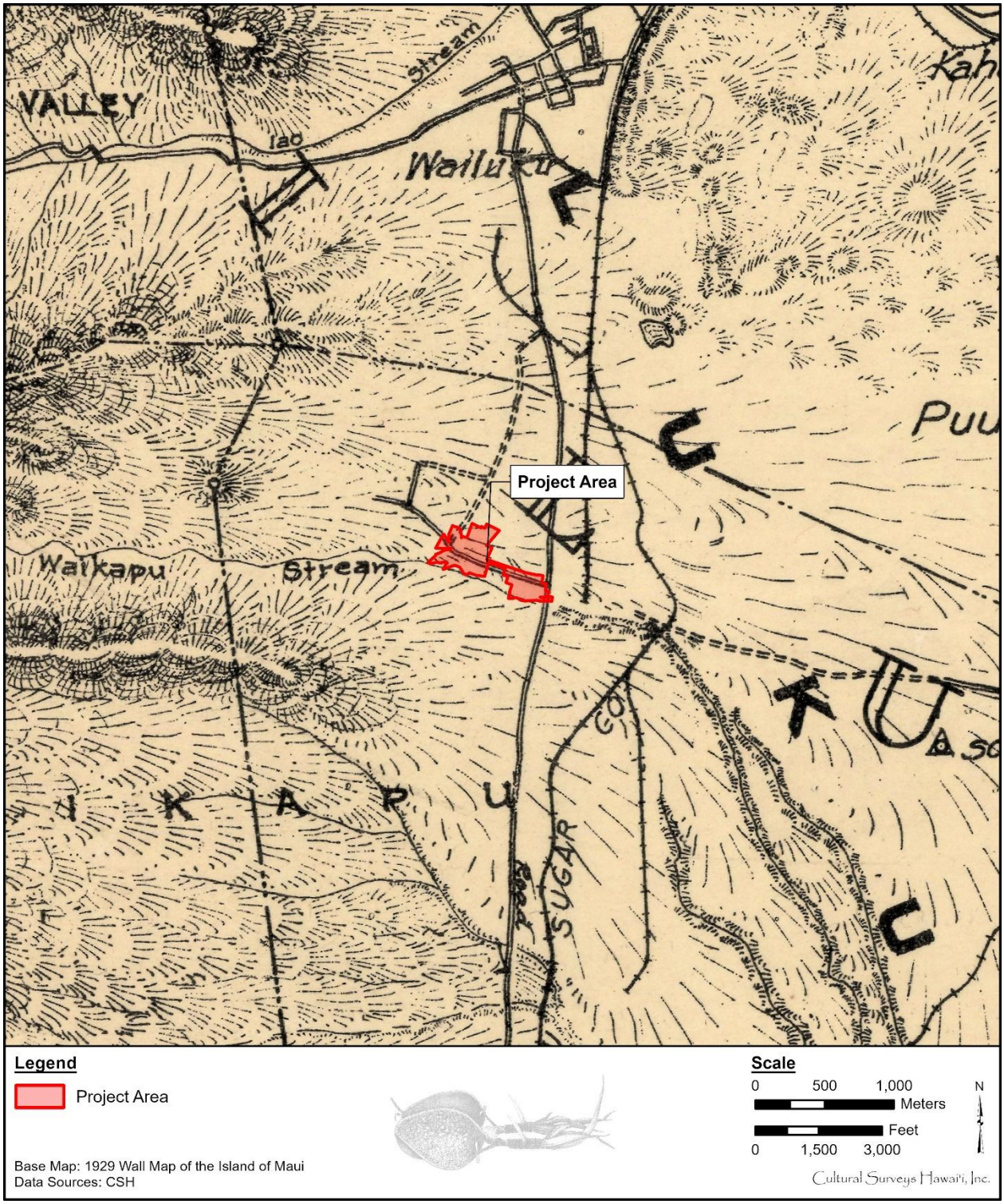


Figure 19. Wall (1929) map of Maui showing the project area and development in the vicinity such as railroad tracks, roads, and unimproved roads

undertaken to provide an additional source of water to the central Maui plains. The ditch began at the Pāpa‘a‘ea Reservoir, at 1,000 ft elevation, and maintained 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. The Halehaku Gulch, at 250 ft deep, and the 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 (Thrum 1900).

2.1.5 1900s

In 1912, HC&S began to modernize the existing plantation camps. Between a huge influx of immigrant workers in 1909, and the burning of village areas of Pā‘ia and Kahului to control smallpox in 1910, changes to the camp system were in full swing. The plantation workforce continued to expand until 1917, when the U.S. declared war on Germany, and the accompanying draft seriously depleted the labor pool. By 1919, postwar requirements for sugar had driven the price to an all-time high of $471.40 per ton (Burns 1991). The post-WWI years saw the sugar industry, and companies like HC&S, add electricity to some villages. HC&S completed the Waikapū well [Well 7] in 1926; one of the largest deep wells in the world. The additional capacity of 40 million gallons per day (mgd) provided by this well was instrumental in planning more sugar and industry within Maui’s central plains (Stearns and Macdonald 1942:216).

On 11 November 1929, Inter-Island Airways, Ltd. began flying regularly scheduled flights between the Hawaiian Islands. Amphibious eight-passenger Sikorsky S-38 aircraft landed at Mā‘alaea Bay, taxied up a concrete ramp, and delivered passengers to waiting automobiles for the trip through Waikapū to Wailuku, and points beyond (Saito 2009). By 1936, the airline had purchased three new sixteen-passenger Sikorsky S-43 aircraft to supplement their four S-38s (Kennedy 1937). With air travel between islands increasing, plans were put underway to build a land based air strip at Pu‘unēnē in neighboring Pūlehu Nui Ahupua‘a to the southeast in lieu of the smaller airport located at Mā‘alaea Harbor.

In addition to sugarcane cultivation, much of the lands of Waikapū in the mid-twentieth century were also tied-up in pastural endeavors. In 1952, over 7,000 acres of land along the base of the West Maui Mountains, spanning from Waikapū to Ukumehame, were sold at auction in two leases (15- to 21-year lease terms) for $16,582. These land tracts served as hog and cattle pasturage (Honolulu Star Bulletin 1952:5). A 1953 map by HC&S shows Waiale pasture lands east of the current project area (Figure 20).

2.1.6 Contemporary Land Use

Throughout the twentieth century much of the lands surrounding the current project area remained either under commercial sugarcane cultivation or continued to be utilized for pasture (Figure 21). A U.S. Geological Survey (1977) aerial image shows nearly all lands surrounding the current project area under commercial sugarcane cultivation (Figure 22). In the latter half of the 1900s, residential tracts were constructed along both the Kuihelani Highway and Honoapi‘ilani Highway corridors that traverse Waikapū. Complementing the residential lots to a lesser degree, are light industrial parcels, grocery stores, and business developments on the outskirts of the sugar fields of Waikapū. Commercial/light industrial development and some residential subdivisions were present along Waiko Road in the vicinity of the project area by 1977 (see Figure 22).

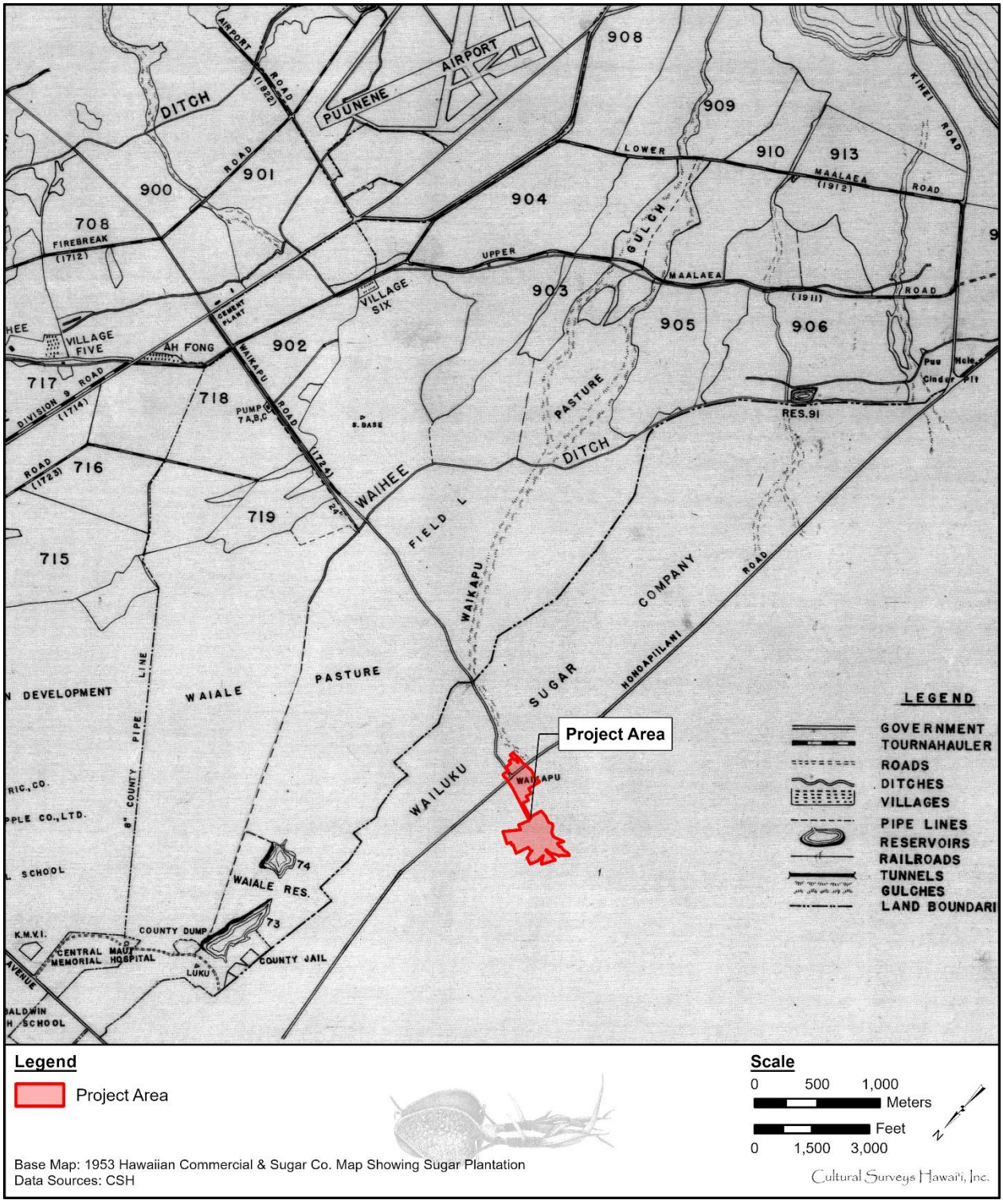


Figure 20. Portion of Hawaiian Commercial & Sugar Co. (1953) map showing the project area and pasture lands east of the sugar plantation

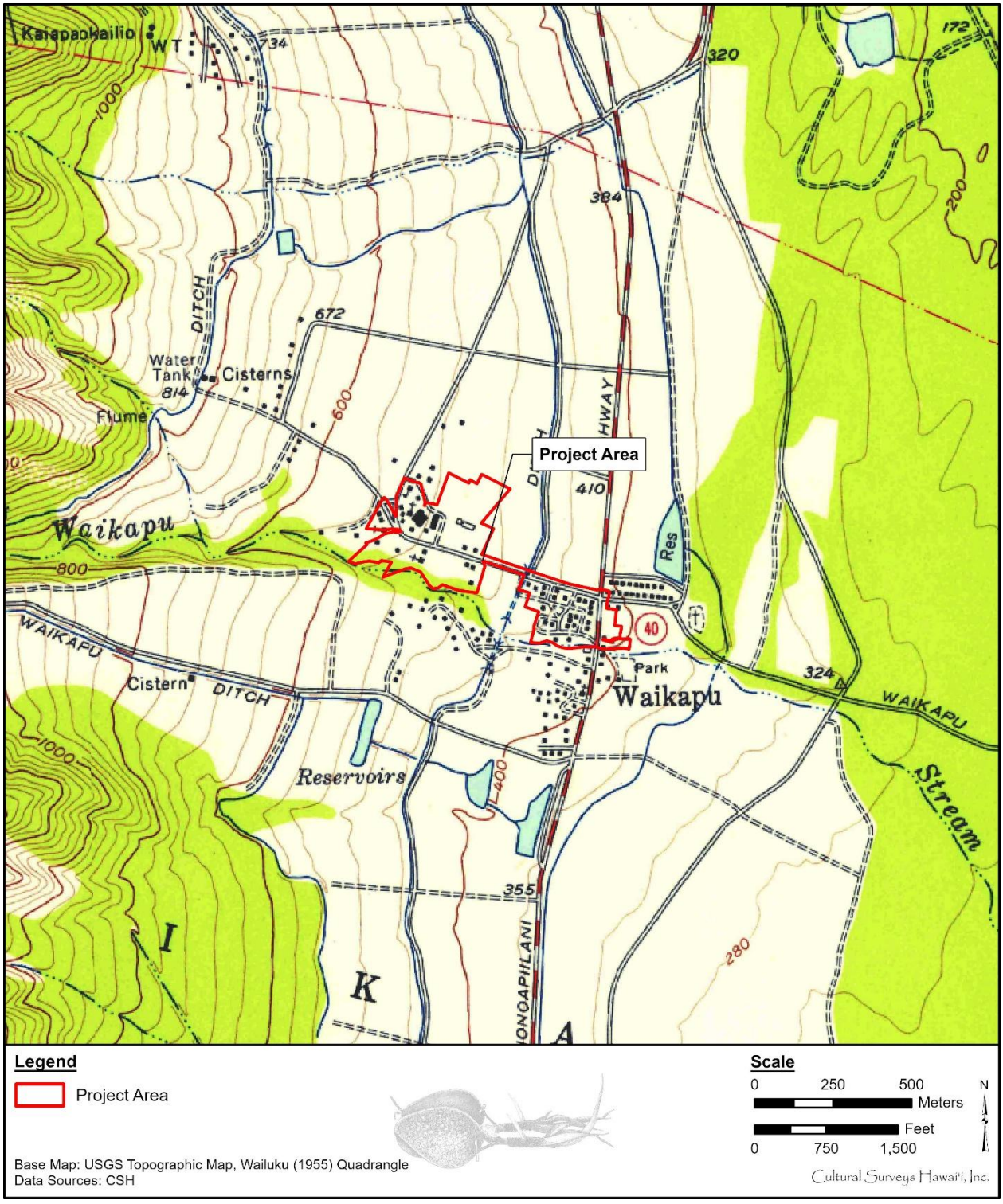


Figure 21. Portion of the 1955 Wailuku USGS topographic quadrangle showing development around the project area (U.S. Geological Survey 1955)

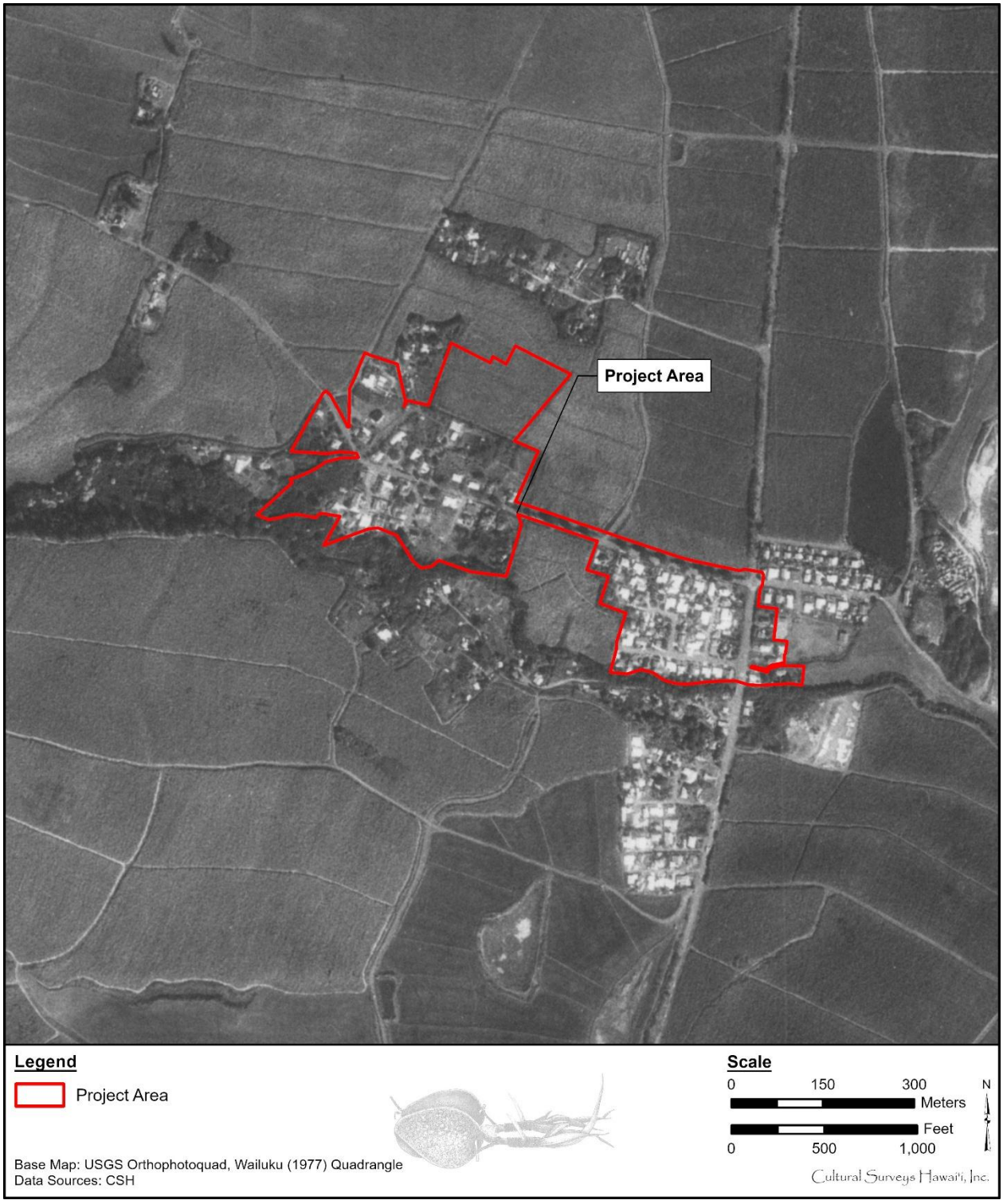


Figure 22. Portion of 1977 Wailuku orthophotoquad showing the current project area surrounded by agricultural (sugarcane and pasture) lands (U.S. Geological Survey 1977)

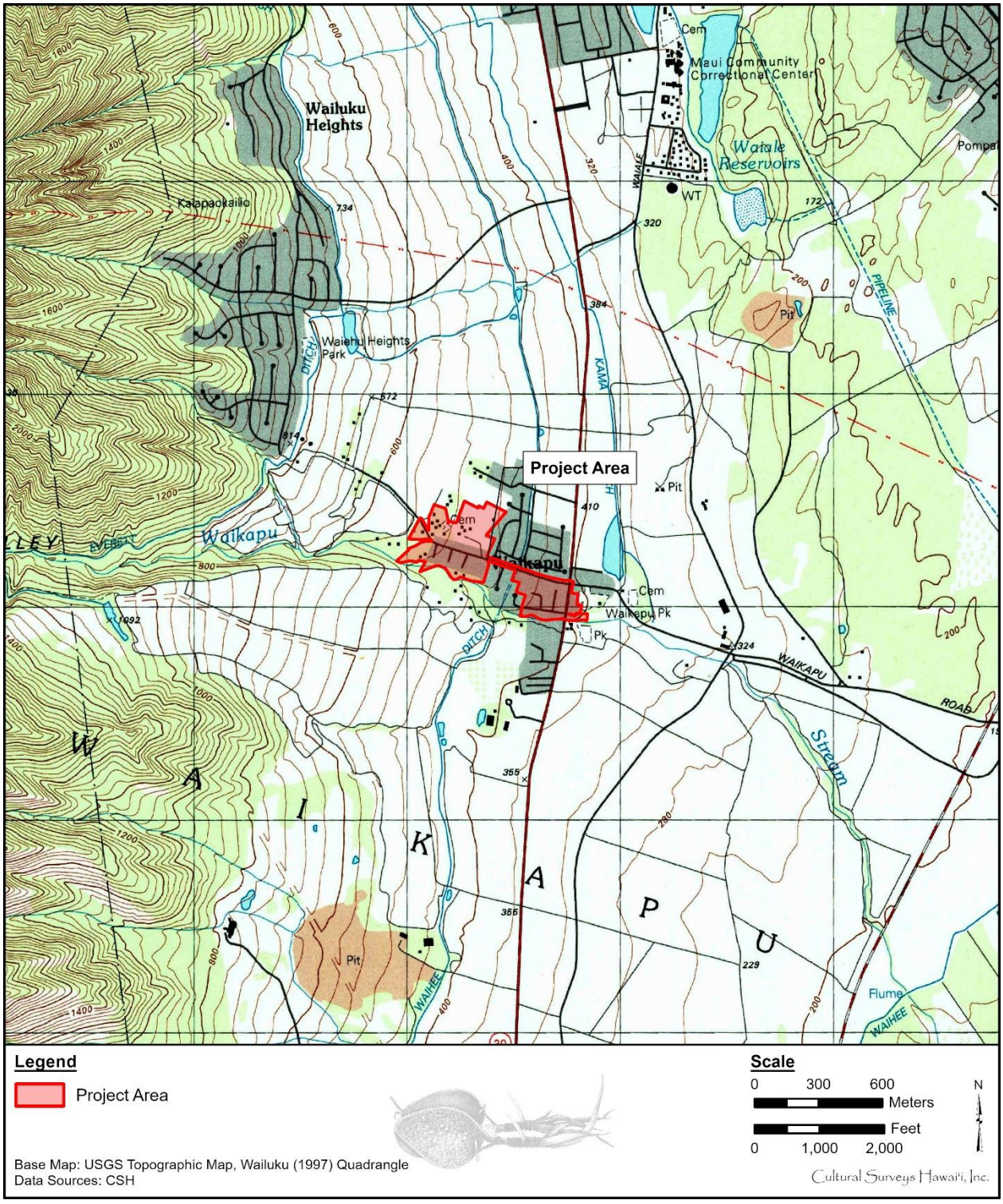


Figure 23. Portion of the 1997 Wailuku USGS topographic quadrangle showing development around the project area (U.S. Geological Survey 1997)

Although the project area exists within a lightly developed region of Waikapū, additional residential and commercial development is currently taking place in various areas surrounding the current project area.

2.2 Previous Archaeological Research

The earliest archaeological studies on the island of Maui were part of island-wide surveys conducted in the early 1900s (Stokes 1917; Walker 1931). These studies focused on the generation of descriptive lists of large-scale architectural features or traditional ceremonial *heiau* sites. No *heiau* were documented in the immediate vicinity of the current project area.

Between 1931 and 1976, only sporadic archaeological studies were undertaken in the area. 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. Under the guideline established by national and state legislation, the lands surrounding the current project area have been subject to a variety of studies including archaeological reconnaissance surveys, archaeological literature reviews and field inspections (LRFI), archaeological inventory survey (AIS) investigations (termed “archaeological surveys” pre-2002, before HAR §13-276-5), archaeological data recovery, and archaeological monitoring programs (Table 2 and Figure 24). Historic properties in the project area vicinity include post-Contact agricultural sites, habitation sites, a historic road, cemeteries/burials, a military bunker, and a portion of Waihe‘e Ditch (SIHP # 50-50-04-05197) (Figure 25).

2.2.1 Kennedy (1988, 1989)

On 16 November 1988, Archaeological Consultants of Hawaii (ACH), conducted a preliminary archaeological survey of Phase 1A of the Waikapu Master Plan within a portion of TMK: (2) 3-5-004:025 (Kennedy 1988). At the time of the investigation, a portion of the study area was undergoing pineapple cultivation, while another portion consisted of flat, vacant land likely utilized for commercial sugarcane. No historic properties were identified during the pedestrian reconnaissance. LCA research indicated the area formerly contained several *lo‘i* and a cluster of houses associated with once prominent Maui society members; therefore, subsurface testing was recommended prior to development of the parcel.

In March 1989, ACH subsequently carried out a limited subsurface testing program at Phase 1A of the Waikapu Master Plan (Kennedy 1989). Six trenches were mechanically excavated; no cultural materials were observed. Presumably, recent and historic commercial agriculture activities had removed evidence of former traditional agriculture and habitation associated with the LCAs.

2.2.2 Haun (1989); Brisbin et al. (1991)

From 5 through 16 December 1988, Paul H. Rosendahl, Ph.D., Inc. (PHRI) conducted an archaeological survey of approximately 600 acres for the Waikapu Mauka Partners Golf Resort project (Haun 1989). Nine archaeological features and complexes were documented during the pedestrian survey; however, no SIHP #s were assigned. The features include walls, ditches, terraces, mounds, depressions, modified outcrops, enclosures, and L, C, and U-shapes.

Table 2. Previous archaeological studies within and surrounding the project area

Reference	Type of Study	Location	Results (SIHP # 50-50-04)
Kennedy (1988)	Archaeological survey	Phase 1A of Waikapu Master Plan; TMK: (2) 3-5-004:025	No historic properties identified
Kennedy (1989)	Limited subsurface testing	Phase 1A of Waikapu Master Plan; TMK: (2) 3-5-004:025	No historic properties identified
Haun (1989)	Archaeological survey	Waikapu Mauka Partners Golf Resort	Identified nine features and complexes (no SIHP #s), including walls, ditches, terraces, mounds, depressions, modified outcrops, possible *heiau* or shrine, enclosures, and L, C, and U-shapes
Rotunno and Cleghorn (1990)	Archaeological reconnaissance survey	Horita Homes; TMKs: (2) 3-8-007:002 and 110	Identified two potential historic properties: a sandstone cobble-lined trail (Temp. Site No. 1) and a piled and compacted cobblestone mound (Temp. Site No. 3)
Sinoto (1990a, 1990b)	Archaeological surface survey, subsurface assessment, and archaeological monitoring	Maui Lani Sand Borrow Site; TMK: (2) 3-8-007:103	No historic properties identified
Brisbin et al. (1991)	Archaeological data recovery	Waikapu Mauka Partners Golf Resort	Designated SIHP #s -02019 through -02027 to features/complexes identified by Haun (1989); returned radiocarbon dates suggest two separate, concurrent occupations from 1450 to 1675 and between 1650 and 1778
Donham (1991)	Field inspection	15-foot-wide pipeline easement across Waikapū Stream; TMKs: (2) 3-004:014 and 002	No historic properties identified within study area; noted terrace wall on Waikapū Stream south bank, cattle pens north; and buried section of former channel with terracing east of easement

Reference	Type of Study	Location	Results (SIHP # 50-50-04)
Sinoto (1993)	Archaeological monitoring	Maui Lani Sand Borrow Site; TMK: (2) 3-8-007:103	No historic properties identified
Rotunno-Hazuka, Somer, Clark, et al. (1995)	Archaeological test excavations	Maui Lani Subdivision and Sand Borrow Site; TMKs: (2) 3-8-007:002 and 110	Determined insignificance for two temporary sites (T-1 and T-3) previously recorded by Rotunno and Cleghorn (1990); identified and determined an additional temporary site (T-4) insignificant; documented at least three additional human burials associated with SIHP # -02797
Rotunno-Hazuka, Somer, Flood, et al. (1995)	Archaeological research, test excavations, and burial investigations	Maui Lani Subdivision; TMKs: (2) 3-8-007:002 and 110	Newly identified 10 burial features with an MNI of 12 associated with SIHP # -02797
Fredericksen and Fredericksen (1996)	Archaeological data recovery	Waikapu Borrow Site; TMK: (2) 3-8-007:104	Documented SIHP # -03525, reinterment preserve for the remains of at least 22 individuals originally disturbed during sand mining activities
Pantaleo and Sinoto (1996)	Archaeological subsurface sampling	Maui Lani Subdivision Phase 1 and 1A parcels; TMKs: (2) 3-8-007:002, 110	Identified four additional burials of SIHP # -02797, burial complex; identified two additional human burials designated as SIHP #s -04146 and -04147
Moore and Kennedy (1998)	Archaeological survey	Multiple locations; TMK: (2) 3-8-007:101 por.	Identified three historic properties: SIHP # 04200, four human burials with associated artifacts (Features A–D); SIHP # -04201, a human burial; and SIHP # -04202, a temporary habitation site
Sinoto et al. (2001)	Supplemental archaeological sampling	Maui Lani Light Industrial Park; TMK: (2) 3-8-007:131 por.	No historic properties identified

Reference	Type of Study	Location	Results (SIHP # 50-50-04)
Archaeological Services Hawaii (2003)	Interim archaeological monitoring	Wailuku Agribusiness, Inc. sand mining operations; TMK: (2) 3-05-002:001	No historic properties identified
Fredericksen and Fredericksen (2004)	AIS	Waikapu Affordable Housing Subdivision; TMKs: (2) 3-5-002:001 por. and 3-8-007:101	Documented a previously identified historic property, SIHP # -05474, Kama Ditch with associated Reservoir No. 6
Guerriero et al. (2004)	AIS	50-acre parcel; TMK: (2) 3-5-002:001 por.	Documented SIHP # -05474, Kama Ditch
Rotunno-Hazuka and Pantaleo (2004)	Interim archaeological monitoring	Hawaiian Cement Sand Mining Operations; TMK: (2) 3-8-007:101 por.	Identified two burial features within completed Phase B (Fe. 1B and Fe. 2B and 30 additional burial features (Fe. 1A-30A) within the ongoing Phase A operations (features not assigned SIHP #s at time of report)
Rotunno-Hazuka and Pantaleo (2005)	AIS	Maui Lani Elementary School; TMK: (2) 3-8-007:137	No historic properties identified
Wilson and Dega (2005)	AIS	215.8-acre parcel in Wailuku and Waikapū; TMKs: (2) 3-5-002 and (2) 3-5-003	Documented components of SIHP # -05179, Waihe‘e Ditch and SIHP # -05493, Waikapū Ditch, identified five new historic properties: SIHP # -05726, an earthen ditch; SIHP # -05727, a large reservoir; SIHP # -05728, 14 erosion control berms; SIHP # -05729, a lesser stone and mortar ditch; and SIHP # -05730, Old Waikapu Rd
Morawski et al. (2006)	Archaeological monitoring	Off-site construction near proposed Kehalani Mauka Subdivision in Wailuku and Waikapū; TMKs: (2) 3-5-002:001 por. and (2) 3-5-001:017 por.	Identified five historic properties: SIHP # -05680, human burial; SIHP #s -05965 and -05966, isolated and disturbed human skeletal remains; SIHP # -05963, historic roadbed; SIHP # -05964, sugarcane flume portion

Reference	Type of Study	Location	Results (SIHP # 50-50-04)
Dagan and Hammatt (2006)	LRFI	Maui Scrap Yard site; TMK: (2) 3-8-007:105	No historic properties identified
Tome and Dega (2010)	AIS	607 acres spanning Waiale, Wailuku, and Waikapū; TMKs: (2) 3-8-005:023 por. and 037; (2) 3-8-007:071, 101, 102, and 104	Confirmed SIHP # -01508, portion of Spreckels/Waihe‘e Ditch and SIHP # -05504, locations of three human burials; documented newly identified SIHP # -06578, a buried fire pit/*imu*
Perzinski and Dega (2010)	AIS	Proposed Wai‘ale Rd extension and section of Waiko Rd; TMKs: (2) 3-5-002:014, 018, 888; (2) 3-5-027:021; (2) 3-6-002:003; and (2) 3-8-005:999	Documented SIHP # -06668, a historic boulder terrace for either water diversion or a former footbridge footing on the southern bank of Waikapū Stream
Titchenal and Sinoto (2010)	Archaeological assessment	Maui Scrap Yard; TMK: (2) 3-8-07:105	No historic properties identified
Guerriero et al. (2017)	AIS	Waikapū Country Town Project; TMKs: (2) 3-6-002:003; (2) 3-6-004:003; and (2) 3-6-005:007	Identified four historic properties: SIHP # -07881, commercial sugarcane irrigation features; SIHP # -07882, a remnant L-shaped retaining wall; SIHP # -07883, a WWII bunker; SIHP # -07884, three discrete scatters of historic materials; also documented a previously identified historic property, SIHP # -05197, the historic Waihe‘e Ditch
Yucha and Hammatt (2021)	Burial Site Component	Maui Scrap Yard site; TMK: (2) 3-8-007:105	Documentation of preservation in place for human skeletal remains of three individuals (SIHP # -08812), including two *in situ* burials (Feature A and Feature C) and one isolated, disarticulated femur portion (Feature B)

Reference	Type of Study	Location	Results (SIHP # 50-50-04)
Yucha et al. (2023)	LRFI	Proposed Waiale Rd extension to Honoapi‘ilani Hwy; TMKs: (2) 3-5-002:014 por. and 888 por., (2) 3-6-002:003 por. and 004 por., (2) 3-6-004:003 por., and (2) 3-6 (Honoapi‘ilani Hwy ROW)	Identified three potential historic properties: CSH 1 is a historic road alignment and former railroad corridor; CSH 2 is a drainage ditch; CSH 3 includes mechanically stacked boulder retaining walls; also confirmed the location of SIHP # -06668, a basalt boulder terrace

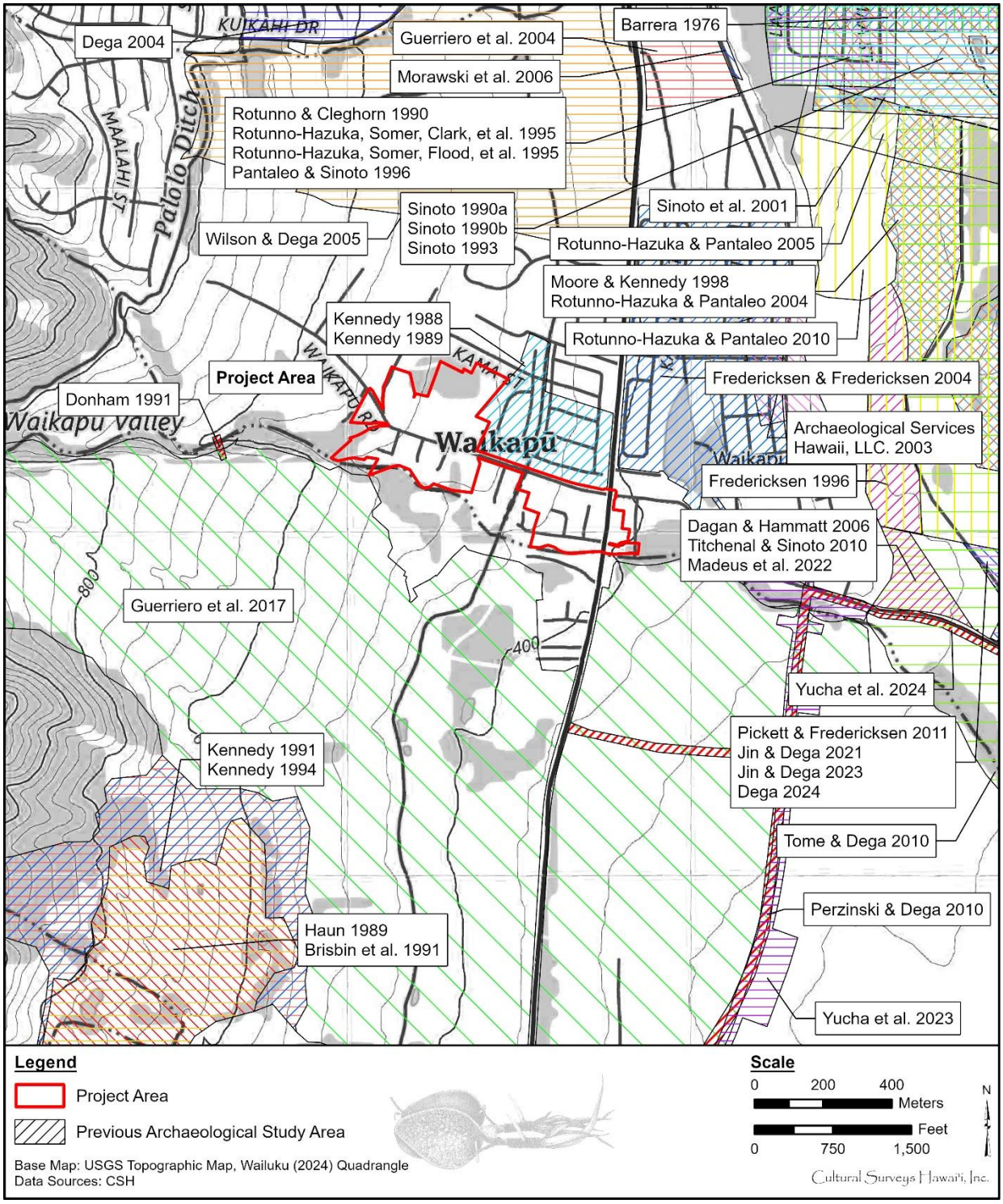


Figure 24. Portion of the 2024 Wailuku USGS topographic quadrangle showing previous archaeological studies in the vicinity of the current project area (U.S. Geological Survey 2024)

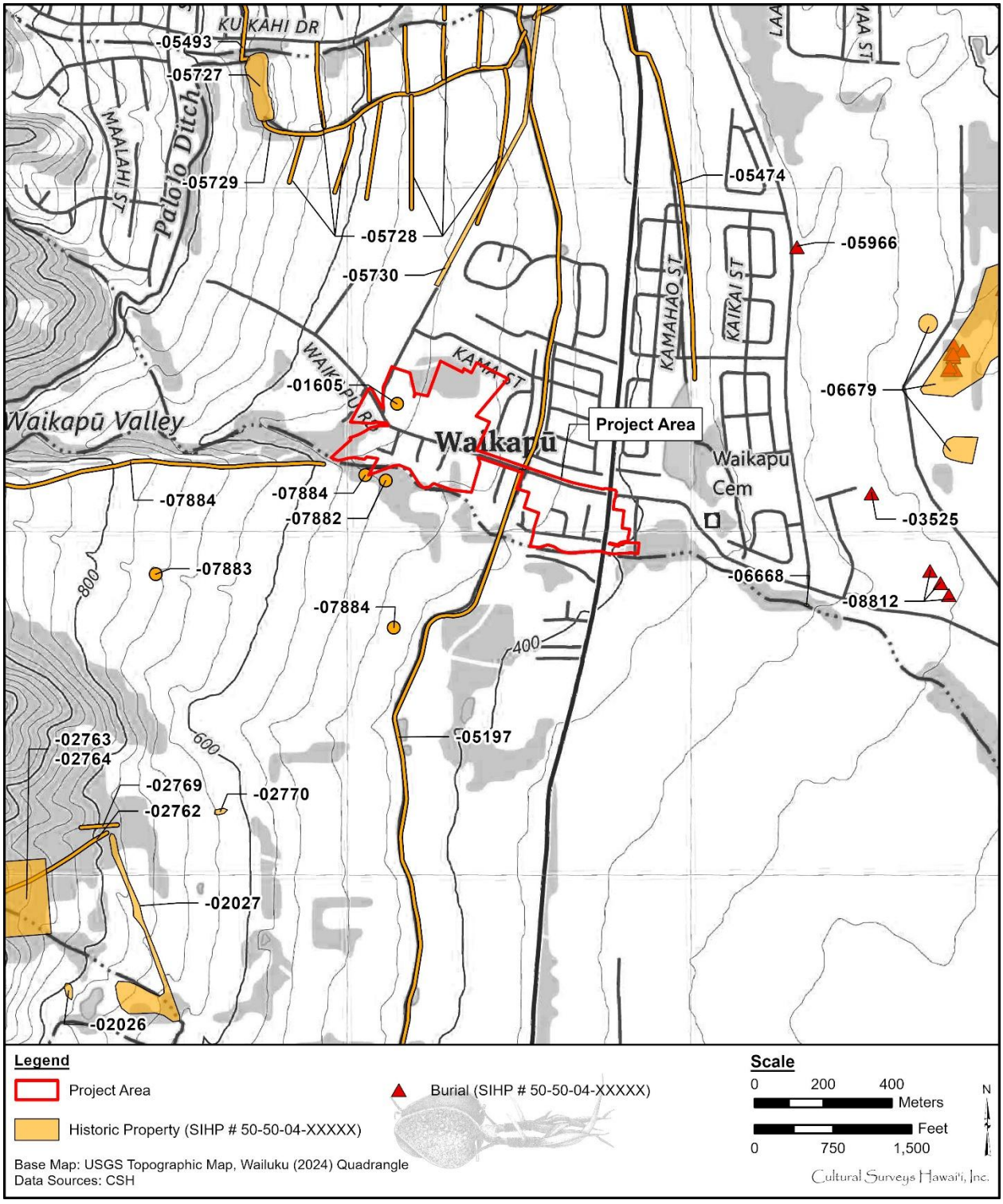


Figure 25. Portion of the 2024 Wailuku topographic quadrangle showing the locations of burials and other historic properties in the vicinity of the current project area (U.S. Geological Survey 2024)

A possible *heiau* or shrine was identified within one of the temporary habitation/agriculture complexes. Most features appeared associated with historic ranching or traditional dryland agriculture, while some features within the central portion of the study area above 500 ft AMSL appeared to represent pre-Contact temporary habitation. Further data collection by intensive survey and testing was recommended for all features/complexes.

PHRI conducted subsequent data recovery excavations at the nine features/complexes previously recorded by Haun (1989) (Brisbin et al. 1991). In the data recovery report, these features/complexes, formerly labeled with temporary site identifications, were designated as SIHP #s 50-50-04-02019 through -02027. SIHP # -02019 consists of a 457 m historic-era wall and an associated ditch. SIHP # -02020 is an approximately 1,596 square m agricultural area containing several stepped terraces and small garden plots. SIHP # -02021 consists of two agricultural terraces. SIHP # -02022 represents a historic linear water diversion wall extending approximately 400 m along a hillside. SIHP # -02023 is an agriculture and habitation complex that includes numerous enclosures (many C-shaped), terraces, a rectangular room with a paved terrace, and a hearth. SIHP # -02024 is also an agriculture and habitation (short-term) complex, which includes C-shaped structures, enclosures, a room, garden plots, terraces, and a possible shrine. SIHP # -02025 is a U-shaped structure once used a habitation area. SIHP # -02026 contains a small rectangular enclosure. SIHP # -02027 includes a large enclosure with a large terrace, small terrace, and small cupboard; several associated historic wine bottles indicate historic use, though not necessarily historic construction.

Data recovery excavations were conducted at features within SIHP #s -02020 and -02023 through -02027. Overall, the features mostly were agricultural, though many habitation features were documented along with architectural features. “West-end platforms” may represent *heiau* used as “agricultural temples” (Brisbin et al. 1991:90). Data recovery results denote that increases in density of agricultural features and elevation positively correlate. Radiocarbon dates and diagnostic artifacts suggest the area was utilized as early as 1450 until the modern era, with two periods of intense activity: one from about 1450 to 1675 and again between approximately 1650 and 1778. Results of the data recovery efforts also indicate two feature clusters, possibly signifying two separate but concurrent occupations.

2.2.3 Rotunno and Cleghorn (1990)

Between 16 and 31 January 1990, an archaeological reconnaissance survey was conducted by the Public Archaeology Section of the Applied Research Group of the Bernice Pauahi Bishop Museum on an approximately 1,000-acre parcel for the Horita Homes project area (TMKs: [2] 3-8-007:002 and 110) (Rotunno and Cleghorn 1990). Systematic sweeps, placed no less than 50 m apart, were taken across the five land sections (Zones 1 through 5) of the project area delineated by the survey team. Three temporary archaeological sites (labelled Temporary Site Numbers 1 through 3) between Zones 1 and 3. Temporary Site No. 1 consists of a pathway of compacted sand cobbles in a parallel alignment, seemingly delineating a pathway through the parcel with no discernable starting or ending point. Researchers noted the possibility of this path being a somewhat recent construction. Temporary Site No. 2 was initially identified as a disturbed rock wall but was later found to be the remnant of bulldozer tailings. Temporary Site No. 3 consists of a rock mound constructed of piled and compacted cobblestones that did not extend below the

ground surface. Additional archaeological surveying and monitoring were recommended due to dense ground cover and the possibility of subsurface cultural remains and human skeletal remains.

2.2.4 Sinoto (1990a, 1990b, 1993)

From 2 through 8 May 1990, the B.P. Bishop Museum conducted a pedestrian survey of 70 acres for the Maui Lani Sand Borrowing Project at TMK: (2) 3-007:103. No historic properties were observed, however, the “dense vegetation cover hindered observation” (Sinoto 1990a:1). Archaeological monitoring was recommended for future excavations in sand deposits.

On 12 July 1990, the Bishop Museum conducted an archaeological subsurface assessment and continued archaeological monitoring of a portion of the Maui Lani Sand Borrow Project at TMK: (2) 3-007:103 (Sinoto 1990b). The field assessment part of the study included a survey of approximately one third of the existing ground surface, which had been previously grubbed and graded without an archaeologist present and prior to issuance of a grading and grubbing permit. Following the surface survey, archaeologists were assigned to monitor further ground disturbances at the project area. At the time of the interim field report (30 September 1990), no historic properties had been identified.

In a letter report dated 24 September 1993, Aki Sinoto of Aki Sinoto Consulting, summarized the archaeological monitoring of sand borrowing activities conducted during the previous four years at the Maui Lani Sand Borrow Site (Sinoto 1993). The report included the results of the surface survey and field assessment conducted by Public Archaeology Section, Applied Research Group of the B. P. Bishop Museum in May 1990 (Sinoto 1990a) and July 1990 (Sinoto 1990b), respectively. Results of subsequent archaeological monitoring were also reported.

Between July and November 1990, full-time archaeological monitoring was conducted by the Bishop Museum. Following a year long hiatus, archaeological monitoring resumed during March 1992, but was conducted by Aki Sinoto Consulting. Between May and November 1992, Aki Sinoto Consulting conducted periodic archaeological monitoring of the sand borrowing activities. No historic properties were identified during any archaeological monitoring. Cow bones were encountered, though were expected due to previous pasture uses associated with the project area. During the time of the report, sand borrowing had temporarily ceased; archaeological monitoring was expected to resume with future sand moving activities.

2.2.5 Kennedy (1991)

From 19 October to 28 November 1989, ACH conducted the pedestrian survey component of an archaeological survey with subsurface testing of the Waikapu Mauka Partners proposed residential project at portions of TMKs: (2) 3-6-002:002 and 004 (Kennedy 1991). ACH carried out the subsequent testing program from 11 February to 11 March 1990. During the surface survey, seven single archaeological features and 11 complexes comprised of 74 features were identified and designated as SIHP #s 50-50-04-02753 through -02770. Most of these features likely functioned agriculturally; however, some features also indicated habitation, religious, and burial functions. SIHP #s 50-50-04-02753, through -02761, -02763 through -02765 all represent habitation/agricultural complexes. A human arm bone fragment was identified at the surface of SIHP # 50-50-04-02756 near a wall (Feature C). Possible burials were indicated at SIHP #s 50-

50-04-02753, -02758 through -02761, -02763, and -02764. The remaining historic properties, which were not identified as complexes, include single agricultural walls (SIHP #s 50-50-04-02762, -02768, and -02769), four wall segments (SIHP # 50-50-04-02765), a terrace cluster (SIHP # 50-50-04-02766), a U-shape (SIHP # 50-50-04-02767), and a remnant enclosure (SIHP # 50-50-04-02770). The function for SIHP # 50-50-04-02767 (U-shape) was interpreted as habitation/ agricultural and a possible burial. Overall, features/complexes represented a continuation of those previously documented by Haun (1989) on the adjoining property.

Subsurface testing was conducted within 10 of the 11 complexes at 24 total features, including five enclosures, four C-shapes, nine platforms, three mounds, one U-shape, one "[h]illslope [p]lanting [f]eature," and one rock shelter (Kennedy 1991:20-21). Testing results identified an intact child burial (Feature B) at SIHP # 50-50-04-02755; an adult burial (Feature E) at SIHP # 50-50-04-02757; and cultural deposits at SIHP # 50-50-04-02756 (Features A and F). Five charcoal samples were extracted from soils near a platform (Feature G) at SIHP # 50-50-04-02753, a U-shape (Feature B) and platform (Feature E) at SIHP # 50-50-04-02755, an enclosure (Feature D) at SIHP # 50-50-04-02759, and a C-shape (Feature C) at SIHP # 50-50-04-02760. Calibrated dates returned for the five samples suggest the area was occupied from around 1500 through mid-1600s and then reoccupied during the early 1800s.

2.2.6 Donham (1991)

On 20 November 1991, the SHPD completed a field inspection of a proposed 15-foot-wide pipeline easement across Waikapū Stream within TMKs: (2) 3-004:002 and 014 to connect a waterline between Wailuku Heights Subdivision and the planned Waikapu Mauka Subdivision (Donham 1991). Donham (1991) noted that both the north and south sides of the stream were disturbed by grubbing and grading within the easement corridor and recommended that additional construction activities be confined to this disturbed area.

On the south bank of Waikapū Stream, a stone terrace wall was identified west of the easement. North of the stream and west of the graded area, an active complex of cattle pens was identified. East of the easement, a section of the former channel appeared "artificially faced with boulders and cobbles along the northern bank" (Donham 1991:2), and former terracing south of the channel was indicated in an area of Waikapū Stream once containing an island. The channel once forming the northern perimeter of this island was buried at the time of the field inspection. Archaeological monitoring or periodic inspection during the project were recommended to ensure work did not occur beyond the already disturbed easement corridor. Recordation of the previously disturbed features in the area and research involving, at minimum, a review of LCAs within and adjacent to the project area were also recommended.

2.2.7 Rotunno-Hazuka, Somer, Clark, et al. (1995)

Between 23 May and 14 June 1990, Applied Research Group of the B.P. Bishop Museum conducted test excavations at two possible historic properties previously documented by Rotunno and Cleghorn (1990) as temporary site numbers TS1 and TS3 (TMKs: [2] 3-8-007:002 and 110) (Rotunno-Hazuka, Somer, Clark, et al. 1995). An additional potential historic property was recorded as temporary site T-4 and tested. Test excavations also occurred at the established SIHP # 50-50-04-02797 burial complex.

Significant cultural resources were not identified on the surface or within test excavations at the three temporary sites. Therefore, these features were determined archaeologically insignificant. T-1 represents parallel cobble alignments that were interpreted as features recently constructed, possibly by people using off-road vehicles in the sand dunes. T-3, consisting of two rock mounds, was explained as most likely natural features created by sand dune erosion. The mound features were not consistent with known traditional Hawaiian burial markers or trail markers (*ahu*). T-4 appeared to be a recent campfire remnant based on the observed piled of rocks covering a modern trash pit proximal to dirt bike trails.

No human burial features were identified during the subsurface testing at SIHP # -02797. However, varying concentrations of fragmented human skeletal remains were observed both on the surface and within test excavations at the western periphery of the sand borrow pit near the approximate location of where Neller (1984) first documented burials at SIHP # -02797. The recovered fragmented remains represented a minimum number of individuals (MNI) of at least three individuals. Rotunno-Hazuka, Somer, Clark, et al. (1995) recommended SIHP # -02797 be considered significant. Additional recommendations included that all construction related to the project area cease until formulation of a burial treatment plan, that future ground disturbance in the project area be monitored by an archaeologist, and that a burial preserve plan be created and implemented for future development of the project area.

2.2.8 Rotunno-Hazuka, Somer, Flood, et al. (1995)

In 1992, the B.P. Bishop Museum researched historical documents and maps for the Maui Lani Development area and conducted archaeological test excavations for burial investigations near SIHP # 50-50-04-02797, a burial complex previously identified at the western periphery of a sand borrow site on the development parcel’s eastern boundary (TMKs: [2] 3-8-007:002 and 110) (Rotunno-Hazuka, Somer, Flood, et al. 1995). The test excavations resulted in the identification of ten burial features representing at least 12 additional human burials associated with SIHP # -02797. Six of the burial features were preserved *in situ*, while one individual was disinterred because it had already been exposed in the sandpit. Recovered skeletal remains were handled by the SHPD on Maui. The documentation of additional skeletal remains at SIHP # -02797 prompted the SHPD to request a more intensive AIS of the proposed development area. The results of this AIS are presented by Pantaleo and Sinoto (1996).

2.2.9 Pantaleo and Sinoto (1996)

Between 8 and 28 March 1995, Aki Sinoto Consulting conducted a supplemental surface survey and archaeological subsurface testing for Maui Lani Partners, Ltd. for development in the Maui Lani area of Wailuku (TMKs: [2] 3-8-007:002 and 110) (Pantaleo and Sinoto 1996). Intensive subsurface testing occurred at Maui Lani Development Phase 1 parcel, Phase 1A parcel, and SIHP # 50-50-04-02797, a human burial complex. A total of 90 machine excavated trenches, two shovel scrapes, and 1 manually excavated trench were tested in a total of 58 localities. During the archaeological investigation, six human burials were identified and designated as SIHP #s 50-50-04-04146 and -04147 and four additional burials were designated as components of SIHP # -02797.

Eighty acres proposed for residential development comprised the Phase 1 parcel, located near the Maui Waena Intermediate School. Ten trenches were manually excavated in the Phase 1 parcel. No historic properties were identified in the Phase 1 parcel.

The Phase 1A parcel was 172 acres proposed for an 18-hole golf course south of the Phase 1 parcel border. Sixty-eight backhoe excavated trenches, two shovel scrapes, and one manually excavated trench were tested in the Phase 1A parcel. Two distinct, previously undocumented human burials were identified during testing in this parcel. One burial, SIHP # -04146 was identified at Locality 12. The other burial, SIHP # -04147, was exposed in a road cut along the slope of a dune at Locality 21.

Twelve trenches were placed in and around a sand borrowing pit and known burial complex SIHP # -02797. Four additional human burials were identified in association with SIHP # -02797 Additionally, scattered surface human skeletal remains were identified in association with SIHP # -02797. Six machine excavated trenches were tested to investigate the origin of the scattered surface human skeletal remains; neither human burials nor non-burial cultural deposits were identified within any of these six test excavations.

The lack of apparent predictability in locating subsurface cultural remains, specifically human burials, based upon surface features (man-made or natural), led researchers to conclude no effective predictive method for avoiding burials, and thus the parcel was cleared for continued development with an archaeological monitor present to help mitigate potential impacts. Archaeological monitoring was recommended for future ground disturbance associated with development within the project area due to the high potential for encountering burials.

2.2.10 Fredericksen and Fredericksen (1996)

Between May 1994 and March 1995, Xamanek Researches, LLC conducted archaeological data recovery at a sand mining operation in Waikapū known as the Waikapu Borrow Site (Fredericksen and Fredericksen 1996), north of the current project area. In May 1994, sand used as fill for the Lahaina Wastewater Facility that was originally taken from the sand borrow site was discovered to contain human skeletal remains. The SHPD required the fill to be returned to its original location and examined for human skeletal materials. Careful sifting and cataloging of the sand revealed that an MNI of at least 22 occupied the former burial site disturbed by the mining operation. In addition to human skeletal remains, multiple artifacts were also observed, including ornamental, polished, and drilled dog and pig teeth and a few basalt stones. All artifacts and human remains were without provenience and were reinterred by representatives of the Maui/Lāna‘i Islands Burial Council (MLIBC) in a burial preserve assigned SIHP # 50-50-04-03525 in March 1995.

2.2.11 Moore and Kennedy (1998)

Between 1996 and 1998, Archaeological Consultants of the Pacific, Inc. conducted an AIS with subsurface testing on two neighboring parcels within the Wailuku Sand Dunes slated for sand mining by Hawaiian Cement (Moore and Kennedy 1998). The study included a 100% pedestrian survey in addition to the mechanical excavation of 117 trenches. Three historic properties were identified during the study: SIHP #s 50-50-04-04200, -04201, and -04202.

SIHP # -04200 consists of a complex of four *in situ* burial designated as Features A, B, C, and D. SIHP # -04200 Feature A is an adult burial within Trench 2 at approximately 175 cm below surface (cmbs) with two associated basalt stones, a grinding stone, and a waste-flake. SIHP # -04200 Feature B is an adult male within a burial pit in Trench 5 at approximately 150 cmbs. SIHP # -04200 Feature C is an adult burial within Trench 6. SIHP # -04200 Feature D is an infant burial within a burial pit in Trench 7a at 50 cmbs with several waterworn stones and basalt flakes.

SIHP # -04201 is an *in situ* adult burial within Trench 49 at approximately 160 cmbs. No burial pit or cultural materials were found in association with this interment.

SIHP # -04202 consists of three tiers of terraces in a deteriorated condition alongside a dry stream bed. The upper tier showed evidence of a loose stone paving subject to bulldozing disturbance; the middle and lower tiers were deteriorated due to livestock trampling, although the lower two terraces still had intact portions of the wall facings. A test unit excavated into the loosely paved upper terrace produced one artifact, a single waterworn stone used as an abrader. SIHP # -04202 was determined to be a sparsely used temporary habitation, likely dating to late pre-Contact to early Contact periods.

Recommendations following this study included that all burials encountered during excavation be preserved in place. Additional archaeological monitoring for the grading, grubbing and initial excavation of the project area, in addition to having an on-call monitor in case of future discoveries of human burials, were recommended for all future work in these parcels.

2.2.12 Sinoto et al. (2001)

In 2001, Archaeological Services Hawaii (ASH) conducted supplementary archaeological subsurface sampling of an approximate 56-acre parcel within the Maui Lani subdivision for the construction of a light industrial park (TMK: [2] 3-8-007:131 por.) (Sinoto et al. 2001). A pedestrian survey was conducted with no historic properties observed. Subsurface testing consisted of 20 backhoe trenches, and no historic properties were identified. Archaeological monitoring was recommended for future construction based on the potential of human burials present in the area.

2.2.13 Archaeological Services Hawaii (2003)

In January 2003, ASH submitted an interim archaeological monitoring report to the SHPD for Wailuku Agribusiness, Inc. sand mining operations at TMK: (2) 3-05-002:001 (Archaeological Services Hawaii 2003). The report summarizes over 16 hours of archaeological monitoring that took place during 1999 through 2002. At the time of the report, no cultural materials or historic properties had been identified. Archaeological monitoring was recommended to continue for the remainder of the project, which was expected to end by 2005.

2.2.14 Guerriero et al. (2004)

ASH conducted an AIS of a 50-acre parcel for proposed development at the Emmanuel Lutheran Church (TMK: [2] 3-5-002:001 por.) (Guerriero et al. 2004). At this time, CSH has not been able to locate a copy of the report. The following was described by O’Claray-Nu et al. (2018:22):

> The AIS included a pedestrian survey with subsurface backhoe testing of a total of 25 backhoe trenches (TRl-25). Results of the pedestrian survey identified one historic property, a disturbed segment of State Site 50-50-04-5474, the Kama Ditch, situated within the southwestern portion of the project area. Also noted was a metal sluice gate, designated Feature 1 of Site 5474. The ditch, also known as *kamaauwai* was constructed around 1905 to 1907 and provided water to irrigate the sugar cane fields surrounding the project area. Site 5474 was assessed as significant under Criterion “a” because of its association with the plantation era and Criterion “d” for its information content under the Federal and State historic preservation guidelines (O’Claray-Nu et al. 2018:22)

2.2.15 Fredericksen and Fredericksen (2004)

In August, September, and December 2003, Xamanek Researches conducted an AIS of approximately 100 acres for the Waikapu Affordable Housing Subdivision project (TMKs: [2] 3-5-002:001 por. and 3-8-007:101) (Fredericksen and Fredericksen 2004). Nearly half of the study area had been disturbed by former sand mining activities. A previously identified historic property, SIHP # 50-50-04-05474, Kama Ditch with associated Reservoir No. 6, was documented within the project area. The SHPD collected architectural data for SIHP # -05474, which was to be mostly demolished during the project. Archaeological monitoring was recommended for the project.

2.2.16 Rotunno-Hazuka and Pantaleo (2004)

In April 2004, ASH submitted to SHPD an interim archaeological monitoring program for the continued development of the 59-acre Hawaiian Cement Sand Mining Operation in Waikapū Ahupua‘a (Rotunno-Hazuka and Pantaleo 2004). Fieldwork during this study involved the continuous monitoring of ground disturbing activities associated with the removal of sand for construction aggregate uses. This archaeological monitoring began at least as early as January 2000 and was divided into Phases A and B. At the time of the report, Phase B was complete, while Phase A was ongoing. Phase B documented the identification of two human burials, Fe. 1B and Fe. 2B, which were left *in situ* pending preservation plans in accordance with the SHPD guidelines. Phase A had documented 40 additional human burials within 30 discrete features, labeled Fe. 1A through Fe. 30A. Since this work was ongoing, additional discoveries were anticipated. All observed burials were to be proposed for preservation in place by the property owner and reviewed by the MLIBC.

2.2.17 Rotunno-Hazuka and Pantaleo (2005)

In February 2005, ASH conducted additional AIS subsurface testing prior to development at the proposed site for Maui Lani Elementary School (TMK: [2] 3-8-007:137) (Rotunno-Hazuka and Pantaleo 2005). The study included a pedestrian survey of the 29-acre project area and 15 machine-excavated test trenches, which were concentrated mostly in the northern half of the project area where development was proposed. No historic properties were identified during the surface survey or subsurface testing, so the study was termed an archaeological assessment. No further archaeological testing was recommended, but archaeological monitoring was

recommended for future ground disturbance associated with the project area due to the high probability of human burials near the project area.

2.2.18 Wilson and Dega (2005)

In August 2005, Scientific Consultant Services Inc. (SCS) conducted an AIS on two parcels of land totaling 215.8 acres for the ‘Alaneo Development Project on the boundary between Waikapū and Wailuku Ahupua‘a (TMKs: [2] 3-5-002 and [2] 3-5-003) (Wilson and Dega 2005). The AIS included a systematic pedestrian survey and 21 backhoe test trenches. Seven historic properties were documented during the surface survey and all relate to historic sugarcane cultivation. Two historic properties, SIHP #s 50-50-04-05179 and -05493, were previously identified. SIHP # -05179 consists of a surface portion of the Waihe‘e Ditch and SIHP # 50-50-04-05493 is a surface portion of the Waikapū Ditch. Five historic properties were newly identified. SIHP # 50-50-04-05726 consists of a historic earthen berm ditch. SIHP # 50-50-04-05727 consists of an active and maintained rectangular reservoir. SIHP # 50-50-04-05728 consists of 14 earthen erosion control berms, all running parallel to one another in a cross-slope orientation. SIHP # 50-50-04-05729 consists of a stone and mortar irrigation ditch, possibly representing a recently widened former irrigation ditch. SIHP # 50-50-04-05730 consists of a 945-m portion of the alignment of Old Waikapū Road, observed to be running roughly between the two parcels making up the project area.

Only one trench (ST-6) encountered a historic property, largely because it was excavated across one of the earthen berms comprising SIHP # -05728 to gain insight into its construction. No subsurface historic properties were identified during trenching portions of this study. No further archaeological work for the project.

2.2.19 Morawski et al. (2006)

Between December 2003 and July 2005, SCS and ASH conducted archaeological monitoring of off-site construction near the proposed Kehalani Mauka Subdivision Project in Wailuku and Waikapū (TMKs: [2] 3-5-002:001 por. and [2] 3-5-001:017 por.) (Morawski et al. 2006). Five historic properties were identified during the 20 months of monitoring. SIHP # 50-50-04-05680 is a complete, *in situ* human burial located along Wai‘ale Road. The burial was preserved in place and capped with a buried concrete slab. SIHP # 50-50-04-05965 consists of disturbed human skeletal remains (an adult humerus portion). SIHP # 50-50-04-05966 consists of an incomplete and previously disturbed subadult burial. The human skeletal remains of SIHP #s -05965 and -05966 were assessed at the Maui SHPD Office and temporarily curated there, pending long-term mitigation. SIHP # 50-50-04-05963 is a historic roadbed associated with early use of Wai‘ale Road. SIHP # 50-50-04-05964 is a portion of a historic sugarcane irrigation flume consisting of concrete and corrugated metal.

2.2.20 Dagan and Hammatt (2006)

On 22 November 2006, CSH conducted a Due Diligence Letter Report and Field Inspection on the proposed site for the Maui Scrap Yard Project (Dagan and Hammatt 2006). This study included a field inspection of the project area to determine the presence/absence of any surface historic properties and to determine if any such historic properties would be adversely affected by the

proposed development. Regarding the landscape and business activities within the project area, the report noted the following:

> …The parcel is almost completely covered with mountains of industrial scrap of all origins that include mounds of sorted materials such as automobile tires, refrigerators, and aluminum cans. There are cleared roads that traverse the yard and provide access for heavy machinery. Mr. Koki explained that before they began their current operation they brought in two feet of fill and covered the majority of the ground surface of the project area. He stated that there was a sandy area that they did not cover with fill, on the northern end of the project area where they stockpiled metal and other materials from their previous baseyard. (Dagan and Hammatt 2006:3)

No historic properties were identified during this study, however, the observed presence of two sand piles of unknown origin at the northern end of the project area were noted as strong potential for subsurface findings. A complete AIS, in addition to archaeological monitoring provisions, were recommended prior to and during all future ground disturbances on the parcel.

2.2.21 Tome and Dega (2010)

Between 13 June 2008 and 16 September 2009, SCS conducted an AIS of approximately 607 acres of undeveloped land spanning the aeolian sand dunes crossing Waiale, Wailuku, and Waikapū (Tome and Dega 2010). These project lands border the current project area east and south. The investigation included a 100% pedestrian survey and the excavation of 282 backhoe trenches and five manually excavated test units. Area A of the project area contained two previously identified historic properties: SIHP # 50-50-04-01508, a portion of the Spreckels Ditch; and SIHP # 50-50-04-05504, a locale consisting of at least three human burials. These sites had been designated by the SHPD outside of any previous archaeological study (Tome and Dega 2010:38). The human skeletal remains were identified by an archaeologist from ASH in 2003 during a casual observation while monitoring at a nearby Maui Lani project area. The pedestrian survey relocated the two previously identified site locales.

Further testing near SIHP # -05504, which did not result in the discovery of additional human skeletal remains, helped define the site boundaries. One newly identified historic property was documented in one excavation during subsurface testing. SIHP # 50-50-04-06578 designates a buried fire pit/*imu* (underground oven) observed within Trench ST-90 located in Area A. Archaeological monitoring was recommended for all ground disturbing activities associated with the development of the project area.

2.2.22 Perzinski and Dega (2010)

In August 2009, SCS conducted an AIS of an approximate 2.5 km long corridor for the proposed Wai‘ale Road extension and a 1.3 km long by 0.2 km wide corridor for the proposed Waiko Road improvement in Waikapū (TMKs: [2] 3-5-002:014, 018, 888; [2] 3-5-027:021; [2] 3-6-002:003; and [2] 3-8-005:999) (Perzinski and Dega 2010). The investigation included a pedestrian survey and 64 backhoe trenches. No cultural materials were encountered within the backhoe trenches. One historic property was documented during the pedestrian survey. SIHP # 50-50-04-06668 is a

historic boulder terrace on the southern bank of Waikapū Stream. The terrace was interpreted as functioning for either water diversion or as a former footbridge footing. No sediments were present within the boulder terrace. SIHP # -06668 was assessed as significant per Criterion “d” (have yielded, or have the potential to yield significant information to the history of the area) of the Hawai‘i State Register, and no additional testing was recommended.

2.2.23 Titchenal and Sinoto (2010)

In March 2010, Aki Sinoto Consulting conducted an AIS for the proposed light industrial subdivision (Titchenal and Sinoto 2010) associated with the current Lot 1-A Improvements Project (TMK: [2] 3-8-007:105). The AIS included a surface survey of the entire project area, the excavation of nine backhoe-assisted test excavations, and the excavation of 11 subsurface inspection units. No historic properties were identified during the study. Due to the negative findings of the AIS, the study was termed an archaeological assessment.

2.2.24 Guerriero et al. (2017)

From February through June 2013, ASH conducted an AIS for the Waikapū Country Town Project (TMKs: [2] 3-6-002:003; [2] 3-6-004:003; and [2] 3-6-005:007) (Guerriero et al. 2017). The project area was divided into five parcels: Parcel 3 Mauka, Parcel 3 Waena, Parcel 3 Makai, Parcel 7, and Parcel 6. Fieldwork included a subsurface testing program consisting of 150 mechanically excavated test excavations. No historic properties were identified during subsurface test excavation.

Four historic properties, SIHP #s 50-50-04-07881 through -07884, were identified during the surface survey. SIHP # -07881 consists of 18 component features associated with historic commercial sugarcane irrigation (e.g., concrete-lined ditches and headwalls, dirt culverts, and sluice gates) along the northwestern boundary of project area, south of Waikapū Stream, in Parcel 3 Mauka. SIHP # -07882 is a remnant L-shaped retaining wall located near SIHP # -07881 Feature 2 (ditch) and the Parcel 3 Mauka and Parcel 6 boundary. SIHP # -07883 was interpreted as a WWII bunker on the south side of an access road transecting east/west Parcel 3 Mauka. SIHP # -07884 consists of three discrete scatters of historic materials including ceramic sherds and glass bottle fragments located in Parcel 3 Mauka, Parcel 6, and Parcel 7. Additionally, previously identified SIHP # -05197, the historic Waihe‘e Ditch, runs north/south through the northwest portion of the project area.

In addition to the SIHP #s identified, six other features were recorded and designated temporary site numbers. These temporary sites include a concrete slab of early to mid-1900s construction (TS4), and five rock piles (TS21, TS22, and TS23 through TS25). None of these features were determined to meet significance criteria. Other than archaeological monitoring during the project, additional archaeological work was not recommended for these temporary sites.

2.2.25 Yucha and Hammatt (2021)

Beginning on 14 December 2020, CSH conducted archaeological monitoring of all project-related ground disturbance for the Lot 1-A Site Improvements Project. At present, a draft of the project’s archaeological monitoring report remains under SHPD review. During archaeological

monitoring, human skeletal remains of three individuals (SIHP # 50-50-04-08812), including two *in situ* burials (Feature A and Feature C) and one isolated, disarticulated femur portion (Feature B) were inadvertently discovered. Work was immediately halted in the location of these findings, and the SHPD and Maui Police Department (MPD) were promptly notified. In consultation with the SHPD, recognized descendants, and the landowner, these findings were preserved in place. In March 2021, CSH prepared a Burial Site Component of an Archaeological Preservation Plan for SIHP # -08812 that specified the details of preservation in place (Yucha and Hammatt 2021). No additional historic properties were identified during archaeological monitoring of the subject project.

2.2.26 Yucha et al. (2023)

On 1 December 2021 and 4 February 2022, CSH conducted field inspections for an LRFI report for a proposed extension of Waiale Road, from its existing terminus at E. Waiko Road, to the southwest, to connect to Honoapi‘ilani Highway (TMKs: [2] 3-5-002:014 por. and 888 por., [2] 3-6-002:003 por. and 004 por., [2] 3-6-004:003 por., and [2] 3-6 Honoapi‘ilani Hwy ROW) (Yucha et al. 2023). The construction would include the installation of underground utilities and a proposed bridge crossing at Waikapū Stream. The study identified three potential historic properties (CSH 1 through CSH 3) and confirmed the location of SIHP # 50-50-04-06668 within the project area. CSH 1 is a historic road alignment and former railroad corridor that crosses the project area in two locations. CSH 2 is a drainage ditch that extends along the downslope edge of Honoapi‘ilani Highway. CSH 3 includes mechanically stacked boulder retaining walls constructed between the northern bank of Waikapū Stream and Waiko Road. SIHP # -06668 is a basalt boulder terrace along the southern bank of Waikapū Stream and was previously documented during an AIS of a previously proposed alignment of the Waiale Road extension (Perzinski and Dega 2010). The project area is located within an area that was formerly used for commercial agriculture in clay-based alluvial sediments. There is a potential for subsurface historic properties to be present beneath the agricultural plow zone (3-4 ft below surface).

Section 3 Archaeological Monitoring Provisions

Under Hawai‘i State historic preservation legislation, “Archaeological monitoring may be an identification, mitigation, or post-mitigation contingency measure. Monitoring shall entail the archaeological observation of, and possible intervention with, on-going activities, which may adversely affect historic properties” (HAR §13-279-3).

Hawai‘i State historic preservation legislation governing archaeological monitoring programs requires that each monitoring plan discuss eight specific items (HAR §13-279-4). The monitoring provisions below address these eight requirements in terms of archaeological monitoring for the excavations within the current project area.

1) Anticipated Historic Properties:

   Three historic properties are located within or immediately adjacent to the project area, however, the proposed project is anticipated to have “no effect” on these significant historic properties since they are located outside of the areas proposed for project-related ground disturbance.

   SIHP # 50-50-04-01605 is an architectural historic property designated to the Waikapū Protestant Church for the National Register of Historic Places (NRHP) in 1990. SIHP # -01605 was assessed as significant per NRHP Criteria “a” (be associated with events that have made an important contribution to the broad patterns of our history) and “c” (embody the distinctive characteristics of a type, period, or method of construction, represent the work of a master, or possess high artistic value).

   SIHP # -05197 is a small portion of the Waihe‘e Ditch at its crossing beneath Waiko Road. It has previously been documented by Wilson and Dega (2005) and Guerriero et al. (2017). SIHP # -05197 was assessed as significant per HAR §13-284-6 Criterion “d” (have yielded, or is likely to yield, information important for research on prehistory or history).

   SIHP # -07884 contains three discrete surface scatters of historic cultural deposits including ceramic sherds and glass bottle fragments. The cultural deposit was identified by Guerriero et al. (2017). SIHP # -07884 was assessed as significant per HAR §13-284-6 Criterion “d” (have yielded, or is likely to yield, information important for research on prehistory or history).

2) Locations of Historic Properties:

   The remnants of the Waikapū Protestant Church, SIHP # -01605, encompass less than 1 acre of land within TMK: (2) 3-5-012:036. The parcel is shared with a modern house and is located off Waiko Road in the western portion of the current project area.

   SIHP # -05197, the Waihe‘e Ditch, traverses north to south and crosses beneath Waiko Road on the eastern side of Kilinoe Place, in the central portion of the current project area.

   SIHP # -07884, three scattered deposits of historic artifacts, was identified outside of the southwestern portion of the current project area (see Figure 25).

3) Fieldwork:

The archaeological monitoring program will consist of on-site monitoring, which will occur for all ground disturbing activities that take place during the current project. There will be at least one archaeological monitor assigned to each piece of moving equipment. Any departure from this will occur only following consultation with and written concurrence from the SHPD.

While there are three historic properties located within or immediately adjacent to the project area, ground disturbance is proposed to occur within road right-of-ways with tie-ins to residential structures which will have no effect on the historic properties. Despite this, the on-site archaeologist will notify crews of the locations of the historic properties and ensure that no ground disturbance occurs in those areas.

If subsurface archaeological deposits (e.g., trash pits, structural remnants) are encountered, they will be documented according to current standard archaeological recording techniques. This will include drawing plan view and profile maps as applicable and recording the stratigraphy of excavation profiles where cultural features or artifacts are exposed as well as representative profiles. Representative stratigraphic profiles will be documented at a minimum of 2.0 m long whenever possible. These exposures will be photographed, located on project area maps, and, if appropriate, sampled. The representative profiles locations will be photographed and mapped on a USGS topographic quadrangle, even if no historically significant sites are documented. Photographs will include a scale and north arrow. As appropriate, sampling will include the collection of representative artifacts, bulk sediment samples, and/or the on-site screening of measured volumes of feature fill to determine feature contents. Profile locations, historic property locations, and any other points of interest will be located using a sub-meter accurate GPS device. Site boundaries will be recorded as a polygon, not as a single point.

In the event of significant finds, the SHPD will be notified. If human skeletal remains are identified, construction activity in the vicinity will be stopped and no exploratory work of any kind will be conducted unless specifically requested by the SHPD. All human skeletal remains that are encountered during excavation will be handled in compliance with HAR §13-300 and HRS §6E-43.

An archaeological principal investigator is responsible for sending SHPD a written notification via email and HICRIS for Project No. 2021PR01130 at the start of archaeological monitoring.

4) Archaeologist’s Role:

The on-site archaeologist will have the authority to stop work immediately in the area of any findings so that documentation can proceed, and appropriate treatment can be determined. In addition, the archaeologist will have the authority to slow and/or suspend construction activities in order to ensure that the necessary archaeological sampling and recording can take place.

5) Coordination Meeting:

Before work commences on the project, the on-site archaeologist shall hold a coordination meeting to orient the construction crew to the requirements of the archaeological monitoring program. At this meeting the monitor will discuss the procedures for on-site monitoring. The archaeologist will also emphasize his or her authority to temporarily halt construction and that all finds (including objects such as bottles) are the property of the landowner and may not be removed from the construction site. The importance of an archaeologist's presence during any project excavation will be stressed.

6) Laboratory Work:

Laboratory work will be conducted in accordance with HAR §13-279-5(6). Laboratory analysis of non-burial related finds will be tabulated and standard artifact and midden recording will be conducted as follows. Artifacts will be documented as to provenience, measurements, weight, type of material, and presumed function. Photographs of representative artifacts will be taken for inclusion in the archaeological monitoring report. Bone and shell midden materials will be sorted down to species, when possible, and then tabulated by provenience.

As appropriate, collected charcoal material obtained within intact cultural deposits will be analyzed for species identification. Charcoal samples ideal for dating analyses will be sent to Beta Analytic, Inc. for radiocarbon dating. If appropriate, artifacts may be sent to the University of Hawai‘i-Hilo Geoarchaeology Lab for Energy-Dispersive X-ray Fluorescence (EDXRF) analysis in order to identify and possibly geographically locate the source material. All analyzed samples, provenience information, and results will be presented in table form within the archaeological monitoring report.

7) Report Preparation:

The report will contain sections on monitoring methods, archaeological results, stratigraphy, and results of laboratory analyses, and it will present a synthesis of these results. The report will address the requirements of a monitoring report (pursuant to HAR §13-279-5). Photographs of excavations will be included in the monitoring report even if no historically significant sites are documented. All historic properties (non-burial and burial) identified and/or further documented during archaeological monitoring (e.g., cultural layer, pit features, buried walls) shall be assessed for site significance per HAR §13-275-6, Criteria "a" through "e". The site(s) will also be evaluated for eligibility for listing on the Hawai‘i Register of Historic Places (see 13-198 for more info). This information shall be included in the final report, along with an appropriate recommendation for future mitigation. The archaeological monitoring report shall be prepared and submitted to the SHPD within 90 days of the end of archaeological monitoring fieldwork. Should burial treatment be completed as part of the monitoring effort, a summary of this treatment will be included in the monitoring report. Should burials and/or human skeletal remains be identified, CSH will provide all appropriate additional written documentation (e.g., letters, memos, reports) that may be requested by the SHPD.

8) Archiving Materials:
All burial materials will be addressed in accordance with SHPD directives. Materials not associated with burials will be temporarily stored at CSH's Wailuku office until an appropriate curation facility is selected, in consultation with the landowner and the SHPD. All data generated will be stored at the CSH offices.

Section 4 References Cited

Abbott, Isabella Aiona
1992 *La‘au Hawai‘i: Traditional Hawaiian Uses of Plants*. Bishop Museum Press, Honolulu.

Anderson, Rufus
1865 *The Hawaiian Islands: Their Progress and Condition under Missionary Labors.* Third ed. Gould and Lincoln, Boston.

Archaeological Services Hawaii
2003 Archaeological Interim Monitoring Report for Wailuku Agribusiness, Inc at TMK 3-5-02: 1; Waikapu Ahupua‘a, Wailuku District, Island of Maui. Archaeological Services Hawaii, LLC, Wailuku, Hawai‘i.

Baldwin, E. D.
1930 *Map of the Ahupuaa of Waikapu, Wailuku District, Maui* Hawaii Territory Survey. Hawai‘i

Beckwith, Martha W.
1932 *Kepelino's Traditions of Hawaii*. Translated by Mrs. Mary Wiggin Pukui. Translation of Hawaiian traditions from hand-written notes of Bishop Maigret, founder of the Catholic mission in Hawai‘i . Bernice Pauahi Bishop Museum, Honolulu.

1970 *Hawaiian Mythology*. University of Hawai‘i Press, Honolulu.

Bingham, Hiram
1824 Excursion of Messrs. Bingham and Richards. In *The Missionary Herald for the Year 1824*, Vol 20, edited by American Board of Commissioners for Foreign Missions, pp. 111-112. Samuel T. Armstrong, Boston.

Brisbin, Joel, Alan Haun, and Peter Jensen
1991 *Archaeological Data Recovery Excavations Waikapu Mauka Partners Golf Resort Project Area Land of Waikapu, Wailuku District Island of Maui*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Burns, Irma Gerner
1991 *Maui’s Mittee and the General, A Glimpse into the Lives of Mr. and Mrs. Frank Fowler Baldwin*. Ku Pa‘a Inc., Honolulu.

Chinen, Jon J.
1958 *The Great Mahele: Hawaii's Land Division of 1848*. University of Hawai‘i Press, Honolulu.

Coll Jr., Ray.
1954 Hydroseparator for Wailuku. *The Honolulu Advertiser* Saturday, May 22:12. Honolulu.

Cummings, George C.F.
1881 The Largest Extinct Volcano. (An Ascent of Haleakala.) *Scribner's Monthly, An Illustrated Magazine for the People*: 272-275.

Dagan, Colleen, and Hallett H. Hammatt
2006 An Archaeological Due Dilligence Letter Report and Field Inspection for the Maui Scrap Yard Project, Waikapu Ahupuaa, Wailuku District, Maui Island TMK (2) 3-8-007:105. Cultural Surveys Hawai‘i, Inc., Wailuku, Hawai‘i.

Dodge, F.S.
1885 *Maui, Hawaiian Islands. Registered Map 1268*, 1:90,000. Hawaiian Government Survey. Library of Congress Geography and Map Division Washington, D.C. 20540-4650.

Donham, Theresa K.
1991 Field Inspection of a Water Pipeline Easement Across Waikapu Stream, Waikapu, Maui TMK 3-5-04: 14 and 3-6-04: 2. State of Hawai‘i Department of Land and Natural Resources, State Historic Preservation Division, Wailuku, Hawai‘i

Edwards, Bela Bates
1832 *The Missionary Gazetteer: Comprising a Geographical and Statistical Account of the Various Stations of the American and Foreign Protestant Missionary Societies of all Denominations, with their Progress in Evangelization and Civilization.* William Hyde & Co., Boston.

Emerson, Nathaniel B.
1993 *Pele and Hiiaka: A Myth from Hawaii* Honolulu Star-Bulletin, Ltd., Honolulu.

Esri, Inc.
2018 *Map Image Layer.* Satellite and aerial imagery for ArcGIS; Raster. Esri, Inc. Redlands, California.

Evening Bulletin.
1888 Kamehameha V announced arrival on Maui. *Evening Bulletin* Friday, November 9:3. Honolulu.

Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, and Floyd Stephens
1972 *Soil Survey of Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. Soil Conservation Service, United States Department of Agriculture, Washington, D.C.

Fornander, Abraham
1969 *An Account of the Polynesian Race: Its Origins and Migrations*. Charles Tuttle, Rutland, Vermont.

Fredericksen, Eric, and Demaris Fredericksen
2004 Archaeological Inventory Survey for Waikapu Affordable Housing Subdivision Waikapu Ahupua‘a, Wailuku District Island of Maui (TMK: 3-5-02: por. 01 and 3-8-07: 101). Xamanek Researches, Pukalani, Hawai‘i.

Fredericksen, Walter M., and Demaris L. Fredericksen
1996 Report on the Waikapu Human Remains Recovery Project, Waikapu, Maui, Hawaii (Borrow Site 50-50-04-3525) TMK: 3-8-07:104. Xamanek Researches, Pukalani, Hawai‘i.

Giambelluca, Thomas W., Q. Chen, A.G. Frazier, J.P. Price, Y.L. Chen, P.S. Chu, J.K. Eischeid, and D.M. Delparte
2013 Online The Rainfall Atlas of Hawai‘i. In *Bull. Amer.Meteor. Soc.*, pp. 313-316. Vol. 94. University of Hawai‘i at Mānoa, Honolulu.

Giambelluca, Thomas W., X. Shuai, M.L. Barnes, R.J. Alliss, R.J. Longman, T. Miura, Q. Chen, A.G. Frazier, R.G. Mudd, L. Cuo, and A.D. Businger
2014 Evapotranspiration of Hawai‘i. Final report submitted to the U.S. Army Corps of Engineers—Honolulu District, and the Commission on Water Resource Management, State of Hawai‘i. University of Hawai‘i at Mānoa, Honolulu.

Guerriero, Diane, Andre‘e Conley-Kapoi, and Jeffrey Pantaleo
2017 Archaeological Inventory Survey Report for Several Parcels of Land Situated within Waikapū Ahupua`a; Wailuku District Pū`ali Komohana Moku Located at TMK: [2] 3-6-002:003; 3-6-004:003; and 3-6-005:007; Island of Maui. Archaeological Services Hawaii, LLC, Pu`unene, Hawai‘i.

Guerriero, Diane, Lisa Rotunno-Hazuka, and Jeffrey Pantaleo
2004 *A*rchaeological Inventory Survey of a 50-Acre Parcel of Land, Waikapu and Wailuku Ahupua`a; Wailuku District, Maui Island TMK: 3-5-02: por. 001. Archaeological Services Hawaii, LLC, Pu`unene, Hawai‘i.

Handy, E.S. Craighill, Elizabeth Green Handy, and Mary Kawena Pukui
1991 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Revised ed. Bernice P. Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu.

Haun, Alan E.
1989 Interim Report: Summary of Findings, and General Significance Assessments and Recommended General Treatments: Archaeological Inventory Survey Waikapu Mauka Parners Golf Resort Project Area Land of Waikapu, Wailuku District, Island of Maui. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Hawaii Department of Survey, Bureau of Government Surveying
1903 *Report of the Survey to the Governor of the Territory of Hawaii for the Year Ending June 30, 1902*. The Hawaiian Gazette Co., Honolulu.

Hawaii Supreme Court
1896 *Hawaiian Case Reports: Cases Decided in the Supreme Court of the Hawaiian Islands* Submitted to Hawaiian Gazette Company, Honolulu.

Hawaii TMK Service
1934 *Tax Map Key [2] 3-5*. Hawaii TMK Service. Honolulu, Hawai‘i

Hawaiian Commercial & Sugar Co.
1953 *Sugar Plantation Map of the Hawaiian Commercial & Sugar Co.* Hawaiian Commercial and Sugar Company.

Head, Lou
1960 Old Maui Church To Be Restored. *The Honolulu Advertiser* Sunday, March 13:29. Honolulu.

Hill, Robert R., Tanya L. Lee-Greig, and Hallett H. Hammatt
2006 A Cultural Impact Evaluation Report for a 15.20-Acre Parcel located at Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island TMK (2) 3-8-08: 001. Cultural Surveys Hawai‘i, Inc., Wailuku, Hawai‘i.

Honolulu Star Bulletin
1952 In Waikapu District. *Honolulu Star Bulletin* Thursday, January 17. Honolulu.

Hoyt, Helen P.
1976 *The Night Marchers*. The Hawaiian Bicentennial Library. 14 vols. Island Heritage Limited, Norfolk Island, Australia.

Kamakau, Samuel Mānaiakalani
1992 *Ruling Chiefs of Hawaii*. Revised ed. The Kamehameha Schools Press, Honolulu.

Kaukali, Edwin L., and Wayne A. Subica
2010 *Hawaii Plantations Pay System & History about the Old Days*. Second ed. History. Memories of Hawaii - Big Island.

Kennedy, Joseph
1988 Preliminary Archaeological Survey of Phase IA of the Waikapu Master Plan TMK 3-5-04:por. 25.

1989 Archaeological Subsurface Testing Results at Phase 1A of the Waikapu Master Plan TMK 3-5-04: por. 25.

1991 Inventory Survey & Subsurface Testing Results for Waikapu Partners Proposed Residential Project Waikapu, Wailuku District, Island of Maui TMK: 3-6-02:2(por.) & TMK: 3-6-04:2(por.) Revised March 1991 Subsurface Testing of Suspected Burial Features Addendum December 1991. Archaeological Consultants of Hawaii, Haleiwa, Hawai‘i.

Kennedy, Stanley C.
1937 America's Most Westerly Domestic Airline *Pan-Pacific*: 17-18.

Kuykendall, R.S.
1938 *The Hawaiian Kingdom: 1778-1854, Foundation and Transformation*. University of Hawaii Press, Honolulu.

MacLennan, Carol A.
1997 Hawai‘i Turns to Sugar: The Rise of Plantation Centers, 1860-1880. *The Hawaiian Journal of History* 31.

Moffat, Riley M., and Gary L. Fitzpatrick
1995 *Surveying the Mahele: Mapping the Hawaiian Land Revolution*. Palapala‘āina. Editions Limited, Honolulu.

2004 *Mapping the Lands and Waters of Hawai‘i*. Palapala‘aina. Editions Ltd., Honolulu.

Monsarrat, M.D.
1882 *Kuleanas. Registered Map No. 940*, Unknown Scale. On file at the State of Hawaii Survey Office, Honolulu, Hawai‘i.

Moore, James R., and Joseph Kennedy
1998 An Archaeological Inventory Survey Report for a Proposed Sand Mine to be Located at TMK: 3-8-07:101 9pors.) in Waikapu and Wailuku Ahupua'a, Wailuku District, Island of Maui, April 1998. Archaeological Consultants of the Pacific, Inc., Haleiwa, Hawai‘i.

Morawski, Lauren, Donna M. Shefcheck, and Michael F. Dega
2006 An Archaeological Monitoring Report for Kehalani Subdvision and Offsite Improvements, Wailuku and Waikapu Ahupua'a, Wailuku District, Island of Maui, Hawai'i [TMK:3-5-02:01 Portion and TMK:3-5-01:17 Portion]. Scientific Consultant Services, Inc., Honolulu.

Neller, Earl
1984 Recovery of Endangered Human Bones from the Wailuku Sand Hills, Maui, Hawaii (TMK 3-8-07:2). State Historic Preservation Division, Honolulu.

Nellist, George F.
1925 *The Story of Hawaii and Its Builders*. Honolulu Star Bulletin, Honolulu.

O’Claray-Nu, Jenny, Lisa J. Rotunno-Hazuka, and Jeffrey Pantaleo
2018 Final Archaeological Assessment Report for a 15.0 acre Parcel Located Along Waiale Road in Wailuku Ahupua‘a and District Pū‘ali Komohana Moku Island of Maui TMK: (2) 3-5-001:064. Archaeological Services Hawaii, LLC., Pu‘unēnē, Hawai‘i.

Pantaleo, Jeffrey, and Aki Sinoto
1996 Archaeological Subsurface Sampling of the Proposed Maui Lani Development Phases 1 and 1a Wailuku Ahupua'a, Wailuku District, Maui Island (TMK 3-8-07:2, 110). Aki Sinoto Consulting, Honolulu.

Pellegrino, Hokuao.
2009 Traditional Place Names in the Ahupua‘a of Wailuku. *Maui News* December 15, 2009. Wailuku, Hawai‘i.

Perzinski, David, and Michael F. Dega
2010 Archaeological Inventory Survey Report for the Waiale Road Extension and Waiko Road Improvement Project in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawaii [TMK: (2) 3-5-002:014; 888; 3-5-027:021; 3-6-002:033 and 3-8-005:999]. Scientific Consultant Services, Inc., Honolulu, Hawai‘i.

Pukui, Mary Kawena, and Samuel H. Elbert
1986 Hawaiian Dictionary Hawaiian-English English-Hawaiian. Revised and Enlarged ed. University of Hawai‘i Press, Honolulu.

Pukui, Mary Kawena, Samuel H. Elbert, and Esther T. Mookini
1974 *Place Names of Hawaii*. Revised and Enlarged ed. University Press of Hawaii, Honolulu.

Richards, William
1831 “Intelligence from the Sandwich Islands,”. In *Missionary Herald*, Vol Vol. XXVII [27]. Crocker and Brewster, Boston.

Rotunno-Hazuka, Lisa, and Jeffrey Pantaleo
2004 Archaeological Interim Monitoring Report for Hawaiian Cement Sand Mining Operations at TMK: 3-8-07:101 pors., Wailuku Ahupuaa; Wailuku District; Island of Maui. Archaeological Services Hawaii, Wailuku, Hawai‘i.

2005 Archaeological Assessment Report for Maui Lani Elementary School in Wailuku Ahupua‘a, Wailuku District Island of Maui TMK 3-8-07: por. 131. Archaeological Services Hawaii, LLC, Wailuku, Hawai‘i.

Rotunno-Hazuka, Lisa, Lonnie Somer, Stephan D. Clark, and Boyd Dixon
1995 Archaeological Testing of Four Sites on the Maui Lani Property in Wailuku Ahupua'a, Wailuku District, Island of Maui, Hawai'i. Bishop Museum, Honolulu.

Rotunno-Hazuka, Lisa, Lonnie Somer, Krista Flood, Darrin Lazzaro, Stephan D. Clark, and Boyd Dixon
1995 Historical Research for the Proposed Maui Lani Project and Test Excavations at Site 50-50-04-2797, Wailuku, Maui. Bernice Pauahi Bishop Museum, Honolulu.

Rotunno, Lisa J., and Paul L. Cleghorn
1990 Archaeological Reconnaissance Survey of TMK 3-8-07: 2 and 110 Wailuku, Maui. Bishop Museum, Honolulu.

Saito, Norman
2009 Aviation History, Wailuku, HI.

Schmitt, Robert C.
1973 *The Missionary Censuses of Hawaii*. Pacific Anthropological Records No. 20. Bernice Pauahi Bishop Museum, Department of Anthropology, Honolulu.

Sinoto, Aki
1990a Post-Field Summary, Maui Lani Borrow Site, Wailuku, Maui Island TMK 3-8-07:103. Pauahi Bishop Museum, Honolulu.

1990b Interm Field Summary Report-Archaeological Subsurface Assessment and Continuing Monitoring of a Portion of the Maui Lani Sand Borrow Parcel, TMK 3-8-07:103. Bernice Pauahi Bishop Museum, Honolulu, Hawaii 96817-0916.

1993 Results of Archaeological Monitoring of Sand Borrowing Activities at Maui Lani, Wailuku, Maui TMK: 3-8-07:103. Aki Sinoto Consulting, Honolulu.

Sinoto, Aki, Lisa Rotunno-Hazuka, and Jeffrey Pantaleo
2001 Supplementary Archaeological Sampling: Proposed Light Industrial Park Maui Lani Development Area, Wailuku, Maui Island (TMK 3-8-07: POR 131). Archaeological Services Hawaii, LLC, Honolulu, Hawaii.

Speakman, Cummins E.
1978 *Mowee: An Informal History of the Hawaiian Island*. Peabody Museum of Salem, Salem, Massachusetts

Stearns, Harold T., and Gordon A. Macdonald
1942 *Geology and Ground-Water Resources of the Island of Maui, Hawaii*. Bulletin 7 vols. Territory of Hawaii, Division of Hydrography, Advertiser Publishing Company, Honolulu.

Sterling, Elspeth P.
1998 *Sites of Maui*. Bishop Museum Press, Honolulu.

Stokes, John F.G.
1917 Report on the Heiau of Maui. In *Hawaiian Alamanac and Annual for 1913 The Reference Book of Information and Statistics Relating to the Territory of Hawaii, of Value to Merchants, Tourists and Others.*, edited by Thomas G. Thrum, pp. 125. Thos. G. Thrum, Honolulu.

The Honolulu Advertiser.
1886 Interment of the Late Mr. Henry Cornwell. *The Honolulu Advertiser* Monday, February 15:3. Honolulu.

1903 Col. WM. H. Cornwell Dies At Waikapu Ranch. *The Honolulu Advertiser* Thursday, November 19:8. Honolulu.

1916 In the Days of Kalakaua. *The Honolulu Advertiser* Sunday, June 11. Honolulu.

1927 The Sand Hills of Maui in 1841. 7 January 1927:12. Honolulu.

1949 Valley Island Will Get First Traffic Light. *The Honolulu Advertiser* Sunday, Jan 9:17. Honolulu.

The Pacific Commercial Advertiser.
1879 Excerpts on Cornwell Land Holdings in Waikapu. *The Pacific Commercial Advertiser* 27 December 1879:5.

Thrum, Thomas G.
1874 Notes on the History of the Sugar Industry of the Hawaiian Islands. *The Sugar Cane* VI(54):1-4.

1922 Hawaiian Place Names. In *A Dictionary of the Hawaiian Language*, edited by Henry H. Parker, pp. 625-674. The Board of Commissioners of Public Archives of the Territory of Hawaii, Honolulu.

Thurston, Lorrin A. .
1906 Sugar: Its Status and Development in Hawaii. *The Louisiana Planter and Sugar Manufacturer* July 21, 1906. New Orleans.

Tome, Guerin, and Michael Dega
2010 An Archaeological Inventory Survey of Approximately 607 Acres of Land in Waiale, Wailuku and Waikapu Ahupuaa, Wailuku District, Island of Maui, Hawaii. TMK: (2) 3-8-005:023 (por.), 37 and (2) 3-8-007:71, 101, 102, 104. Scientific Consultant Services Inc., Honolulu.

U.S. Department of Agriculture, Natural Resources Conservation Service
2001 Soil Survey Geographic (SSURGO) database for Island of Lanai, Hawaii (hi970). U.S. Department of Agriculture, Natural Resources Conservation Service.

U.S. Geological Survey
1924 *Topographic Map, Maalaea Quadrangle*. United States Department of the Interior, USGS. Reston, Virginia.

1955 *Wailuku Quadrangle, Hawaii [map]*, 1:24,000. United State Department of the Interior, USGS. Reston, Virginia.

1977 *USGS Orthophotoquad, Wailuku Quadrangle*. United States Department of the Interior, USGS.

1997 *Wailuku Quadrangle, Hawaii*, 1:24,000. United State Department of the Interior, USGS. Reston.

2024 *Wailuku Quadrangle, Hawaii*. United States Department of the Interior.

Unknown
1893 William H Cornwell, wearing in court military uniform https://www.wikitree.com/photo/jpg/Cornwell-118-2, accessed July, 2019.

Waikapu Community Association
2018 About Waikapu: Waikapu Today http://waikapumaui.org/about-waikapu/, accessed July, 2019.

Walker, Winslow
1931 *Archaeology of Maui*. Bernice Pauahi Bishop Museum, Honolulu.

Wall, Walter E.
1929 *Map of the Island of Maui: Compiled from all Available Data*, 1:5000. Hawaii Territory Survey. Honolulu.

Westervelt, W.D.
1910 *Legends of Ma-ui - A Demi-God of Polynesia and of His Mother Hina*. The Hawaiian Gazette Company, Honolulu.

Wilcox, Carol
1996 *Sugar Water: Hawaii's Plantation Ditches*. University of Hawai‘i Press, Honolulu.

Wilson, Jon, and Michael F. Dega
2005 *Archaeological Inventory Survey on 215.800 Acres Located in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawaii [TMK (2) 3-5-02: 02 and 03*. Scientific Consultant Services, Inc., Honolulu.

Wyllie, R.C.
1854 Report of the Committee on Coffee 2:26-41. Honolulu.

Yucha, Josephine M., and Hallett H. Hammatt
2021 Burial Site Component of an Archaeological Preservation Plan for SIHP # 50-50-04-8812 at the Lot 1-A Site Improvements Project, Waikapū Ahupua‘a, Wailuku District, Maui Island, TMK: [2] 3-8-007:105. Submitted to Cultural Surveys Hawai‘i, Inc., Wailuku, Hawai‘i.

Yucha, Trevor
2022 Interim Archaeological Documentation of Geotechnical Borings for the Waiko Road Subdivision Sewer System Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: [2] 3-5-010:001, 033, 034 & 036-038; [2] 3-5-011:001-041, 043-046 & 048; [2] 3-5-011:999 por. Letter to the Hawai‘i State Historic Preservation Division. Cultural Surveys Hawai‘i Inc., Wailuku, Hawai‘i

Yucha, Trevor M., Jennifer J. Frey, Josephine M. Yucha, and Hallett H. Hammatt
2023 Archaeological Literature Review and Field Inspection for the Waiale Road Extension Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: [2] 3-5-002:014 por. and 888 por., [2] 3-6-002:003 por. and 004 por., [2] 3-6-004:003 por., and [2] 3-6 (Honoapi‘ilani Hwy ROW). Cultural Surveys Hawai'i, Inc., Wailuku, Hawai'i.

Appendix A SHPD Correspondence

MICHAEL P. VICTORINO
Mayor
ERIC A. NAKAGAWA, P.E.
Director
ROBERT SCHMIDT
Deputy Director
MICHAEL KEHANO, P.E.
Solid Waste Division
SCOTT R. ROLLINS, P.E.
Wastewater Reclamation Division
TAMARA L. FARNSWORTH
Environmental Protection & Sustainability Division



COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT
2145 KAOHU STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793

October 4, 2022

Dr. Alan S. Downer, Administrator
Department of Land and Natural Resources
State Historic Preservation Division
Kakuhihewa Bldg., Suite 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Subject: Request for State Historic Preservation Division Initial Hawai‘i Revised Statutes 6E-8 Historic Preservation Review for the Waiko Road Subdivision Sewer System Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui, TMKs: [2] 3-5-004:028, 031, and 063; [2] 3-5-010:001, 033, 034, 036, 037, and 038; [2] 3-5-011:001 to 041, 043 to 046, and 048; [2] 3-5-012:001 to 023, 025, 035 to 040, and 043 to 047.

Dear Dr. Downer:

The County of Maui Department of Environmental Management (DEM) is submitting the subject project to the State Historic Preservation Division (SHPD) for review under Hawai‘i Revised Statutes 6E-8.

Scope of Work

DEM proposes the construction of approximately 5,800 linear feet (1,768 m) of gravity wastewater line and service laterals connecting approximately 119 lots in the Waikapū area (Figure 1 and Figure 2). The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. Project-related ground disturbance will include the approximately 5,800 linear feet (1,768 m) of trenching along with the excavation of service laterals to connect to approximately 119 house lots.

Summary of Identification Efforts

A review of previous archaeological studies within Waikapū Ahupua‘a indicates that the current project area has not been subject to an archaeological inventory survey (AIS) or previous archaeological study (Figure 3 and Figure 4).

The nearest previous study was a preliminary archaeological survey (Kennedy 1988) and subsequent archaeological subsurface testing (Kennedy 1989) of portions of the Waikapū Master Plan area along the northern boundary of the current project area (see Figure 3). At the time of the preliminary study in 1988, one portion of the study area remained under cultivation for pineapples while the remainder contained fallow agricultural fields that were possibly used for sugarcane cultivation. Cane haul roads and a portion of an irrigation ditch (Waihe‘e Ditch) were noted but not assessed as historic properties. The 1988 study recommended systematic subsurface testing within the boundaries of former land commission awards (LCAs) within the area. In 1989, a total of six backhoe test excavations were completed with no findings. Kennedy (1989:4) noted:

> The results of this testing were negative. It is possible that trench placement missed existing deposits but this, in my opinion is unlikely. More than 22 lineal [linear] meters were removed within a single trace of materials that one would associate with traditional or early historic habitation sites.
> It is our opinion that sugarcane and other recent activities have been extensive enough in this area to [have] obliterated any subsurface deposits that may have once existed. [Kennedy 1989:4]

To the south of the project area, an AIS for the proposed Waikapū Country Town Project, conducted by Archaeological Services Hawaii, LLC in 2017, included a 100 percent coverage pedestrian inspection and 150 backhoe-assisted test excavations (Guerriero et al. 2017) (see Figure 3). Four historic properties were identified during the surface survey that included: SIHP #s 50-50-04-07881 through -07884. SIHP # -07881 consisted of 18 component features associated with historic commercial sugarcane irrigation (e.g., concrete-lined ditches and headwalls, dirt culverts, and sluice gates). SIHP # -07882 was a remnant L-shaped retaining wall. SIHP # -07883 was interpreted as a WWII bunker. SIHP # -07884 consisted of three discrete scatters of historic materials including ceramic sherds and glass bottle fragments. Additionally, previously identified SIHP # -05197, the Waihe‘e Ditch, extended through the northwestern portion of the study area.

While no previous archaeological studies have been conducted within the current project area, a review of historic properties on the Hawai‘i Register of Historic Places (HRHP) indicates that the project area includes the Waikapū Protestant Church (Waikapū Stone Church), which was added to the HRHP on 4 August 1990 and assigned SIHP # 50-50-04-01605.

Summary of Geotechnical Testing Results

In consultation with the SHPD, archaeological observation of geotechnical borings for the current project was conducted between 13 and 18 January 2022 by CSH archaeologist Jennifer Frey, B.A., under the direction of Principal Investigators Josephine Yucha, M.S., and Hallett H. Hammatt, Ph.D. This work required approximately 3 person-days to complete.

A total of six geotechnical bores were completed (B-1 through B-6) throughout the project area to depths of approximately 6.0 m (20.0 ft) below surface (Figure 5). Two borings were placed along Wilikona Place, one along Kemoa Place, and three along West Waiko Road. In general, the observed stratigraphy included asphalt and associated base course material overlying previously disturbed fill sediment, natural loamy or clay-based alluvial soils, and bedrock. Of interest was a layer of waterworn pebbles and cobbles within B-5 and B-6 that appears to be indicative of a

Dr. Alan Downer, DLNR
Page 3

former stream channel or meander of the adjacent Waikapū Stream. No cultural materials or historic properties were observed during geotechnical testing.

Evaluation of Project's Effects

The current project area has not been subject to an AIS or previous archaeological study. A review of nearby previous archaeological studies and the HRHP indicates that the project area minimally includes SIHP # 50-50-04-01605, the Waikapū Protestant Church, and a small portion of SIHP # -05197, the Waihe‘e Ditch, at its crossing beneath Waiko Road. The proposed project is anticipated to have "no effect" on these significant historic properties since they are located outside of the areas proposed for project-related ground disturbance.

Based on all available information, a project effect determination of "no historic properties affected" may be appropriate, however, since the project area has not been previously subject to an archaeological study, DEM believes that there may be insufficient information to determine the potential for the project to adversely impact significant subsurface historic properties within the project area at this time.

Request for Concurrence

DEM requests SHPD concurrence with archaeological monitoring for identification purposes for all project-related ground disturbance. Per Hawai‘i Administrative Rules (HAR) §13-279-3, archaeological monitoring for identification will entail archaeological observation of, and possible intervention with, on-going activities which may adversely affect historic properties.

Sincerely,

cn=Robert Schmidt, o=Deputy Director, ou=Dept of Environmental Management, email=Robert.Schmidt@co.maui.hi.us, c=US
2022.10.04 15:45:16 -10'00'

for Eric Nakagawa, P.E.
Director of Environmental Management

Cc: Trevor Yucha, Cultural Surveys Hawai‘i (w/attachments)

Derek Ono, Warren S. Unemori Engineering, Inc. (w/attachments)

Emily Murai, Munekiyo Hiraga (w/attachments)

Dr. Alan Downer, DLNR
Page 4

References Cited

Guerriero, Diane, Andre‘e Conley-Kapoi, and Jeffrey Pantaleo
2017 *Archaeological Inventory Survey Report for Several Parcels of Land Situated within Waikapū Ahupua`a; Wailuku District Pū`ali Komohana Moku Located at TMK: [2] 3-6-002:003; 3-6-004:003; and 3-6-005:007; Island of Maui*. Archaeological Services Hawaii, LLC, Pu`unene, Hawai‘i.

Kennedy, Joseph
1988 Preliminary Archaeological Survey of Phase IA of the Waikapu Master Plan TMK 3-5-04:por. 25.

1989 Archaeological Subsurface Testing Results at Phase 1A of the Waikapu Master Plan TMK 3-5-04: por. 25.

Dr. Alan Downer, DLNR
Page 5

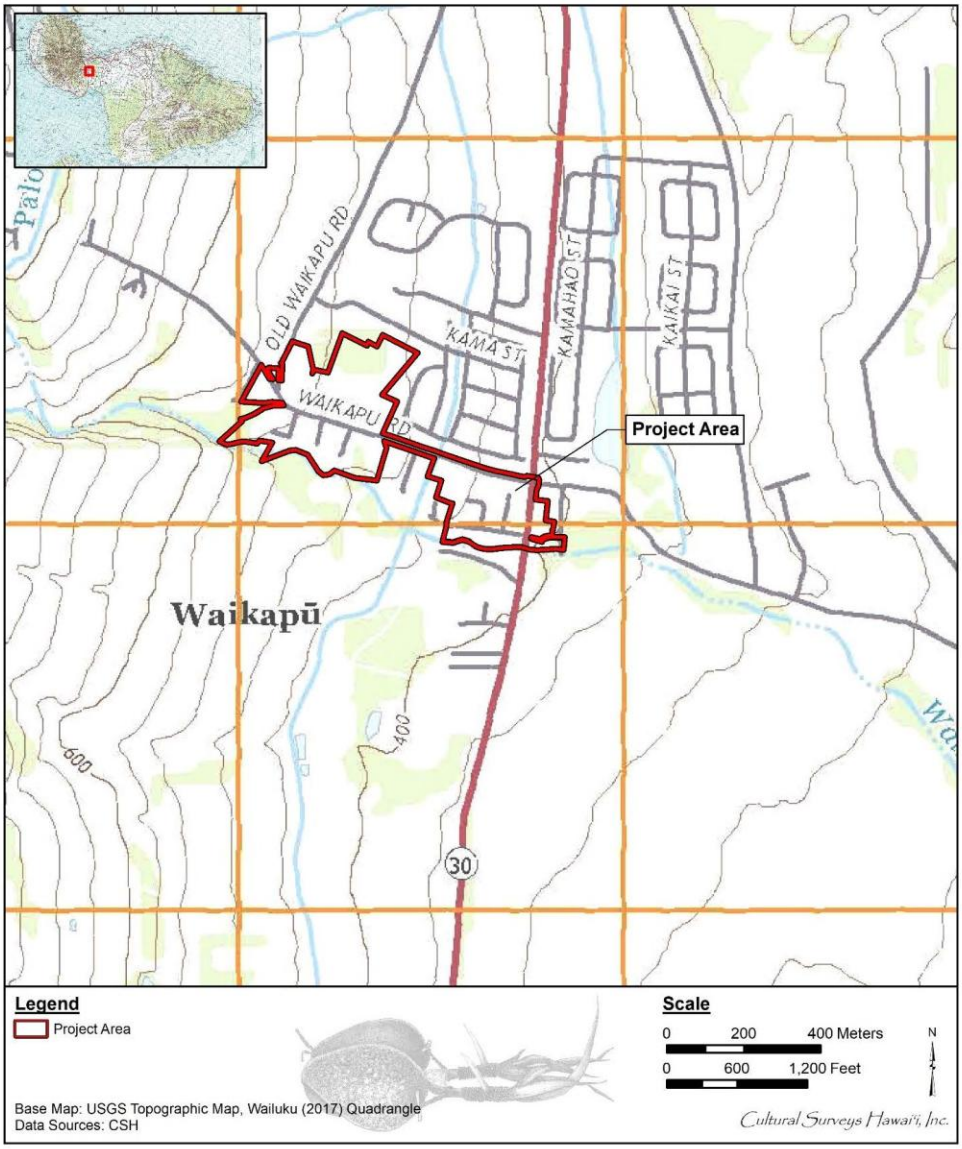


Figure 1. Portion of the 2017 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting the location of the project area

Dr. Alan Downer, DLNR
Page 6

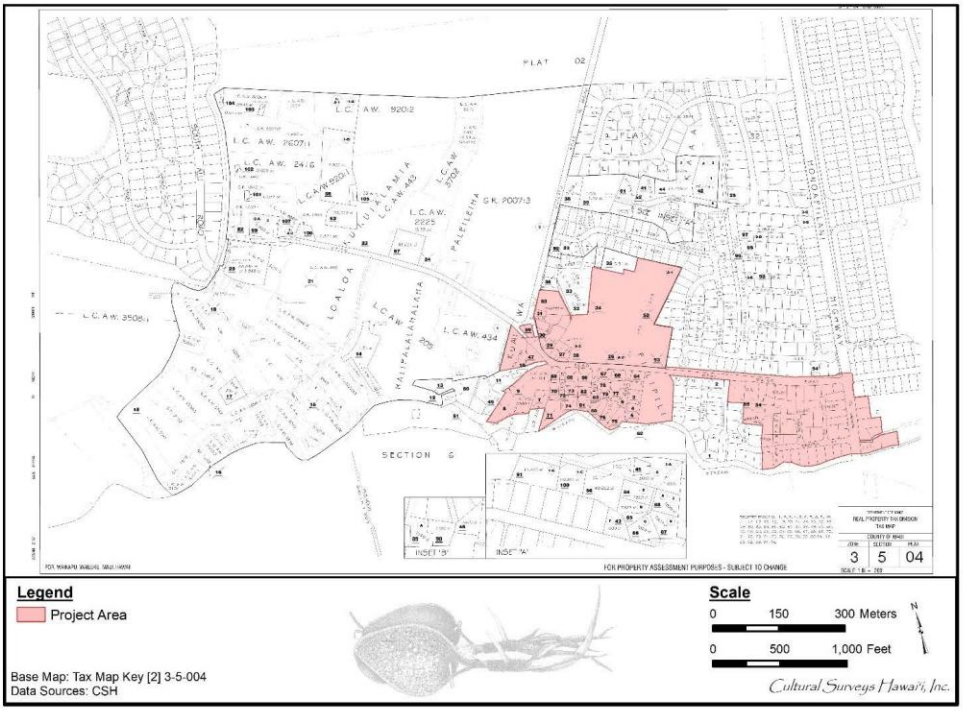


Figure 2. Tax Map Key (TMK) [2] 3-5-004 depicting the current project area

Dr. Alan Downer, DLNR
Page 7

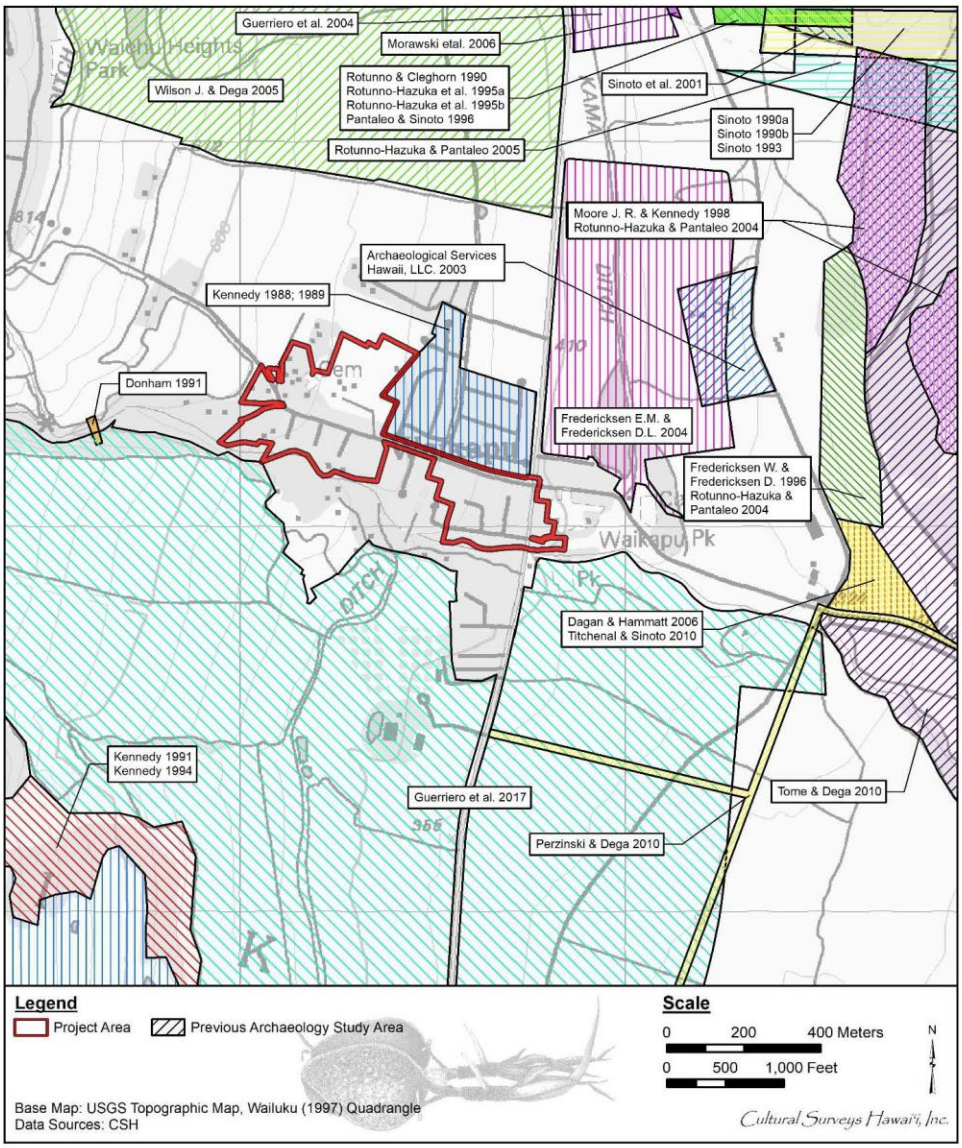


Figure 3. Portion of the 1997 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting previous archaeological studies conducted in the vicinity of the project area

Dr. Alan Downer, DLNR
Page 8

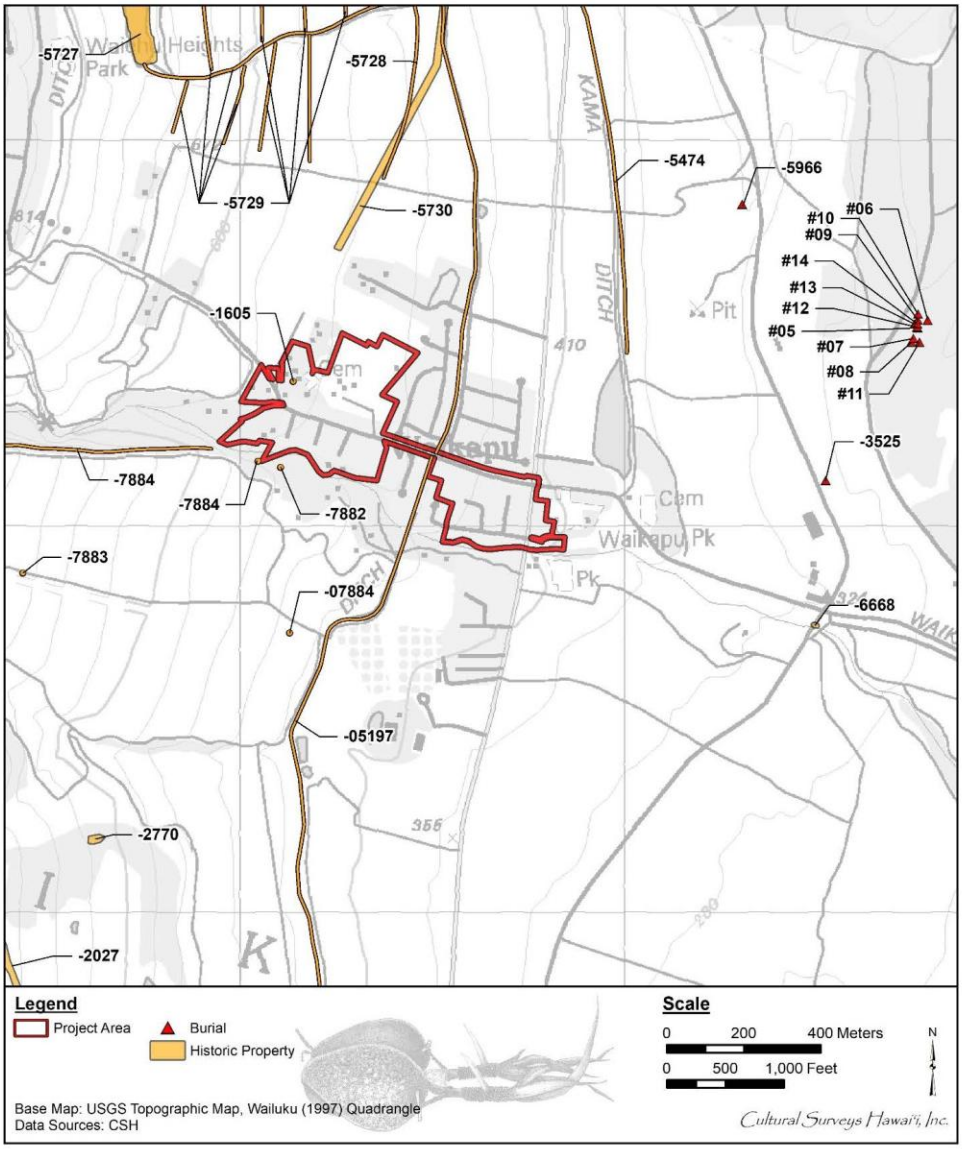


Figure 4. Portion of the 1997 Wailuku U.S. Geological Survey 7.5-minute topographic quadrangle depicting previously documented historic properties within and near the current project area (SIHP # 50-50-04-)

Dr. Alan Downer, DLNR
Page 9



Figure 5. 2018 aerial image depicting the location of geotechnical test bores completed within the current project area

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

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | 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

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

RYAN K.P. KANAKA'OLE
FIRST DEPUTY

DEAN D. UYENO
ACTING 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

February 9, 2024

IN REPLY REFER TO:
Project No. 2021PR01130
Doc. No. 2402NM02
Archaeology

Shayne Agawa, P.E., Director
County of Maui
Department of Environmental Management
2145 Kaohu Street, Suite 102
Wailuku, Maui, Hawaii 96793
Email: environmental.mgmt@co.maui.hi.us

Dear Shayne Agawa:

SUBJECT: **Chapter 6E-8 Historic Preservation Review –**
Waiko Road Subdivision Sewer System Project
Request for Concurrence with Project Effect Determination
Waikapū Ahupua'a, Pū'ali Komohana District, Island of Maui
TMK: (2) 3-5-004:028, 031, and 063; (2) 3-5-010:001, 033, 034, 036, 037, and 038; (2) 3-5-011:001-041, 043-046, and 048; (2) 3-5-012:001-023, 025, 035-040, 043-047
(East Waiko Road, West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street ROWs)

This letter provides the State Historic Preservation Division's (SHPD's) review of the County of Maui Department of Environmental Management's (DEM) Waiko Road Subdivision Sewer System Project. SHPD received the current submission on March 6, 2023, along with a copy of the 50% complete construction plans, a cover letter from an End-of-Fieldwork letter report from Cultural Surveys Hawai'i, Inc. (CSH) regarding geotechnical testing preformed for the project (Yucha, February 2022), an HRS 6E Form, and a letter from the County of Maui requesting the SHPD's concurrence with archaeological monitoring for identification purposes during all ground disturbance work associated with the subject project.

DEM proposes the construction of approximately 5,800 linear feet (1,768 m) of gravity wastewater line and service laterals connecting approximately 119 lots within a 0.06-acre project area. The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street Right-of-Ways (ROWs).

CSH was on-site during the geotechnical borings conducted in surpport of the subject project. CSH observed the boring soil samples which identified the presence of natural alluvial soils, including a potenial former stream channel, beach asphalt, base course gravel, and disturbed fill sediment. Additionally, the Land Commission Award (LCA) 5228:3 (to H. Kuihelani) occurs within the current project area. Yucha (February 2022) recommends the project proceed with archaeological monitoring for identification purposes.

At this time, SHPD has insufficient information to determine the potential for the project to adversely impact significant subsurface historic properties. Therefore, **SHPD concurs with County of Maui's request that the project proceed with archaeological monitoring for identification purposes** in order to adequately identify if any archaeological historic properties are present and, if so, to determine potential impacts to them and, if necessary, to ensure that appropriate mitigation is implemented.

Shayne Agawa, P.E.
02/09/2024
Page 2

SHPD looks forward to receiving for review and acceptance an archaeological monitoring plan (AMP) meeting the requirements of HAR §13-279-4 prior to permit issuance. Please submit the requested AMP and associated filing review fee to HICRIS Project No. 2021PR01130 using the Project Supplement option.

SHPD will notify the County of Maui when the archaeological monitoring plan has been reviewed and accepted, and the project initiation process may continue.

Please contact ‘Iolani Kauhane, Historic Preservation Archaeologist III, at Iolani.Kauhane@hawaii.gov for any questions regarding this letter.

Aloha,

Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Dr. Janet Six, janet.six@co.maui.hi.us
Noelani Hessler, nhessler@culturalsurveys.com
Emily Murai, emily@munekiyohiraga.com
Karlynn Fukuda, karlynn@munekiyohiraga.com
Derek Ono, dono@wsue.com
Juan Rivera, juan.Rivera@co.maui.hi.us
Trevor Yucha, tyucha@culturalsurveys.com

JOSH GREEN, M.D.
GOVERNOR | KE KIAʻĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIAʻĀINA

STATE OF HAWAIʻI | 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

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

RYAN K.P. KANAKAʻOLE
FIRST DEPUTY

DEAN D. UYENO
ACTING 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

September 29, 2024

IN REPLY REFER TO:
Project No. 2021PR01130
Doc. No. 2409NM09
Archaeology

Shayne Agawa, P.E., Director
County of Maui, Department of Environmental Management
2145 Kaohu Street, Suite 102
Wailuku, Maui, Hawaii 96793
Email: environmental.mgmt@co.maui.hi.us

Dear Shayne Agawa:

SUBJECT: **Hawaii Revised Statutes (HRS) Chapter 6E-8 Historic Preservation Review –**
Waiko Road Subdivision Sewer System Project
Request for Concurrence with a Project Effect Determination
Archaeological Monitoring Plan
Waikapū Ahupuaʻa, Pūʻali Komohana District, Island of Maui
TMK: (2) 3-5-004:028, 031, and 063; (2) 3-5-010:001, 033, 034, 036, 037, and 038;
(2) 3-5-011:001-041, 043-046, and 048; (2) 3-5-012:001-023, 025, 035-040, 043-047
(East Waiko Road, West Waiko Road, Honoapiʻilani Highway, Wilikona Place,
Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street Right-of-Ways
[ROWs])

This letter provides the State Historic Preservation Division's (SHPD's) review of the archaeological monitoring plan (AMP) titled *Draft Archaeological Monitoring Plan or the Waiko Road Subdivision Sewer System/Waikapū Waterline Project, Waikapū Ahupuaʻa, Pūʻali Komohana District, Maui Island, TMKs: [2]3-5-004:018, 028, 031, & 063; [2] 3-5-010:001, 033, 034, & 36-38, [2] 3-5-011:001-041, 043-046 &48; [2] 3-5-012:001-23, 025, 035-040, & 043-047* (Yucha and Hammatt, September 2025) completed in support of the County of Maui, Department of Environmental Management's (DEM) Waiko Road Subdivision Sewer System Project. SHPD requested archaeological monitoring for identification purposes for the proposed project in a letter dated February 9, 2024 (Doc. No. 2402NM02). Our office received the draft AMP on September 12, 2025 (HICRIS Submission No. 2021PR01130.006).

DEM proposes the construction of approximately 5,800 linear feet (1,768 m) of gravity wastewater line and service laterals connecting approximately 119 lots within a 41.18-acre project area. The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapiʻilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, Old Waikapu Road, and Kilohi Street ROWs.

The Yucha and Hammatt (September 2025) AMP meets the requirements of HAR §13-279-4. **It is accepted**.

SHPD requests the minor revisions in the Attachment be included in the Final AMR. Please send one hard copy of this document clearly marked FINAL, along with a text-searchable pdf copy of the document and a copy of this letter to the Kapolei SHPD office, attention SHPD Library, and a second hardcopy to the Maui SHPD office, attention April Greenberg. Additionally, please submit a text-searchable pdf copy of the Final AMP to HICRIS Project No. 2021PR01130 in response to the request and a pdf copy of the AMP to SHPD.Archaeology.Library@hawaii.gov

SHPD hereby notifies the DEM that the AMP has been accepted, and the project initiation process may continue.

SHPD requests written notification via email and HICRIS Project No. 2021PR01130 at the start of archaeological monitoring. Within 30 days of completion of archaeological monitoring fieldwork, SHPD looks forward to receiving a brief archaeological monitoring letter report of findings as specified in HAR §13-282-3(f)(1). Within 90 days of the completion of archaeological monitoring field work, SHPD looks forward to receipt of an archaeological monitoring report meeting the requirements of HAR §13-279-5 for review and acceptance.

Please submit the AMR and associated review fee and any other project documents and correspondence to HICRIS Project No. 2021PR01130 in response to the request.

Please contact Susan A. Lebo, Archaeology Branch Chief, at Susan.A.Lebo@hawaii.gov for any questions regarding this letter.

Aloha,

Jessica L. Puff
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Janet Six, janet.six@co.maui.hi.us
Noelani Hessler, nhessler@culturalsurveys.com
Emily Murai, emily@munekiyohiraga.com
Karlynn Fukuda, karlynn@munekiyohiraga.com
Derek Ono, dono@wsue.com
Juan Rivera, juan.Rivera@co.maui.hi.us
Trevor Yucha, tyucha@culturalsurveys.com
Adam Strubeck, adam@munekiyohiraga.com

Attachment

Issues and Concerns: *Draft Archaeological Monitoring Plan or the Waiko Road Subdivision Sewer System/Waikapū Waterline Project, Waikapū Ahupua'a, Pū'ali Komohana District, Maui Island, TMKs: [2]3-5-004:018, 028, 031, & 063; [2] 3-5-010:001, 033, 034, & 36-38, [2] 3-5-011:001-041, 043-046 &48; [2] 3-5-012:001-23, 025, 035-040, & 043-047* (Yucha and Hammatt, September 2025)

1. (Title pg.) Change brackets in TMKs to parenthesis and ensure #s are same throughout for example, the 23 on the last line doesn't have a 0 in front, like 025.
2. (Pg. ii) Write out full site #s upon first mention. Check throughout document and update as appropriate.
3. (Pg. 61) Three historic properties are located close to the project area-include how these will be avoided during the project and how monitoring will assist in that effort. For example, will the archaeological monitor physically point out these resources to the crew? Is any fencing proposed and/or any other methods proposed to ensure they are not impacted? Are they far enough away that no impacts for sure will occur? Include some clarification.
4. (Pg. 61) Include: at least one archaeological monitor will be assigned to each piece of moving equipment.
5. (Pg.61) Instead of "…fieldwork will likely encompass the documentation of subsurface.." clarify that if subsurface archaeological deposits are encountered they will be documented.
6. (Pg. 61) Include: scale and north arrow for photographs.
7. (Pg. 61) Include: site boundaries need to be recorded as a polygon, not as a single point.
8. (Pg. 61, throughout) Ensure human remains is written as "human skeletal remains."
9. (Pg. 61) Clarify plan views and profiles instead of just "drawing."
10. (Pg. 61) Include: Representative soil profiles will be mapped on a USGS topographic Quadrangle Map.
11. (Pg. 61-62) Include: The archaeological PI is responsible for sending to SHPD a written notification via email and HICRIS Project No. 2021PR01130 at the start of archaeological monitoring.
12. (Pg. 61-62) Include: All historic properties (non-burial and burial) identified and/or further documented during archaeological monitoring (e.g., cultural layer, pit features, buried walls) shall be assessed for site significance per HAR §13- 275-6, Criteria a through e. The site(s) will also be evaluated for eligibility for listing on the HI Register of Historic Places (See 13-198 for more info). This information shall be included in the final report, along with an appropriate recommendation for future mitigation.

APPENDIX E

CULTURAL IMPACT ASSESSMENT

DRAFT
Cultural Impact Assessment for the Waiko Road Subdivision Sewer System / Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui TMKs: [2] 3-5-004:028, 031 & 063; [2] 3-5-010:001, 033, 034, 036-038; [2] 3-5-011:001-041, 043-046 & 048; [2] 3-5-012:001-023, 025, 035-040 & 043-047

Prepared for
Munekiyo Hiraga

Prepared by
Kellen Tanaka, B.S.,
Nani Parker,
and
Hallett H. Hammatt, Ph.D.

Cultural Surveys Hawai‘i, Inc.
Kailua, Hawai‘i
(Job Code: WAIKAPU 26)

August 2025

O‘ahu Office
P.O. Box 1114
Kailua, Hawai‘i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
1860 Main St.
Wailuku, Hawai‘i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	Cultural Impact Assessment for the Waiko Road Subdivision Sewer System / Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui, TMKs: [2] 3-5-004:028, 031 & 063; [2] 3-5-010:001, 033, 034, 036-038; [2] 3-5-011:001-041, 043-046 & 048; [2] 3-5-012:001-023, 025, 035-040 & 043-047 (Tanaka et al. 2025)
Date	August 2025
Project Number	Cultural Surveys Hawai‘i, Inc. (CSH) Job Code: WAIKAPU 26
Agencies	State Office of Planning and Sustainable Development (OPSD), Environmental Review Program (ERP)
Land Jurisdiction	County of Maui, Department of Environmental Management (DEM)
Project Location	The project area consists of a portion of West Waiko Road, from Old Waikapū Road to the east to the intersection with Honoapi‘ilani Highway to the west. It includes the residential communities immediately south of West Waiko Road including Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street, as well as an area north of West Waiko Road which is bounded by Old Waikapu Road to the east, Kama Street to the north, and Hoolako Place to the west. It also includes a portion of Honoapi‘ilani Highway south of the intersection with West and East Waiko Road, as well as a smaller area which is bounded by Honoapi‘ilani Highway to the west, East Waiko Road to the north, and the Waikapū Community Center and Park to the east. The project area is depicted on a portion of the 2017 Wailuku U.S. Geological Survey (USGS) 7.5-minute topographic map quadrangle.
Project Description	The proposed project will include the construction of approximately 5,800 linear feet of gravity wastewater line and service laterals to connect approximately 119 lots in the Waikapū area. The new sewer system will connect to an existing manhole located at East Waiko Road, and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights-of-way, and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development. The DEM has coordinated with the Department of Water Supply (DWS) for proposed waterline replacement work in the vicinity of

	the project area to be done in conjunction with the subject sewer system improvements project. DWS proposes replacing waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline replacement work will be indicated on project plans and discussed within the Draft EA. Waterline work will take place on Honoapiilani Highway, Kemoa Place, Wilikona Place, Kilohi Plane, Nuna Place, and Honua Place. Existing 4-inch waterlines on Kilohi Place, Nuna Place, and Honua Place will be replaced with 8-inch waterlines connecting to the existing 8-inch waterline along West Waiko Road.
Project Acreage	The project area is approximately 41.18 acres (16.66 hectares).
Document Purpose and Regulatory Context	This cultural impact assessment (CIA) supports compliance for the Waiko Road Subdivision Sewer System/Waikapū Waterline Project with: • The National Historic Preservation Act (NHPA), which requires consideration of a proposed projects' potential impacts to historic properties and resources; • The mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Regulatory 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; • 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 in order to "promote responsible decision making" (HRS §343); and, • The State of Hawai‘i's historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to "promote the use and conservation of historic properties for the education of the citizens of Hawai‘i" (HAR §13-275-6) This CIA contains information gathered from archival research and consultation, compiled in order 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).
Results of Background Research	Background research for the proposed project yielded the following information: 1. The current project area is located in the Waikapū Ahupua‘a in the Pū‘ali Komohana Moku in the isthmus of Central Maui between the northwest slopes of Haleakalā and the southeast slopes of Mauna Kahalawai (West Maui Mountains). 2. Waikapū Ahupua‘a is one of the four *ahupua‘a* (traditional land sections usually extending from the mountain to the sea) that make up “*Nā Wai ‘Ehā*” or “The Four Waters” of Maui; this includes Waihe‘e, Wailuku, Wai‘ehu, and Waikapū (Handy et al. 1991:469, 272; Moffat and Fitzpatrick 1995:23). 3. In the tradition of Hawaiian naming practices, the wind associated with Waikapū is called Kololio (Nakuina 1902:68; Nakuina 1992:63) and the rain specific to this *ahupua‘a* is called Kili‘o‘opu (Akana and Gonzalez 2015:84). 4. The place name “Waikapū,” according to Pukui et al. 1974:223, literally translates to “Water of the Conch.” This is due to a cave within Waikapū Valley that supposedly housed a supernatural conch shell (named Kīhapū, blessed with the breath of Lono) that resided there until it was stolen by a supernatural dog named Puapualenalena (Kaualililehua 1872). 5. In ancient times, Waikapū and Wailuku were agriculturally abundant lands known for their extensive *lo‘i,* or wetland taro cultivation (Handy et al. 1991:497). Handy et al. (1991:496) describe Waikapū Stream as land bound, as opposed to emptying into the ocean, with the water diverted into *lo‘i* and the overflow dissipating on the dry plains of the central isthmus between West and East Maui feeding the wetland of Keālia. 6. Ke Kula o Kama‘oma‘o, or the Plains of Kama‘oma‘o, is the name given to a region of sandy plains spanning portions of Wailuku and Waikapū Ahupua‘a (Emerson 1993). This area

	was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970), a place where dead spirits waited for a friendly escort, perhaps an *‘aumakua* (family god), to show them the way to eternity. 7. According to author and historian, Helen P. Hoyt (1976), Kama‘oma‘o is also a region where the “Marchers of the Night,” or *Ka huaka‘i o ka Po*, are sometimes heard and seen. When these spiritual “Night Marchers” appear, according to Beckwith (1932:199), “It is said that such a sight is fatal unless one has a relative among the dead to intercede for him.” 8. Ahulau ka Pi‘ipi‘i i Kakanilua or The Battle of Waikapū Common entailed the clash of invading Hawai‘i Island forces, headed by Kalani‘ōpu‘u with the Maui forces under Kahekili in 1776. Kalani‘ōpu‘u landed his invading troops at Mā‘alaea and marched across the isthmus of Kama‘oma‘o (Fornander 1880:2:152–153). 9. The nineteenth century brought to Maui a multitude of commercial, demographic, social, and religious changes encouraged by the burgeoning foreign influx. In 1819, the first whaling ships arrived in Hawaiian waters and Lāhainā Harbor became a primary port of call for provisioning ships in the Islands. Closely following the arrival of the first whaling ships, the first Protestant missionaries and their families arrived in Lāhainā in 1823 (Bingham 1824). 10. In 1838, the Waikapū Congregational Church was established as a home-based Christian service. During World War II, Waikapū Congregational Church was turned over to the military and used as a surgical hospital. The Church building was used as a ward with an additional “nurses quarters” built off to the side of the main structure (Head 1960). 11. Foreign commercialism initially came to Waikapū in the form of sugar processing and coffee production (Wyllie 1854). By the mid-nineteenth century, most of the Waikapū Commons and across the isthmus was covered with sugarcane. Waikapu Sugar Company operated from 1862 to 1894, when it was purchased and incorporated into the holdings of Wailuku Sugar Company (Kaukali and Subica 2010). Beginning in 1880, the Waikapū plantation lands began to be merged with those of the Wailuku and Waihe‘e plantations. In 1905, a new sugar mill was constructed in Wailuku to accommodate the

	sugar brought in from the new outlying plantations, including Waikapū (Kaukali and Subica 2010:98). 12. The economic boom resulting from the passage of the Reciprocity Treaty in 1876 encouraged sugar baron Claus Spreckels and other Hawaiian sugar planters to invest heavily in capital improvements such as irrigation systems, mills, and railroads. Numerous ditches including the Hamakua Ditch, Honomanu Ditch, Waihe‘e Ditch (also named the Spreckels Ditch), and the Lowrie Ditch were created to provide additional water to the plantations of the central Maui plains (Wilcox 1996). 13. In addition to sugarcane cultivation, much of the lands of Waikapū in the mid-twentieth century were also tied-up in pastural endeavors. In 1952, over 7,000 acres of land along the base of the West Maui Mountains, spanning from Waikapū to Ukumehame, were sold at auction in two leases (15- to 21-year lease terms) for $16,582. These land tracts served as hog and cattle pasturage (*Honolulu Star-Bulletin 1952*:5). 14. In the latter half of the 1900s, residential tracts were constructed along both the Kuihelani Highway and Honoapi‘ilani Highway corridors that traverse Waikapū. Complementing the residential are light industrial parcels, grocery stores, and business developments on the outskirts of Waikapū sugar fields.
Results of Community Consultation	CSH attempted to contact Hawaiian organizations, agencies, and community members as well as cultural and lineal descendants in order to identify individuals with cultural expertise and/or knowledge of the project area and vicinity. Community outreach letters were sent to 33 individuals or groups; eight responded, one provided written testimony, and two of these *kama‘āina* (native-born) and/or *kūpuna* (elders/of the grandparent’s generation) met with CSH for more in-depth interviews. Consultation was received from: 1. Dr. Scott Fisher, Chief Conservation Officer, Hawaiian Islands Land Trust (HILT); and Maui Lāna‘i Islands Burial Council (MLIBC) 2. Mr. Kaniloa Kamaunu, Aha Moku ‘O Wailuku (AMOW), Aha Moku ‘O Maui LLC 3. Mr. Robert Hobdy, retired naturalist, and forester

Identification of Cultural Practices and Resources	Consultation identified the following cultural, historical, and natural resources where cultural practices (including traditional and customary native Hawaiian rights) are being exercised in Waikapū Ahupua‘a: 1. Freshwater resources 2. *Iwi kūpuna* (ancestral remains) Based on the results of community consultation and background research conducted as part of this CIA, CSH has identified the following cultural practices within Waikapū Ahupua‘a: 1. Freshwater gathering and uses 2. Burials practices Zero on-going cultural practices were identified within the project area during community consultation. The project area is located in the general vicinity of on-going cultural practices such as freshwater gathering and uses and burial practices.
Identification of Impacts to Cultural Practices and Resources	Zero impacts to on-going cultural practices were identified within the project area during community consultation for this CIA. Consultation identified a number of concerns related to potential impacts to freshwater resources and *iwi kūpuna*: 1. Impacts to freshwater resources a. Kaniloa Kamaunu expressed his concerns that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū which he noted is used for drinking and irrigation. He asked how far would the proposed sewer lines be from the stream? 2. Impacts to *iwi kūpuna* a. Dr. Scott Fisher stated the area has “lots of *iwi kūpuna* (ancestral remains).” He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū. He pointed out that beneath a 9-to-12-inch layer of alluvial dirt is sand. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*. b. Mr. Kamaunu noted that the “nature of the area” is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* (family) in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi*

	kūpuna. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road. c. Mr. Kamaunu also expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. d. While the project area includes a historic cemetery and the potential for the discovery of *iwi kūpuna*, no unmarked burial sites have been previously documented within the project area (see Section 3.3)
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. Recommendations regarding potential impacts to freshwater resources a. No mitigations regarding potential impacts to freshwater resources were proposed by participants during consultation, however, Mr. Kamaunu asked what kind of mitigation will be done to assure that surface and ground water will not be contaminated in the case of a broken sewer line? He also asked what will the process be to address potential impacts to surface and ground water resulting from a sewer line bursting? Mr. Kamaunu emphasized, "The comments I've made are not to be regarded as AMOW [Aha Moku ‘O Wailuku] is in anyway or form in favor of the project. As my comments reflected this area is highly sensitive and because the stream and *iwi kūpuna* could be potentially desecrated or injured by the project neither I nor AMOW are in favor of this project." b. CSH recommends the use of Best Management Practices (BMPs) during the construction process to reduce potential runoff or contamination of the stream and that any identified broken sewer lines be repaired and environmental remediation included if and when needed in compliance with applicable laws 2. Recommendations regarding potential impacts to *iwi kūpuna* a. Dr. Fisher strongly recommends archaeological monitoring be conducted during construction activities associated with the proposed project. He also

	recommends project proponents perform other mitigation measures including digging with a non-toothed backhoe. b. Mr. Kamaunu recommended that an archaeological inventory survey (AIS) be conducted to describe the area and to discuss the possibilities of encountering *iwi kūpuna* during ground disturbance activities associated with the proposed project. He also asked what are the mitigation measures planned if there is a disturbance to *iwi kūpuna*? c. The project is subject to historic preservation review by the State Historic Preservation Division (SHPD). The SHPD is the appropriate authority to determine historic preservation requirements for the project. d. 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* 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. e. 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.

Table of Contents

Management Summary ..... **i**

Section 1 Introduction **1**

1.1 Project Description 1
1.2 Regulatory Context 6
1.3 Document Purpose 6
1.4 Natural Environment 6
1.4.1 *Ka Lepo* (Soils) 6
1.4.2 *Nā Ua* (Rains) 9
1.4.3 *Nā Makani* (Winds) 9
1.4.4 *Nā Kahawai* (Streams and Freshwater) 10
1.4.5 *Ka Lihi Kai a me Ka Moana* (the Coast and Ocean) 10
1.5 Built Environment 10

Section 2 CIA Methods **12**

2.1 Archival Research 12
2.2 Consultation 12
2.2.1 Community Outreach, Interview, and Transcription Methods 12

Section 3 Archival Research Results **14**

3.1 Traditional Accounts 14
3.1.1 *Nā ka‘ao a me Nā Mo‘olelo* (Legends and Stories) 14
3.1.2 *Nā Wahi Pana* (Storied Places) 17
3.1.3 *Nā ‘Ōlelo No‘eau* (Proverbs) 25
3.1.4 *Nā Oli* (Chants) 28
3.1.5 *Nā Mele* (Songs) 30
3.2 Archaeological and Historical Narrative 33
3.2.1 Pre-Contact Habitation 33
3.2.2 Early Historic Period 35
3.2.3 Mid-Nineteenth Century 36
3.2.4 Mid- to Late 1800s 40
3.2.5 1900s 50
3.2.6 Contemporary Land Use 53
3.3 Historic Properties in the Vicinity of the Project Area 53

Section 4 Consultation Results **62**

4.1 Community Outreach Table 62
4.2 *Kama‘āina* Interview Discussions 64
4.2.1 Dr. Scott Fisher 64
4.2.2 Kaniloa Kamaunu 66
4.2.3 Robert Hobdy 68

Section 5 Cultural Practices and Cultural Resources Identified During Consultation as Associated with the Project Area and Waikapū Ahupua‘a **69**

5.1 Subsistence and Settlement Patterns 69
5.2 Freshwater Resources 69
5.3 *Nā Wahi Pana* 69

5.4 Burials 70

Section 6 Summary and Recommendations 71

6.1 Summary of Cultural Practices and Resources Identified during Background Research and Consultation 71
6.1.1 Subsistence and Settlement Patterns 71
6.1.2 Freshwater Resources 72
6.1.3 *Nā Wahi Pana* 73
6.1.4 Burials 73
6.2 Summary of Community Outreach and *Kama‘āina* Perspectives 74
6.2.1 Comments/thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a* 74
6.2.2 Comments/thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a* 74
6.3 Assessment of Impacts Posed to Cultural Practices and Cultural Resources 77
6.3.1 Individual’s comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a* 77
6.3.2 Individual’s comments or thoughts on the potential impacts the proposed project may have cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a* 77
6.3.3 CSH Assessment of Impacts Posed to Cultural Practices and Cultural Resources, integrating perspectives from consultation, and evidence from background research 77
6.3.4 Discussion of impacts to historic properties (i.e., cultural resources) identified during background research and consultation 80
6.3.5 Discussion of impacts to cultural practices and resources identified during background research and consultation 81
6.4 Mitigation Possibilities Identified During Consultation and Background Research 81

Section 7 References Cited 83

Appendix A Community Outreach Letter 92

Appendix B Consultee Interview Summaries 95

B 1. Dr. Scott Fisher 95
B 2. Mr. Kaniloa Kamaunu 98
B 3. Mr. Robert Hobdy 99

List of Figures

Figure 1. Portion of the 2017 Wailuku USGS 7.5-minute topographic map quadrangle with the project area delineated 2
Figure 2. Tax Map Key (TMK) [2] 3-6-004 showing the project area (Hawai‘i TMK Service 2014) 3
Figure 3. Tax Map Key (TMK) [2] 3-5-004 showing the project area (Hawai‘i TMK Service 2014) 4
Figure 4. 2018 ESRI aerial image superimposed with the boundaries of the project area 5
Figure 5. Overlay of *Soil Survey of the 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 6. Newspaper clipping from the 7 January 1927 edition of the Honolulu Advertiser describing an 1841 discovery of human remains in the Sand Hills of Maui 26
Figure 7. Early photograph of Waikapū Valley with *lo‘i*, *‘auwai* (ditch), and dispersed homes (Waikapu Community Association 2018) 37
Figure 8. LCAs and Land Grants within and surrounding the current project area depicted on portion of the 1997 Wailuku USGS 7.5-minute topographic quadrangle 39
Figure 9. Historical photograph of the Plains of Kama‘oma‘o (background) as viewed from the vegetated alluvial slopes of Waikapū Valley (Waikapu Community Association 2018) 41
Figure 10. Historic photograph of Waikapū Congregational Church, Waiko Road, and the surrounding community (Waikapu Community Association 2018) 41
Figure 11. Waikapū Congregational Church after having its steeple removed during World War II (Waikapu Community Association 2018) 42
Figure 12. Waikapu Sugar Mill (Maui Historical Society, n.d.) 44
Figure 13. Waikapu Sugar Company mill, ca. 1890 (Waikapu Community Association 2018) 44
Figure 14. Colonel William H. Cornwell in the garb of the Hawaiian Royal Court (unknown photographer 1893) 45
Figure 15. Newspaper announcement for the arrival of Kalākaua’s visit to W.H. Cornwell on Maui for the King’s birthday (Evening Bulletin 1888) 46
Figure 16. Portion of Baldwin (1930) Waikapū Ahupua‘a map showing “Waikapu Village” (Waikapu Camp) in the vicinity of the project area 48
Figure 17. Portion of the Dodge (1885) map showing the current project area surrounded by sugar cultivation from both HC&S and Cornwell’s Waikapū plantation 51
Figure 18. Portion of the 1924 Mā‘alaea USGS topographic quadrangle map showing the current project area and HC&S ditches, roads, and labor camps in the vicinity 52
Figure 19. Portion of the 1955 Wailuku USGS 7.5-minute topographic quadrangle showing the project area and surrounding ditches and roads 54
Figure 20. 1977 Wailuku USGS orthophoto quad showing the extent of sugar cultivation around the current project area in the latter half of the twentieth century 55
Figure 21. Portion of the 1997 Wailuku USGS topographic quadrangle showing the current project area and peripheral light industrial, commercial, and residential development 56

Figure 22. Portion of the 1997 Wailuku USGS 7.5-minute topographic quadrangle showing previously documented historic properties in the vicinity of the project area 57
Figure 23. Tax Map Key (TMK) [2] 3-5-004 showing the project area located within the *‘ili* of Wahineomā‘ili, Pilipili, Nonoaha and Kuaiwa (County of Maui 2021).....100

List of Tables

Table 1. Place name meanings of Wailuku Moku and Waikapū Ahupua‘a in the vicinity of the project area 19
Table 2. Archaeological Historic Properties in the Project Area Vicinity.....58
Table 3. Architectural Historic Properties in the Project Area Vicinity.....60
Table 4. Community outreach table.....62
Table 5. Past and Present Cultural Resources Associated with the Project Area and Vicinity Identified During Consultation.....75
Table 6. Potential Impacts Posed by the Proposed Project to Cultural Resources or Activities Within the Project Area Vicinity 80

Section 1 Introduction

1.1 Project Description

At the request of Munekiyo Hiraga, and on behalf of Department of Environmental Management (DEM), Cultural Surveys Hawai‘i (CSH) has prepared this cultural impact assessment (CIA) for the Waiko Road Subdivision Sewer System/Waikapū Waterline Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui, TMKs: [2] 3-5-004:028, 031 & 063; [2] 3-5-010:001, 033, 034, 036-038; [2] 3-5-011:001-041, 043-046 & 048; [2] 3-5-012:001-023, 025, 035-040 & 043-047. The project area includes a portion of West Waiko Road, from Old Waikapu Road to the east to the intersection with Honoapi‘ilani Highway to the west. It includes the residential communities immediately south of West Waiko Road including Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street, as well as an area north of West Waiko Road which is bounded by Old Waikapu Road to the east, Kama Street to the north, and Hoolako Place to the west. It also includes a portion of Honoapi‘ilani Highway south of the intersection with West and East Waiko Road, as well as a smaller area which is bounded by Honoapi‘ilani Highway to the west, East Waiko Road to the north, and the Waikapū Community Center and Park to the east. The location and boundaries of the proposed project are delineated on a portion of the 2017 Wailuku U.S. Geological Survey (USGS) topographic quadrangle (Figure 1), tax map plats (Figure 2 and Figure 3) and a 2018 ESRI aerial photograph (Figure 4).

The DEM proposes the construction of approximately 5,800 linear feet (1.76 km) of gravity wastewater line and service laterals connecting approximately 119 lots in the Waikapū area. The new sewer system will connect to an existing manhole located at East Waiko Road and the new sewerlines will be located within West Waiko Road, Honoapi‘ilani Highway, Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street. This will eliminate many cesspools and septic systems in the area, which can have long-term effects on the surrounding environment. The proposed improvements would be located within the roadway rights-of-way and sewer connections will be installed at the boundaries of the privately owned parcels. The project improvements will occur in areas of existing residential and limited commercial development.

The DEM has coordinated with the Department of Water Supply (DWS) for proposed waterline replacement work in the vicinity of the project area to be done in conjunction with the subject sewer system improvements project. DWS proposes to replace waterlines within the current project area and the extent of the project area will remain unchanged. It is noted that DWS is pursuing an Environmental Assessment Exemption for the proposed waterline work; however, the waterline replacement work will be indicated on project plans and discussed within the Draft EA.

Waterline work will take place on Honoapiilani Highway, Kemoa Place, Wilikona Place, Kilohi Place, Nuna Place, and Honua Place.

Existing 4-inch waterlines on Kilohi Place, Nuna Place, and Honua Place will be replaced with 8-inch waterlines connecting to the existing 8-inch waterline along West Waiko Road.

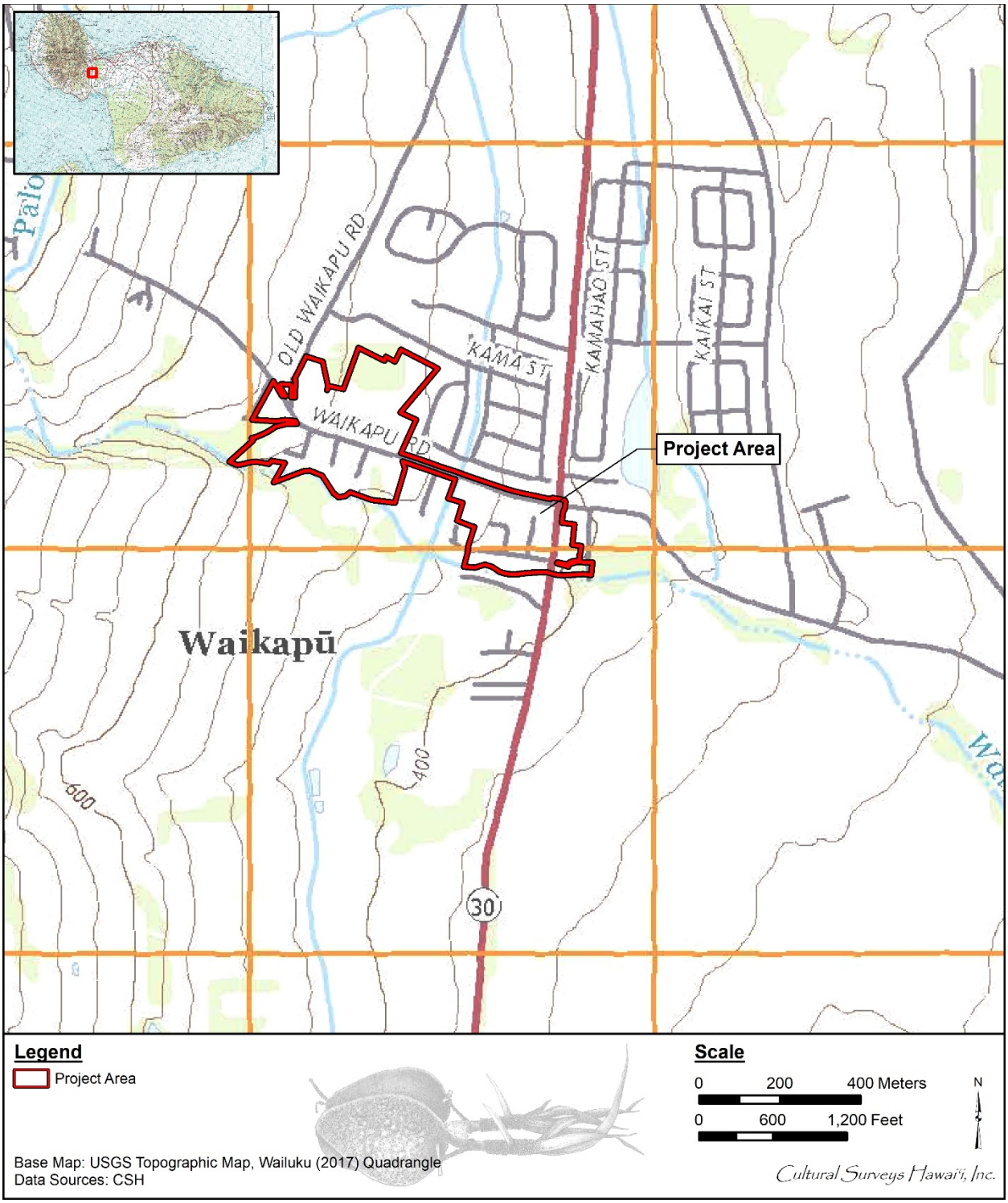


Figure 1. Portion of the 2017 Wailuku USGS 7.5-minute topographic map quadrangle with the project area delineated

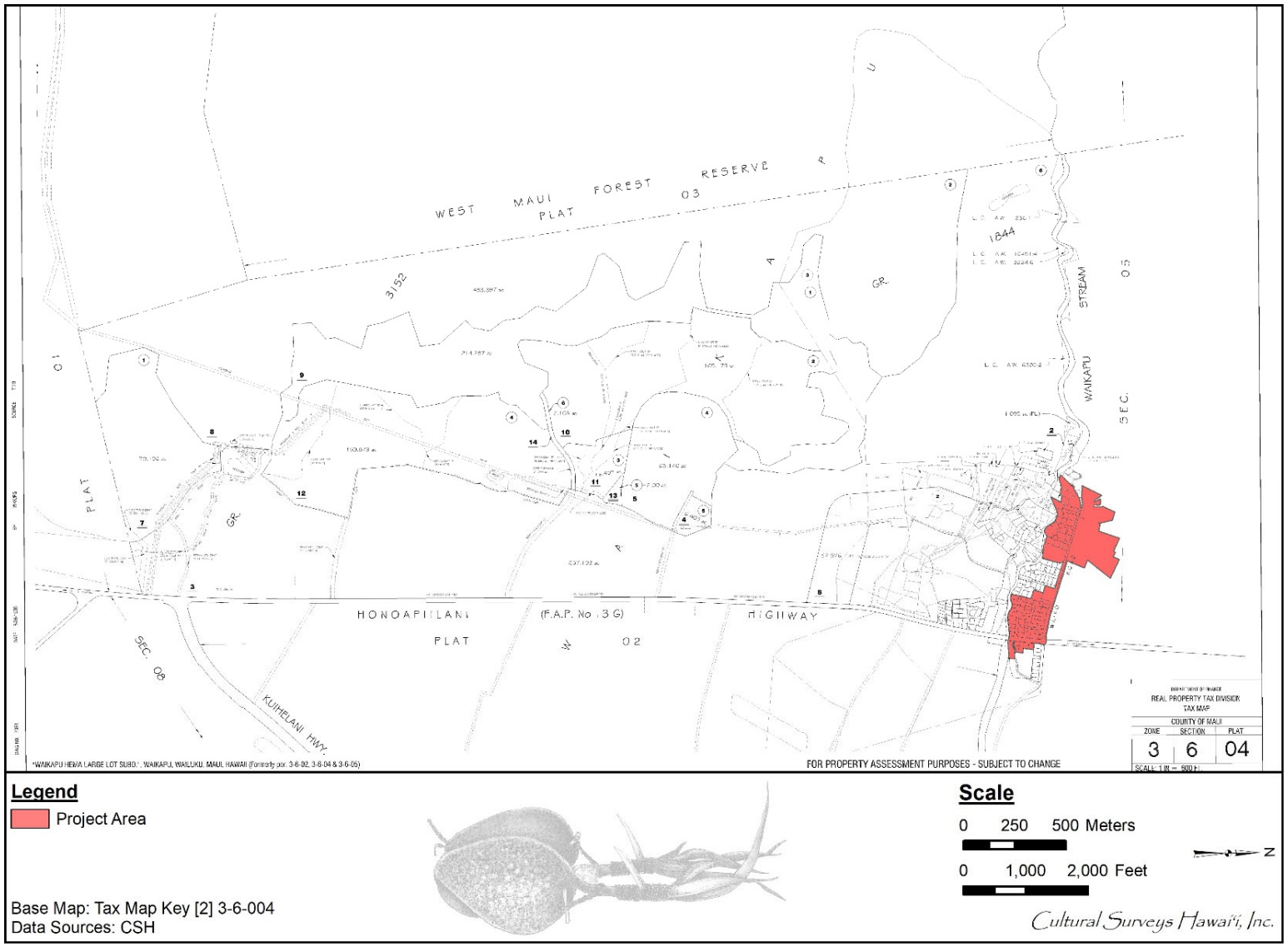


Figure 2. Tax Map Key (TMK) [2] 3-6-004 showing the project area (Hawai‘i TMK Service 2014)

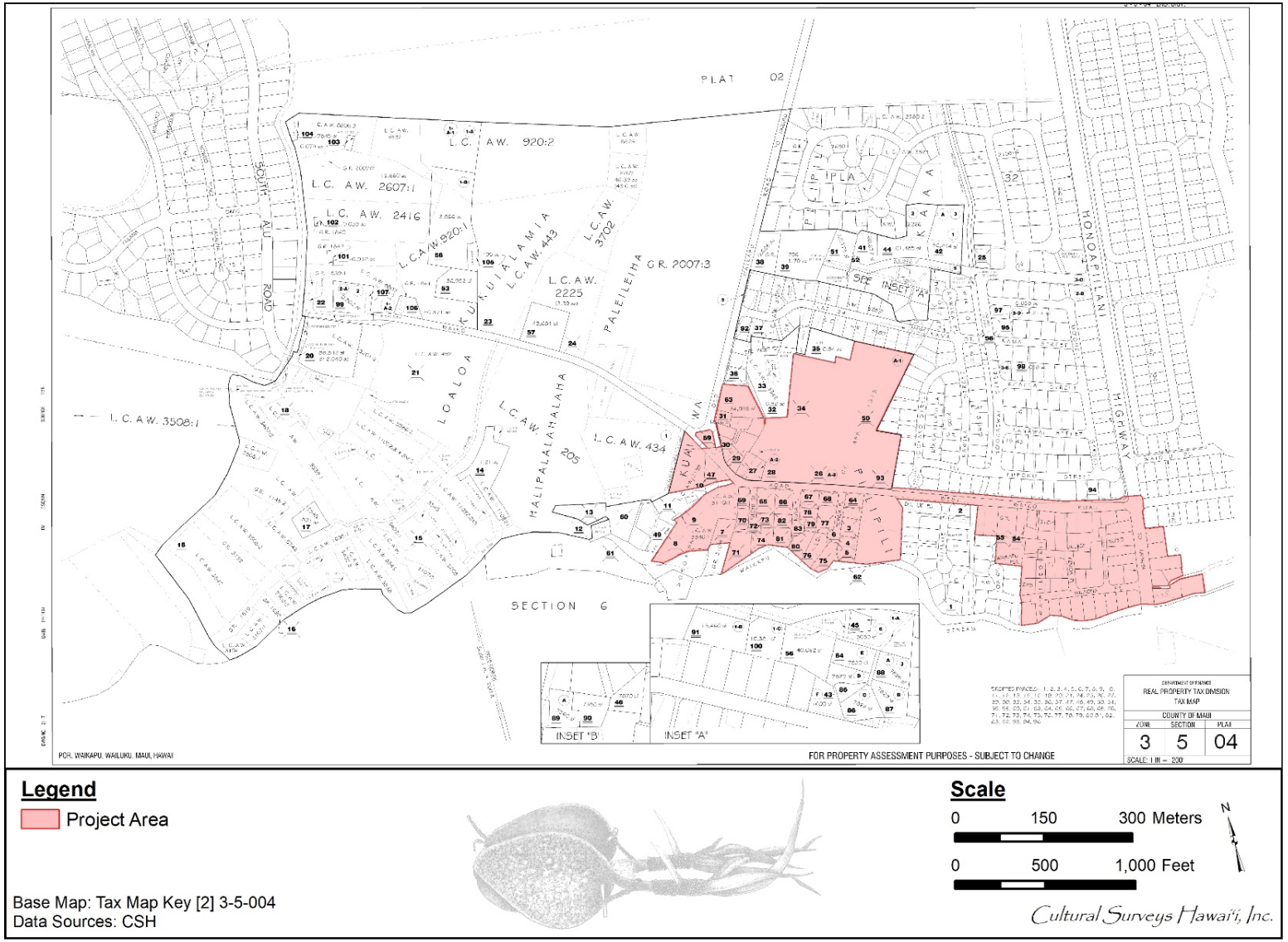


Figure 3. Tax Map Key (TMK) [2] 3-5-004 showing the project area (Hawai‘i TMK Service 2014)



Figure 4. 2018 ESRI aerial image superimposed with the boundaries of the project area

1.2 Regulatory Context

This CIA supports compliance for the Waiko Road Subdivision Sewer System/Waikapū Waterline Project with:

- The National Historic Preservation Act (NHPA), which requires consideration of a proposed project's potential impacts to historic properties and resources.
- The mandate set forth by the Hawai‘i State Constitution (Articles IX and XII), courts, Hawai‘i Regulatory 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;
- 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 in order to "promote responsible decision making" (HRS §343); and
- The State of Hawai‘i's historic preservation review process under HAR §13-275-6 and §13-284-6, which requires the identification and mitigation of adverse effects proposed by a potential project in order to "promote the use and conservation of historic properties for the education of the citizens of Hawai‘i" (HAR §13-275-6)

1.3 Document Purpose

This CIA contains information gathered from archival research and consultation, compiled in order 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).

1.4 Natural Environment

1.4.1 *Ka Lepo* (Soils)

According to the U.S. Department of Agriculture (USDA) Soil Survey Geographic (SSURGO) database (U.S. Department of Agriculture 2001) and soil survey data gathered by Foote et al. (1972), soils within the project area include Iao cobbly silty clay, 3 to 7 percent slopes (IbB), Iao clay, 7 to 15 percent slopes (IcB), Wailuku silty clay, 3 to 7 percent slopes (WvB), and rough broken land (rRR) (Figure 5).

Soils of the Iao Series are described as follows:

> This series consists of well-drained soils on valley fill and alluvial fans. These soils developed in alluvium derived from basic igneous rock. They are nearly level to moderately sloping. Elevations range from 100 to 500 feet. …

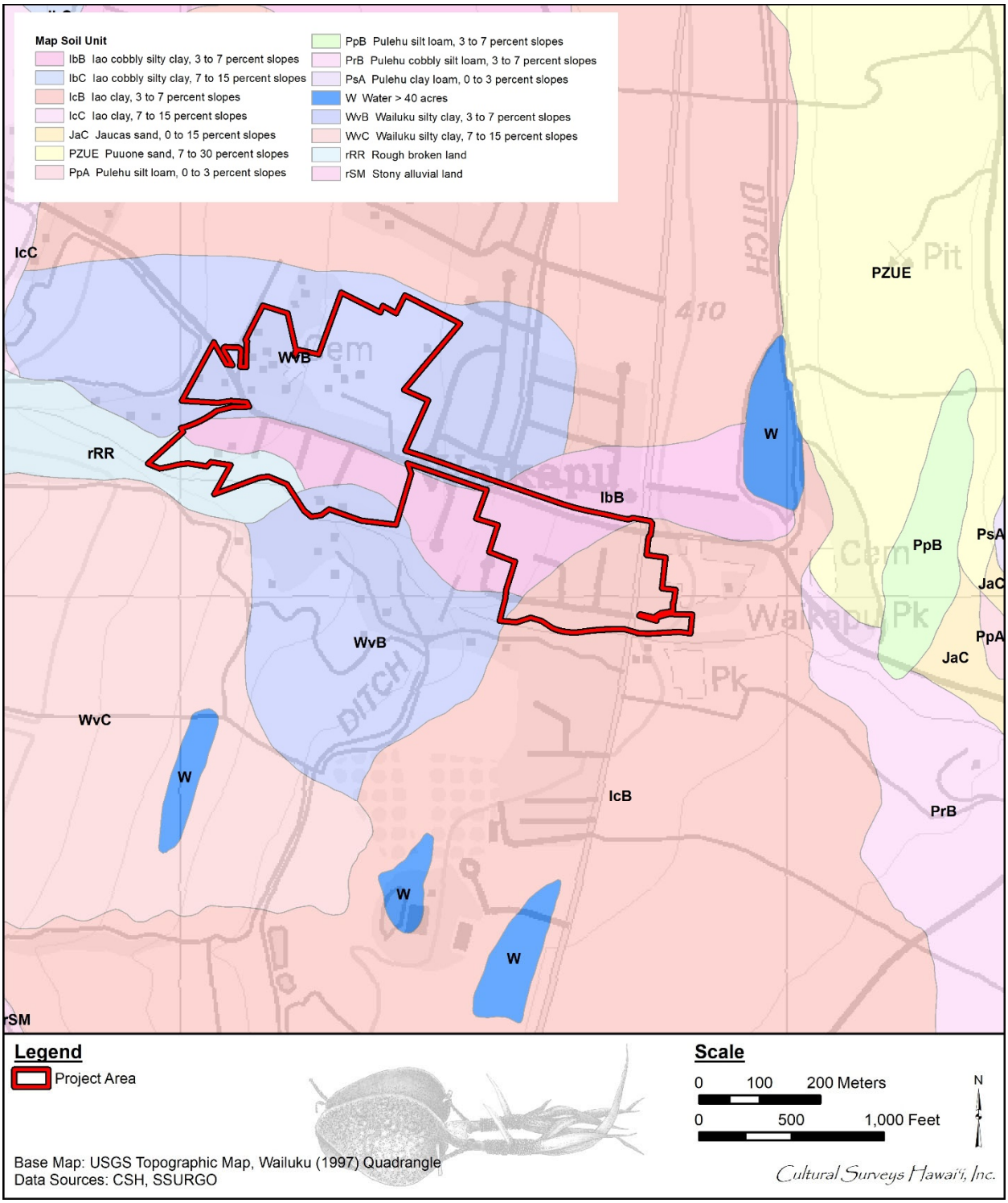


Figure 5. Overlay of *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (Foote et al. 1972), indicating soil types within and surrounding the project area (USDA SSURGO 2001)

> These soils are used for sugarcane. Small acreages are used for pasture and homesites. The natural vegetation consists of bermudagrass, feather fingergrass, koa haole, lantana, and Natal redtop. [Foote et al. 1972:46]

Iao clay, 3 to 7 percent slopes (IcB) comprises the majority of the project area, extending eastward from the central portion of the project area and across the Honoapi‘ilani Highway.

> This soil is on smooth alluvial fans and valley fill. …
>
> In a representative profile the surface layer is dark-brown clay about 15 inches thick. The subsoil, about 45 inches thick, is very dark brown, dark-brown, and very dark grayish-brown clay and silty clay. The substratum is clayey alluvium. The soil is neutral in the surface layer and subsoil.
>
> Permeability is moderately slow. Runoff is medium, and the erosion hazard is slight to moderate. The available water capacity is about 1.7 inches per foot in the surface layer and subsoil. In places roots penetrate to a depth of 5 feet or more.
>
> This soil is used for sugarcane and homesites. (Capability classification IIe if irrigated, IIIc if nonirrigated; sugarcane group 1; pasture group 3) [Foote et al. 1972:46]

Iao cobbly silty clay, 3 to 7 percent slopes (IbB) comprises the northwestern half of the project area.

> This soil has a profile like that of Iao clay, 3 to 7 percent slopes, except for the texture of the surface layer and the content of cobblestones.
>
> This soil is used for sugarcane and homesites. [Foote et al. 1972:47]

Soils of the Wailuku Series are described as follows:

> This series consists of well-drained soils on alluvial fans on the island of .Maui. These soils developed in alluvium derived from weathered basic igneous rock. They are gently to moderately sloping. Elevations range from 50 to 1,000 feet. …
>
> These soils are used for sugarcane, pasture, and homesites. The natural vegetation consists of bermudagrass, guineagrass, koa haole, lantana, and Natal redtop. [Foote et al. 1972:133]

Wailuku silty clay, 3 to 7 percent slopes (WvB) comprises a small area in the southwest corner of the project area, near Oia Way and Wilikona Place.

> This soil has a profile like that of Wailuku silty clay,7 to 15 percent slopes, except for the slope. Runoff is slow, and the erosion hazard is slight.
>
> This soil is used for sugarcane and homesites. [Foote et al. 1972:133]

Rough broken land (rRR) is described as follows:

> Rough broken land (rRR) consists of very steep land broken by numerous intermittent drainage channels. In most places it is not stony. It occurs in gulches and on mountainsides on all the Islands except Oahu. The slope is 40 to 70 percent. Elevations range from nearly sea level to about 8,000 feet. The local relief is

> generally between 25 and 500 feet. Runoff is rapid, and geologic erosion is active. The annual rainfall amounts to 25 to more than 200 inches.
>
> These soils are variable. They are 20 to more than 60 inches deep over soft, weathered rock. In most places some weathered rock fragments are mixed with the soil material. Small areas of rock outcrop, stones, and soil slips are common. Included in mapping were areas of colluvium and alluvium along gulch bottoms.
>
> This land type is used primarily for watershed and wildlife habitat. In places it is used also for pasture and woodland. The dominant natural vegetation in the drier areas consists of guava, lantana, Natal redtop, bermudagrass, koa haole, and molassesgrass. Ohia, kukui, koa, and ferns are dominant in the wetter areas. Puakeawe, aalii, and sweet vernalgrass are common at the higher elevations. [Foote et al. 1972:119]

1.4.2 *Nā Ua* (Rains)

Precipitation is a major component of the water cycle and is responsible for depositing *wai* (fresh water) on local flora. Pre-Contact *kānaka* (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 (Giambelluca et al. 1986:17).

Each small geographic area on Maui had a Hawaiian name for its own rain. According to Akana and Gonzalez (2015):

> Rain names are a precious legacy from our kūpuna who were keen observers of the world around them and who had a nuanced understanding of the forces of nature. They knew that one place could have several types of rain, each distinct from the other. They knew when a particular rain would fall, its color, its duration, its intensity, its path, its sound, its scent, and its effect on the land and their lives … Rain names are a treasure of cultural, historical, and environmental information. [Akana and Gonzalez 2015:xx]

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). There were many recognized rains in the *moku* (district) of Wailuku but the Kiliʻoʻopu rain was specifically associated with Waikapū and the larger Wailuku district (Akana and Gonzalez 2015:84).

1.4.3 *Nā Makani* (Winds)

Similar to rain, *makani* (wind) were named for various reasons. Names of winds were assigned based on but not limited to their direction, strength, and geographic location. 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]

Each small geographic area on Maui had a Hawaiian name for its own wind, rain and seas. The area of Waikapū in the *moku* of Wailuku was no exception to this naming practice.

The Wind Gourd of La‘amaomao tells the story of Pāka‘a and his son Kuāpāka‘a, descendants of the wind goddess La‘amaomao. They are able to control the winds of Hawai‘i which are contained in a gourd and may be called forth by chanting their names. Pāka‘a’s chant traces the winds of Maui in the *moku* of Wailuku. They are presented in Pāka‘a’s chant as follows:

Olaukoa i Ukumehame,	Olaukoa is at Ukumehame
Makani wawahi hale i Olowalu,	The wind that tears apart the hale at Olowalu,
Kilihau iho no ilaila,	Kilihau is the rain there,
Kololio mai o Waikapu,	Kololio is of Waikapū,
He i‘a iki ko Wailuku,	I‘a iki is of Wailuku,
He oopu ko Waihee,	‘O‘opu is of Waihe‘e, ...

[Nakuina 1902:68, 1992:63]

1.4.4 *Nā Kahawai* (Streams and Freshwater)

Waikapū Stream is one of four major deep-valley streams (Waikapū, Wailuku, Wai‘ehu, and Waihe‘e) which comprise the *‘okana* (sub-district) known as “Nā Wai ‘Ehā,” or “The Four Waters” (Handy et al. 1991:469; Moffat and Fitzpatrick 1995:23). Handy et al. (1991:496) described Waikapū Stream as a land bound stream whose water was “utilized for irrigating a great acreage of sugar cane” and was “formerly was diverted into lo‘i [irrigated taro patch] and its overflow was dissipated on the dry plains of the broad isthmus between West and East Maui.”

1.4.5 *Ka Lihi Kai 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 Lāna‘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 Lāna‘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).

1.5 Built Environment

The project area primarily consists of residential development located to the south of West Waiko Road and to the west of Honoapi‘ilani Highway including Wilikona Place, Kemoa Place, Keilio Place, Honua Place, Nuna Place, and Kilohi Street, as well as an area north of West Waiko Road which includes the Waikapu Protestant Church, designated as State of Hawai‘i Inventory of Historic Places (SIHP) # 50-50-04-01605. It also includes a smaller residential development located to the east of Honoapi‘ilani Highway, south of East Waiko Road, and west of Waikapū

Community Center and Park. The lands to the south of the project area are minimally developed residential plots and agricultural lands that were previously used for sugarcane production.

Section 2 CIA 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 2022), the Office of Hawaiian Affairs (OHA) Papakilo Database (Office of Hawaiian Affairs 2015), and the Ava Konohiki Ancestral Visions of ‘Āina website (Ava Konohiki 2015).

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, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Waikapū.

2.2.1 Community Outreach, Interview, and Transcription Methods

2.2.1.1 Scoping for Participants

We begin our consultation efforts with utilizing our previous contact list to facilitate the interview process. We then review an in-house database of *kūpuna*, *kama‘āina*, 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* (knowledge) and *mana‘o* (thought, 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 may also conduct 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) missing details to *mo‘olelo*.

CSH seeks *kōkua* (assistance) and guidance on 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 Completion of Interview

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 to make any necessary edits. Once the interviewee has made those edits, we incorporate their *‘ike* (knowledge/experience) and *mana‘o* (thoughts/insights) 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 that were 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*. 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 Archival Research Results

3.1 Traditional Accounts

3.1.1 *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* (chief), 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 Waiko Road Subdivision Sewer System project area. Many relate an age of mythical characters whose epic adventures inadvertently lead to the Hawaiian race of *ali‘i* and *maka‘āinana*. 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.

3.1.1.1 Puapualenalena and Kiha-Pū

Puapualenalena was a famous dog *kupua*, or demigod, who was noted as a great thief and runner who could take the shape of a yellow dog in order to provide for his master, one such thing being

the famous *pū* (conch shell) called Kiha-pū (Beckwith 1970:349). While there are variations on the story that place the *pū* and Pupualenalena's recovery of the object at Waipio Valley on Hawai‘i Island (Beckwith 1970:350–351), an article published in *Ka Nupepa Kuokoa* during the latter part of the nineteenth century places the *pū* in a cave of Waikapū Valley, thus contributing to the origin of the place name Waikapū. The following is a portion of the tradition as printed in original Hawaiian language account, as well as the translation:

> *O Waikapu e oleloia nei, he wahi pana no ia i kapaia e kekahi poe o ka wa kahiko, a laha loa mai a hiki i keia wa, mamuli o keia inoa. O keia wahi no hoi o Waikapu, he wahi ana ia aia iloko lilo o ke kahawai, ua mile paha a oi aku ka loa mai ke kulanakauhale aku. Aia ma ka aoao hema o ua kahawai nei, he ana, a iloko o ua ana nei he pu, a e kani mau ana oia i na wa a pau me ka ike ole ia e ka lehulehu, a he makaula nae no Kauai ka mea nana i hoolohe mai i ke kani o ua pu nei, a ua imi mai oia me ka manao e loaa. Aia hoi ma ka aoao hikina akau o ua kahawai la, mai kahi aku o ka pu e kani nei, a aia hoi maluna ae o ka pali, he ilio, o Puapualenalena kona inoa, a no kona lohe no hoi i ke kani o ua pu nei, ua imi ikaika oia i kahi e loaa ai, aohe nae he loaa iki, oiai ua makaala loa na mea nana ua pu nei ma ke kiai ana, aka, ua hoomau no nae ua ilio nei ma ka hoomakaulii ana i wahi e loaa ai.*
>
> *A no ka manao paha o uamau mea nei nana ka mea kani, aohe kupua e lilo ai o ka laua milimili, nolaila, ua hoao laua ma ka hoohemahema liilii ana, aohe nae he lilo. Aka, iloko nae o ka la i lilo ai ia Pupualenalena, ua palaka loa laua ma ka hoomanao ana. A no ka lilo ana o ua pu nei ia Pupualenalena, mai laila mai ke kani ole ana a hiki i keia la. Ua lohe ia kona leo ma na wahi a pau o keia mau mokupuni, a ua lilo ia i mea hoouluhua i ka manao o kekahi poe. A no keia pu mai i kapaia ai ka inoa holookoa o Waikapu. Oia iho la ka moolelo no kahi i loaa mai ai keia inoa. He wahi makaikai nui ia no hoi keia e na malihini e makemake ana e ike.*
>
> *No Waikapu holookoa.—He maikai no ka noho ana o ka aina; eia nae, ua hapa ka ulu nui ana o na mea kanu, no ka uuku o ka wai, i ka ua mea he nui o ka wela o ka la i keia mau la. Ua maloo na loi kalo, nakakaka ka lepo. O ka mahiko o Waikapu nei, aohe no he maloo o ke ko, no ke kamau iki no o kahi wai, a ke maloo uuku mai nei nae ma ke kauwahi.*
>
> *...*
>
> *W.K. KAUALILILEHUA.*
>
> *Maui, Sept 13, 1872*

Translation:

> Waikapū is the place being mentioned, it is a legendary place that was named by some people of ancient times, and is known as such until present day. This place is Waikapū, a place located near a stream, about a mile or more from town, south of the stream, there is a cave, and in the cave was a conch shell, and every time it's blown, no ordinary person see where the sound was coming from. A prophet from Kaua‘i is the one that heard this sound, and he searched for it thinking he was going

> to find it. On the northeast side of the stream, from the place where the pū is blown, on a cliff is a dog, Puapualenalena, and because he heard the sound of the pū, he searched effortlessly for it, however was not able to find it since the guardian of the pū guarded it carefully, but the dog continued, eagerly searching to find the place. Because of their (Kaua‘i prophet and Pupualenalena) ideas, the guardian (blower of the pū) believed that no demigod would be able to take it. Therefore the guardian of the pū began to neglect his responsibility, while the dog continued to search. As the day went on, it was taken by Pupualenalena. The guardian was very neglectful of his responsibility. And because it was taken by Pupualenalena, there has been no sound from this pū until today. Its sound was heard throughout all the islands, and became frustrating for some people. And from this pū, came the name in its entirety, Waikapū. That is the story of where this place got its name. This is a big touring place for people who want to see/know.
>
> For the entire place of Waikapū – it is a good place to live; however, only a portion can be used to farm because of limited amount of water and the heat of the sun these days. The taro patches became dry, and the dirt cracked. As for the Waikapū farmers, there is no sugarcane due to dryness, because of little continuance of water, the dryness continues slowly.
>
> …
>
> W.K. KAUALILILEHUA.
>
> Maui, Sept 13, 1872
>
> [translated by Cori-Ann Lorenzo] [Kaualililehua 1872]

3.1.1.2 Pu‘uhele, The Traveling Hill

Two versions of the same story presented in Beckwith’s *Hawaiian Mythology* (1970:188–189) describe three hills near the shore of Mā‘alaea which are endowed with *mo‘o* or water lizard spirits: Pu‘uhele, Pu‘u-o-kali and their first child named Pu‘u-o-inaina. Pu‘uhele is in the *ahupua‘a* of Waikapū, Pu‘u-o-kali is in the *ahupua‘a* of Waiohuli and Keokea to the southeast of Waikapū.

The Myths of Sacred Hills (Beckwith 1970:189) describes the hills of Pu‘uhele and Pu‘u-o-kali which are also noted to be *mo‘o*. Pu‘uhele and Pu‘u-o-kali have a child, Pu‘u-o-inaina, who is placed on the island of Kaho‘olawe where she becomes the wife of Ka‘akakai and Ka‘anahua, the two sons of the *kahuna* (priest), Hua. Pu‘u-o-inaina also takes Lohiau as her husband while he was living in Mā‘alaea. This angers Pele, who cuts Pu‘u-o-inaina in two, her head becoming the rock islet of Molokini and her tail becoming the hill of Pu‘u-o-la‘i which is located to the southeast of Waikapū in Mākena (Beckwith 1970:189).

> The two hills beyond Maalaea bay on Maui are named Pu‘uhele and Pu‘u-okali. They are mo‘o beings and their first child is a daughter born of Pu‘uokali and named Pu‘u-o-inaina. She is placed on the sacred island of Kahoolawe, called at that time Kohe-malamalama. She becomes the wife of the two sons of the kahuna of Hua, Kaakakai and Kaanahua, who take the form of birds and retreat to Hanaula when the great drought comes and there alone rain falls. Pu‘u-o-inaina takes Lohiau for her husband while he is living at Maalaea. Pele is angry and cuts her in two in the

> middle. The tail becomes the hill Pu‘u-o-la‘i at Makena, the head becomes the rock islet of Molokini. [Beckwith 1970:189]

In *The Myth of Pu‘uhele*, which also appears in *Hawaiian Mythology*, Kahinali‘i, mother of goddesses Pele and Hi‘iaka, gives birth to Pu‘uhele, “a child born in the form a bloody foetus” (Beckwith 1970:188). After being thrown away by her sisters, Pu‘uhele crosses the channel between the islands of Hawai‘i and Maui, landing in Kaupō in the form of a beautiful woman. She travels along the coast until she reaches Wānanalua on the eastern coast of Maui where she vows to remain.

> Pu‘uhele (Traveling hill) is a child born in the form of a bloody foetus to Kahinali‘i, mother of Pele and Hi‘iaka. The sisters throw it away. The child crosses the channel of Alanuihaha between Hawaii and Maui and lands at Nu‘u in Kaupo in the form of a beautiful woman. She passes on without speaking to Nu‘u and makes friends with the beautiful Pu‘uomaiai. Manawai-nui recognizes her and calls her by name. Kanahaha sees her and falls dead and a spring gushes to this day from the hill of that name. Leho-ula follows her as she continues her route along the coast. At Wananalua Pu‘uhele vows to remain. When Kaihualele reproves her for trespass she dies and through her power as a god her spirit body lives on in the form of the hill Kauiki at the seashore. [Beckwith 1970:188]

There is also a Pu‘uhele in the *ahupua‘a* of Hāmoa near Hāna. Hele and Kali are also described as a “chief and chiefess of antiquity who ruled all that area and the hills were named for them” (Ashdown 1971:58).

3.1.2 *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]

3.1.2.1 *Nā Inoa ‘Āina* (Place Names)

In the preface of *Place Names of Hawaii* (Pukui et al. 1974:x), Samuel Elbert states that

> 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 [the ancient names] now. [Pukui et al. 1974:x]

Inherent in the statements of Elbert is the knowledge that the oldest place names held meaning and told the story of an area prior to European contact. Literal translations of place names for land areas and divisions near the project corridor are listed in Table 1 below and may provide some insight into what this area was like prior to Western Contact. Unless otherwise noted, translations are by Pukui et al. (1974).

The place name Waikapū, according to (Pukui et al. 1974:223), literally translates to "Water of the Conch." This is due to a cave within Waikapū Valley that supposedly housed a supernatural conch shell (named Kīhapū, blessed with the breath of Lono) that resided there until it was stolen by a supernatural dog named Puapualenalena (from Section 3.1.1.1). This conch shell, when blown, was said to resound throughout all the Hawaiian Islands (Beckwith 1970:349; Pukui et al. 1974:223). According to W.K. Kaualililehua:

> On the left side of the stream is a cave and in the cave was the conch. It sounded all the time, unseen by the public. …
>
> On the northeast side of the stream on the opposite side of the conch that sounded, on the cliff, was a dog named Puapualenalena. Because he heard it he sought diligently to find it but did not succeed. Those who guarded the conch were very watchful … [cited in Sterling 1998:93]
>
> The owners of the conch did not believe, perhaps, that a supernatural being would succeed in taking it away, so they tried to be a little careless. It was not taken, but on the day that Puapualenalena did get it away, they had been utterly careless. After he took it, it sounded no more to this day. [W.K. Kaualilileua in Sterling 1998:93]

Elspeth Sterling (1998) provides several additional accounts of the naming of the waters of Nā Wai ‘Ehā, specifically Wailuku and Waikapū, that have a grounding in the affairs of the Hawaiian people. According to H.T. Cheever (cited in Sterling 1998:63), the waters of Nā Wai ‘Ehā were named after successive events during a famous, albeit unnamed, battle:

Table 1. Place name meanings of Wailuku Moku and Waikapū Ahupua‘a in the vicinity of the project area

Name	Feature	Translation
Ahuakolea	*‘Ili*	*Lit*., “plover’s hill” (Thrum 1922:625); note *‘ili* is a land division within an *ahupua‘a*
Aikanaha	*‘Ili*	*Lit*., “possession by forties” (Thrum 1922:626); Kanahā is also a fishpond in Wailuku Ahupua‘a, name of which has been translated by Pukui et al. (1974) as “the shattered [thing]”
‘Auwailimunui	*‘Ili*	*Lit.,* “big moss ditch, mentioned in LCAw 76 to Wm Shaw (Soehren 2014)
Ha‘aua	*‘Ili*	No translation given; mentioned in LCAw 76 to Wm Shaw notes indicate it is along Waikapū Stream (Soehren 2014)
Hanaula	*‘Ili*	*Lit*., “red bay”
Haleki‘i	*Heiau*	*Lit*., “image house”; a *heiau* (pre-Contact place of worship) (Walker Site 44) located in Wailuku at the site of Pihana Heiau along the meander of ‘Īao Stream
Ho‘opahelo	*‘Ili*	*Lit.,* “to cause to slip, slide, etc.”. mentioned in LCAw 460 to Pu‘upāhoehoe (Soehren 2014)
‘Īao	Stream	*Lit*., “cloud supreme”; the ‘Īao Stream brings the water of the ‘Īao Valley to the ocean at Paukūkalo, a point just northwest of Kahului Harbor
Ka‘a	Point	*Lit*., “rolling”; a shoreline promontory just east of Kahului Bay
Ka‘a‘a	*‘Ili*	No translation given, mentioned in LCAw 2226 to Keawe (Soehren 2014)
Ka‘alaea	*‘Ili*	*Lit*., “the ocherous earth”
Kahului		*Lit*., “the winning”; native name for the Kahului region is “Kaihuwa‘a” (Sterling 1998)
Kaiwaloa	Ridge	*Lit*., “the long fern”; *‘iwa* is a native fern (*Asplenium horridum*) with narrow, feather-shaped fronds (Pukui and Elbert 1986:104), may also refer to the flight of the *‘iwa* bird (*Fregata minor palmerstoni*)
Kalapaokailio	Ridge	*Lit.,* “the ridge of the dog”, mentioned in LCAw 71 claim as the ridge that bounds the Wailuku and Waikapū boundary (Soehren 2014)
Kalialinui	Gulch	Possible literal translation: “large tree or plant used for medicine” (Pukui and Elbert 1986); Kalialinui Gulch is 11 miles long, beginning on the upper slopes of Haleakalā, through the project area, and across Wailuku Ahupua‘a, terminating on the flat plains of Kahului just south of Kanahā Pond

Name	Feature	Translation
Kanahā	Pond	Star name (Pukui and Elbert 1986); salt was gathered at Kanahā: “When the sea rose the hollows in the rocks were filled” (Sterling 1998)
Ka‘ōpala		*Lit*., “the rubbish”; a dividing line between Pūlehu Nui Ahupua‘a and Waikapū Ahupua‘a
Kapalaalaea	*‘Ili*	*Lit*., “daubed with reddish soil” (Thrum 1922:644)
Kapilau	Ridge	*Lit*., “the stench”
Kapili iki	Gulch	“Pili” is a type of grass (*Heteropogon contortus*) used in the thatching of traditional *hale* (house) construction; “*iki*” translates to short, or small; possibly meaning “short pili [grass]”
Kapūhau (var. Pukau, Pūhau)	*‘Ili*	Pūhau—*Lit*., “the ice spring”; pū is short for puna (spring)
Kapukaulua		*Lit*., “the fish hole”; located in the coastal region of Pā‘ia, at the most seaward portion of Spreckelsville; close to the reported location of Papanene Heiau (Walker Site 56); the reference to the fishing area concerns the *ulua* (crevalle, jack, pompano) fish
Kaumu‘īlio	*‘Ili*	*Lit.,* “the dog oven”; mentioned in LCAw 411 to Po‘onui (Soehren 2014)
Keana	*‘Ili*	*Lit*., “the cave” (Pukui et al. 1974:103)
Kuaiwa	*‘Ili*	*Lit*., “nine times” (Thrum 1922:653) or nine generations
Lehuapueo	*‘Ili*	No translation given, mentioned in LCAw 432 to Anthony Sylva (Soehren 2014).
Loaloa (var. Kaloaloa)	*‘Ili*	“Elongated garden plot, as for sweet potatoes (so used in 1848 land claims)” (Pukui and Elbert 1986:209)
Luapua‘a (var. Kaluapuaa)	*‘Ili*	*Lit*., “hog pit”
Mā‘alaea		Perhaps a contraction of Maka‘alaea (Ocherous earth beginning)
Mauna Kahalawai		*Lit*., “the gathering of waters”; the West Maui Mountains (Pellegrino 2009)
Mau‘oni	Pond	One of the two fishponds located at the shore of Kanahā
Naholomahana Gulch	Gulch	No translation given; an intermittent stream at about 2,600 ft. elevation which joins Waikapū stream at 620 ft. (Soehren 2014)
Noho‘ana	*‘Ili*	*Lit*., “way of life” (Pukui and Elbert 1986:269)

Name	Feature	Translation
‘Ōhi‘a	*‘Ili*	Two kinds of trees, *‘ōhi‘a‘ai* (*Eugenia malaccensis*/mountain apple) (Pukui and Elbert 1986:277) and *‘ōhi‘a lehua* (*Metrosideros macropus, M. collina polymorpha*) (Pukui and Elbert 1986:199); found in the forested regions, the fruit of the *‘ōhi‘a‘ai* was prepared by splitting and drying it in the sun (Pukui and Elbert 1986:277); the wood of the *‘ōhi‘a lehua* is hard and once used for images, spears, and mallets (Pukui and Elbert 1986:199)
Palama	*‘Ili*	*Lit*., “lama wood enclosure”; lama wood (*Diospyros sanwicensis*), whose name translates to “light” or “lamp” was a type of hardwood used in *hale* (house) construction (Abbott 1992:68); lama wood was also an integral part of *hula* (dance)ceremony where a block from the tree would be wrapped in yellow *kapa* (Hawaiian cloth) and scented with *‘ōlena* (*Curcuma longa*) to represent Laka, the goddess of *hula*, sister and wife of Lono (Abbott 1992:117)
Palolo	Ditch	*Lit*., “clay”
Papakapu	*‘Ili*	*Lit.,* “forbidden flats”, mentioned in LCAw 71 to M.J. Nowlein (Soehren 2014)
Papa‘ula		*Lit*., “red flats”; the region just inland of this promontory is presently a portion of the modern Maui Country Club golf course
Paukūkalo		*Lit*., “taro piece”; present-day shoreline community located at the northernmost region of Kahului Harbor; the ‘Īao Stream reaches the ocean at Paukūkalo, a region formerly heavily planted in *kalo* (taro; *Colocasia esculenta*)
Pihana	*Heiau*	*Lit*., “fullness”; stories of this Wailuku Heiau include it being built in a single night by the legendary race of *menehune* (legendary small people) who brought the stones from Paukūkalo beach; also the construction of this *heiau* has been attributed to the Maui chief, Kahekili; listed as Walker Site 43
Pohakoi	Boundary	No translation; a boundary marker that runs from Ka‘ōpala to this point
Pōhakuloa	*‘Ili*	*Lit.,* “long stone”; mentioned in LCAw 408 to Manu (Soehren 2014)
Pūlehu Nui	*Ahupua‘a*	Large *pūlehu* where *pūlehu* is literally translated as “broiled”; this *ahupua‘a* abuts Wailuku and Waikapū and constitutes much of the central isthmus
Pu‘u Anu	Hill	*Lit.,* “cold hill”, hill at an elevation of 2,972 ft on the Waikapū and Ukumehameh boundary (Soehren 2014)

Name	Feature	Translation
Pu‘u Lio	Hill	*Pu‘u* is the word for hill and *li‘o* may be in reference to the bird named for the sound they make; place name possibly related to the *li‘o* bird, which is the same as the *‘a‘o* (*Puffinus auricularis newelli*) (Pukui and Elbert 1986:207)
Pu‘u Moe	Hill	*Lit.,* “sleeping hill”, hill at an elevation of 2,433 ft. on the Waikapū and Ukumehame boundary (Soehren 2014)
Pu‘unēnē		*Lit*., “goose hill”; cinder cone once located inland of Papa‘ula, mined for its gravel during WWII to construct the runways at NAS Kahului
Wahineomā‘ili	*‘Ili*	*Lit.,* “woman of Mā‘ili”, mentioned in LCAw 5228 to Kuihelani (Soehren 2014)
Wai‘ale	Reservoir	*Lit*., “rippling water”; reservoir located in Wailuku, fed by waters of the Spreckels Ditch
Waikapū	*Ahupua‘a*	*Lit*., “water of the conch”; reference to the conch shell formerly found in a cave at Waikapū, until it was stolen by a supernatural dog, named Puapualenalena; also, the scene of a great battle, fought between Kahekili, king of Maui, and Kalani‘ōpu‘u, king of Hawai‘i Island, at Waikapū Commons
Wailuku	*Ahupua‘a*	*Lit*., “water of destruction”; possibly a reference to the battle which took place at ‘Īao between the forces of Kamehameha I and the Maui chiefs; Sterling (1998) states that Pukui et al. (1974) believes the name is older than the famous battle; Westervelt (1910) makes special reference to the waters of Wailuku in ‘Īao emptying into the Kahului Harbor

> …Waikapu—The water where the conch was blown, and the engagement began. Waiehu—The water where the combatants smoked with dust and perspiration. Wailuku—The water of destruction, where the battle began to be fierce and fatal. Waihee—The water of total rout and defeat, where the army melted away. [H.T. Cheever in Sterling 1998:63]

Helen Wong Smith remarks that the Sterling notes (n.d.) in the Maui Historical Society mention that Waikapū Stream is not the nearest stream to Kalepolepo; however, it drains into Kealia Pond, which is fairly near, and may have been the nearest running stream. An intermediate version of the name occurs in Bates' 1854 *Sandwich Island Notes* which associates the conch shell and Kamehameha I:

> The first village of any note on the way to Wailuku is Waikapū. It contains a population of about 500. Here the forces of Kamehameha the Great once assembled for battle at the sounding of the conch shell. Hence the name Wai-ka-pu (water of the conch or trumpet. [Bates 1854:309 in Wong Smith 1991:A2]

The names and legends of the region may have their origins in one, or many, notable events that occurred in the time before Western contact. Though opinions vary, the central isthmus of Maui was nonetheless utilized by forces entering these battles.

3.1.2.2 The Plains of Kama‘oma‘o

Ke Kula o Kama‘oma‘o, or the Plains of Kama‘oma‘o, is the name given to a region of sandy plains spanning portions of Wailuku and Waikapū Ahupua‘a (Emerson 1993). This area was known by Hawaiians in traditional times as a wandering place of the souls (Beckwith 1970), a place where dead spirits waited for a friendly escort, perhaps an *‘aumakua*, to show them the way to eternity:

> The worst fate that can befall a soul is to be abandoned by its aumakua and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place, feeding upon spiders and night moths. Such spirits are believed to be malicious and to take delight in leading travelers astray; hence the wild places which they haunt on each island are feared and avoided. Such are the plains of Kama‘oma‘o on the island of Maui. [Beckwith 1970:154]

According to author and historian, Helen P. Hoyt (1976), Kama‘oma‘o is also a region where the "Marchers of the Night," or *Ka huaka‘i o ka Po*, are sometimes heard and seen. When these spiritual "Night Marchers" appear, according to Beckwith (1932:199), "It is said that such a sight is fatal unless one has a relative among the dead to intercede for him."

> The marchers carried candlenut torches which burned brightly even on a rainy night. They might even be seen in broad daylight and were followed by whirlwinds such as come one after another in columns. They cried 'Kapu o moe!' as a warning to stragglers to get out of the way or to prostrate themselves with closed eyes until the marchers passed. [Beckwith 1932:199]

3.1.2.3 A Warfare in the Sand Hills of Nā Wai ‘Ehā

As a political center for the chiefly class of Hawaiian society, several large battles took place in the general vicinity of Wailuku, many of which entailed the marching of foreign armies through

the *ahupua‘a* of Waikapū after landing their canoes on the leeward shores of the central isthmus, near Kealia. One example was the Battle of Waikapū Common, or the Ahulau ka Pi‘ipi‘i i Kakanilua. This battle entailed the clash of invading Hawai‘i Island forces, headed by Kalani‘ōpu‘u, with the Maui forces under Kahekili in 1776. According to Fornander (1880:2:152–153), following the plunder of the leeward east Maui coastline, Kalani‘ōpu‘u landed his invading troops at Mā‘alaea. The following account describes the battle on the sand hills south of Wailuku:

> The landing being effected early in the day, it was resolved to push forward at once, and ‘on to Wailuku!’ where Kahekili was residing, became the war cry of the day. The detachment or regiment known as the Alapa, mustering with several hundred men, was selected for this hazardous expedition, and with high courage they started across the isthmus of Kamaomao, known as the Waikapu common, determined, as the legend says, ‘to drink the waters of the Wailuku that day.’ This regiment was considered to be the bravest and best. … They are said to have all been of equal stature and their spears of equal length; and the legend represents their appearance—with their feather cloaks reflecting the sunshine and the plumes of their helmets tossing in the wind—as a gorgeous and magnificent spectacle.
>
> Little did this gallant troop apprehend the terrible fate that awaited them. Little did Kalaniopuu know the wily warrior with whom he was contending. Offering no resistance to the enemy while crossing the common, Kahekili distributed his forces in various directions of the Wailuku side of the common and fell upon the [Alapa] as it was entering among the sandhills southeast of Kalua, near Wailuku. The gallant and devoted Alapa were literally annihilated; only two out of the eight hundred escaped alive. [Fornander 1880:2:152–153]

Following the humiliating defeat, Kalani‘ōpu‘u consulted his remaining fighters and his war leaders, including his favorite, the young Kamehameha. After this Kalani‘ōpu‘u and his forces proclaimed, “Tomorrow we will drink the waters of Wailuku and rest in the shade of Hekuawa” (Speakman 1978:13). In response to the invader’s renewed vigor for battle:

> Ka-hekili and his ally and nephew, the ruling chief of O‘ahu, prepared another fish net [ambush], and the fish [Hawai‘i Island warriors] swam into it. Ka-hekili’s men rose before dawn and took their stand in the sand hills, some toward the Waikapu turn. The invading force from Hawai‘i found a divided front from which the spears poured down on them ‘like a swift rainstorm.’ The terrified soldiers were surrounded and fled. [Speakman 1978:13–14]

The Big Island army was ambushed at an area close to Waikapū and was destroyed by the army of Kahekili on the plains of Kama‘oma‘o (Hokulani Holt Padilla in Hill et al. 2006). This second day of fighting was known as the battle of Kamoku‘ilima (Kamakau 1992:132). Kalani‘ōpu‘u never succeeded in taking Wailuku, and died shortly after the Battle of Wailuku Common. Upon the death of Kalani‘ōpu‘u, and the death of his sons, the young Kamehameha became the ruling chief of Hawai‘i and the mortal enemy of the now aged Kahekili (Speakman 1978:12). Kamehameha would return to Wailuku and succeed where Kalani‘ōpu‘u had failed. By 1786, Kahekili controlled Maui, Moloka‘i, Lāna‘i, and O‘ahu. This undisputed political control lasted for only a short period of time. In 1790, the last great conflict on Maui—the Battle of Kepaniwai—was fought in ‘Īao

Valley in Wailuku. The Battle of Kepaniwai marked the end of the reign of Kahekili and the beginning of the early historic period and a politically unified Hawai‘i (Pukui et al. 1974).

An 1841 account of Commodore Charles Wilkes of the American Navy published in the 7 January 1927 edition of the *Honolulu Advertiser* provides an early description of “a mound of human bones” thought to be the bodies of fallen warriors in the Sand Hills of Wailuku (Figure 6). The article refers to the accounts of past battles fought in Central Maui.

3.1.3 *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* (“to cause growth,” a gift given to convey appreciation, to strengthen bonds); 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 the reader or between speaker and listener:

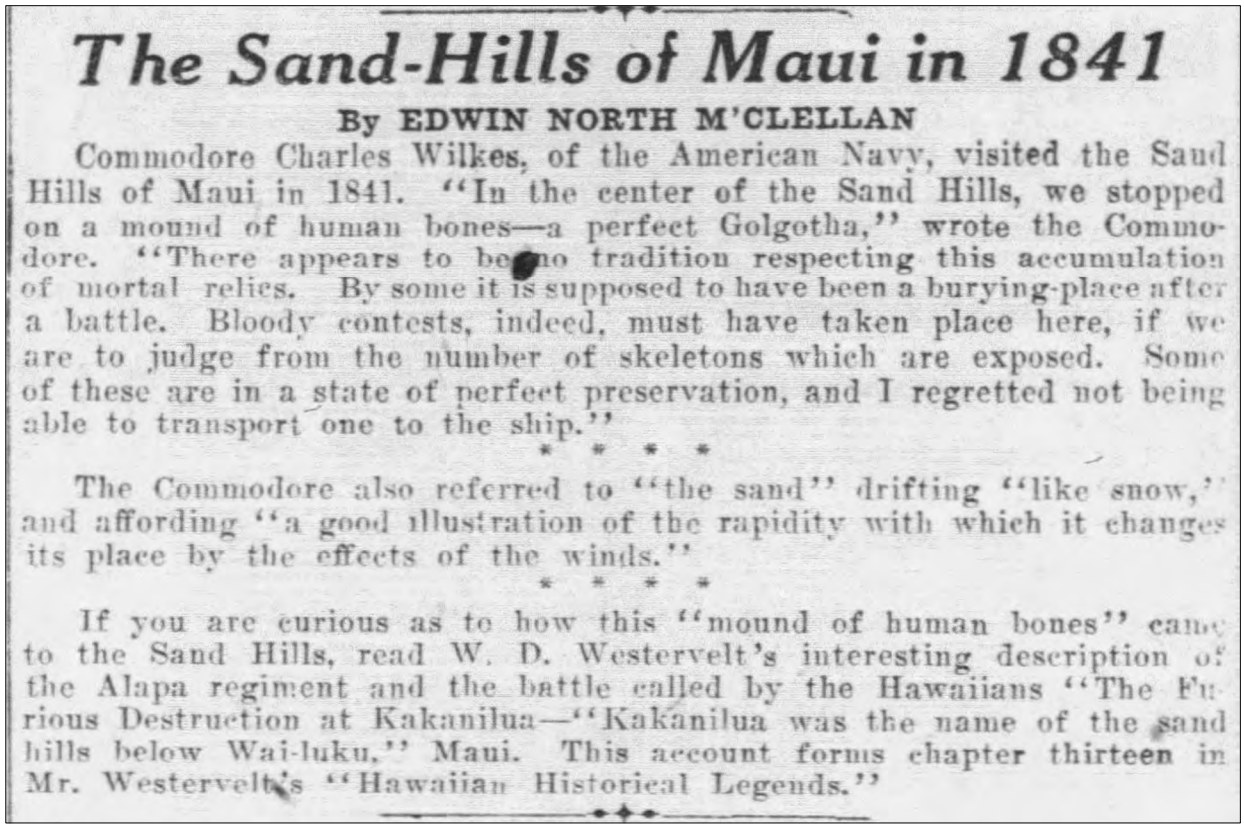
> They reveal with each new reading ever deeper layers of meaning, giving understanding not only of Hawai‘i and its people but of all humanity. Since the sayings carry the immediacy of the spoken word, considered to be the highest form of cultural expression in old Hawai‘i, they bring us closer to the 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. In addition to *‘ōlelo no‘eau* specific to Waikapū, other proverbs below describe the larger area of Wailuku Moku and are taken from Mary Kawena Pukui’s *‘Ōlelo No‘eau* (Pukui 1983).

3.1.3.1 *‘Ōlelo No‘eau* #1465

The following *‘ōlelo no‘eau* describes the wind of Waikapū.

> Ka makani kokololio o Waikapū.
>
> *The swift, gusty wind of Waikapū.*
>
> Waikapū is on Maui. [Pukui 1983:159]



The Sand-Hills of Maui in 1841

By EDWIN NORTH M'CLELLAN

Commodore Charles Wilkes, of the American Navy, visited the Sand Hills of Maui in 1841. "In the center of the Sand Hills, we stopped on a mound of human bones—a perfect Golgotha," wrote the Commodore. "There appears to be no tradition respecting this accumulation of mortal relics. By some it is supposed to have been a burying-place after a battle. Bloody contests, indeed, must have taken place here, if we are to judge from the number of skeletons which are exposed. Some of these are in a state of perfect preservation, and I regretted not being able to transport one to the ship."

* * * *

The Commodore also referred to "the sand" drifting "like snow," and affording "a good illustration of the rapidity with which it changes its place by the effects of the winds."

* * * *

If you are curious as to how this "mound of human bones" came to the Sand Hills, read W. D. Westervelt's interesting description of the Alapa regiment and the battle called by the Hawaiians "The Furious Destruction at Kakanilua—"Kakanilua was the name of the sand hills below Wai-luku," Maui. This account forms chapter thirteen in Mr. Westervelt's "Hawaiian Historical Legends."

Figure 6. Newspaper clipping from the 7 January 1927 edition of the Honolulu Advertiser describing an 1841 discovery of human remains in the Sand Hills of Maui

3.1.3.2 *‘Ōlelo No‘eau* #2911

The following *‘ōlelo no‘eau* also describes the wind of Waikapū.

> Waikapū i ka makani kokololio
>
> *Waikapū of the gusty wind.*
>
> Refers to Waikapū, Maui [Pukui 1983:319]

3.1.3.3 *‘Ōlelo No‘eau* #2300

The following *‘ōlelo no‘eau* describes the poetic term for four *ahupua‘a* on Maui.

> Na wai ‘ehā.
>
> *The four wai*.
>
> A poetic term for these places on Maui: Wailuku, Waiehu, Waihe‘e, Waikapū, each of which has a flowing water (*wai*). [Pukui 1983:251]

3.1.3.4 *‘Ōlelo No‘eau* #19

The following *‘ōlelo no‘eau* briefly describes the battle between Kahekili and Kalani‘ōpu‘u.

> Ahulau ka Pi‘ipi‘i i Kakanilua.
>
> *A salughter of the Pi‘ipi‘i at Kakanilua.*
>
> In the battle between Kahekili of Maui and Kalani‘ōpu‘u of Hawai‘i, on the sand dunes of Wailuku, Maui, there was a great slaughter of Hawai‘i warriors who were called the Pi‘ipi‘i. Any great slaughter might be compared to the slaughter of the Pi‘ipi‘i. [Pukui 1983:5]

3.1.3.5 *‘Ōlelo No‘eau* #1711

The following *‘ōlelo no‘eau* was said by Kalani‘ōpu‘u who believed his warriors was winning against Kahekili.

> Ke inu aku la paha a‘u ‘Ālapa i ka wai o Wailuku.
>
> *My ‘Ālapa warriors must now be drinking the water of Wailuku.*
>
> Said when an unexpected success has turned into a failure. This was a remark made by Kalaniōpu‘u to his wife Kalola and son Kiwala‘ō, in the belief that his selected warriors, the ‘Ālapa, were winning in their battle against Kahekili. Instead they were being destroyed. [Pukui 1983:184]

3.1.3.6 *‘Ōlelo No‘eau* #2647

The following *‘ōlelo no‘eau* play on the word *luku* (destruction).

> Pili ka hanu o Wailuku.
>
> *Wailuku holds its breath.*
>
> Said of one who is speechless or petrified with either fear or extreme cold. There is a play on *luku* (destruction). Refers to Wailuku, Maui. [Pukui 1983:290]

3.1.3.7 *‘Ōlelo No‘eau* #2912

The following *‘ōlelo no‘eau* gives a short description of Wailuku.

> Wailuku i ka malu he kuawa.
>
> *Wailuku in the shelter of the valleys.*
>
> Wailuku, Maui, reposes in the shelter of the clouds and the valley. [Pukui 1983:319]

3.1.4 *Nā Oli* (Chants)

Oli, according to Mary Kawena Pukui (Pukui 1995:xvi–xvii), are often grouped according to content. Chants often were imbued with *mana* (spiritual power); such *mana* was manifested through the use of themes and *kaona* (hidden or layered meaning). According to Pukui, chants for the gods (*pule*; prayers) came first, and chants for the *ali‘i*, “the descendants of the gods,” came second in significance. Chants “concerning the activities of the earth peopled by common humans,” were last in this hierarchy (Pukui 1995:xvi–xvii). Emerson conversely states,

> In its most familiar form the Hawaiians–many of whom [were lyrical masters]—used the oli not only for the songful expression of joy and affection, but as the vehicle of humorous or sarcastic narrative in the entertainment of their comrades. The dividing line, then, between the oli and those other weightier forms of the mele, the inoa [name], the kanikau (threnody), the pule, and that unnamed variety of mele in which the poet dealt with historic or mythologic subjects, is to be found almost wholly in the mood of the singer. [Emerson 1965:254]

While *oli* may vary thematically, subject to the perspective of the *ho‘opa‘a* (chanter), it was undoubtedly a valued art form used to preserve oral histories, genealogies, and traditions, to recall special places and events, and to offer prayers to *akua* and *‘aumākua* alike. Perhaps most importantly, as Alameida (1993:26) writes, “chants … created a mystic beauty … confirming the special feeling for the environment among Hawaiians: their one *hānau* (birthplace), their *kula iwi* (land of their ancestors).”

3.1.4.1 Ke‘elikōlani

In an *oli* to Ke‘elikōlani composed by Pipi (Fornander 1919-1920:6:486–487), Wailuku is mentioned in relation to “*malu kuawa*” which translates to “shelter of the valley” (Pukui and Elbert 1986:158). Also mentioned in the *oli* is the I‘a-iki wind.

Kapukoaku, kai kohola ka lani.	The standing coral of the shallow sea, the chief.
Kai luu o ke kai uli hohonu,	Overturning waves of the dark deepsea,
E kihe ai ka ihu, me he naia la.	Diving its crest there as a porpoise
E no ai I ke kapu o lakou,	According to their kapu.
5. Kanahae makawalu nono o ke ‘lii	5. Diminishing numerous noise of the chief.
Kahiki wahie aloaloa,	Kahiki scattering timber

Loaloanui ia ka lani	Exceedingly long is the chief
Kaumakamano, he mano he naha na ‘lii	Kaumakamano, a shark, a shark for chiefs.
Hookahi lau konahala ke kapu;	In one season the kapu passed;
10. Kapu hoi paha Kekelaokalani;	10. May be Kekelaokalani was kapu also.
Ka auhuhu hoi ia e lena ai ke kai,	The poison plant it was, yellowing the seas.
E onioni ai ka ia, make i ka hola;	Stupifying the fish, deadened by the intoxicating plant;
E kapalili ai i ka ili o ke kai,	Fluttering on the surface of the sea,
He kai hoonee; he kai oki apu,	A moving sea; a cross, chasing sea.
15. Kahiwalele kapu kalani, o Keelikolani la.	15. Kahiwalele kapued the chief Keelikolani;
Ku Kauiki pa kohana i ka makani,	Kauiki stands bare in the wind,
Hoohalulu i ke kai o Kaihalulu	Trembling by the sea of Kaihalulu
Ke oi a lau i ka makani,	Greatly increased by the wind,
E kali ana i ka ua Paiolopawa,	Waiting for the piolopawa rain
20. I ka hili kua ia e ke Koholalele,	20. On the stricken back of the Koholalele.
Lele ka hauli o Nalualele i kai	The dark shadow of Nalualele leaps seaward.
Ke komi komi‘a iho la e ka lau awa,	Reducing gradually the lauawa [wind].
Wai kea hana na huli ka amau,	Hana was water-whitened as the fern changed
O na malo o Kama i Kualihau e!	The malos of Kama in Kualihau.
25. ae paha aohe wahahee, aho o koe aku e!	25. Perhaps so, without falsehood, be patient till more follows.
Koe Auhi, pakele aku o Kahikihui,	Excepting Auhi, Kahikinui escaped,
Lilo aku la i na lima o ka naulu,	Taken by the force of the naulu [wind];
Ulu ae la Kalupua e ka makani,	Grown are the flowers scattered by the wind;
Lomi‘a iho la na maka o ke aalii,	Destroyed are the shoots of the aalii,
30. Enaena wela I ka la.	30. Scorced by the sun.

O Lualailua i ke kula la,	Lualailua of the plain,
Welo Waiahualele, lele ke ahi o kula maalo i ka maka;	Waiahualele fluttering, the fire of kula attracts the eye,
Weli oaka, a i uka o Koanaulu e!	Suddenly brightened up above Koanaulu!
Ae paha, oahe wahahee e hookoe aku e!	Yes, perhaps, without falsehood to be set aside.
35. Koe Wailuku i ka malu Kuawa,	35. Except Wailuku in the shade of Kuawa
Ke hoopaio la me Kaiaiki, me ke Kaahaaha.	In the contentions of Kaiaiki with Kaahaaha.
Anu o Niua, hamo ke kilioopu ka o kai,	Niua was cold; the grass waved towards the sea.
Pohu ke kaha maloko o Hupukoa,	Calm was the channel within Hupukoa,
Hoopaaia i ka uwahi a ke kai,	Withheld was the spray of the sea;
40. He uwahi kai no Papale.	40. A sea-spray for Papale
Kailiu ke hoale la, i ike kumu o ka maomao e!	Stirred up by the salt sea seeking [the] roots of green verdure,
Ae paha, aohe wahahee e hookoe aku e!	Perhaps so, without falsehood to be set aside.

[Fornander 1919-1920:6:486–487]

The phrase "*malu kuwawa*" also appears in Lahainaluna Chants. A dirge was composed for L.L. Ua, a Lahainaluna teacher, by his students following his death in February of 1854 (Fornander 1919-1920:6:525). The English translation defines "*malu kuwawa*" as "dark clouds."

60. Malamalama kea lo pouli ke kua.	60. Before was the light and darkness at the rear.
Papale na maka i ke aloha.	Close thy eyes with love.
Ke hoi nei ka uhane I ka malu niu o Lele;	The soul is returning to the coconut grove of Lele;
I ka malu kuwawa o Wailuku;	To the dark clouds of Wailuku;
I ka ua naulu noe anu o Kula;	To the cold misty rain of Kula;

[Fornander 1919-1920:6:525]

3.1.5 *Nā Mele* (Songs)

The following section draws from the Hawaiian art of *mele*, poetic song intended to create two styles of meaning.

> 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]

3.1.5.1 “Nā Wai ‘Ehā O Maui”

This *mele* was composed by Alice Namakelua in 1940 for the Kamehameha Day Celebration in Honolulu. The four waters of Maui are mentioned in this *mele*.

E Maui nui o Kama	Great Maui of Kama
‘Āina ua kaulana	Famous land
O ka heke i‘o no ‘oe	You are truly superior
Ua lohe ‘ia ‘a puni ka honua	Heard around the earth
‘Āina ‘oe ua wehi	You are the land adorned
Ua ‘ohu e ka roselani	Adorned by the rose
He pua ho‘i nāu e lei	A flower for you to wear as an adornment
A e ha‘aheo mau ai ‘oe	And continue to wear in pride
Kaulana nā wai ‘ehā	Famous are the four waters
He puana he inoa he ha‘ina	A refrain, a name, an answer
Waikapū, Wailuku, Waiehu	Waikapū, Wailuku, Waiehu
A‘o Waihe‘e iho ia wai	Water descends in Waihe‘e
He inoa nēia nou	This is a name chant for you
E Maui nui o Kama	Great Maui of Kama
Ha‘aheo ‘oe i ka roselani	You are cherished with pride because of the rose
E ō mai i kou inoa	Reply to your name

[Huapala n.d.]

3.1.5.2 “No Na Wai ‘Ehā”

This twentieth century *mele* composed by Scott Hai mentions Waikapū and other locations on Hai’s beloved island home of Maui.

I Waikapū ke aloha	My love is at Waikapū
Ka makani Kokololio	The gusty wind named Kokololio
Pili i ka poli nahenahe	Held close to the soft bosom

He ‘īnikiniki mālie	Gently pinching
I Wailuku iho ‘oe	You went down to Wailuku
I ka piko a‘o ‘Īao	To the summit of ‘Īao
Lihilihi o ka pua rose	Petals of the roses
He ‘īnikiniki mālie	Gently pinching
I Waiehu iho ‘oe	You went down to Waiehu
Ka makani Hō‘ehaili	Hō‘ehaili, the wind that pierces the skin
Me ka uhi wai a‘o uka	With the thick fog of the upland
He ‘īnikiniki mālie	Gently pinching
I Waihe‘e kāua	We were at Waihe‘e
Ka makani Kili‘o‘opu	The wind named Kili‘o‘opu
Me ka wai a‘o Eleile	And the water of Eleile
He ‘īnikiniki mālie	Gently pinching
I Lahaina iho ‘oe	You went down to Lahaina
Ka makani Kaua‘ula	Kaua‘ula, the strong mountain wind
Me ka malu ulu a‘o Lele	Amid the shade of the breadfruit trees of Lele
He ‘īnikiniki mālie	Gently pinching
Ha‘ina mai ka puana	Tell the refrain
No na wai ‘ehā	Of the four water
E ho‘i no e pili	Return and let us be together
He ‘īnikiniki mālie	Gently pinching

[Huapala n.d.]

3.1.5.3 “Waikapū/‘Iniki Mālie”

This song describes the winds of the four water-lands in Maui: Waikapū, Wailuku, Waiehu, and Waihe‘e. The meaning of each name is described below by Pukui et al. (1974). Waikapū, water of the conch. A conch found in a cave in this area could be heard anywhere throughout the Hawaiian Islands. It was stolen by a supernatural dog named Puapualenalena whose name meant yellow tail feathers. Wailuku, water of destruction. Wailuku was the battle site where Kalani‘ōpu‘u’s army was nearly annihilated by Kahekili. Waiehu, meaning water spray and Waihe‘e, meaning slipping water.

Waikapū makani Kokololio,	Waikapū wind in gusts,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Skin-stinging wind gently pinching.
Wailuku makani Lawemālie,	Wailuku wind becoming gentle,
He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Skin-stinging wind gently pinching.
Waiehu makani Hō‘eha‘ili	Waiehu wind paining the skin,

He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.	Skin-stinging wind gently pinching
Waihe‘e makani Kili‘o‘opu *He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.*	Waihe‘e graceful wind, Skin-stinging wind gently pinching.
Ha‘ina mai ana ka puana, *He makani houhou ‘ili ‘inisinisi (‘inikiniki) mālie.*	Tell the refrain, Skin-stinging wind gently pinching.

[Huapala n.d.]

3.2 Archaeological and Historical Narrative

3.2.1 Pre-Contact Habitation

The division of Maui’s lands into political districts occurred during the rule of Kaka‘alaneo, under the direction of his *kahuna*, Kalaiha‘ōhi‘a (Beckwith 1970:383). This division resulted in 12 districts during traditional times: Kula, Honua‘ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko‘olau, Hāmākua Loa, Hāmākua Poko, Wailuku, Kā‘anapali, and Lāhainā. The current project area is located in the Waikapū Ahupua‘a, in the Wailuku District and Pū‘ali Komohana Moku in the isthmus of Central Maui between the northwest slopes of Haleakalā and the southeast slopes of Mauna Kahalawai (West Maui Mountains). Overall, Wailuku and Waikapū Ahupua‘a share an east-west boundary and collectively constitute the entirety of the central isthmus of Maui, which is bounded by ‘Īao Valley to the west, Kahului Harbor to the north, Pā‘ia and Hāli‘imaile to the east, and Mā‘alaea Harbor to the south. These combined lands encompass a total of approximately 43,779 acres.

Wailuku and Waikapū are two of four *ahupua‘a* that traditionally comprise the *‘okana* of Maui known as “Nā Wai ‘Ehā,” or “The Four Waters,” so named for the four major deep-valley streams emanating from the West Maui Mountains (Handy et al. 1991:469; Moffat and Fitzpatrick 1995:23). Geographically and culturally, Nā Wai ‘Ehā consisted of four deep-valley streams (Waikapū, Wailuku, Wai‘ehu, and Waihe‘e) that watered four distinct areas of taro land that spread out fanwise to the shoreline (Handy et al. 1991:272) with the *ahupua‘a* of both Wailuku and Waikapū extending across the isthmus of Maui to meet the traditional land boundaries of Hamakuapoko and Kula Moku. These two land divisions were of primary importance due to their location across “the whole of the central isthmus so as to cut off half of the lands in the district of Kula from access to the sea,” and were sometimes referred to as Na Poko (W.D. Alexander in Sterling 1998:63).

In ancient times, Waikapū and Wailuku were agriculturally abundant lands known for their extensive *lo‘i* (Handy et al. 1991:497). In an excerpt from C.T. Cheever (in Sterling 1998:75), the remnants of the pre-Contact cultivation of ‘Īao Valley in Wailuku is described as follows:

> As you get into the valley and vega of Wailuku, you see numerous remains of old kihapais, or cultivated lots, and divisions of land now waste, showing how much more extensive formerly was the cultivation, and proportionately numerous the people, than now …

> The whole valley of Wailuku, cultivated terrace after terrace, gleaming with running waters and standing pools, is a spectacle of uncommon beauty to one that has a position a little above it. [C.T. Cheevers in Sterling 1998:75]

Similar observations were made regarding the deep valley of Waikapū, lying immediately southwest of the paramount valley of the West Maui range in Wailuku. Writing his observations from long after the period of active *lo‘i* cultivation, E.S.C. Handy (in Sterling 1998) observed,

> Spreading north and south from the base of Waikapu to a considerable distance below the valley are the vestiges of extensive wet plantations, now almost obliterated by sugar cane cultivation; a few here and there are preserved in plantation camps and under house garden sites along the roads. … Far on the north side, just above the main road and at least half a mile below the entrance to the canyon, an extensive truck garden on old terrace ground shows the large area and the distance below and away from the valley that was anciently developed in terraced taro culture. On the south side there are likewise several sizeable *kuleana* where terraces are now used for truck gardening. [E.S.C. Handy in Sterling 1998:94]

Handy et al. (1991) in *Native Planters in Old Hawaii Their Life, Lore, and Environment*, describes Waikapū Stream as land bound, as opposed to emptying into the ocean, with the water diverted into *lo‘i* and the overflow dissipating on the dry plains of the central isthmus between West and East Maui (Handy et al. 1991:496) feeding the wetland of Keālia. Though there has been some speculation on the establishment of small fishing settlements with cultivation of sweet potatoes in the sandy soil or red *lepo* near the shore, E.S.C. Handy stated that

> …From Waihee to Waikapu there is much good land below and bounding the ancient terrace area on the *kula* and in the lower valleys which would be ideal for sweet potato culture, but it is said that little was grown in this section because there was so much taro. [Sterling 1998:63]

Beyond the alluvial sediments of the stream valley as lower elevations lead into the central isthmus of Maui, the landscape was once dominated by windswept Pleistocene sand dune deposits. The following excerpt of a newspaper article submitted to the *Pacific Commercial Advertiser* distinguishes the differences between the two areas and indicates both agricultural and pastoral use for the lands of Waikapū:

> The isthmus of Waikapu (and Wailuku) lies but little above the level of the sea, and is composed of dry sand. Since the goats and cattle have been allowed to run there, they have destroyed the vines and bushes which served to confine the sand on the windward side, and the “dunes” have been driven nearly to the leeward beach, and will soon usurp the whole of the lower part of the isthmus. The wind here rushes across in fierce gusts between the two divisions of the island, and renders the navigation of the bay at times quite dangerous. On the western slope of the isthmus, and towards the windward side, lie the cultivated portions of Waikapu and Wailuku, which, with the valleys behind them, are very fertile. [Anonymous 1858]

3.2.2 Early Historic Period

The nineteenth century brought to Maui a multitude of commercial, demographic, social, and religious changes encouraged by the burgeoning foreign influx. In 1819, the first whaling ships arrived in Hawaiian waters and Lāhainā Harbor became a primary port of call for provisioning ships in the Islands. Closely following the arrival of the first whaling ships, the first Protestant missionaries and their families arrived in Lāhainā in 1823 (Bingham 1824). One of the first records regarding the number of residents living in the regions of Wailuku and Waikapū come from population statistics compiled by the early missionaries who settled there. In 1829, Protestant missionaries recorded school attendance figures for the out-stations of Wailuku as consisting of 612 students, with an additional 329 students in Waikapū (Richards 1831; Waikapu Community Association 2018). Just a few years later, the mission census data of 1831-1832 records the population of Waikapū at 733 inhabitants (Schmitt 1973:18).

The use of the northern coastline landing at Kahului by early Europeans proved difficult; far more records exist of early explorers and merchant ships at anchor off the southern, more protected coastline of Maui than along the exposed, northern coast. An account by the American missionary Rufus Anderson (1865) portrays the obstacle of landing in Wailuku:

> We were bound to Wailuku, situated near the western side of the isthmus connecting West and east Maui. After crossing the channel the wind increased, and so rough was the sea that our landing seemed not quite safe. Mr. Alexander met us on the shore, but in such a stand-storm that we were obliged to veil our faces. We breasted the gale for a dozen miles, and near Wailuku were wet to the skin by a storm of rain. [Anderson 1865:176]

A landing on the leeward coast of the central isthmus meant the people and commerce that reached European ships came through the trails that transect the Plains of Kama‘oma‘o.

During the early and mid-1800s, the Hawaiian demography was affected by two dramatic factors: radical depopulation resulting from Western disease and nucleation around developing port towns. Traditional Hawaiian populations lived in a largely dispersed settlement pattern.

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. Foreign commercialism initially came to Waikapū in the form of sugar processing and coffee production (Wyllie 1854). A man by the name of Antone (Anthony) Catalena was running a cane syrup factory at Waikapū ca. 1823 and is credited with being the founder of the industry in Hawai‘i (Thrum 1874) while Antonio Silva set up a plantation and a mill in Waikapū ca. 1828 (Thurston 1906). At about the same time Antonio was also engaged in coffee agriculture with trees that reportedly produced above 20 pounds annually (Wyllie 1854). The Reverend Hiram Bingham (1824) wrote the following description about an excursion he took with the Reverend William Richards, in a letter sent to the American Board of Commissioners of Foreign Missions (ABCFM) in Boston, dated 30 August 1823.

> The principal plantation in this district, called Waikapu (Wy-kah-poo) lies about midway between the two bays, watered by a small stream, descending in a south-eastern direction from the lofty mountains, that lie between Lahinah [sic] and that place. At this plantation which belongs to Cox [Kahekili Ke‘eaumoku] and

> Kaahoomanoo [Ka‘ahumanu], there are about 100 houses, six head of neat cattle, and eight horses. This is the most important, and almost the only inland settlement that I have seen in the islands. Its situation is very pleasant. You stand upon the bank of this little rivulet in the midst of the bananas, sugarcane, and taro; and the plains that lie upon the two bays spread upon your right and left, containing perhaps 100 or 150 square miles. Before you, at the distance of 15. [Bingham 1824:111]

These early commercial developments along with the establishment of the branch station of the ABCFM at Wailuku in November 1831 (Edwards 1832:403) would alter the traditional lifeways of Nā Wai ‘Ehā and Waikapū in a manner best described by Kuykendall (1938), noting that 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]

Following this trend in the commercialization of agricultural pursuits across all islands, the remnants of indigenous agriculture either fell into disrepair or were absorbed by the developing plantations. Vestiges of extensive *lo‘i* cultivation, which spread to the north and south from the base of Waikapū to a considerable distance below the valley, remained through the 1930s. Although most of the *lo‘i* terraces in Waikapū had been plowed under by the expansion of commercial sugarcane cultivation, a few of the ancient terraces were preserved in plantation camps and under house sites as well as reused as garden sites, among which, and in addition to Hawaiian wet-taro, included Japanese dry-taro, truck gardens, and lotus for their seeds (Figure 7) (Handy et al. 1991:497).

3.2.3 Mid-Nineteenth Century

3.2.3.1 The Māhele and the Kuleana Act

In 1845, the Board of Commissioners to Quiet Land Titles, also called the Land Commission, was established “for the investigation and final ascertainment or rejection of all claims of private individuals, whether natives or foreigners, to any landed property” (Chinen 1958:8). This led to the Māhele, the division of lands among the king of Hawai‘i, the *ali‘i*, and the common people, which introduced the concept of private property into Hawaiian society. In 1848, Kamehameha III divided the land into four divisions: Crown Lands reserved for himself and the royal house; Government Lands set aside to generate revenue for the government; Konohiki Lands claimed by *ali‘i* and their *konohiki* (supervisors); and *kuleana* (native land rights), habitation and agricultural plots claimed by the common people (Chinen 1958:8–15).

Upon confirmation of a land claim, the *ali‘i* were required to pay a commutation fee to the government. This commutation (meaning a substitution of one form of payment or charge for another) could be satisfied with a cash payment or the return of land of equal value. This payment was usually one-third of the value of the unimproved land at the date of the award (Chinen 1958:9–12). The *ali‘i* usually retained some of the land they were awarded. Then, they would return some of the land to pay the commutation fee. The returned land usually became Government Land. In 1851, Government Lands became available for purchase “in lots of from one to fifty acres in fee



Figure 7. Early photograph of Waikapū Valley with *lo‘i*, *‘auwai* (ditch), and dispersed homes (Waikapu Community Association 2018)

simple, to residents only, at a minimum price of fifty cents per acre" (U.S. Department of the Interior 1882:23). These costs did not include the survey fee, which was to be paid by the interested buyer.

Under the Kuleana Act of 1850, the *maka‘āinana* were required to file their claims with the Land Commission within a specified time period in order to apply for fee-simple title to their lands. The claim could only be filed after the claimant arranged and paid for a survey, and two witnesses testified they knew the claimant and the boundaries of the land, knew that the claimant had lived on the land since 1839, and knew that no one had challenged the claim. Then, the *maka‘āinana* could present their claims to the Land Commission to receive their Land Commission Award (Kame‘eleihiwa 1992).

Not everyone who was eligible to apply for *kuleana* lands did so, and not all of the claims were awarded. Some claimants failed to follow through and come before the Land Commission, some did not produce two witnesses, and some did not get their land surveyed. In addition, some *maka‘āinana* may have been reluctant to claim *‘āina* that had been traditionally controlled by their *ali‘i*, some may have not been familiar with the concept of private land ownership, and some may have not known about the Māhele, the process of making claims (which required a survey), or the strict deadline for making claims. Further, the Land Commission was comprised largely of foreign missionaries, so the small number of claimants and awards may reflect only those *maka‘āinana* who were in good standing with the church. Significantly, the surveying of land was not standardized (Kame‘eleihiwa 1992:296–297).

During the Māhele, the lands surrounding Waikapū Commons were sold by the Department of Education in ten parcels, each amounting to more than 1,317 acres, and had Royal Patents issued for the sales in 1854. Later, all ten of these Royal Patents were surrendered and cancelled, and the land was quit-claimed back to the Board of Education in August 1860. In 1875 the Board of Education sold at auction the "Land known as the ahupuaa of Waikapu, saving grants hitherto made within said ahupuaa, or sales by the board of education" to Mr. Henry Cornwell, lands extending out from Waikapū Valley to the northwestern boundary of Pulehunui Ahupua‘a (Pacific Commercial Advertiser 1879:5). Cornwell acquired the lands in fee-simple under Royal Patent No. 3152. The lands purchased by Cornwell were added to the holdings of the Waikapū Sugar Plantation, originally started by Henry Cornwell and James Louzada on Grant 2951, before the plantation was sold in 1876.

The current project area is situated within portions of Land Grants 1673, 2107, and 2474 and portions of LCA 2522, 3110, 3296, 3340, and 5228 (Figure 8). There are several other LCAs and land grants located in the immediate vicinity. These awards are concentrated within the watershed area of Waikapū Stream, west of the project area and Honoapi‘ilani Highway. Land use associated with these grants and LCAs includes house lots, *lo‘i*, potato, *hala* (*pandanus*) trees, banana, *kula* (pasture), sugarcane, *‘auwai* (ditch), reservoir, fish, and livestock (Guerriero et al. 2017).

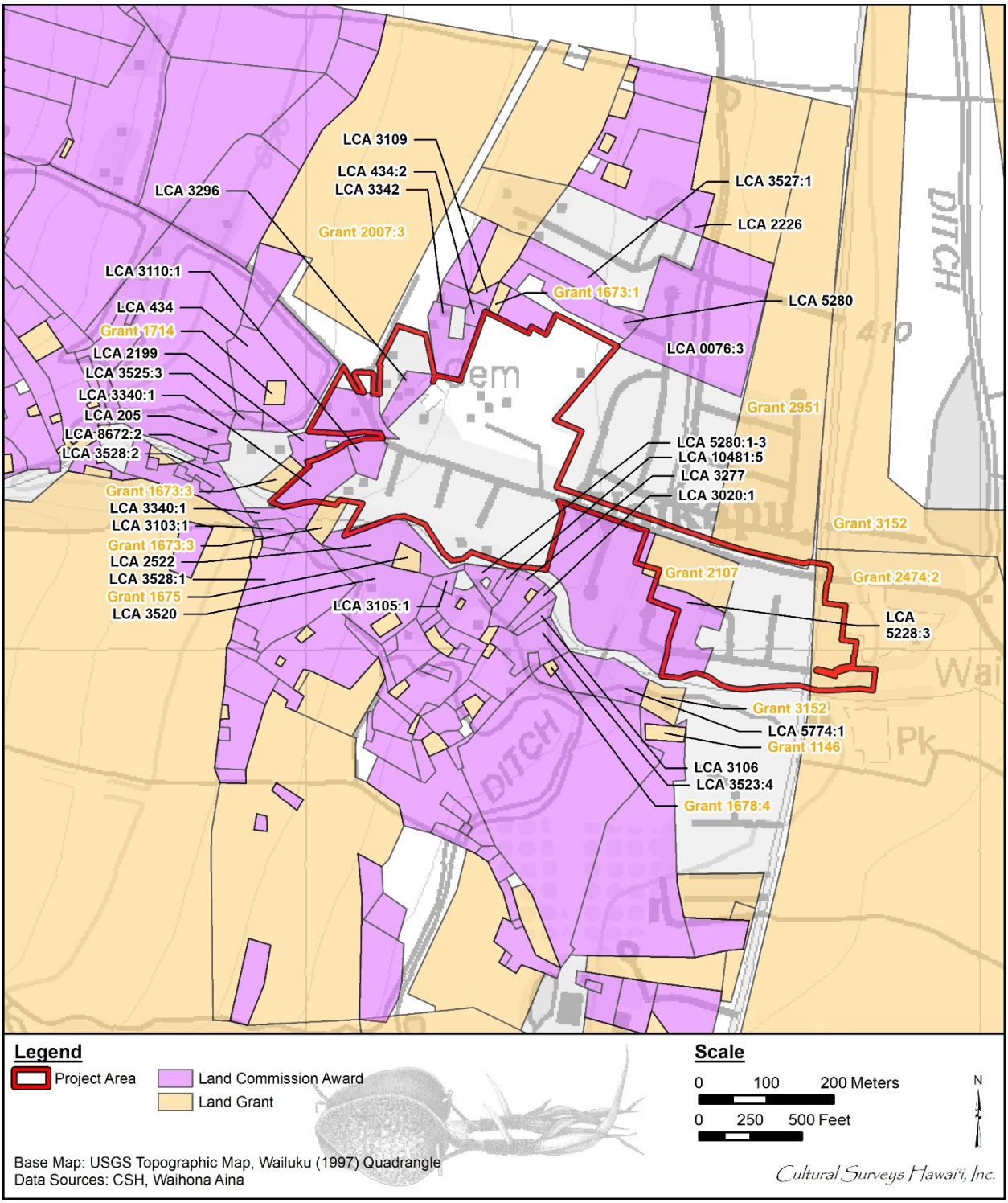


Figure 8. LCAs and Land Grants within and surrounding the current project area depicted on portion of the 1997 Wailuku USGS 7.5-minute topographic quadrangle

3.2.4 Mid- to Late 1800s

A common crop on nearly all major Hawaiian Islands was sugarcane. With the passage of Hawaiian lands into the Western model of privatization, coupled with the decline of the indigenous population, the wet valleys on Nā Wai ‘Ehā began to shift away from subsistence farming toward plantation style sugarcane cultivation. The fertility of the river valleys of Nā Wai ‘Ehā was readily observed by visitors of the period. While traveling from Mā‘alaea to Waikapū a late nineteenth century observer describes the following scenic views:

> It took us about an hour to drive from Maalea to Waikapu and we began to see some indications of the beauty which the inhabitants of Maui ascribe to their beloved isle. The mountain mass that seemed shapeless is rent by a series of deep gorges—each, we were told, a scene of bewildering beauty, both in rock-scenery and foliage. The wild waste of unproductive lava has been partially irrigated, and the barren wilderness now yields rich fields of sugar-cane. Very lovely were these green fields, with their tassels at once rosy and silvery, resembling the blossom of some giant grass. The fields are hedged with the prickly-pear, which here attains a great size, with stems upward of a foot in diameter, and becomes a very handsome though grotesque shrub. [Cummings 1881:273]

In general, it appears the most agriculturally fertile lands of Waikapū Ahupua‘a did not extent beyond the alluvial sediments of the stream valley as the lower elevations leading into the central isthmus of Maui are dominated by windswept Pleistocene sand dune deposits (Figure 9) (Foote et al. 1972:48, 115). An article published in *Pacific Commercial Advertiser* substantiates this claim by describing “the western slope of the isthmus, and towards the windward side” as containing “the cultivated portions of Waikapu and Wailuku, which, with the valleys behind them,” are noted as “very fertile” (Anonymous 1858).

3.2.4.1 Waikapū Congregational Church

Prior to the surge in commercial sugarcane cultivation, Waikapū was dominated by Hawaiian homes with nearby taro patches feeding from the waters of Waikapū Valley. The small community residing here established the Waikapū Congregational Church in 1838 as a home-based Christian service, sometimes utilizing the facilities of the distant Ka‘ahumanu Church in Wailuku. In 1868, the community was able to erect and dedicate a permanent structure (Figure 10). Residents moving to the region in 1908 recalled that “we used to have ‘hoikes’, (rally days) there and folk from all Central Maui used to attend.” According to residents, both the Wednesday night prayer services and Sunday all-day services would fill the church building to capacity (Head 1960).

During World War II, Waikapū Congregational Church was turned over to the military and used as a surgical hospital. The Church building was used as a ward with an additional “nurses quarters” built off to the side of the main structure. It was during this period that the church had its steeple removed for being too clear a target for potential marauding enemy submarine gunners (Figure 11). Although the steeple was re-erected after the war, it continuously leaked and was again removed from the building. As sugarcane cultivation began to dominate the region in the early to mid-twentieth century, residential dwellings dwindled, as did the attendees of the Waikapū Congregational Church. As full-time pastors became unnecessary, the church members

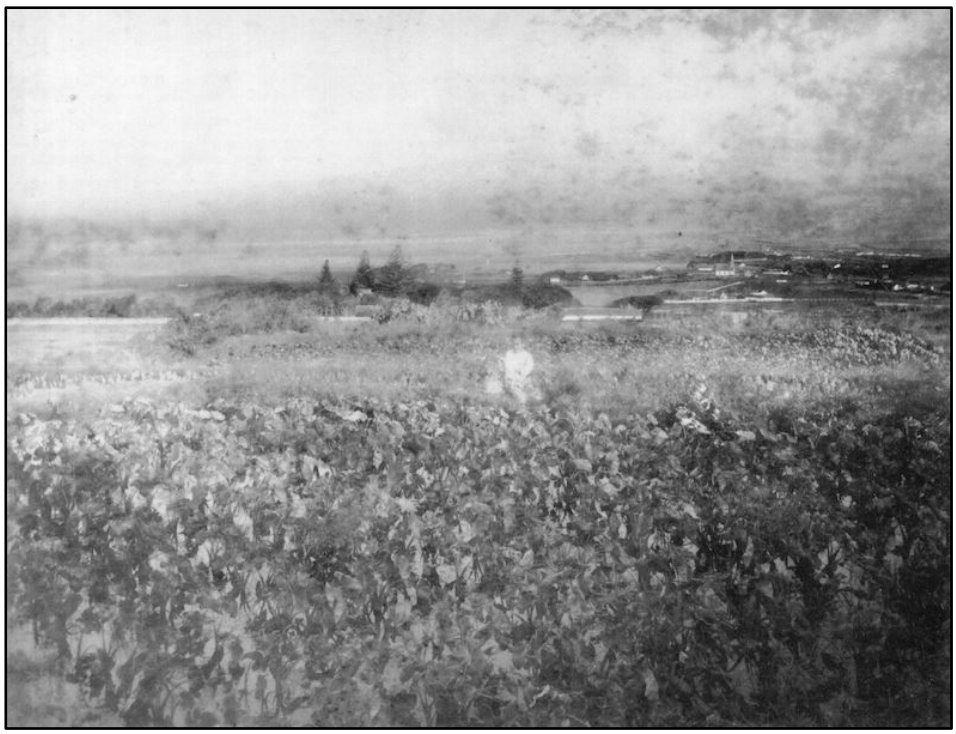


Figure 9. Historical photograph of the Plains of Kama‘oma‘o (background) as viewed from the vegetated alluvial slopes of Waikapū Valley (Waikapu Community Association 2018)

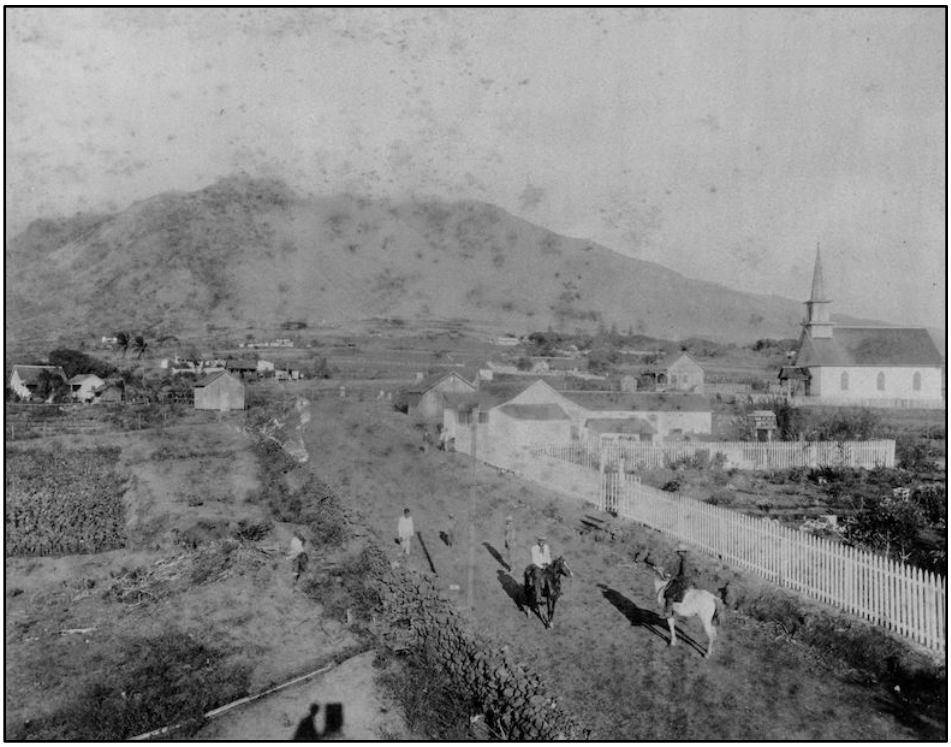


Figure 10. Historic photograph of Waikapū Congregational Church, Waiko Road, and the surrounding community (Waikapu Community Association 2018)

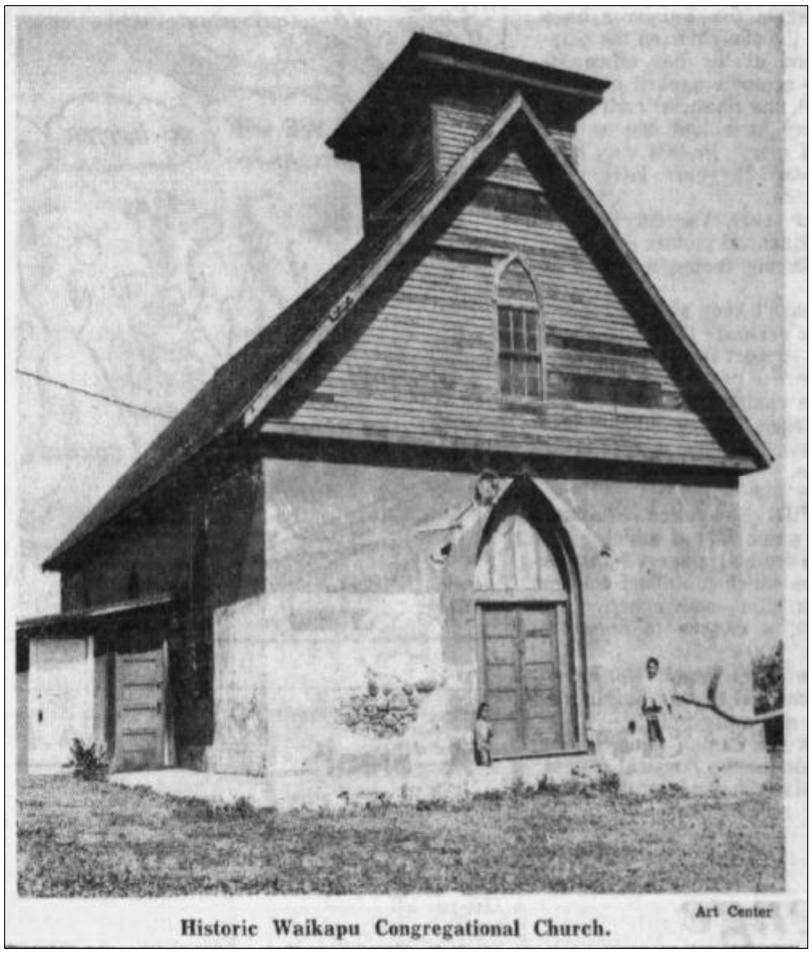


Figure 11. Waikapū Congregational Church after having its steeple removed during World War II (Waikapu Community Association 2018)

voted to merge with the Kahului Church, and the Waikapū Congregational Church was abandoned to the sugarcane fields that surround it (Head 1960).

3.2.4.2 Development of Commercial Sugar in Waikapū

Henry Cornwell arrived on Maui from New York and started the Waikapu Sugar Company with James Louzada (his brother-in law) in 1864. The two partners constructed a steam-powered sugar mill situated on a 17-acre parcel that had been part of Land Grant 2951; land originally purchased by Henry Cornwell and J. Louzada in Waikapū (Wilcox 1996:61) (Figure 12 and Figure 13).

In 1876, Henry Cornwell retired and the remaining plantation lands were sold to the new partners Colonel William H. Cornwell (Figure 14) and Colonel G.W. Macfarlane (*Honolulu Advertiser* 1903:8). Henry Cornwell, originally born on Long Island in 1815, died in Waikapū in 1886 and was buried at Nu‘uanu Valley Cemetery on O‘ahu (*Honolulu Advertiser* 1886:3).

During his time at the head of the Waikapū plantation, Col. William H. Cornwell nourished a healthy relationship with Hawaiian royalty. As a close friend of King Kalākaua and Queen Regent Lili‘uokalani, Col. Cornwell hosted events for the monarchs on his Maui properties, including celebrations for Kalākaua’s birthday that entailed festivities and horse races (*Evening Bulletin* 1888:3) (Figure 15). Kalākaua’s annual celebrations on November 16 would be remembered well into the early twentieth century for the excitement of the horse races and the occasional after-race polo match (*Honolulu Advertiser* 1916). Col. Cornwell also was appointed a member of the king’s staff in the Revolution of 1887, elected to a four-year term as a member in the House of Nobles in 1890, and served a very short stint as the Minister of Finance in the cabinet of Queen Regent Lili‘uokalani (*Honolulu Advertiser* 1903:8).

In 1878, Claus Spreckels bought an undivided interest in 12,000 acres of the Waikapū Commons from W.H. Cornwell and leased an additional 24,000 acres of adjacent Wailuku Commons crown lands from the government (Wilcox 1996:61). These lands would form a large portion of Hawaiian Commercial and Sugar Company (HC&S). The economic boom resulting from the passage of the Reciprocity Treaty in 1876 encouraged sugar baron Spreckels and other Hawaiian sugar planters to invest heavily in capital improvements such as irrigation systems, mills, and railroads. The reciprocity agreement with the United States brought down the heavy cost of high tariffs on sugar.

Most of the Waikapu Commons and across the isthmus was covered with sugarcane by the mid-nineteenth century. Waikapu Sugar Company operated from 1862 to 1894, when it was purchased and incorporated into the holdings of Wailuku Sugar Company (Kaukali and Subica 2010).

3.2.4.3 Organization of the Wailuku Sugar Company

A Chinese planter, Hungtai, is reputed to have operated the first sugar mill at Wailuku in 1823. As early as 1840, the first sugar venture organized by the Kingdom of Hawai‘i was begun by Kamehameha III (Kauikeaouli), at Wailuku (Moffat and Fitzpatrick 2004:54). The king’s Wailuku plantation and mill were described by the Protestant missionary, Richard Armstrong, in these terms:



Figure 12. Waikapu Sugar Mill (Maui Historical Society, n.d.)



Figure 13. Waikapu Sugar Company mill, ca. 1890 (Waikapu Community Association 2018)



Figure 14. Colonel William H. Cornwell in the garb of the Hawaiian Royal Court (unknown photographer 1893)

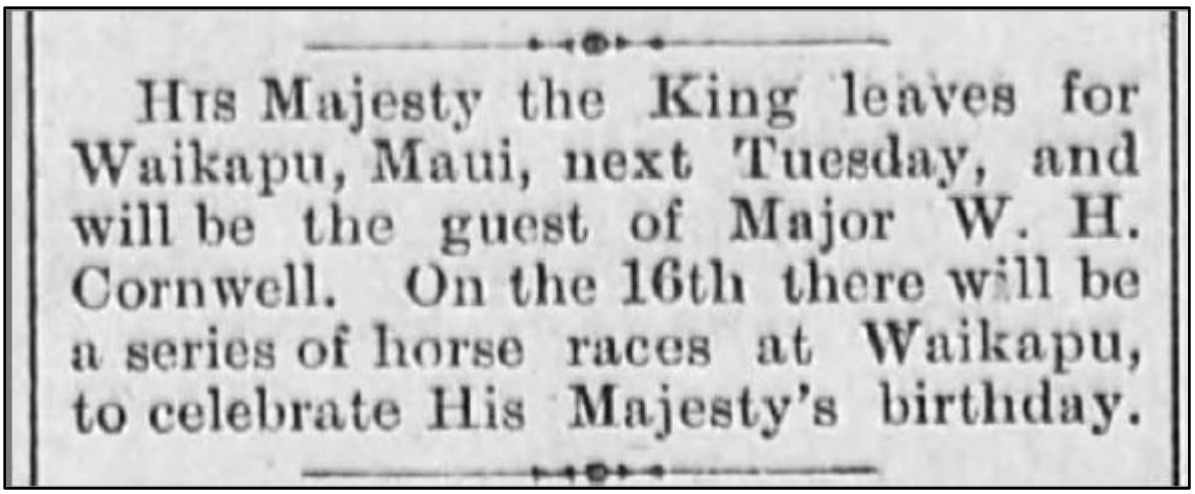

His Majesty the King leaves for Waikapu, Maui, next Tuesday, and will be the guest of Major W. H. Cornwell. On the 16th there will be a series of horse races at Waikapu, to celebrate His Majesty's birthday.

Figure 15. Newspaper announcement for the arrival of Kalākaua's visit to W.H. Cornwell on Maui for the King's birthday (Evening Bulletin 1888)

> The King has given out small lots of land, from one to two acres, to individuals for the cultivation of cane. When the cane is ripe, the king finds all the apparatus for manufacturing and when manufactured takes the half. Of his half, one fifth is regarded as the tax due to the aupuni (Hawaii Department of Survey) & the remaining four fifths is his compensation for the manufacture. These cane cultivators are released from all other demands of every description on the part of the chiefs [from Hawaiian Mission Children’s Society Wailuku Station Report 1839]. [MacLennan 1997:33]

The modern plantation framework for the Wailuku Sugar Company began in the 1850s by the Protestant missionary Edward Bailey and one of his sons. Their early water-run mill was eventually merged with sugar cultivation performed by Bal and Adams. These pioneer sugar partners later began the Wailuku Sugar Company. In 1862, the partners of the Wailuku Sugar Company grew to include James Robinson & Company, Thomas Cummins, and J. Fuller (Wilcox 1996:122). In 1863, Charles Brewer became a major partner in the operation of the Wailuku Sugar Company. By 1867, the Wailuku Sugar Company had 2,250 acres planted in cane. The Wailuku Sugar Company incorporated in 1875 and began to become profitable. In 1877, the Baileys were bought out (Nellist 1925:70).

3.2.4.4 The Waikapu Division of the Wailuku Sugar Company

The Waikapū sugar lands became a part of the Wailuku Sugar Company in 1894. Beginning in 1880, the Waikapū plantation lands began to be merged with those of the Wailuku and Waihe‘e plantations. During the 1880s, F.L. Hoogs was named the head overseer of the Waikapu Division of the Wailuku Sugar Company. In 1887, American sugar growers revolted against the Hawaiian Monarchy and demanded a more liberal Constitution, which was granted, under duress, by Kalākaua. In 1905, a new sugar mill was constructed in Wailuku to accommodate the sugar brought in from the new outlying plantations, including Waikapū (Kaukali and Subica 2010:98).

The economic progress of the Wailuku Sugar Company required the importation of foreign labor. The increase in the labor population at the plantations required larger laborer camps. In the 1880s, immigrants from South America began to settle in Waikapū. They worked the sugar fields and brought their love of horseracing to the plantation culture of Maui (Kaukali and Subica 2010:98).

By the 1890s, a network of plantation housing camps had been established at the Waikapu Division of the Wailuku Sugar Company. These included Hopoi Camp, located at the Hopoi Reservoir, upland of the Waiale Reservoir; Waikapu Camp, located downslope of the Palolo Ditch and the south side Waikapū Ditch, on the Waikapū Stream; Hyashi Camp, located just west of Waikapu Camp, toward the Pu‘u Hele cinder cone; Kimura Camp, located further west from Hyashi Camp; Pu‘u Hele Camp, located at the base of a cinder cone downslope of the Pohakea Gulch, where today the North Kīhei Road meets the Honoapi‘ilani Highway and the Pu‘u Hele Cemetery. Waikapu Camp, labeled as “Waikapu Village” on a Baldwin (1930) map (Figure 16), expanded into the residentially and commercially developed area now known as Waikapu.

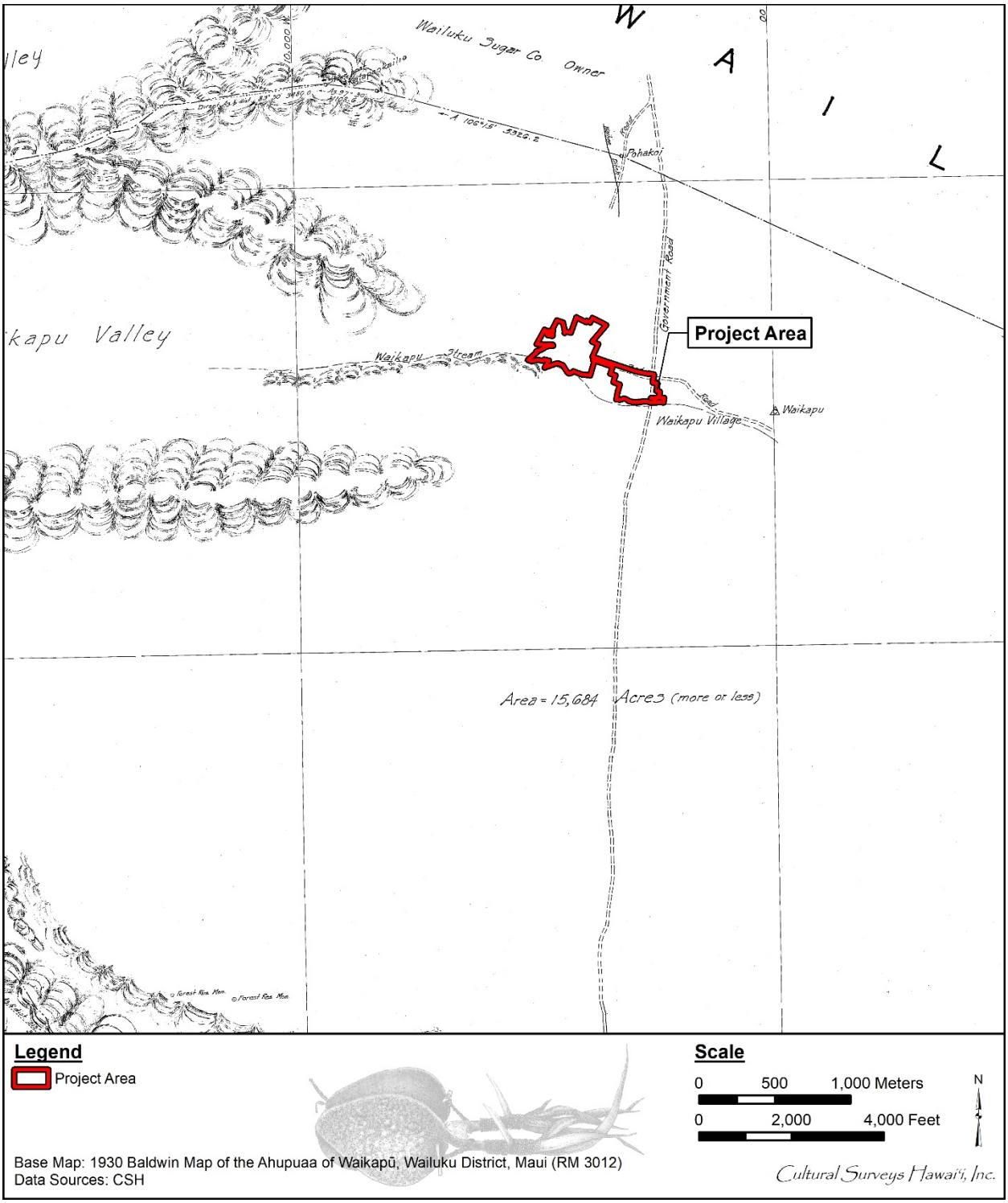


Figure 16. Portion of Baldwin (1930) Waikapū Ahupua‘a map showing “Waikapu Village” (Waikapu Camp) in the vicinity of the project area

The traditional *konohiki* system of water division was evident at the Waikapu Division of the Wailuku Sugar Company. In an 1896 lawsuit (Cornwell v. Wailuku Sugar Company), testimony was entered regarding the destruction of traditional *kuāuna* (embankments of taro patches). This testimony established that, along with the growing of cane in the region, the traditional farming of taro had continued based on the customary rights of landowners under the old Hawaiian tenure. The Wailuku Sugar Company brought the action to stop traditional landowners from diverting irrigation water for raising taro (Hawaii Supreme Court 1896).

In 1959, the Wailuku Sugar Company constructed a hydroseparator in an area between the Wailuku offices and the mill location. While this invention aided the water consumption of the plantation, it also allowed the plantation to collect the solid debris that accumulated in the irrigation system canals. Previously all the accumulated solids from the system had been dumped into the Wailuku River, and by extension, the ocean. This new device utilized an inverted cone-shaped basin that used suction to transport the waterlogged sediment back to fields that needed the soil and nutrients. The hydroseparator installed in Wailuku, and the "settlings" extracted from the system, were used to build up the soils in the sandy sediments of Waikapū fields (Coll 1954:12). The Wailuku Sugar Company would also fund the construction of the first traffic signal on the Island of Maui, located at the intersection of Waikapū Road and an unnamed plantation dirt road, to handle the increasingly heavy traffic on Waikapū Road and allow the cane hauling trucks to avoid the customary routes that took them through Wailuku Town (*Honolulu Advertiser* 1949:17).

3.2.4.5 Hawaiian Commercial and Sugar in the Central Isthmus

The success of sugar grown in the region resulted in a second large plantation, in Waihe‘e, producing over 757 tons of sugar and 45,000 gallons of molasses in 1865. The Waihe‘e mill manager was Samuel T. Alexander, and the mill's head foreman was Henry P. Baldwin, both of whom would resign in the late 1860s to establish a small sugar enterprise of their own in upper Pā‘ia (Gilmore 1936).

In 1869, on land located directly west of Pā‘ia, a small *kuleana* of 11.94 acres was purchased by S.T. Alexander and his business partner H.P. Baldwin, both descended from Lāhainā missionary families, who were eager to apply their agricultural experience to their own plantation. This initial land purchase was the beginning of the development of the entire central isthmus for sugar cultivation. In rapid succession, Alexander & Baldwin expanded its operations by purchasing other small *kuleana*, setting up a mill, and attracting more investment capital (Dean 1950).

In 1876, a treaty signed between the Kingdom of Hawai‘i and the United States, the Reciprocity Treaty, opened larger and more lucrative markets for Hawaiian sugar. Plans were immediately drawn up by Alexander & Baldwin to finance a ditch to bring water from the Hāna region of East Maui to the arid plains of Pā‘ia. The Kingdom of Hawai‘i issued a lease for the construction right-of-way, and in 1879, the successful venture delivered millions of gallons of water to the central isthmus via the Hamakua Ditch (Wilcox 1996).

Competition was supplied by Claus Spreckels who engineered a similar irrigation ditch from Honomanū in East Maui to lands located just inland of Kahului, where the Spreckelsville Mill and plantation camp were built. Spreckels invested three million dollars in the Hawaiian Commercial

& Sugar Company, and competed for sugar lands, wharf and warehouse space, railway lines, and shipping schedules with Alexander & Baldwin (Dorrance and Morgan 2000).

In 1882, Spreckels, following his success in building the Honomanu Ditch linking East Maui water sources with his sugar fields in the central isthmus, further capitalized on that success to engineer the Waihe‘e Ditch (also named the Spreckels Ditch) in West Maui. The 15-mile-long ditch started at the 435-foot elevation of Waihe‘e Stream, and carried 60 million gallons of water (per 24-hour day) to the Wai‘ale Reservoir at the 214-foot elevation of Wailuku. Spreckels became the first plantation owner to irrigate his fields by water from both Haleakalā and the West Maui mountains (Wilcox 1996). By 1888, the Spreckels’ plantation covered 28,000 acres, making it the largest sugar plantation in the world. Financial pressures forced Spreckels to give up control of Hawaiian Commercial & Sugar Company (HC&S) to Alexander & Baldwin in 1898 after a long and fierce battle (Dean 1950). An 1885 Dodge map of Maui shows early encroachment of HC&S cultivation lands into the Waikapū area (Grant 3343) and a 1924 Maalaea USGS map shows the extent of HC&S sugar lands and the associated sugar plantation infrastructure, such as irrigation ditches and labor camps, in the vicinity of the project area (Figure 17 and Figure 18).

In 1899, HC&S determined that cultivating the Pu‘unēnē plains required far more water than the original Hamakua Ditch could provide. The Lowrie Ditch project, completed in 1900, was undertaken to provide an additional source of water to the central Maui plains. The ditch began at the Pāpa‘a‘ea Reservoir, at 1,000 ft elevation, and maintained 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. The Halehaku Gulch, at 250 ft deep, and the 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 (Thrum 1900).

3.2.5 1900s

In 1912, HC&S began to modernize the existing plantation camps. Between a huge influx of immigrant workers in 1909, and the burning of village areas of Pā‘ia and Kahului to control smallpox in 1910, changes to the camp system were in full swing. The plantation workforce continued to expand until 1917, when the U.S. declared war on Germany, and the accompanying draft seriously depleted the labor pool. By 1919, postwar requirements for sugar had driven the price to an all-time high of $471.40 per ton (Burns 1991). The post-World War I years saw the sugar industry, and companies like HC&S, add electricity to some villages. HC&S completed the Waikapū well (Well 7) in 1926; one of the largest deep wells in the world. The additional capacity of 40 million gallons per day (mgd) provided by this well was instrumental in planning more sugar and industry within Maui’s central plains (Stearns and MacDonald 1942:216).

On 11 November 1929, Inter-Island Airways, Ltd. began flying regularly scheduled flights between the Hawaiian Islands. Amphibious eight-passenger Sikorsky S-38 aircraft landed at Mā‘alaea Bay, taxied up a concrete ramp, and delivered passengers to waiting automobiles for the trip through Waikapū to Wailuku, and points beyond (Saito, personal communication, 2009). By 1936, the airline had purchased three new 16-passenger Sikorsky S-43 aircraft to supplement their four S-38s (Kennedy 1937). With air travel between islands increasing, plans were put underway to build a land-based air strip at Pu‘unēnē in neighboring Pūlehu Nui Ahupua‘a to the southeast in lieu of the smaller airport located at Mā‘alaea Harbor.

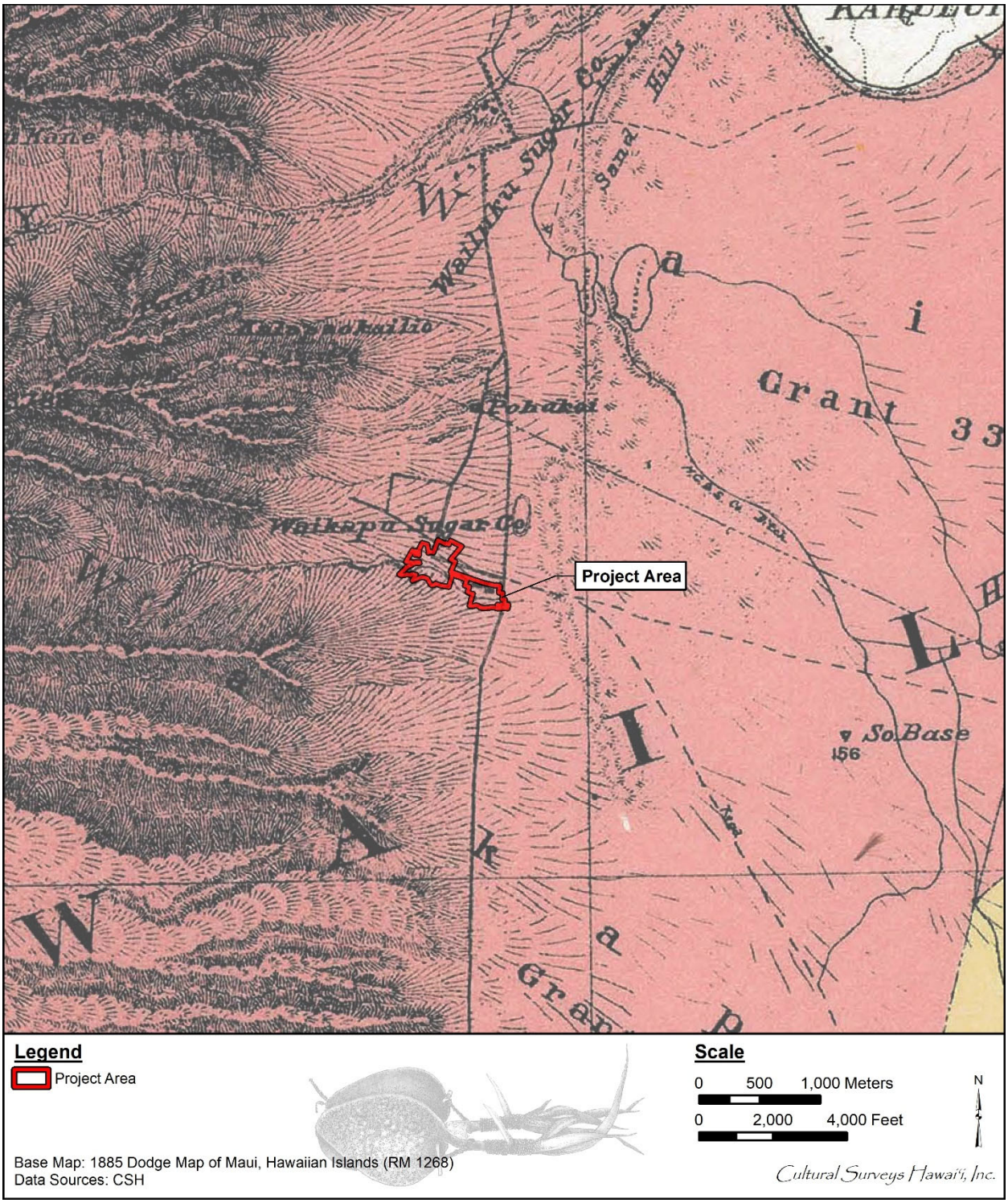


Figure 17. Portion of the Dodge (1885) map showing the current project area surrounded by sugar cultivation from both HC&S and Cornwell’s Waikapū plantation

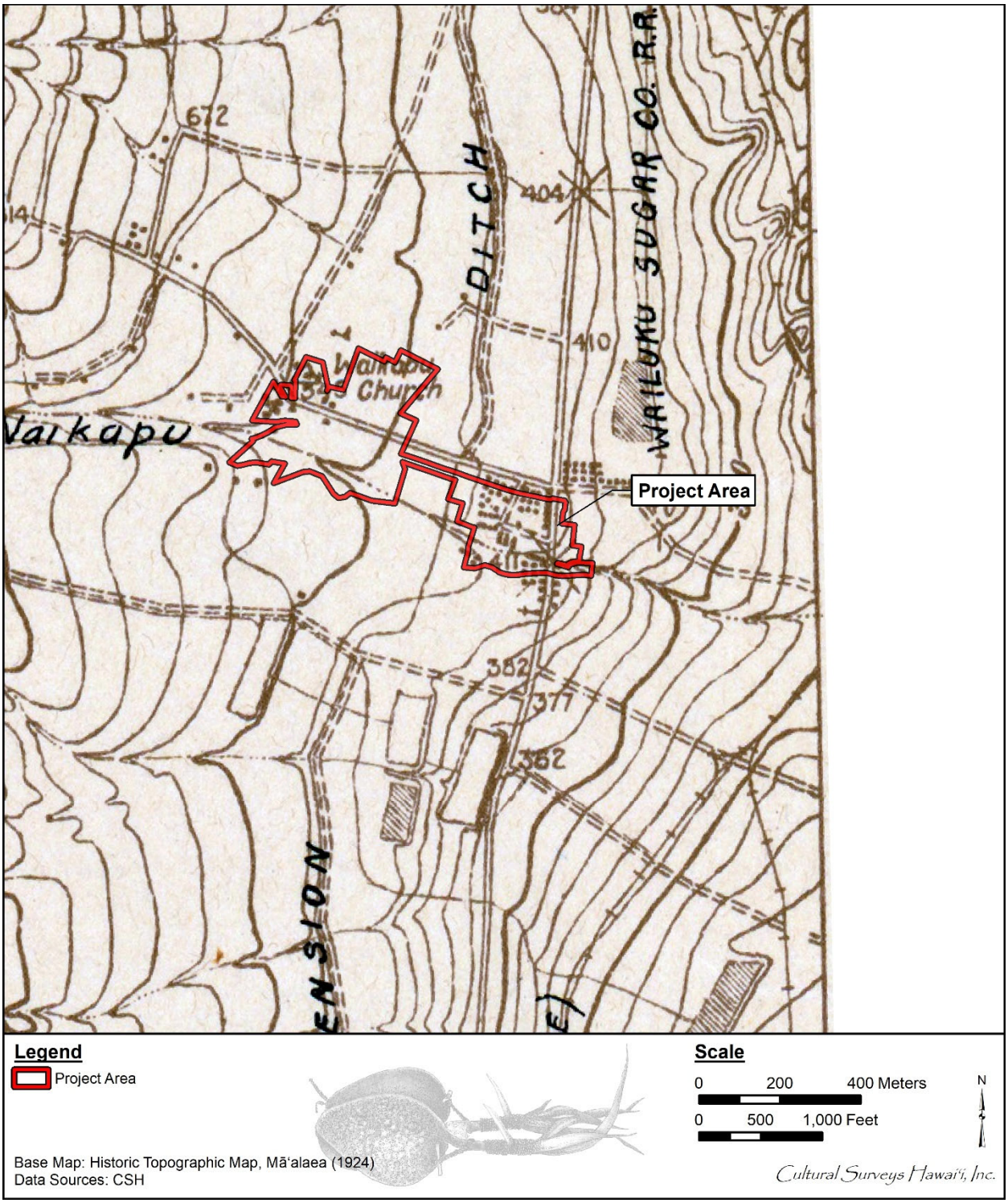


Figure 18. Portion of the 1924 Mā‘alaea USGS topographic quadrangle map showing the current project area and HC&S ditches, roads, and labor camps in the vicinity

In addition to sugarcane cultivation, much of the lands of Waikapū in the mid-twentieth century were also tied-up in pastural endeavors. In 1952, over 7,000 acres of land along the base of the West Maui Mountains, spanning from Waikapū to Ukumehame, were sold at auction in two leases (15- to 21-year lease terms) for $16,582. These land tracts served as hog and cattle pasturage (*Honolulu Star-Bulletin 1952*:5).

3.2.6 Contemporary Land Use

Throughout the twentieth century, much of the lands within and surrounding the current project area remained either under commercial sugarcane cultivation or continued being utilized pastorally (see Figure 16 through Figure 19).

A USGS (1977) aerial image shows nearly all lands surrounding the current project area under commercial sugarcane cultivation (Figure 20). In the latter half of the 1900s, residential tracts were constructed along both the Kuihelani Highway and Honoapi‘ilani Highway corridors that traverse Waikapū. Complementing the residential are light industrial parcels, grocery stores, and business developments on the outskirts of Waikapū sugar fields. Figure 20 shows residential, commercial, and light industrial development in the vicinity of the project area in 1977. Additional residential and commercial development is currently taking place in various areas, mostly north, of the current project area (Figure 21).

C. Brewer & Company, focusing on diversified agriculture and tourism, established the Maui Tropical Plantation in 1983 (Waikapu Country Town 2019). Today, the Maui Tropical Plantation includes several agricultural plots, the Mill House Restaurant, two zipline courses (Maui Zipline and Flyin Hawaiian Zipline), a plantation store and other retail outlets, Kumu Farms stand, and the Mill House Roasting Company (Maui Tropical Plantation 2019). Various Hawaiian tropical plants landscape the grounds that also incorporate former sugarcane mill equipment. Kumu Farms sells the harvest from more than 60 acres of plantation property planted with over 35 crops, including numerous herbs, papaya, bananas, avocado, guava, pineapple, mango, eggplant, green beans, salad greens, corn, carrots, and macadamia nut (Maui Tropical Plantation 2019). Texas Longhorn cattle, introduced in the 2000s, graze the hillside beyond the crops cultivated at the plantation. Daily tours transport visitors around the plantation and a lagoon on the property. Maui Tropical Plantation is located south of the current project area.

3.3 Historic Properties in the Vicinity of the Project Area

A discussion of previously identified archaeological resources in the project area vicinity is included in this CIA to inform understandings of land and local communities from the initial Hawaiian discovery and settlement of the islands through the historic era, and to provide additional context for the historic documentation, traditional cultural practices, and oral histories associated with the project area and vicinity.

Two historic properties, Waikapū Protestant Church (SIHP # -01605) (National Register of Historic Places 1990) and a portion of Waihe‘e Ditch (SIHP # -05197) (Wilson and Dega 2005; Guerriero et al. 2017), are located within the project area. No *heiau* were documented in the immediate vicinity of the current project area. Historic properties in the vicinity of the current project area have been identified along the stream valleys to the north and south and primarily include historic agricultural complexes and associated habitation areas, cultural deposits, historic buildings and pre-Contact burial sites (Figure 22, Table 2, and Table 3).

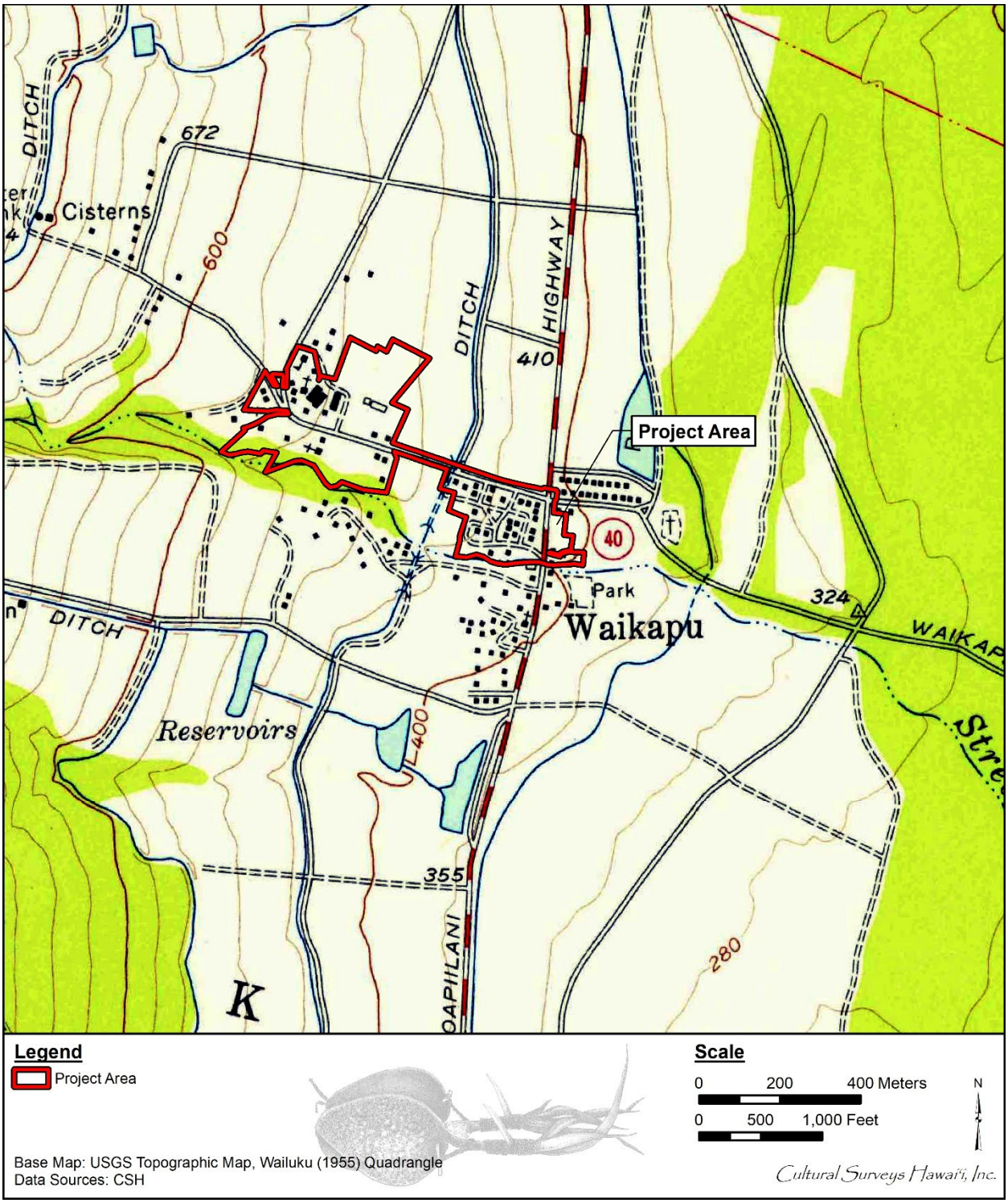


Figure 19. Portion of the 1955 Wailuku USGS 7.5-minute topographic quadrangle showing the project area and surrounding ditches and roads

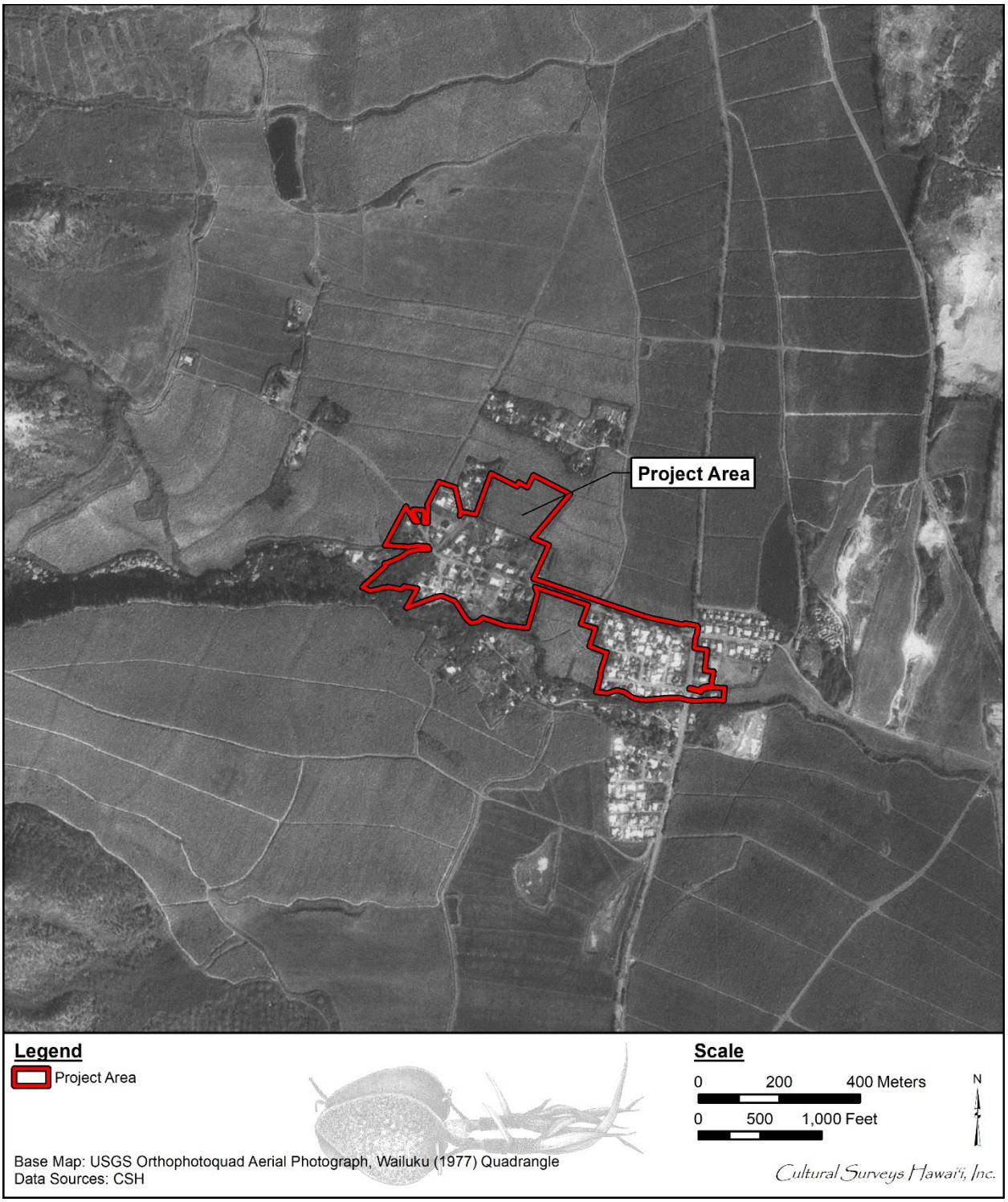


Figure 20. 1977 Wailuku USGS orthophoto quad showing the extent of sugar cultivation around the current project area in the latter half of the twentieth century

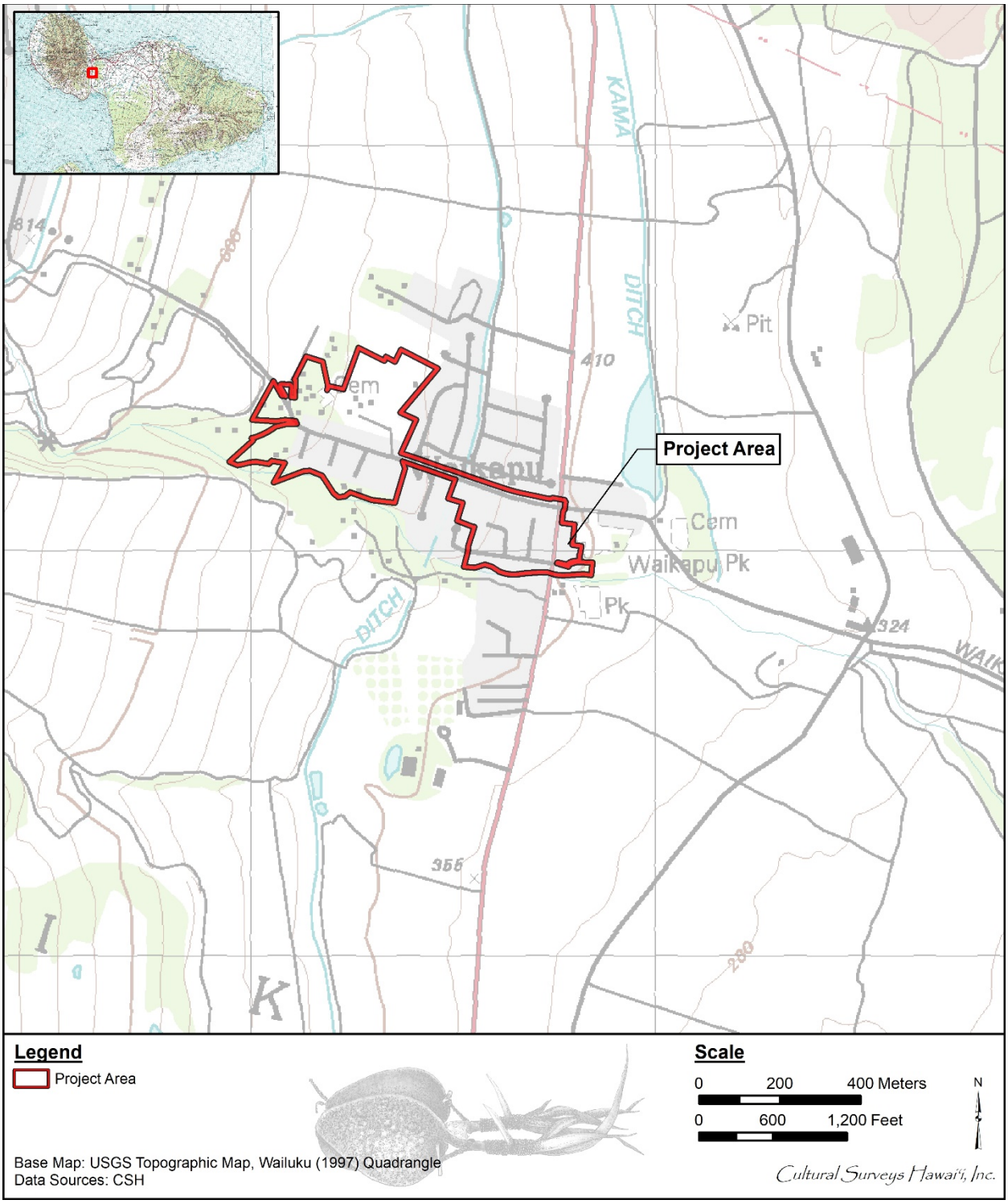


Figure 21. Portion of the 1997 Wailuku USGS topographic quadrangle showing the current project area and peripheral light industrial, commercial, and residential development

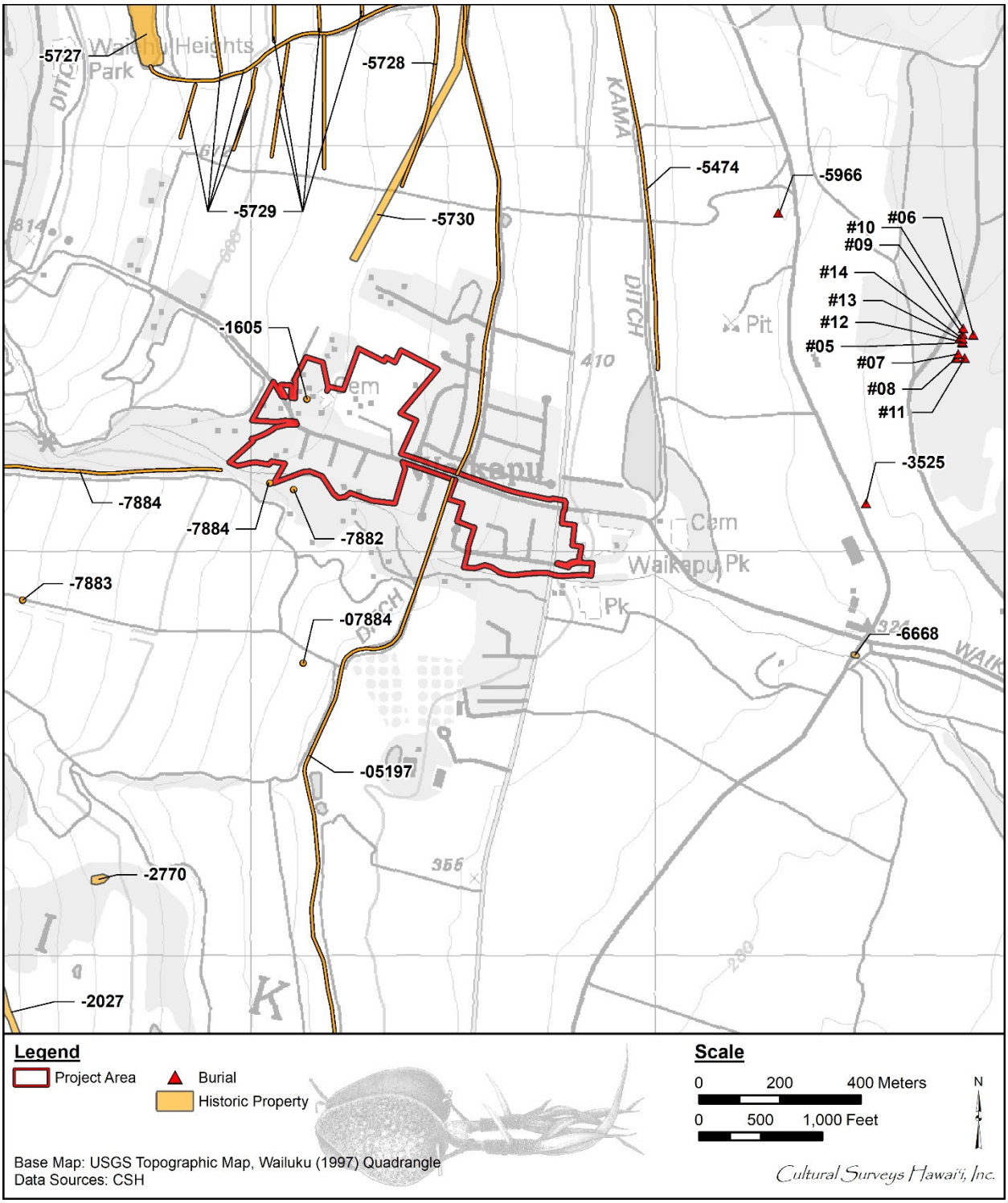


Figure 22. Portion of the 1997 Wailuku USGS 7.5-minute topographic quadrangle showing previously documented historic properties in the vicinity of the project area

Table 2. Archaeological Historic Properties in the Project Area Vicinity

SIHP # 50-50-04-	Type	Description	Reference
Sites 05, 06, 07, 08, 09, 10, 11, 12, 13, 14	Burials	Monitoring of ground disturbing activities associated with the removal of sand for construction aggregate uses documented two human burials, Features 1B and 2B, which were left *in situ*. An additional 40 human burials within 30 discrete features, Features 1A through 30A, were also documented.	Rotunno-Hazuka and Pantaleo (2004)
-02027	Complex	A large enclosure with a large terrace, small terrace, and small cupboard; several associated historic wine bottles indicate historic use, though not necessarily historic construction. Previously identified by Haun (1989)	Brisbin et al. (1991)
-02770	Enclosure	Remnant enclosure	Kennedy (1991)
-03525	Burial preserve	At least 22 individuals and associated artifacts disturbed from the sand mine were reinterred	Fredericksen and Fredericksen (1996)
-05197	Ditch	Waihe‘e Ditch	Wilson and Dega (2005); Guerriero et al. (2017)
-05474	Ditch and reservoir	Previously identified Kama Ditch and associated Reservoir No. 6	Fredericksen and Fredericksen (2004)
-05727	Reservoir	Large active and maintained rectangular reservoir	Wilson and Dega (2005)
-05728	Berms	14 erosion control berms, all extending parallel to one another in a cross-slope orientation	Wilson and Dega (2005)
-05729	Irrigation ditch	Stone and mortar irrigation ditch, possibly representing a recently widened former irrigation ditch	Wilson and Dega (2005)

-05730	Historic road	945 m portion of the alignment of Old Waikapū Road	Wilson and Dega (2005)
-05966	Burials	“Isolated human remains” were “identified in an area of previously disturbed fill soils likely associated with the initial construction of the manhole and sewer main along Waiale Rd” (Morawski et al. 2006).	Morawski et al. (2006)
-06668	Terrace	Historic boulder terrace on southern bank of Waikapū Stream. The terrace was interpreted as functioning for either water diversion or as a former footbridge footing. SIHP # -06668 was assessed as significant per Criterion “d” (have yielded, or have the potential to yield significant information to the history of the area) of the Hawai‘i State Register	Perzinski and Dega (2010); Yucha et al. (2022)
-07884	Historic cultural deposits	Three discrete scatters (Features 1–3) of historic materials including ceramic sherds and glass bottle fragments. SIHP # -07884 was assessed as significant under Criterion “d”	Guerriero et al. (2017)

Table 3. Architectural Historic Properties in the Project Area Vicinity

SIHP # 50-50-04-	Type	Description	Reference
-01605	Waikapū Protestant Church	"The Waikapu Protestant Church is architecturally significant as an example of a nineteenth century stone church on Maui. […] This church is typical of its period in having been constructed of local materials, including lava rock, coral mortar, and koa wood, by Hawaiians under the supervision of a missionary. […] The church is of exceptional interest in that it features Gothic windows with sandstone frames. This is the only known use of this form in mid-nineteenth century stone churches in Hawaii. […] The church is also significant for its associations with the missionary efforts in Hawaii during the nineteenth century, and with its associations with the social history of Waikapu. For many years the church was the religious and social center of this area." (National Register of Historic Places 1990)	National Register of Historic Places 1990
-07883	Military bunker	World War II bunker. SIHP # -07883 was assessed as significant under Criterion D, since "they have yielded, or have the potential to yield significant information to the history of the area;" SIHP # -07883 (bunker) was additionally assessed with significance Criterion C for having "a distinct method or style of construction during a certain era" (Guerriero et al. 2017:2). Guerriero et al. (2017) recommended preservation in	Guerriero et al. (2017)

		place for SIHP # -07883 (bunker); alternatively, recommendation was presented for replacement of SIHP # -07883 with an interpretative commemorative plaque if preservation is not viable.	

A total of 24 historic properties are located in the project area vicinity. These include post-Contact agricultural sites, habitation sites, a historic road, cemeteries/burials, a historic church, and a military bunker. SIHP # -01605 (Waikapū Protestant Church) and SIHP # -05197 (a portion of Waihe‘e Ditch) are located within the project area.

Section 4 Consultation Results

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, in order to identify individuals with cultural expertise and/or knowledge of the *ahupua‘a* of Waikapū. CSH initiated its outreach effort in August 2021 through letters, emails, and telephone calls. CSH completed the community consultation in January 2023.

4.1 Community Outreach Table

Table 4 contains the names, affiliations, dates of contact, and comments from NHOs, individuals, organizations, and agencies that participated in the consultation process. Results are presented below in alphabetical order.

Table 4. Community outreach table

Name	Affiliation	Comments
Apana, Clare	Cultural Practitioner; Malama Kakanilua; Aha Moku Council Burial Committee	Letter and figures sent via email 23 August 2021; Ms. Apana replied via email 23 August 2021 requesting more information regarding project planning and permitting; CSH replied via email 23 August 2021 and provided available information regarding plans and permits and offered to provide information when it becomes available; Ms. Apana replied via email 27 August 2021; Revised project description and figures sent via email 8 August 2022
Fisher, Scott	Chief Conservation Officer, Hawaiian Islands Land Trust (HILT)	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via email 23 August 2021; Dr. Fisher replied via email 23 August 2021; CSH replied via email 23 August 2021; Interview conducted via telephone 2 September 2021; Summary of interview sent via email 1 October 2021; Summary approved 1 October 2021; Revised project description and figures sent via email 8 August 2022; Revised summary approved 22 November 2022; Revised project description and figures sent via email 11 June 2025; Dr. Fisher replied via email 11 and 13 June 2025. He did not have any additional comments.
Hobdy, Robert	Retired Naturalist and Forester	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via USPS 19 October 2021; Mr. Hobdy provided written testimony via email 22 October 2021;

Name	Affiliation	Comments
		CSH replied via email 22 October 2021; Revised project description and figures sent via email 8 August 2022; Written testimony approved 9 August 2022
Kamaunu, Kaniloa	Aha Moku Council Wailuku Representative; Aha Moku Council Burial Committee	Letter and figures sent via email 23 August 2021; Mr. Kamaunu replied via email 10 September 2021; CSH replied via email 10 September 2021; Interview scheduled for 23 September 2021; Interview rescheduled for 27 September 2021; Summary sent for review 1 October 2021; Summary approved 30 November 2021; Revised project description and figures sent via email 8 August 2022; CSH followed up via email 2 November 2022; CSH followed up via email 4 January 2023; Summary approved 15 January 2023; Revised project description and figures sent via email 11 June and 18 July 2025 Mr. Kamanunu replied via email 18 July 2025. He did not have any additional comments.
Kapu, Uilani	Treasurer, Na Aikane o Maui	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via email 23 August 2021; Ms. Kapu replied via email 26 August 2021; recommending reaching out to Noe Ahia and Kaniloa Kamaunu; CSH replied via email 27 August 2021; Revised project description and figures sent via email 8 August 2022
Kuloloio, Manuel	Makuakāne, Kuloloi‘a Lineage I ke Kai ‘o Kuloloi‘a	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via email 23 August 2021; Mr. Kuloloio replied via email 2 September 2021 and stated that his “ancestor Kuloloi’a (Wahine) farmed the Waikapu Lo’i Kalo of Abner Paki and Konia upstream from your Project Area.” CSH replied via email 2 September 2021; Revised project description and figures sent via email 8 August 2022
Nakahashi, Ikaika	Cultural Historian, SHPD	Letter and figures sent via email 23 August 2021; Letter and figures sent via email 20 October 2021; Mr. Nakahashi replied via email 10 November 2021 and recommended utilizing the media to solicit information and to consult with Ke‘eaumoku Kapu and Hoku‘ao Pellegrino. CSH replied via email 10 November 2021;

Name	Affiliation	Comments
		Letter and figures sent to Mr. Kapu and Mr. Pellegrino via email 23 August and 20 October 2021; Revised project description and figures sent via email 8 August 2022; Mr. Nakahashi replied via email 12 August 2022 and recommended utilizing the media to solicit information and to consult with Ke‘eaumoku Kapu and Hoku‘ao Pellegrino; CSH replied via email 12 August 2022
Pridemore, Jill	Director, Alexander and Baldwin Sugar Museum	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via email 23 August 2021; Ms. Holly Buland replied 25 August 2021 suggesting reaching out to Waikapū Community Association, Avery Chumbley, or Mike Atherton. Also suggested reviewing studies conducted in the vicinity; CSH replied via email 25 August 2021; Revised project description and figures sent via email 8 August 2022
Raymond, Ki‘ope	Hawaiian Studies Teacher, UH Maui	Letter and figures sent via USPS 19 August 2021; Letter and figures sent via email 23 August 2021; Letter and figures sent via email 20 October 2021; Mr. Raymond replied via email 20 October 2021 that he had no comment at this time; CSH replied via email 20 October 2021; Revised project description and figures sent via email 8 August 2022; Mr. Raymond replied via email 8 August 2022 that he had no comment at this time; CSH replied via email 8 August 2022

4.2 *Kama‘āina* Interview Discussions

The authors and researchers of this report extend our deep appreciation to everyone who took the time to speak and share their *mana‘o* and *‘ike* with CSH whether in interviews or brief consultations. We request that if these interviews are used in future documents, the words of contributors be reproduced accurately and in no way altered, and that if large excerpts from interviews are used, report preparers obtain the express written consent of the interviewee/s.

4.2.1 Dr. Scott Fisher

4.2.1.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 3 September 2021, CSH spoke with Dr. Scott Fisher via telephone. Dr. Fisher is the Chief Conservation Officer for the Hawaiian Islands Land Trust (HILT), a 501(c)(3) land conservancy

organization, which represents the combined skill and resources of four island-based organizations: Hawai‘i Island Land Trust, Maui Coastal Land Trust, O‘ahu Land Trust, and Kaua‘i Public Land Trust. Dr. Fisher noted he has no ancestral ties to the area and the information he shared comes from talking with people who have ancestral ties to the area, historical research from available public documents, and his own experiences on his *‘ulu* (breadfruit, *Artocarpus altilis*) farm in Waikapū.

In his interview, Dr. Fisher discussed how the *ahupua‘a* of Waikapū received its name. He described how Waikapū was a very productive area in traditional times. He mentioned that the project area is located next to Waikapū Stream and discussed the types of flora and fauna found in the area.

Dr. Fisher also stated the area has “lots of *iwi kūpuna*” and recommended archaeological monitoring be conducted during construction activities associated with the proposed project, as well as other mitigation measures including digging with a non-toothed backhoe. He also recommended other community members to consult with regarding the project.

4.2.1.2 Individual’s knowledge of traditional cultural practices of the past within the proposed project area and greater *ahupua‘a* (e.g., gathering, agriculture, Hawaiian herbal medicine, marine and freshwater resources)

Dr. Fisher discussed how Waikapū was a very productive area in traditional times. He shared that the project area is located next to Waikapū Stream which is part of the *‘okana* known as “Nā Wai ‘Ehā,” or “The Four Waters.” He mentioned that Nā Wai ‘Eha was the “most culturally productive land on Maui.” He also recalled observing waterworn rocks while working on his farm which indicated the alignment of Waikapū Stream had changed over time.

He mentioned that *‘auku‘u* (black-crowned night heron, *Nycticorax nycticorax hoactli*), as well as deer live along Waikapū Stream. He also noted that the *muliwai* (pool near mouth of a stream) of Waikapū Stream is Keālia Pond which is also a habitat for wild birds. Dr. Fisher mentioned that indigenous plants of the area include *olopua* (*Nestegis sandwicensis*), *‘ōhi‘a* (*Metrosideros macropus*), ferns, and grasses. He suggested studying Stephanie Pau’s research on the indigenous plants found at Keālia Pond.

Dr. Fisher stated that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo*, and sugarcane. He shared that the area is covered by an alluvial fan with rich soil that was good for *kalo* production and that there are still remnants of terraces that formerly spanned the whole area up in the valley. He noted that between the 1850s through the 2000s, Waikapū was a “high productivity sugar area.” He recalled hearing that the earliest sugar plantation on Maui was in Waikapū.

Dr. Fisher has a farm in Waikapū where he grows *‘ulu*. He recalled finding “old railroad pins” and evidence of tool production while working on his farm.

4.2.1.3 Legends, stories, or chants associated with the individual’s traditional cultural practices and their relationships to the proposed project area and greater ahupua‘a

Dr. Fisher shared two *mo‘olelo* discussing how the *ahupua‘a* of Waikapū received its name. Both *mo‘olelo* are associated with the *pū* or large triton conch shell. Dr. Fisher stated that the name

Waikapū comes from the sound the wind makes when it blows through Waikapū Valley, which resembles the sound of a *pū* being blown.

The second *mo‘olelo* Dr. Fisher shared regarding the naming of Waikapū is associated with the battle between chief of Hawai‘i, Kalani‘ōpu‘u, and his armies and chief of Maui, Kahekili, and his armies on the plains of Kama‘oma‘o. He stated that Kalani‘ōpu‘u and his armies landed at Kīheipūko‘a, which is located on the "Kīhei side of Keālia Pond," and traveled through Waikapū on their way to Wailuku. As the ‘Ālapa and Pi‘ipi‘i crossed through Waikapū, they were surrounded and slaughtered by the forces of Maui and O‘ahu. Dr. Fisher stated that the Maui army blew the conch shell to signal their attack on the Hawai‘i army. He noted there were only two survivors from the ‘Ālapa and Pi‘ipi‘i after the battle.

Dr. Fisher also noted that cultural descendants of slain warriors from Hawai‘i who were among the ‘Ālapa and Pi‘ipi‘i have been recognized by the Maui Lāna‘i Islands Burial Council MLIBC).

4.2.1.4 Individual's knowledge of cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

Dr. Fisher stated the area has "lots of *iwi kūpuna*." He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

While working on his farm, he discovered that beneath a 9-to-12-inch layer of alluvial dirt is sand. He explained that during the late Pleistocene period, about 20,000 years ago, water levels dropped and sand blew in forming sand dunes. He added that around 12,000 years ago, during the Holocene period, the sand dunes were covered by sediments brought in by floods. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*.

4.2.1.5 Individual's comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater ahupua‘a

Dr. Fisher strongly recommends archaeological monitoring be conducted during construction activities associated with the proposed project. He also recommends project proponents perform other mitigation measures including digging with a non-toothed backhoe.

4.2.2 Kaniloa Kamaunu

4.2.2.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 27 September 2021, CSH spoke with Kaniloa Kamaunu, a representative of Aha Moku ‘O Wailuku (AMOW), an affiliate of Aha Moku ‘O Maui LLC, via telephone to discuss his concerns regarding the Waiko Road Subdivision Sewer System project and potential impacts to Waikapū Stream and *iwi kūpuna* which may be encountered during construction activities along the roadways within the project area.

4.2.2.2 Individual's knowledge of traditional cultural practices of the past within the proposed project area and greater *ahupua‘a* (e.g., gathering, agriculture, Hawaiian herbal medicine, marine and freshwater resources)

Mr. Kamaunu pointed out that the project area is located near Waikapū Stream. He noted that water from Waikapū Stream and the groundwater beneath Waikapū is used for drinking and irrigation.

4.2.2.3 Individual's comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū. He asked how far would the proposed sewer lines be from the stream? He also asked what kind of mitigation will be done to assure that surface and ground water will not be contaminated in the case of a broken sewer line? He also asked what will the process be to address potential impacts to surface and ground water resulting from a sewer line bursting?

4.2.2.4 Individual's knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu also expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface. He noted that the "nature of the area" is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

4.2.2.5 Individual's comments or thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu recommended that an archaeological inventory survey (AIS) be conducted to describe the area and to discuss the possibilities of encountering *iwi kūpuna* during ground disturbance activities associated with the proposed project. He also asked what are the mitigation measures planned if there is a disturbance to *iwi kūpuna*?

In a follow-up email, Mr. Kamaunu emphasized,

> The comments I've made are not to be regarded as AMOW is in anyway or form in favor of the project. As my comments reflected this area is highly sensitive and because the stream and iwi kupuna could be potentially desecrated or injured by the project neither I nor AMOW are in favor of this project.

4.2.3 Robert Hobdy

4.2.3.1 Interview synthesis (biographical data, broad discussion of interview topics covered and insights offered)

On 22 October 2021, Robert Hobdy, retired naturalist, and forester, provided Cultural Surveys Hawai‘i with written testimony via email regarding the history and land use of the project area.

4.2.3.2 Individual's knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and greater *ahupua‘a*

Mr. Hobdy stated that the project area "has been a residential community for over 50 years." He noted, "This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream." He pointed out that there were "[a]t least 18 ‘ili [land division smaller than an *ahupua‘a*] (‘ili kalo or ‘ili mo‘o) clustered around the stream here and above this project area." Mr. Hobdy clarified that, "The term ‘ili kalo describes or connotes wetland grown kalo (taro, *Colocasia esculenta*) in contrast with dryland kalo or other crops. The term ‘ili mo‘o is descriptive of how the water flows from lo‘i (irrigated taro patch) to lo‘i like the thread connecting a string of pearls." He also noted, "Each ‘ili was composed of several kuleana [small piece of property, as within an *ahupua‘a*] that were all fed by a single ‘auwai [ditch] fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family."

Mr. Hobdy also stated that the project area is located in four *‘ili* named Wahineomā‘ili, Pilipili, Nohoana and Kuaiwa. He pointed out that "the names and locations of the ‘ili on the north side of Waikapu Stream" are depicted "on the old Territorial tax map (TMK 3-5-04 [that is plat 04])" (See Appendix B; Figure 23). He also noted, "There were more ‘ili on the south side of the stream that show on another tax map."

Mr. Hobdy stated that, "Other than this reference, I do not know of any particular sites or cultural practices associated with this project area."

Section 5 Cultural Practices and Cultural Resources Identified During Consultation as Associated with the Project Area and Waikapū Ahupua‘a

5.1 Subsistence and Settlement Patterns

Dr. Fisher stated that the project area is located next to Waikapū Stream which is part of the *‘okana* known as “Nā Wai ‘Ehā,” or “The Four Waters.” He noted that in traditional times Nā Wai ‘Eha was the “most culturally productive land on Maui.” He stated that Waikapū was a very productive area. He shared that the area is covered by an alluvial fan with rich soil that was good for *kalo* production. He noted that there are still remnants of terraces that formerly spanned the whole area up in the valley. He mentioned that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo*, and sugarcane. He also recalled hearing that the earliest sugar plantation on Maui was in Waikapū and noted that between the 1850s through the 2000s, Waikapū was a “high productivity sugar area.”

Dr. Fisher has an *‘ulu* farm in Waikapū. He shared that while working on his farm, he encountered evidence of tool production and “old railroad pins.”

Mr. Hobdy also stated that, “This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream.” He pointed out that there were “[a]t least 18 ‘ili (‘ili kalo or ‘ili mo‘o) clustered around the stream here and above this project area.” Mr. Hobdy clarified that, “The term ‘ili kalo describes or connotes wetland grown kalo in contrast with dryland kalo or other crops. The term ‘ili mo‘o is descriptive of how the water flows from lo‘i (irrigated taro patch) to lo‘i like the thread connecting a string of pearls.” He also noted that, “Each ‘ili was composed of several kuleana that were all fed by a single ‘auwai fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family.”

Mr. Hobdy stated that the project area “has been a residential community for over 50 years.”

5.2 Freshwater Resources

Dr. Fisher mentioned that *‘auku‘u*, as well as deer live along Waikapū Stream. He also noted that the *muliwai* of Waikapū Stream is Keālia Pond which is also a habitat for wild birds. He mentioned that indigenous plants of the area include *olopua*, *‘ōhi‘a*, ferns, and grasses. He suggested studying Stephanie Pau’s research on the indigenous plants found at Keālia Pond. He also recalled observing waterworn rocks while working on his farm which indicated the alignment of Waikapū Stream had changed over time.

Mr. Kamaunu pointed out that the project area is located near Waikapū Stream. He expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū which, he noted, is used for drinking and irrigation.

5.3 *Nā Wahi Pana*

Dr. Fisher shared two *mo‘olelo* discussing how the *ahupua‘a* of Waikapū received its name. Both *mo‘olelo* are associated with the *pū* or large triton conch shell. Dr. Fisher stated that the name

Waikapū comes from the sound the wind makes when it blows through Waikapū Valley, which resembles the sound of a *pū* being blown.

The second *mo‘olelo* is associated with the battle between Kalani‘ōpu‘u, and his armies and chief of Maui, Kahekili, and his armies on the plains of Kama‘oma‘o. He stated that chief of Hawai‘i, Kalani‘ōpu‘u and his armies including the ‘Ālapa and Pi‘ipi‘i landed at Kīheipūko‘a, which is located on the "Kīhei side of Keālia Pond." As the ‘Ālapa and Pi‘ipi‘i crossed through Waikapū on their way to Wailuku, they were surrounded and slaughtered by the forces of Maui and O‘ahu. Dr. Fisher stated that the Maui army blew the conch shell to signal their attack on the Hawai‘i army. He noted there were only two survivors from the ‘Ālapa and Pi‘ipi‘i after the battle. He also noted that cultural descendants of slain warriors from Hawai‘i who were among the ‘Ālapa and Pi‘ipi‘i have been recognized by the MLIBC.

Mr. Hobdy noted that the project area is located in the *‘ili* named Wahineomā‘ili, Pilipili, Nohoana and Kuaiwa.

5.4 Burials

Dr. Fisher stated the area has "lots of *iwi kūpuna*." He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

While working on his farm, Dr. Fisher discovered that beneath a 9-to-12-inch layer of alluvial dirt is sand. He explained that during the late Pleistocene period, about 20,000 years ago, water levels dropped and sand blew in forming sand dunes. He added that around 12,000 years ago, during the Holocene period, the sand dunes were covered by sediments brought in by floods. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*.

Mr. Kamaunu also expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface. He noted that the "nature of the area" is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

Section 6 Summary and Recommendations

6.1 Summary of Cultural Practices and Resources Identified during Background Research and Consultation

6.1.1 Subsistence and Settlement Patterns

Traditionally, Waikapū was agriculturally abundant land. The area was known for its extensive *lo‘i* and sustained a large number of inhabitants.

Dr. Fisher also stated that Waikapū was a very productive area. He noted that the project area is located in the vicinity of Waikapū Stream which is part of "Nā Wai ‘Ehā," or "The Four Waters." Nā Wai ‘Eha consists of Waikapū, Wailuku, Wai‘ehu, and Waihe‘e streams which watered former taro lands that were spread out to the shoreline (Handy et al. 1991:272). E.S. Craighill Handy (1940:107) discussed the productivity of Nā Wai ‘Eha, noting that, "From Waihee to Wailuku Valley, in ancient times, was the largest continuous area of wet taro cultivation in the islands." Dr. Fisher also noted that in traditional times, Nā Wai ‘Ehā was the "most culturally productive land on Maui." He shared that the area is covered by an alluvial fan with rich soil that was good for *kalo* production and pointed out that there are still remnants of terraces that formerly spanned the whole area up in the valley.

Mr. Hobdy also stated, "This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream." Handy et al. (1991) describes Waikapū Stream as land bound, as opposed to emptying into the ocean. Stream water was diverted into the *lo‘i* and the overflow would feed onto the dry plains of the central isthmus and Keālia. Mr. Hobdy pointed out that there were "[a]t least 18 ‘ili (‘ili kalo or ‘ili mo’o) clustered around the stream here and above this project area." Mr. Hobdy clarified that, "The term ‘ili kalo describes or connotes wetland grown kalo (taro, *Colocasia esculenta*) in contrast with dryland kalo or other crops. The term ‘ili mo‘o is descriptive of how the water flows from lo‘i (irrigated taro patch) to lo‘i like the thread connecting a string of pearls." He also noted that, "Each ‘ili was composed of several kuleana that were all fed by a single ‘auwai fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family."

Dr. Fisher mentioned that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo*, and sugarcane. He recalled hearing that the earliest sugar plantation on Maui was in Waikapū and noted that between the 1850s through the 2000s, Waikapū was a "high productivity sugar area." Dr. Fisher also shared that while working on his *‘ulu* farm in Waikapū, he encountered evidence of tool production and "old railroad pins."

Archaeological sites identified in the vicinity of the project area provide evidence that lands of Waikapū Ahupua‘a were utilized for habitation, agricultural endeavors, and burial and ceremonial purposes. Archaeological studies (Haun 1989; Brisbin et al. 1991; Kennedy 1991; Fredericksen and Fredericksen 2004; Wilson and Dega 2005; Perzinski and Dega 2010; Guerriero et al. 2017; Yucha et al. 2022) have identified agricultural complexes and associated habitation sites, historic cultural deposits, a military bunker and pre-Contact burial sites. Historic properties located in the vicinity of the project area include enclosures (SIHP #s -02027 and -02770); historic cultural deposits (SIHP # -07884); agricultural sites such as terraces (SIHP #s

-02027 and -06668) , ditches (SIHP #s -05197, -05474, and -05729), reservoirs (SIHP #s -05474, -05727), and berms (SIHP # -05728); and portions of a historic road (SIHP # -05730). SIHP # -01605 (Waikapū Protestant Church) is located within the project area. According to the National Register of Historic Places (1990):

> The Waikapu Protestant Church is architecturally significant as an example of a nineteenth century stone church on Maui. … This church is typical of its period in having been constructed of local materials, including lava rock, coral mortar, and koa wood, by Hawaiians under the supervision of a missionary. … The church is of exceptional interest in that it features Gothic windows with sandstone frames. This is the only known use of this form in mid-nineteenth century stone churches in Hawaii. … The church is also significant for its associations with the missionary efforts in Hawaii during the nineteenth century, and with its associations with the social history of Waikapu. For many years the church was the religious and social center of this area. [National Register of Historic Places 1990]

A portion of SIHP # -05197 (Waihe‘e Ditch) is also located within the project area.

LCA documents noted that there were 58 *‘ili* in Waikapū (Creed 1993:47). Mr. Hobdy noted that the project area is located in the *‘ili* named Wahineomā‘ili, Pilipili, Nohoana and Kuaiwa. Mr. Hobdy stated that the project area “has been a residential community for over 50 years.”

6.1.2 Freshwater Resources

Dr. Fisher mentioned that *‘auku‘u*, as well as deer live along Waikapū Stream. He also noted that the *muliwai* of Waikapū Stream is Keālia Pond which is also a habitat for wild birds.

The Keālia Pond National Wildlife Refuge was established in 1992. The refuge “encompasses approximately 700 acres and is one of the few natural wetlands remaining in the Hawaiian Islands” (USFWS 2021a). The refuge provides “nesting, feeding and resting habitat” for endangered Hawaiian waterbirds and migratory birds including the *ae‘o* (Hawaiian stilt, *Himantopus mexicanus knudseni*), *‘alae ke‘oke‘o* (Hawaiian coot, *Fulica americana alai*), *koloa maoli* (Hawaiian duck, *Anas wyvilliana*), *‘auku‘u*, *kōlea* (Pacific golden plover, *Pluvialis dominica*), *hunakai* (sanderling, *Calidris alba*), *‘akekeke* (ruddy turnstone, *Arenaria interpres*), *‘ūlili* (wandering tattler, *Heteroscelus incanum*), northern pintail (*Anas acuta*), and northern shoveler (*Spatula clypeata*) (USFWS 2021b). The refuge is also a habitat for Blackburn’s Sphinx Moth (*Manduca blackburni*) which is “Hawai‘i’s largest native insect” found “only on Maui, Kaho‘olawe, and the island of Hawai‘i” (USFWS 2021c). The *‘ōpe‘ape‘a* (Hawaiian hoary bat, *Lasiurus cinereus semotus*) “have been documented near the Refuge and may use the Refuge for foraging areas (wetlands appear to be important foraging areas)” (USFWS 2021d). The endangered *honu ‘ea* (Hawksbill Turtle, *Eretmochelys imbricata*) also nest on the beach adjacent to the refuge (USFWS 2021e).

Dr. Fisher mentioned that indigenous plants of Keālia Pond include *olopua*, *‘ōhi‘a*, ferns, and grasses. He suggested studying Stephanie Pau’s research on the indigenous plants found at Keālia Pond. In *A Dynamic History of Climate Change and Human Impact on the Environment from Keālia Pond, Maui, Hawaiian Islands*, Stephanie Pau, Glen M. MacDonald, and Thomas W. Gillespie also noted the vegetation in the Keālia Pond region currently consists of “primarily *Batis maritima* (pickleweed) with a few isolated individuals of *Prosopis pallida* (*kiawe*) and *Acacia*

farnesiana (*klu*) along the sand dunes to the south. Large sugarcane fields surround the site to the northwest" (Pau et al. 2012:4).

Dr. Fisher also recalled observing waterworn rocks while working on his farm which indicated the alignment of Waikapū Stream had changed over time.

Mr. Kamaunu expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū which, he noted, is used for drinking and irrigation.

6.1.3 *Nā Wahi Pana*

The name Waikapū literally translates to "Water of the Conch" (Pukui et al. 1974:223). According to *mo‘olelo*, a cave within Waikapū Valley was the home of a supernatural conch shell named Kīhapū. When blown, the shell could be heard throughout the Hawaiian Islands (Beckwith 1970:349; Pukui et al. 1974:223). The shell was eventually stolen by a supernatural dog named Puapualenalena (from Section 3.1.1.1)

Dr. Fisher shared two *mo‘olelo* discussing how the *ahupua‘a* of Waikapū received its name. Both *mo‘olelo* are associated with the *pū* or large triton conch shell. The first *mo‘olelo* states that the name Waikapū comes from the sound the wind makes when it blows through Waikapū Valley, which resembles the sound of a *pū* being blown.

The second *mo‘olelo* is associated with the battle between Kalani‘ōpu‘u, and his armies and chief of Maui, Kahekili, and his armies on the plains of Kama‘oma‘o. He stated that chief of Hawai‘i, Kalani‘ōpu‘u and his armies including the ‘Ālapa and Pi‘ipi‘i landed at Kīheipūko‘a, which is located on the "Kīhei side of Keālia Pond." As the ‘Ālapa and Pi‘ipi‘i crossed through Waikapū on their way to Wailuku, they were surrounded and slaughtered by the forces of Maui and O‘ahu. Dr. Fisher stated that the Maui army blew the conch shell to signal their attack on the Hawai‘i army. He noted there were only two survivors from the ‘Ālapa and Pi‘ipi‘i after the battle. Dr. Fisher also noted that cultural descendants of slain warriors from Hawai‘i who were among the ‘Ālapa and Pi‘ipi‘i have been recognized by the MLIBC.

6.1.4 Burials

Waikapū is located at the southern extent of the Maui Sandhills, a geologic sand dune feature that formed during a time when sea level was possibly up to 12 m lower than today. Sand was deposited inland (covering nearly the entire western portion of the central isthmus) by wind action from large beaches that existed on the northern coast of Maui. (Macdonald et al. 1983:388). These dunes partially cover the largest alluvial fan deposit in the area created by Waikapū Stream (Stearns and Macdonald 1942:148).

Dr. Fisher stated the area has "lots of *iwi kūpuna*." He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

Dr. Fisher also mentioned that while working on his farm, he discovered that beneath a 9-to-12-inch layer of alluvial dirt is sand. He explained that during the late Pleistocene period, about 20,000 years ago, water levels dropped, and sand blew in forming sand dunes. He added that around 12,000 years ago, during the Holocene period, the sand dunes were covered by sediments brought in by floods. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*.

Mr. Kamaunu also expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface. He noted that the "nature of the area" is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

Several known burial sites are located in the vicinity of the project area including historic and pre-Contact burials. Archaeological studies (Fredericksen and Fredericksen 1996; Rotunno-Hazuka and Pantaleo 2004; Morawski et al. 2006) have also identified numerous burials (Sites 05, 06, 07, 08, 09, 10, 11, 12, 13, 14; SIHP # -05966) and a burial preserve (SIHP # -03525) in the vicinity of the project area.

6.2 Summary of Community Outreach and *Kama‘āina* Perspectives

6.2.1 Comments/thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu noted that water from Waikapū Stream, as well as ground water below Waikapū are used for drinking and irrigation. He expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water. He asked how far would the proposed sewer lines be from the stream? He also asked what kind of mitigation will be done to assure that surface and ground water will not be contaminated in the case of a broken sewer line? He also asked what will the process be to address potential impacts to surface and ground water resulting from a sewer line bursting?

6.2.2 Comments/thoughts on the potential impacts the proposed project may have on cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

Dr. Fisher and Mr. Kamaunu commented on the potential of encountering *iwi kūpuna* during construction activities associated with the proposed project.

Dr. Fisher stated the area has "lots of *iwi kūpuna*." He mentioned that Waikapū was a popular place for burials. He noted that beneath a 9-to-12-inch layer of alluvial dirt is sand. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*. He also noted there is a historic Japanese cemetery in Waikapū.

Mr. Kamaunu noted that the "nature of the area" is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

Table 5. Past and Present Cultural Resources Associated with the Project Area and Vicinity Identified During Consultation

Consultee	Project Area Affiliation	Past Resource/Type/Area	Present Resource/Type/Area	Concerns/Opinions
Scott Fisher	Chief Conservation Officer, HILT; MLIBC	Agricultural resources		Dr. Fisher also stated that Waikapū was a very productive area. Waikapū Stream is part of Nā Wai ‘Ehā which was the “most culturally productive land on Maui” in traditional times. The area is covered by an alluvial fan with rich soil that was good for *kalo* production and there are still remnants of terraces that formerly spanned the whole area up in the valley. He mentioned that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo*, and sugarcane. He recalled hearing that the earliest sugar plantation on Maui was in Waikapū and noted that between the 1850s through the 2000s, Waikapū was a “high productivity sugar area.”
Scott Fisher	Chief Conservation Officer, HILT; MLIBC		Burial practices	Dr. Fisher stated the area has “lots of *iwi kūpuna*.” He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū. He noted that the area consists of sand dunes were easier to dig through, however, he also pointed out that sand shifts exposing *iwi kūpuna*.

Kaniloa Kamaunu	AMOW		Freshwater resources	Mr. Kamaunu expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū which, he noted, is used for drinking and irrigation.
Kaniloa Kamaunu	AMOW		Burial practices	Mr. Kamaunu noted that the “nature of the area” is sensitive due to the presence of sand dunes which were popular places for burials. He pointed that *iwi kūpuna* have been uncovered “not far down the road” from the project area along East Waiko Road.
Robert Hobdy	Retired naturalist, and forester	Agricultural resources		Mr. Hobdy stated, “This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream.” Mr. Hobdy pointed out that there were “[a]t least 18 ‘ili (‘ili kalo or ‘ili mo’o) clustered around the stream here and above this project area.” He also noted that, “Each ‘ili was composed of several kuleana that were all fed by a single ‘auwai fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family.”

6.3 Assessment of Impacts Posed to Cultural Practices and Cultural Resources

6.3.1 Individual's comments or thoughts on the potential impacts the proposed project may have on ongoing traditional cultural practices and natural resources within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū. He asked how far would the proposed sewer lines be from the stream?

6.3.2 Individual's comments or thoughts on the potential impacts the proposed project may have cultural sites and *wahi pana* within the proposed project area and greater *ahupua‘a*

Mr. Kamaunu expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface.

6.3.3 CSH Assessment of Impacts Posed to Cultural Practices and Cultural Resources, integrating perspectives from consultation, and evidence from background research

The current project area is located in the Waikapū Ahupua‘a, in the *moku* of Wailuku. Waikapū is one of four *ahupua‘a* that traditionally comprise the *‘okana* of Maui known as "Nā Wai ‘Ehā," or "The Four Waters" (Handy et al. 1991:469; Moffat and Fitzpatrick 1995:23). Nā Wai ‘Ehā consisted of four deep-valley streams (Waikapū, Wailuku, Wai‘ehu, and Waihe‘e) that watered four distinct areas of taro land that spread out fanwise to the shoreline (Handy et al. 1991:272). Dr. Fisher and Robert Hobdy also mentioned that Waikapū Stream is part of the Nā Wai ‘Ehā. Dr. Fisher noted that in traditional times Nā Wai ‘Eha was the "most culturally productive land on Maui." Mr. Hobdy stated that there were "[a]t least 18 ‘ili (‘ili kalo or ‘ili mo‘o) clustered around the stream here and above this project area." He also noted that, "Each ‘ili was composed of several kuleana that were all fed by a single ‘auwai fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family."

Handy et al. (1991) describe Waikapū Stream as land bound with the water diverted into *lo‘i* and the overflow dissipating on the dry plains of the central isthmus between West and East Maui (Handy et al. 1991:496) feeding the wetland of Keālia.

Dr. Fisher also noted that the *muliwai* of Waikapū Stream is Keālia Pond. He stated that Keālia Pond is also a habitat for wild birds. Established in 1992, the Keālia Pond National Wildlife Refuge "encompasses approximately 700 acres and is one of the few natural wetlands remaining in the Hawaiian Islands" (USFWS 2021a). The refuge provides "nesting, feeding and resting habitat" for endangered Hawaiian waterbirds and migratory birds including the *ae‘o*, *‘alae ke‘oke‘o*, *koloa maoli*, *‘auku‘u*, *kōlea*, *hunakai*, *‘akekeke*, *‘ūlili*, northern pintail , and northern shoveler (USFWS 2021b). The refuge is also a habitat for Blackburn's Sphinx Moth which is "Hawai‘i's largest native insect" found "only on Maui, Kaho‘olawe, and the island of Hawai‘i" (USFWS 2021c). The *‘ōpe‘ape‘a* "have been documented near the Refuge and may use the Refuge for foraging areas (wetlands appear to be important foraging areas)" (USFWS 2021d). The endangered *honu ‘ea* also nest on the beach adjacent to the refuge (USFWS 2021e).

Dr. Fisher also mentioned that indigenous plants of Keālia Pond include *olopua*, *‘ōhi‘a*, ferns, and grasses. Pau et al. (2012:4) also noted the vegetation in the Keālia Pond region consists of "primarily *Batis maritima* (pickleweed) with a few isolated individuals of *Prosopis pallida* (*kiawe*) and *Acacia farnesiana* (*klu*) along the sand dunes to the south. Large sugarcane fields surround the site to the northwest."

Mr. Kamaunu expressed concern that sewage from broken sewer lines may contaminate Waikapū Stream or the ground water beneath Waikapū which he mentioned are used for drinking and irrigation. Contamination of Waikapū Stream may also potentially impact the ecosystem of Keālia Pond.

In ancient times, Waikapū was an agriculturally abundant land known for its extensive *lo‘i* (Handy et al. 1991:497). Dr. Fisher stated that Waikapū is covered by an alluvial fan with rich soil that was good for *kalo* production. Beyond the alluvial sediments of the stream valley as lower elevations lead into the central isthmus of Maui, the landscape was once dominated by windswept Pleistocene sand dune deposits.

Dr. Fisher noted that beneath a 9-to-12-inch layer of alluvial dirt is sand. He explained that during the late Pleistocene period, about 20,000 years ago, water levels dropped, and sand blew in forming sand dunes. He added that around 12,000 years ago, during the Holocene period, the sand dunes were covered by sediments brought in by floods. He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*.

Mr. Kamaunu noted that the "nature of the area" is sensitive. He pointed out that the area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He noted that the lower sections of the project area appear to be undisturbed, however, he also pointed out that projects in previously disturbed areas have also encountered *iwi kūpuna*. Mr. Kamaunu expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

Dr. Fisher also stated the area has "lots of *iwi kūpuna*." He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

While the project area includes a historic cemetery and the potential for the discovery of *iwi kūpuna*, no unmarked burial sites have been previously documented within the project area (see Section 3.3). Several known burial sites have been identified in the vicinity of the project area including historic and pre-Contact burials. Archaeological studies (Fredericksen and Fredericksen 1996; Rotunno-Hazuka and Pantaleo 2004; Morawski et al. 2006) have also identified numerous burials (Sites 05, 06, 07, 08, 09, 10, 11, 12, 13, 14; SIHP # -05966) and a burial preserve (SIHP # -03525) in the vicinity of the project area.

The current project area is situated within portions of Land Grants 1673, 2107, and 2474 and portions of LCA 2522, 3110, 3296, 3340, and 5228. There are several other LCAs and land grants located in the immediate vicinity. These awards are concentrated within the watershed area of Waikapū Stream, west of the project area and Honoapi‘ilani Highway. Land use associated with these grants and LCAs includes house lots, *lo‘i*, potato, *hala* trees, banana, *kula*, sugarcane, *‘auwai*, reservoir, fish, and livestock (Guerriero et al. 2017).

Dr. Fisher mentioned that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo*, and sugarcane. He recalled hearing that the earliest sugar plantation on Maui was in Waikapū. Antone (Anthony) Catalena is credited with being the founder of the sugar industry in Hawai‘i (Thrum 1874). He also ran a cane syrup factory at Waikapū ca. 1823. Antonio Silva also set up a plantation and a mill in Waikapū ca. 1828 (Thurston 1906).

Dr. Fisher noted that between the 1850s through the 2000s, Waikapū was a “high productivity sugar area.” With the passage of Hawaiian lands into the Western model of privatization, coupled with the decline of the indigenous population, the wet valleys on Nā Wai ‘Ehā began to shift away from subsistence farming toward plantation style sugarcane cultivation. Vestiges of extensive *lo‘i* cultivation, which spread to the north and south from the base of Waikapū to a considerable distance below the valley, remained through the 1930s. Although most of the *lo‘i* terraces in Waikapū had been plowed under by the expansion of commercial sugarcane cultivation, a few of the ancient terraces were preserved in plantation camps and under house sites as well as reused as garden sites, among which, and in addition to Hawaiian wet-taro, included Japanese dry-taro, truck gardens, and lotus for their seeds (Handy et al. 1991:497). Dr. Fisher also noted that there are still remnants of terraces that formerly spanned the whole area up in the valley.

The Waikapū sugar lands became a part of the Wailuku Sugar Company in 1894. Beginning in 1880, the Waikapū plantation lands began to be merged with those of the Wailuku and Waihe‘e plantations. The economic progress of the Wailuku Sugar Company required the importation of foreign labor. The increase in the labor population at the plantations required larger laborer camps. By the 1890s, a network of plantation housing camps had been established at the Waikapu Division of the Wailuku Sugar Company. These included Hopoi Camp, Waikapu Camp, Hyashi Camp, Kimura Camp, and Pu‘u Hele Camp. Waikapu Camp expanded into the residentially and commercially developed area now known as Waikapū.

Archaeological sites identified in the vicinity of the project area provide evidence that lands of Waikapū Ahupua‘a were utilized for habitation and agricultural endeavors. Previous archaeological studies (Haun 1989; Brisbin et al. 1991; Kennedy 1991; Fredericksen and Fredericksen 2004; Wilson and Dega 2005; Perzinski and Dega 2010; Guerriero et al. 2017; Yucha et al. 2022) have identified agricultural complexes and associated habitation sites and cultural deposits. Historic properties located in the vicinity of the project area include enclosures (SIHP #s -02027 and -02770); historic cultural deposits (SIHP # -07884); agricultural sites such as terraces (SIHP #s -02027 and -06668), ditches (SIHP #s -05197, -05474, and -05729), reservoirs (SIHP #s -05474, -05727), and berms (SIHP # -05728); and portions of a historic road (SIHP # -05730).

In addition to sugarcane cultivation, much of the lands of Waikapū in the mid-twentieth century were also tied-up in pastural endeavors. In 1952, over 7,000 acres of land along the base of the West Maui Mountains, spanning from Waikapū to Ukumehame, were sold at auction in two leases (15- to 21-year lease terms) for $16,582. These land tracts served as hog and cattle pasturage (*Honolulu Star-Bulletin 1952*:5).

Throughout the twentieth century much of the lands within and surrounding the current project area remained either under commercial sugarcane cultivation or continued being utilized pastorally.

Mr. Hobdy stated that the project area “has been a residential community for over 50 years.” In the latter half of the 1900s, residential tracts were constructed along both the Kuihelani Highway and Honoapi‘ilani Highway corridors that traverse Waikapū. Complementing the residential are light industrial parcels, grocery stores, and business developments on the outskirts of Waikapū sugar fields. Additional residential and commercial development is currently taking place in various areas, mostly north, of the current project area.

Table 6. Potential Impacts Posed by the Proposed Project to Cultural Resources or Activities Within the Project Area Vicinity

Cultural Resource or Activity	Potential Impacts	Explanation
Iwi kūpuna	Encountering *iwi kūpuna* during construction activities	Dr. Scott Fisher and Kaniloa Kamaunu noted the area consists of sand dunes which were popular locations for burials. Mr. Kamaunu mentioned that *iwi kūpuna* have been encountered during construction activities along a roadway in Waiehu and along East Waiko Road.
Freshwater resources	Contamination from sewage	Mr. Kamaunu expressed concern that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water.

6.3.4 Discussion of impacts to historic properties (i.e., cultural resources) identified during background research and consultation

Previous archaeological studies in the vicinity of the project area have primarily documented surface sites, including historic artifact scatters (SIHP # 50-50-04-07884) as well as plantation infrastructure (Guerriero et al. 2017). Two historic properties, SIHP #-01605 (Waikapū Protestant Church) and a portion of SIHP # -05197 (Waihe‘e Ditch), are located within the project area. A brief review of the historical background of the area indicates that portions of the project area are located within Land Grants 1673, 2107, and 2474 and portions of LCA 2522, 3110, 3296, 3340, and 5228. LCA documents indicate that these LCAs included *lo‘i*, *kula*, and house lots. There are several other LCAs and land grants located in the immediate vicinity.

While the project area includes a historic cemetery and the potential for the discovery of *iwi kūpuna*, no unmarked burial sites have been previously documented within the project area (see Section 3.3). Several known burial sites are located in the vicinity of the project area including historic and pre-Contact burials. Archaeological studies (Fredericksen and Fredericksen 1996; Rotunno-Hazuka and Pantaleo 2004; Morawski et al. 2006) have also identified numerous burials (Sites 05, 06, 07, 08, 09, 10, 11, 12, 13, 14; SIHP # -05966) and a burial preserve (SIHP # -03525) in the vicinity of the project area.

Dr. Fisher stated the area has “lots of *iwi kūpuna*.” He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

Waikapū is located at the southern extent of the Maui Sandhills, a geologic sand dune feature that formed by sand that was deposited by wind from large beaches that existed on the northern coast of Maui. (Macdonald et al. 1983:388). Dr. Fisher pointed out that sand dunes were easier to dig through, however, he also pointed out that sand shifts exposing *iwi kūpuna*.

Mr. Kamaunu stated that the "nature of the area" is sensitive. He also noted that the area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*.

He also expressed concern that *iwi kūpuna* may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface. He added that *iwi kūpuna* have been uncovered "not far down the road" from the project area along East Waiko Road.

6.3.5 Discussion of impacts to cultural practices and resources identified during background research and consultation

Interviewees pointed out that the project area is in the vicinity of Waikapū Stream. They pointed out that Waikapū Stream is part of Nā Wai ‘Ehā. Dr. Fisher also noted that in traditional times, Nā Wai ‘Ehā was the "most culturally productive land on Maui." He shared that the area is covered by an alluvial fan with rich soil that was good for *kalo* production and pointed out that there are still remnants of terraces that formerly spanned the whole area up in the valley. E.S. Craighill Handy (1940:107) also discussed the productivity of Nā Wai ‘Eha, noting that, "From Waihee to Wailuku Valley, in ancient times, was the largest continuous area of wet taro cultivation in the islands."

Mr. Hobdy also stated, "This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream." Handy et al. (1991) describes Waikapū stream as land bound, as opposed to emptying into the ocean. Stream water was diverted into the *lo‘i* and the overflow would feed onto the dry plains of the central isthmus and Keālia. Mr. Hobdy pointed out that there were "[a]t least 18 ‘ili (‘ili kalo or ‘ili mo’o) clustered around the stream here and above this project area." He noted that, "Each ‘ili was composed of several kuleana that were all fed by a single ‘auwai fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family."

Mr. Kamaunu noted that water from Waikapū Stream, as well as ground water below Waikapū are used for drinking and irrigation. He expressed concern that sewage from broken sewer lines may contaminate Waikapū Stream or the ground water.

6.4 Mitigation Possibilities Identified During Consultation and Background Research

No mitigations regarding potential impacts to freshwater resources were proposed by participants during consultation, however, Mr. Kamaunu asked what kind of mitigation will be done to assure that surface and ground water will not be contaminated in the case of a broken sewer line? He also asked what will the process be to address potential impacts to surface and ground water resulting from a sewer line bursting?

CSH recommends the use of Best Management Practices (BMPs) during the construction process to reduce potential runoff or contamination of the stream and that any identified broken sewer lines be repaired and environmental remediation included if and when needed in compliance with applicable laws

Dr. Fisher strongly recommends archaeological monitoring be conducted during construction activities associated with the proposed project. He also recommends project proponents perform other mitigation measures including digging with a non-toothed backhoe.

Mr. Kamaunu recommended that an AIS be conducted to describe the area and to discuss the possibilities of encountering *iwi kūpuna* during ground disturbance activities associated with the proposed project. He also asked what are the mitigation measures planned if there is a disturbance to *iwi kūpuna*?

In a follow-up email, Mr. Kamaunu emphasized,

> The comments I've made are not to be regarded as AMOW [Aha Moku O Wailuku] is in anyway or form in favor of the project. As my comments reflected this area is highly sensitive and because the stream and iwi kupuna could be potentially desecrated or injured by the project neither I nor AMOW are in favor of this project.

The project is subject to historic preservation review by the SHPD. The SHPD is the appropriate authority to determine historic preservation requirements for the project.

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* 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 reinterment plan and cultural preservation plan for proper cultural protocol, curation, and long-term maintenance.

Section 7 References Cited

Abbott, Isabella Aiona
1992 *La‘au Hawai‘i*: *Traditional Hawaiian Uses of Plants.* Bishop Museum Press, Honolulu.

Akana, Collette Leimomi and Kiele Gonzalez
2015 *Hanau Ka Ua: Hawaiian Rain Names*. Kamehameha Publishing, Honolulu.

Alameida, Roy Kakulu
1993 Land Tenure and Land Use in Kawaihapai, O‘ahu. Master’s thesis in History. University of Hawai‘i at Mānoa, Honolulu.

Anderson, Rufus
1865 *The Hawaiian Islands: Their Progress and Condition under Missionary Labors*. Third edition. Gould and Lincoln, Boston.

Anonymous
1858 The Hawaiian or Sandwich Islands. *The Pacific Commercial Advertiser* February 25, 1858:1. Honolulu, Hawai‘i.

Ashdown, Inez
1971 *Ke Alaloa o Maui: The Broad Highway of Maui.* Printed by Ace Printing Company, Wailuku, Maui, Hawai‘i.

Ava Konohiki
2015 Ancestral Visions of ‘Āina website. Available online at http://www.avakonohiki.org/.

Baldwin, E.D.
1930 Map of the Ahupuaa of Waikapu, Wailuku District, Maui. Registered Map 3012. Hawai‘i Land Survey Division, Department of Accounting and General Services, Honolulu.

Beckwith, Martha
1932 *Kepelino’s Traditions of Hawaii*. Vol. Bulletin 95. Translated by M.M.W. Pukui. Bernice Pauahi Bishop Museum, Honolulu.
1970 *Hawaiian Mythology*. University of Hawaii Press, Honolulu.

Bingham, Reverend Hiram
1824 Excursion of Messrs. Bingham and Richards. In *The Missionary Herald for the Year 1824*, Vol. 20, edited by A.B. o. C. f. F. Missions, pp. 111–112. Samuel T. Armstrong, Boston.

Brisbin, Joel, Alan Haun, and Peter Jensen
1991 *Archaeological Data Recovery Excavations Waikapu Mauka Partners Golf Resort Project Area Land of Waikapu, Wailuku District Island of Maui*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Burns, Irma Gerner
1991 *Maui’s Mittee and the General, A glimpse into the lives of Mr. and Mrs. Frank Fowler Baldwin*. Ku Pa‘a Inc., Honolulu.

Chinen, Jon J.
1958 *The Great Māhele, Hawai‘i’s Land Division of 1848*. University of Hawaii Press, Honolulu.

Coll, Ray, Jr.
1954 Hydroseparator for Wailuku. *Honolulu Advertiser*, Saturday, 22 May:12

County of Maui
2021 *Tax Map Information*. Electronic document. Available online at: https://www.mauicounty.gov/757/Tax-Map-Information.

Creed, Victoria S.
1993 *Settlement Pattern for Waikapu, Wailuku District, Maui, Hawaii, Vol. I. In partial Fulfillment for the Certificate of Historic Preservation*. Cultural Surveys Hawai‘i, Kailua, HI.

Cummings, George C.F.
1881 The Largest Extinct Volcano. (An Ascent of Haleakala.). In *Scribner's Monthly, An Illustrated Magazine for the People*. Vol. XXII:272-275. The Century Company, New York.

Dean, Arthur L.
1950 *Alexander & Baldwin, Ltd. and the Predecessor Partnerships*. Alexander & Baldwin Ltd. and Advertiser Publishing Company, Honolulu.

Desha, Stephen L.
2000 *Kamehameha and his Warrior Kekūhaupi‘o*. Kamehameha Schools Press, Honolulu.

Dodge, F.S.
1885 *Maui, Hawaiian islands* [map]. 1:90,000. Surveyed by W.D. Alexander, C.J. Lyons, M.D. Monsarrat, F.S. Dodge, S.E. Bishop, E.D. Baldwin and W.R. Lawrence. Hawaiian Government Survey, Library of Congress Geography and Map Division Washington, D.C. 20540-4650. On file at Library of Congress Geography and Map Division Washington, D.C. 20540-4650 USA.

Dorrance, William H. and Francis Swanzy Morgan
2000 *Sugar Islands : The 165-year Story of Sugar in Hawai‘i*. Mutual Publishing, Honolulu.

Edwards, Bela Bates
1832 *The Missionary Gazetteer: Comprising a Geographical and Statistical Account of the Various Stations of the American and Foreign Protestant Missionary Societies of all Denominations, with their Progress in Evangelization and Civilization*. William Hyde & Company, Boston.

Emerson, Nathaniel B.
1965 *The Unwritten Literature of Hawaii: The Sacred Songs of the Hula*. Collected by Nathaniel B. Emerson. Charles E. Tuttle Company, Rutland, Vermont and Tokyo.
1993 *Pele and Hiiaka: A Myth from Hawaii* Honolulu Star-Bulletin, Ltd., Honolulu.

Environmental Council, State of Hawai‘i

1997 *Guidelines for Assessing Cultural Impacts Adopted by the Environmental Council, State of Hawai‘i, November 19, 1997*. Office of Environmental Quality Control, Hawai‘i.

Esri, Inc.

2018 Map Image Layer. Esri, Inc., Redlands, California.

Evening Bulletin

1888 Kalakaua announced arrival on Maui. *Evening Bulletin*, Friday, 9 November:3. Available online, Honolulu.www.newspapers.com.

Foote, Donald E., Elmer L. Hill, Sakuichi Nakamura, and Floyd Stephens

1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai*, State of Hawaii. U.S. Department of Agriculture, Soil Conservation Service, in cooperation with the University of Hawai‘i Agricultural Experiment Station. U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham

1880 *An Account of the Polynesian Race: Its Origins and Migrations*. Volume II. Charles Tuttle, Rutland, Vermont.

1919-1920 *Fornander Collection of Hawaiian Antiquities and Folk-Lore. Memoirs of the Bernice Pauahi Bishop Museum Volume VI*. Bishop Museum Press, Honolulu.

1996 *Fornander's Ancient History of the Hawaiian People*. Mutual Publishing, Honolulu.

Fredericksen, Eric, and Demaris Fredericksen

2004 *Archaeological Inventory Survey for Waikapu Affordable Housing Subdivision Waikapu Ahupua‘a, Wailuku District Island of Maui (TMK: 3-5-02: por. 01 and 3-8-07: 101)*. Xamanek Researches, Pukalani, Hawai‘i.

Fredericksen, Walter M., and Demaris L. Fredericksen

1996 *Report on the Waikapu Human Remains Recovery Project, Waikapu, Maui, Hawaii (Borrow Site 50-50-04-3525) TMK: 3-8-07:104*. Xamanek Researches, Pukalani, Hawai‘i.

Giambelluca, Thomas W., Michael A. Nullett, and Thomas A. Schroeder

1986 *Rainfall Atlas of Hawai‘i*. Department of Land and Natural Resources. State Historic Preservation Division/ Department of Land and Natural Resources, State of Hawai‘i, Honolulu.

Gilmore, Abner Blanks

1936 *The Hawaii Sugar Manual*. New Orleans, Louisiana.

Guerriero, Diane, Andre‘e Conley-Kapoi, and Jeffrey Pantaleo

2017 A*rchaeological Inventory Survey Report for Several Parcels of Land Situated within Waikapū Ahupua`a; Wailuku District Pū`ali Komohana Moku Located at TMK: [2] 3-6-002:003; 3-6-004:003; and 3-6-005:007; Island of Maui*. Archaeological Services Hawaii, LLC, Pu‘unene, Hawai‘i.

Handy, Craighill E. S.

1940 *The Hawaiian Planter*. Bishop Museum Bulletin 161. Bernice Pauahi Bishop Museum, Honolulu.

Handy, E.S. Craighill, Elizabeth Green Handy, and Mary Kawena Pukui

1991 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Revised edition. Bishop Museum Bulletin 233. Bishop Museum Press, Honolulu.

Haun, Alan E.

1989 *Interim Report: Summary of Findings, and General Significance Assessments and Recommended General Treatments: Archaeological Inventory Survey Waikapu Mauka Parners Golf Resort Project Area Land of Waikapu, Wailuku District, Island of Maui*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai‘i.

Hawaii Supreme Court

1896 *Hawaiian Case Reports: Cases Decided in the Supreme Court of the Hawaiian Islands* Hawaiian Gazette Company, Honolulu.

Hawaii TMK Service

2014 Tax Map Key [2] 3-5-004 [map]. Hawaii TMK Service, Honolulu.

2014 Tax Map Key [2] 3-6-004 [map]. Hawaii TMK Service, Honolulu.

Hawaiian Islands Land Trust

2019 *About Us*. Electronic document, https://www.hilt.org/about-us.

Head, Lou

1960 Old Maui Church To Be Restored. *Honolulu Advertiser*, Sunday, 13March:29. Available online, Honolulu.www.newspapers.com.

Hill, Robert R., Tanya L. Lee-Greig, and Hallett H. Hammatt

2006 *A Cultural Impact Evaluation Report for an 15.20-Acre Parcel located at Pūlehu Nui Ahupua‘a, Wailuku District, Maui Island [TMK (2) 3-8-008:001 por.]*. Cultural Surveys Hawai‘i, Inc., Wailuku, Hawai‘i.

Honolulu Advertiser

1886 Interment of the Late Mr. Henry Cornwell. *Honolulu Advertiser*, Monday, 15 February:3. Available online, Honolulu.www.newspapers.com.

1903 Col. WM. H. Cornwell Dies At Waikapu Ranch. *Honolulu Advertiser*, Thursday, 19 November:8. Available online, Honolulu.www.newspapers.com.

1916 In the Days of Kalakaua. *Honolulu Advertiser*, Sunday, 11 June:9. Available online, Honolulu.www.newspapers.com.

1927 The Sand Hills of Maui in 1841. *Honolulu Advertiser*, 7 January 1927:12

1949 Valley Island Will Get First Traffic Light. *Honolulu Advertiser*, Sunday, 9 January:17

Honolulu Star-Bulletin

1952 In Waikapu District. *Honolulu Star-Bulletin*, Thursday, 17 January:5.

Hoyt, Helen P.

1976 *The Night Marchers.* Vol. 13, 14 Vols. The Hawaiian Bicentennial Library. Island Heritage Limited, Norfolk Island, Australia.

Huapala

n.d. *Na Wai ‘Ehā O Maui*, Electronic document, http://www.huapala.org/NA/Na_Wai_Eha_Maui.html.

n.d. *No Na Wai ‘Ehā*, Electronic document, http://www.huapala.org/No/No_Na_Wai_Eha.html.

n.d. *Waikapū/‘Iniki Mālie*, Electronic document, http://www.huapala.org/Wai/Waikapu.html.

Kamakau, Samuel Mānaiakalani

1992 *Ruling Chiefs of Hawaii.* Revised edition. Kamehameha Schools Press, Honolulu.

Kame‘eleihiwa, Lilikalii

1992 *Native Land and Foreign Desires Ko Hawai'i ‘Aina a me Na Koi Pu‘umake a ka Po‘e Haole Pehea la e Pono ai?* Bishop Museum Press, Honolulu.

Kaualililehua, W.K.

1872 No Waikapu. *Nupepa Kuokoa*: Ke Kilohana Pookela no ka Lahui Hawaii, XI. Honolulu.

Kaukali, Edwin L. and Wayne A. Subica

2010 *Hawaii Plantations Pay System & History about the Old Days*. Second edition. Edited by E. Chow. Memories of Hawaii—Big Island.

Kennedy, Stanley C.

1937 America’s Most Westerly Domestic Airline. In *Pan-Pacific*. Vol. 1, No. 1:17–18. Pan-Pacific Union, Honolulu.

Kennedy, Joseph

1991 *Inventory Survey & Subsurface Testing Results for Waikapu Mauka Partners Proposed Residential Project Waikapu, Wailuku District, Island of Maui TMK: 3-6-02:2(por.) & TMK: 3-6-04:2(por.) Revised March 1991 Subsurface Testing of Suspected Burial Features Addendum December 1991*. Archaeological Consultants of Hawaii, Haleiwa, Hawai‘i.

Kuykendall, Ralph Simson

1938 *The Hawaiian Kingdom, Volume 1, 1778-1854*, *Foundation and Transformation.* University of Hawaii Press, Honolulu.

Macdonald, Gordon A, Agantin T. Abbott and Frank L. Peterson

1983 V*olcanoes in the Sea: The Geology of Hawaii Second Edition*. University of Hawaii Press, Honolulu, HI.

MacLennan, Carol A.

1997 Hawai‘i Turns to Sugar: The Rise of Plantation Centers, 1860-1880. *Hawaiian Journal of History* 31.

Malo, David

1951 *Hawaiian Antiquities (Moolelo Hawaii*). Bernice Pauahi Bishop Museum, Honolulu.

Maui Historical Society

n.d. Photo of Waikapu Sugar Mill.

Maui Tropical Plantation
2019 Maui Tropical Plantation. Maui Tropical Plantation https://mauitropicalplantation.com/, accessed 2019.

McGregor, Daviana Pomaikai
1996 An Introduction to the Hoa‘aina and Their Rights. *Hawaiian Journal of History*, vol. 30 (1996):1–27.

Moffat, Riley M. and Gary L. Fitzpatrick
1995 *Surveying the Mahele: Mapping the Hawaiian Land Revolution*. Palapala‘aina. Vol. 2. Editions Limited, Honolulu.
2004 *Mapping the Lands and Waters of Hawai‘i.* Palapala‘aina. Vol. 3. Editions Limited, Honolulu.

Morawski, Lauren, B.A., Donna M. Shefcheck, B.A. and Michael F. Dega, Ph.D.
2006 A*n Archaeological Monitoring Report for Kehalani Subdivision and Offsite Improvements, Wailuku and Waikapu Ahupua‘a, Wailuku District, Island of Maui, Hawai‘i [TMK: 3-5-02:01 portion and TMK: 3-5-01:17 portion]*. Prepared For: Stanford Carr, LLC. Scientific Consultant Services, Inc. Honolulu, Hawai‘i.

Nakuina, Moses
1902 *Moolelo Hawaii o Pakaa a me Ku-a-Pakaa*. Kalamakū Press, Honolulu.
1992 *The Wind Gourd of La‘amaomao*. First edition. Esther T. Mookini and Sarah Nākoa, translators. Kalamakū Press, Honolulu.

National Register of Historic Places
1990 National Register of Historic Places Nomination Form for Waikapu Protestant Church. United States Department of the Interior, National Park Service.

Nellist, George F.
1925 *The Story of Hawaii and Its Builders*. Honolulu Star-Bulletin, Honolulu.

Office of Hawaiian Affairs
2015 *Papakilo Database.* Office of Hawaiian Affairs cultural and historical database. Electronic document, http://papakilodatabase.com/main/index.php.

Pacific Commercial Advertiser
1879 Excerpts on Cornwell Land Holdings in Waikapu. *Pacific Commercial Advertiser*, 27 December:5. Available online, www.newspapers.com.

Pau, Stephanie, Glen M. MacDonald & Thomas W. Gillespie
2012 A Dynamic History of Climate Change and Human Impact on the Environment from Keālia Pond, Maui, Hawaiian Islands, *Annals of the Association of American Geographers*, DOI:10.1080/00045608.2011.652853.

Pellegrino, Hokuao
2009 Traditional Place Names in the Ahupua‘a of Wailuku. *Maui News*, 15 December

Perzinski, David, and Michael F. Dega
2010 *Archaeological Inventory Survey Report for the Waiale Road Extension and Waiko Road Improvement Project in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawaii [TMK: (2) 3-5-002:014; 888; 3-5-027:021; 3-6-002:033 and 3-8-005:999]*. Scientific Consultant Services, Inc., Honolulu, Hawai‘i.

Pukui, Mary Kawena
1949 Songs (Meles) of Old Ka‘u, Hawaii. *Journal of American Folklore*, July-September: 247–258.

1983 *‘Ōlelo No‘eau: Hawaiian Proverbs & Poetical Sayings*. Bishop Museum Special Publication No. 71. Bishop Museum Press, Honolulu.

1995 *Na Mele Welo: Songs of Our Heritage*. University of Hawai‘i Press, Honolulu.

Pukui, Mary Kawena and Laura C.S. Green
1995 *Folktales of Hawai‘i*. Bishop Museum Press, Honolulu.

Pukui, Mary K. and Samuel H. Elbert
1986 *Hawaiian Dictionary*. Second edition. University of Hawaii Press, Honolulu.

Pukui, Mary K., Samuel H. Elbert, and Esther Mookini
1974 *Place Names of Hawaii*. University of Hawaii Press, Honolulu.

Richards, William
1831 Intelligence from the Sandwich Islands. In *Missionary Herald*, Vol. Vol. XXVII [27]. Crocker and Brewster, Boston.

Rotunno-Hazuka, Lisa, and Jeffrey Pantaleo
2004 *Archaeological Interim Monitoring Report for Hawaiian Cement Sand Mining Operations at TMK: 3-8-07:101 pors., Wailuku Ahupuaa; Wailuku District; Island of Maui*. Archaeological Services Hawaii, Wailuku, Hawai‘i.

Saito, Norman
2009 Aviation History. *Personal Communication*. Informal Interview.

Schmitt, Robert C.
1973 *The Missionary Censuses of Hawaii*. Pacific Anthropological Records No. 20. Bernice Pauahi Bishop Museum, Department of Anthropology, Honolulu.

Soehren, Lloyd
2014 *Hawaiian Place Names*. Electronic database, ulukau.org/cgi-bin/hpn?l=haw.

Speakman, Cummins E.
1978 *Mowee: An Informal History of the Hawaiian Island*. Peabody Museum of Salem, Salem, Massachusetts.

Stearns, Harold T. and Gordon A. MacDonald
1942 *Geology and Ground-Water Resources of the Island of Maui, Hawaii*. Bulletin 7 vols. Territory of Hawaii, Division of Hydrography, Advertiser Publishing Company, Honolulu.

Sterling, Elspeth P.
1998 *Sites of Maui*. Bishop Museum Press, Honolulu.

Thrum, Thomas G.

1874 Notes on the History of the Sugar Industry of the Hawaiian Islands. *The Sugar Cane* VI(54):1–4.

1875 Notes on the History of the Sugar Industry of the Hawaiian Islands. In *Hawaiian Almanac and Annual for 1875*. Hawaiian Gazzette Company, Honolulu.

1900 Lowrie Irrigating Canal. In *Hawaiian Almanac and Annual for 1901*. Hawaiian Gazzette Company, Honolulu.

1922 Hawaiian Place Names. In *A Dictionary of the Hawaiian Language*, 13, edited by H H. Parker, pp. 625–674. The Board of Commissioners of Public Archives of the Territory of Hawaii, Honolulu.

Thurston, Lorrin A.

1906 Sugar: Its Status and Development in Hawaii. *The Louisiana Planter and Sugar Manufacturer*, 21 July 1906. New Orleans, Louisiana.

Ulukau

2014 *Māhele Database.* Hawaiian Electronic Library, http://ulukau.org/cgi-bin/vicki?l=en..

USDA (U.S. Department of Agriculture)

2001 *Soil Survey Geographic (SSURGO) database*. U.S. Department of Agriculture, Natural Resources Conservation Service. Fort Worth, Texas. http://www.ncgc.nrcs.usda.gov/products/datasets/ssurgo/ (accessed March 2005).

U.S. Department of Interior

1830-1916 *Interior Department Book #15*, Document dated 1873.

USFWS (U.S. Fish and Wildlife Service)

2021a *About The Refuge*. Electronic document, https://www.fws.gov/refuge/Kealia_Pond/about.html.

2021b *Birds*. Electronic document, https://www.fws.gov/refuge/Kealia_Pond/wildlife_and_habitat/ Birds_of_Kealia_Pond_National_Wildlife_Refuge.html.

2021c *Blackburns Sphinx Moth*. Electronic document, https://www.fws.gov/refuge/Kealia_Pond/wildlife_and_habitat/Blackburns_Sphinx_Moth.html.

2021d *Hawaiian hoary bat*. Electronic document, https://www.fws.gov/refuge/Kealia_Pond/Wildlife_and_Habitat/Hoary_Bat.html.

2021e *Hawksbill Turtle*. Electronic document, https://www.fws.gov/refuge/Kealia_Pond/wildlife_and_habitat/Hawksbill_Turtle.html.

USGS (U.S. Geological Surve)y

1924 *Mā‘alaea topographic quadrangle* [map]. United States Department of the Interior, USGS, Reston, Virginia.

1955 *Wailuku USGS 7.5-minute topographic quadrangle* [map]. United States Department of the Interior, USGS, Reston, Virginia.

1977 *Wailuku USGS orthophoto quad* [map]. United States Department of the Interior, USGS, Reston, Virginia.

1997 *Wailuku quadrangle, Hawaii* [map]. United States Department of the Interior, USGS, Reston, Virginia.

2017 *Wailuku Quadrangle*, Hawaii [map]. United States Department of the Interior, USGS, Reston, Virginia.

Unknown Photographer

1893 William H Cornwell, wearing in court military uniform.

Waihona ‘Aina

2022 *The Māhele Database*. Electronic document, http://waihona.com.

Waikapu Community Association

2018 About Waikapu: *Waikapu Today*. Electronic document, http://waikapumaui.org/about-waikapu/.

Waikapu Country Town

2019 Waikapu Country Town: Project Brochure. Waikapu Country Town http://www.waikapu.com/brochure, accessed.

Walker, Winslow

1931 Archaeology of Maui. Manuscript. Bernice Pauahi Bishop Museum. Honolulu, Hawai‘i.

Westervelt, W.D.

1910 *Legends of Ma-ui—A Demi-God of Polynesia and of His Mother Hina*. Hawaiian Gazette Company, Honolulu.

Wilcox, Carol

1996 *Sugar Water: Hawaii’s Plantation Ditches*. University of Hawai‘i Press, Honolulu.

Wilson, Jon, and Michael F. Dega

2005 *Archaeological Inventory Survey on 215.800 Acres Located in Waikapu Ahupua'a, Wailuku District, Maui Island, Hawaii [TMK (2) 3-5-02: 02 and 03*. Scientific Consultant Services, Inc., Honolulu.

Wong Smith, Helen

1991 *West Molokai, Kaluakoi: Historical Research.* Unknown publisher.

Wyllie, R.C.

1854 *Report of the Committee on Coffee*. Proceedings of the Royal Hawaiian Agricultural Society, Fourth Annual Meeting, Honolulu, 13 June 1854. 2:26–41. Honolulu.

Yucha, Trevor, Jennifer Frey, Josephine Yucha, and Hallett Hammatt

2022 *Archaeological Literature Review and Field Inspection for the Waiale Road Extension Project, Waikapū Ahupua‘a, Pū‘ali Komohana District, Maui Island, TMKs: [2] 3-5-002:014 por. and 888 por., [2] 3-6-002:003 por. and 004 por., [2] 3-6-004:003 por., and [2] 3-6 (Honoapi‘ilani Hwy ROW)*. Cultural Surveys Hawai‘i, Inc., Wailuku, Hawai‘i.

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 Waikapū 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 Munekiyo Hiraga, on behalf of Department of Environmental Management (DEM), CSH is conducting a cultural impact assessment (CIA) for the Waiko Road Subdivision Sewer System Project, Waikapū Ahupua'a, Wailuku District, Maui TMK: [2] 3-5-010:001, 033, 034 & 036-038; [2] 3-5-011:001-041, 043-046 & 048; and [2] 3-5-011:999 (por.). The location and boundaries of the proposed project are delineated on a 1997 Wailuku USGS topographic map quadrangle (Figure 1) and a 2019 aerial photograph (Figure 2) attached to this invitation. The Department of Environmental Management (DEM) proposes the construction of approximately 3,000 linear feet of gravity wastewater line and service laterals connecting approximately 75 lots in the Waikapū area. The new system will connect an existing manhole located at East Waiko Road to new lines within West Waiko Road, Honoapi'ilani Highway, Wilikona Place, Kemoa Place and Keilio Place.

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 Waikapū Ahupua'a. 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 Waikapū 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 (shown on the attached Figures 1 and 2) are especially helpful and appreciated:

- Your knowledge of traditional cultural practices of the past within the proposed project area and Waikapū Ahupua'a

CIA for the Waiko Road Subdivision Sewer System Project

- Your specific traditional cultural practice and its connection to the proposed project area and Waikapū 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 Waikapū Ahupua‘a
- Referrals to other *kūpuna*, *kama‘āīna*, and traditional cultural practitioners knowledgeable about the proposed project area and Waikapū 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 Waikapū Ahupua‘a
- Your knowledge of cultural sites and *wahi pana* (storied places) within the proposed project area and Waikapū 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 Waikapū Ahupua‘a

Consultation Information

Consultation is an important and deeply valued part of the CIA and 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 will be part of the public record. The study will be included as an appendix of the Environmental Assessment (EA) which is being prepared for the proposed project; the EA and CIA will be available for future access through the Office of Environmental Quality Control (https://health.hawaii.gov/oeqc/) 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 Waikapū 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.

CIA for the Waiko Road Subdivision Sewer System Project

Page 3

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 Kellen Tanaka by email at ktanaka@culturalsurveys.com or phone at (808) 262-9972 or Chantellee Spencer at cspencer@culturalsurveys.com.

Mahalo nui loa for your time and attention to this request for consultation.

Yours with much aloha and appreciation,

Kellen Tanaka

CSH Cultural Researcher

Appendix B Consultee Interview Summaries

B 1. Dr. Scott Fisher

On 3 September 2021, Cultural Surveys Hawai‘i (CSH) spoke with Dr. Scott Fisher via telephone to discuss the Waiko Road Subdivision Sewer System project and to share his *‘ike* (knowledge) regarding the *ahupua‘a* (traditional land division usually extending from the mountains to the sea) of Waikapū. Dr. Fisher is the Chief Conservation Officer for the Hawaiian Islands Land Trust (HILT), a 501(c)(3) land conservancy organization, which represents the combined skill and resources of four island-based organizations: Hawai‘i Island Land Trust, Maui Coastal Land Trust, O‘ahu Land Trust, and Kaua‘i Public Land Trust. Combined, HILT has "protected over 18,000 acres of Hawaii's most precious lands and natural resources from Kau [Ka‘ū] on Hawaii Island to Hanalei, Kauai" (Hawaiian Island Land Trust 2019).

> HILT takes a Hawaiian and holistic approach to land conservation. We conserve lands that enable Hawai‘i's long-term well-being, lands with *scenic views, agricultural resources, wildlife habitats, water resource areas, cultural and historical values, and outdoor recreation opportunities.* We seek to complement the stewardship others are providing for mountaintop watersheds by concentrating largely on needs and opportunities for coastal and agricultural lands. [Hawaiian Islands Land Trust 2019]

Dr. Fisher noted he has no ancestral ties to the area and the information he shared comes from talking with people who have ancestral ties to the area, historical research from available public documents, and his own experiences on his *‘ulu* (breadfruit, *Artocarpus altilis*) farm in Waikapū.

Dr. Fisher shared two *mo‘olelo* (stories) discussing how the *ahupua‘a* of Waikapū received its name. Both *mo‘olelo* are associated with the *pū* or large triton conch shell (*Charania tritonis*). The name Waikapū translates to "water of [the] conch" (Pukui et al.1974:223). Dr. Fisher stated that the name Waikapū comes from the sound the wind makes when it blows through Waikapū Valley, which resembles the sound of a *pū* being blown. One *‘ōlelo no‘eau* (proverb) describes the wind of Waikapū as "swift" and "gusty," "Ka makani kokololio o Waikapū. *The swift, gusty wind of Waikapū*" (Pukui 1983:159). The "gusty" wind of Waikapū is also mentioned in another *‘ōlelo no‘eau*, "Waikapū i ka makani kokololio. *Waikapū of the gusty wind*" (Pukui 1983:315).

The second *mo‘olelo* Dr. Fisher shared regarding the naming of Waikapū is associated with the battle between chief of Hawai‘i, Kalani‘ōpu‘u, and his armies and chief of Maui, Kahekili, and his armies on the plains of Kama‘oma‘o. Kalani‘ōpu‘u's armies included the ‘Ālapa and Pi‘ipi‘i which were "composed of persons who were related in some way to Chief Kalani‘ōpu‘u and also some brave and fearless lesser chiefs" (Desha 2000:33). The ‘Ālapa and Pi‘ipi‘i "numbered only eight hundred and were chosen from the young chiefs of the land who had been instructed in the profession of war and who were ready for battle" (Desha 2000:37).

Dr. Fisher stated that Kalani‘ōpu‘u and his armies landed at Kīheipūko‘a, which is located on the "Kīhei side of Keālia Pond," and traveled through Waikapū on their way to Wailuku. As the ‘Ālapa and Pi‘ipi‘i crossed through Waikapū, they were surrounded and slaughtered by the forces of Maui and O‘ahu. Stephen Desha described the slaughter of the ‘Ālapa and Pi‘ipi‘i:

> Kahekili’s warriors were roused up, joined by the O‘ahu warriors under Kahahana, the young chief of O‘ahu, and these numerous warriors were stationed at the sand dunes of Waikapū and also at a place close to those sand dunes seaward of Wailuku. Kahekili’s warriors hid like sand crabs in their holes awaiting the onslaught of Kalani‘ōpu‘u’s relatively few warriors who would move inland to Wailuku without realizing that their death was awaiting them. [Desha 2000:42–43]

Dr. Fisher stated that the Maui army blew the conch shell to signal their attack on the Hawai‘i army. He noted there were only two survivors from the ‘Ālapa and Pi‘ipi‘i after the battle. Desha (2000) mentioned the two surviving warriors were spared so they could report the news of the battle to Kalani‘ōpu‘u:

> On the afternoon of that day two warriors arrived from the battlefield to report the tragic news that all the armies had been slain by the Maui people. The two had been released to report this sad news to Kalani‘ōpu‘u with voices of lamentation. Those persons who had been slain and whose bones were laid in the sand dunes of Wailuku and Waikapū were of chiefly blood of Hawai‘i. [Desha 2000:43]

Dr. Fisher also noted that cultural descendants of slain warriors from Hawai‘i who were among the ‘Ālapa and Pi‘ipi‘i have been recognized by the MLIBC.

Dr. Fisher discussed how Waikapū was a very productive area in traditional times. He shared that the project area is located next to Waikapū Stream which is part of the *‘okana* known as “Nā Wai ‘Ehā,” or “The Four Waters.” Nā Wai ‘Eha consists of Waikapū, Wailuku, Wai‘ehu, and Waihe‘e streams which watered former taro lands that were spread out to the shoreline (Handy et al. 1991:272). Dr. Fisher mentioned that Nā Wai ‘Eha was the “most culturally productive land on Maui.” In *The Hawaiian Planter*, E.S. Craighill Handy (1940:107) also discussed the productivity of Nā Wai ‘Eha, noting, “From Waihee to Wailuku Valley, in ancient times, was the largest continuous area of wet taro cultivation in the islands.”

Dr. Fisher mentioned that *‘auku‘u* (black-crowned night heron, *Nycticorax nycticorax hoactli*), as well as deer, live along Waikapū Stream. He also noted that the *muliwai* (pool near mouth of a stream) of Waikapū Stream is Keālia Pond which is also a habitat for wild birds. The Keālia Pond National Wildlife Refuge was established in 1992. The refuge “encompasses approximately 700 acres and is one of the few natural wetlands remaining in the Hawaiian Islands” (USFWS 2021a). The refuge provides “nesting, feeding and resting habitat” for endangered Hawaiian waterbirds and migratory birds including the *ae‘o* (Hawaiian stilt, *Himantopus mexicanus knudseni*), *‘alae ke‘oke‘o* (Hawaiian coot, *Fulica americana alai*), *koloa maoli* (Hawaiian duck, *Anas wyvilliana*), *‘auku‘u* (black-crowned night heron, *Nycticorax nycticorax hoactli*), *kōlea* (Pacific golden plover, *Pluvialis dominica*), *hunakai* (sanderling, *Calidris alba*), *‘akekeke* (ruddy turnstone, *Arenaria interpres*), *‘ūlili* (wandering tattler, *Heteroscelus incanum*), northern pintail (*Anas acuta*), and northern shoveler (*Spatula clypeata*) (USFWS 2021b). The refuge is also a habitat for Blackburn’s Sphinx Moth (*Manduca blackburni*) which is “Hawai‘i’s largest native insect” found “only on Maui, Kaho‘olawe, and the island of Hawai‘i” (USFWS 2021c). The *‘ōpe‘ape‘a* (Hawaiian hoary bat, *Lasiurus cinereus semotus*) “have been documented near the Refuge and may use the Refuge for foraging areas (wetlands appear to be important foraging areas)” (USFWS 2021d). The endangered *honu ‘ea* (Hawksbill Turtle, *Eretmochelys imbricata*) also nest on the beach adjacent to the refuge (USFWS 2021e).

Dr. Fisher mentioned that indigenous plants of the area include *olopua* (*Nestegis sandwicensis*), *‘ōhi‘a* (*Metrosideros macropus*), ferns, and grasses. He suggested studying Stephanie Pau’s research on the indigenous plants found at Keālia Pond. In *A Dynamic History of Climate Change and Human Impact on the Environment from Keālia Pond, Maui, Hawaiian Islands*, Stephanie Pau, Glen M. MacDonald, and Thomas W. Gillespie also noted the vegetation in the Keālia Pond region currently consists of “primarily *Batis maritima* (pickleweed) with a few isolated individuals of *Prosopis pallida* (*kiawe*) and *Acacia farnesiana* (*klu*) along the sand dunes to the south. Large sugarcane fields surround the site to the northwest” (Pau et al. 2012:4).

Dr. Fisher stated that historically farming in Waikapū consisted of crops such as *‘ulu*, *kalo* (taro, *Colocasia esculenta*), and sugarcane. He shared that the area is covered by an alluvial fan with rich soil that was good for *kalo* production and that there are still remnants of terraces that formerly spanned the whole area up in the valley.

Dr. Fisher shared that between the 1850s through the 2000s, Waikapū was a “high productivity sugar area.” He recalled hearing that the earliest sugar plantation on Maui was in Waikapū. In *Hawaiian Almanac and Annual for 1875*, Thomas G. Thrum also noted that around 1823, Antone Catalina is “claimed by some to have been the founder of the [sugar] industry by making excellent syrup at Waikapu, Maui-the site of the present Waikapu mill” (Thrum 1875). In 1828, Antonio Silva also set up a plantation and mill in Waikapū (Thurston 1906). Silva was also involved in coffee production with trees that reportedly produced over 20 pounds annually (Wyllie 1854). Dr. Fisher also recalled finding “old railroad pins” and evidence of tool production while working on his *‘ulu* farm in Waikapū.

While working on his farm, Dr. Fisher also discovered that beneath a 9-to-12-inch layer of alluvial dirt is sand. He explained that 20,000 years ago during the late Pleistocene period, water levels dropped and sand blew in forming sand dunes. Around 12,000 years ago, during the Holocene period, the sand dunes were covered by sediments brought in by floods. He also recalled observing waterworn rocks which indicated the alignment of Waikapū Stream had changed over time.

Dr. Fisher stated the area has “lots of *iwi kūpuna* (ancestral remains).” He noted that sand dunes were easier to dig through, however, he also pointed out that shifting sand exposes *iwi kūpuna*. He mentioned that Waikapū was a popular place for burials and noted there is a historic Japanese cemetery in Waikapū.

Dr. Fisher strongly recommends archaeological monitoring be conducted during construction activities associated with the proposed project. He also recommends project proponents perform other mitigation measures including digging with a non-toothed backhoe.

Dr. Fisher also recommended consulting with Foster Ampong and Hōkūao Pellegrino.

B 2. Mr. Kaniloa Kamaunu

On 27 September 2021, Cultural Surveys Hawai‘i, Inc. (CSH) spoke with Kaniloa Kamaunu, a representative of Aha Moku ‘O Wailuku (AMOW), an affiliate of Aha Moku ‘O Maui LLC, via telephone to discuss the cultural impact assessment for the Waiko Road Subdivision Sewer System project and to share his *‘ike* (knowledge) of the *ahupua‘a* (traditional land division usually extending from the mountain to the sea) of Waikapū and to share his concerns regarding the proposed project.

Mr. Kamaunu pointed out that the project area is located near Waikapū Stream. He is concerned that sewage from broken sewer lines may enter Waikapū Stream or percolate into the ground water beneath Waikapū which, he noted, is used for drinking and irrigation. He asked how far would the proposed sewer lines be from the stream? He also asked what kind of mitigation will be done to assure that surface and ground water will not be contaminated in the case of a broken sewer line? He also asked what will the process be to address potential impacts to surface and ground water resulting from a sewer line bursting?

Mr. Kamaunu also expressed concern that *iwi kūpuna* (ancestral remains) may be encountered during construction activities along the roadways within the project area. He mentioned that *iwi kūpuna* have been encountered during a project along a roadway in Waiehu. He pointed out that setting the sewer lines in place would involve digging 6 to 8 feet below the surface. He noted that the “nature of the area” is sensitive. The area consists of sand dunes which were important to *Kanaka Maoli* as many of them would bury their *‘ohana* (family) in the sand. He shared that the lower sections of the project area appear to be undisturbed, however, he also noted that projects in previously disturbed areas have also encountered *iwi kūpuna*. He added that *iwi kūpuna* have been uncovered “not far down the road” from the project area along East Waiko Road.

Mr. Kamaunu recommended that an AIS be conducted to describe the area and to discuss the possibilities of encountering *iwi kūpuna* during ground disturbance activities associated with the proposed project. He also asked what are the mitigation measures planned if there is a disturbance to *iwi kūpuna*?

In a follow-up email, Mr. Kamaunu emphasized,

> The comments I’ve made are not to be regarded as AMOW is in anyway or form in favor of the project. As my comments reflected this area is highly sensitive and because the stream and iwi kupuna could be potentially desecrated or injured by the project neither I nor AMOW are in favor of this project.

B 3. Mr. Robert Hobdy

On 22 October 2021, Robert Hobdy, retired naturalist and forester, provided Cultural Surveys Hawai‘i with written testimony regarding the cultural impact assessment for the Waiko Road Subdivision Sewer System project. Mr. Hobdy's testimony is provided below:

> I am familiar with this project area which has been a residential community for over 50 years. This area was once part of the of the great Na Wai Eha agricultural system. It was in the southern area centering around Waikapu Stream. At least 18 ‘ili [land division smaller than an *ahupua‘a* (traditional land division usually extending from the mountain to the sea)] (‘ili kalo or ‘ili mo‘o [In a follow up email, Mr. Hobdy clarified that, "The term ‘ili kalo describes or connotes wetland grown kalo (taro, *Colocasia esculenta*) in contrast with dryland kalo or other crops. The term ‘ili mo‘o is descriptive of how the water flows from lo‘i (irrigated taro patch) to lo‘i like the thread connecting a string of pearls"]) clustered around the stream here and above this project area. Each ‘ili was composed of several kuleana [small piece of property, as within an *ahupua‘a*] that were all fed by a single ‘auwai [ditch] fed by Waikapu Stream. Each ‘ili had a name and each was usually managed by an extended family. This particular project area lies on portions of four ‘ili named Wahineomaili, Pilipili, Nohoana and Kuaiwa. The names and their locations are shown on the old Territorial tax map (TMK 3-5-04 [that is plat 04]) that shows the names and locations of the ‘ili on the north side of Waikapu Stream [Figure 23]. There were more ‘ili on the south side of the stream that show on another tax map plat. Other than this reference, I do not know of any particular sites or cultural practices associated with this project area.

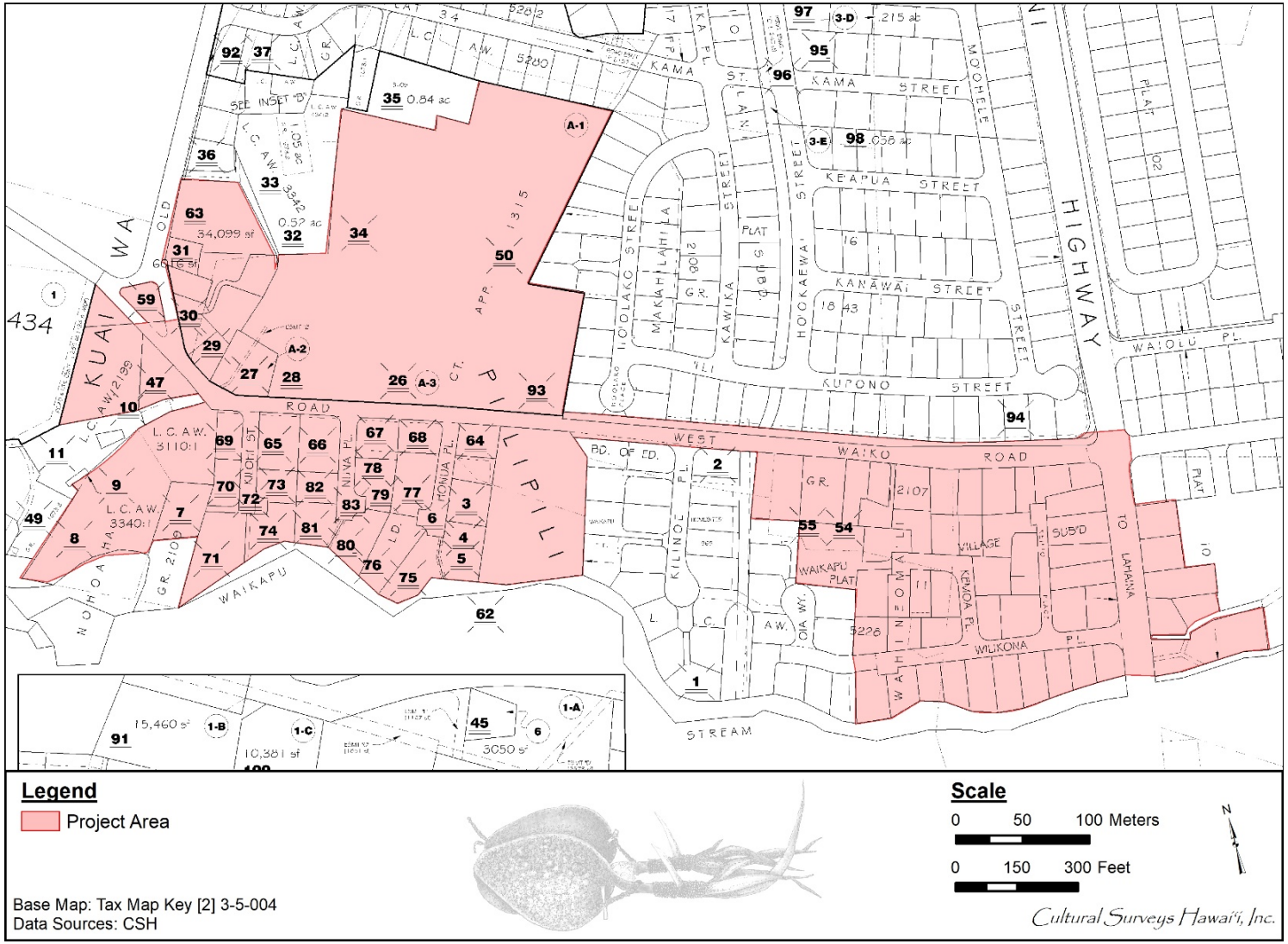


Figure 23. Tax Map Key (TMK) [2] 3-5-004 showing the project area located within the *‘ili* of Wahineomā‘ili, Pilipili, Nonoaha and Kuaiwa (County of Maui 2021)

ANALYSIS OF PROJECT APPLICABILITY TO HAWAIʻI STATE PLAN

APPENDIX

F-1

APPENDIX F-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 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 action will ensure the continued treatment of wastewater to protect the project area's environment and natural resources along with the health and well-being of its residents.**			
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.			✓
Policies:			
(b) To achieve the population objective, it shall be the policy of this State to:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.			✓

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
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			✓
(3) Promote increased opportunities for Hawaii's people to pursue their socio-economic aspirations throughout the islands.			✓
(4) Encourage research activities and public awareness programs to foster an understanding of Hawaii's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawaii's population.			✓
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among the states, provided that such actions do not prevent the reunion of immediate family members.			✓
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			✓
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			✓
Analysis: **The proposed action is not directly or indirectly supportive of the objectives and policies for population as it involves the installation of wastewater improvements within an existing, developed area.**			
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.		✓	
(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.		✓	
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.			✓
(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.			✓
(3) Promote Hawaii as an attractive market for environmentally and socially sound investment activities that benefit Hawaii's people.			✓

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) Transform and maintain Hawaii as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			✓
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawaii.			✓
(6) Seek broader outlets for new or expanded Hawaii business investments.			✓
(7) Expand existing markets and penetrate new markets for Hawaii's products and services.			✓
(8) Assure that the basic economic needs of Hawaii's people are maintained in the event of disruptions in overseas transportation.			✓
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.		✓	
(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.			✓
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.		✓	
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawaii.			✓
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawaii's employment and economic growth opportunities.		✓	
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			✓
(15) Maintain acceptable working conditions and standards for Hawaii's workers.			✓
(16) Provide equal employment opportunities for all segments of Hawaii's population through affirmative action and nondiscrimination measures.			✓
(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.			✓
(18) Encourage businesses that have favorable financial multiplier effects within Hawaii's economy, particularly with respect to emerging industries in science and technology.			✓
(19) Promote and protect intangible resources in Hawaii, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.			✓
(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.			✓
(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.			✓

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
Analysis: **The proposed action indirectly supports the general objectives and policies for the economy by supporting design and construction activity which contributes to increased employment opportunities, job choices, and living standards. Businesses positively affected by the project are those which support design and construction such as engineers and material suppliers.**			
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.			✓
(2) Growth and development of diversified agriculture throughout the State.			✓
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii's strategic, economic, and social well-being.			✓
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.			✓
(2) Encourage agriculture by making the best use of natural resources.			✓
(3) Provide the governor and the legislature with information and options needed for prudent decision-making for the development of agriculture.			✓
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			✓
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawaii's economy.			✓
(6) Seek the enactment and retention of federal and state legislation that benefits Hawaii's agricultural industries.			✓
(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.			✓
(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.			✓
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			✓
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			✓
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			✓
(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.			✓

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
(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.			✓
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			✓
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			✓
(16) Facilitate the transition of agricultural lands in economically nonfeasible agricultural production to economically viable agricultural uses.			✓
(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.			✓
(18) Increase and develop small-scale farms.			✓
Analysis: **The proposed action does not directly or indirectly affect the objectives and policies for agriculture. The project area is in an urban area near other residential subdivisions. The implementation of the proposed action is not considered to adversely affect agricultural productivity on Maui.**			
Chapter 226-8 Objective and policies for the economy – – visitor industry.			
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.			✓
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.			✓
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawaii's people.			✓
(3) Improve the quality of existing visitor destination areas by utilizing Hawaii's strengths in science and technology.			✓
(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.			✓
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawaii's people.			✓
(6) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the visitor industry.			✓
(7) Foster a recognition of the contribution of the visitor industry to Hawaii's economy and the need to perpetuate the aloha spirit.			✓
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawaii's cultures and values.			✓

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
Analysis: **The proposed action is not directly or indirectly applicable to the objective and policies for the visitor industry and has no implications for enhancement or growth of the visitor industry.**			
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.		✓	
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;			✓
(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;			✓
(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;		✓	
(4) Increase opportunities for entry and advancement of Hawaii's people into federal government service;			✓
(5) Promote federal use of local commodities, services, and facilities available in Hawaii;			✓
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawaii; and		✓	
(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.			✓
Analysis: **The proposed action is indirectly applicable to the objectives and policies for the economy in regards to federal expenditures as it utilizes State Revolving Funds (SRF) through the Environmental Protection Agency (EPA) to construct the proposed improvements which will benefit the community and its residents.**			
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.			✓
Policies:			
(b) To achieve the potential growth and innovative activity 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) 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;			✓
(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;			✓
(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;			✓
(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;			✓
(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;			✓
(6) Expand Hawaii's capacity to attract and service international programs and activities that generate employment for Hawaii's people;			✓
(7) Enhance and promote Hawaii's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;			✓
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, underground resources, and solid waste;			✓
(9) Promote Hawaii's geographic, environmental, social, and technological advantages to attract new or innovative economic activities into the State;			✓
(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;			✓
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			✓
(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;			✓
(13) Foster a broader public recognition and understanding of the potential benefits of new or innovative growth-oriented industry in Hawaii;			✓
(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;			✓
(15) Increase research and development of businesses and services in the telecommunications and information industries;			✓

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
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			✓
(17) Recognize and promote health care and health care information technology as growth industries.			✓
Analysis: The proposed action does not directly or indirectly affect the development and expansion of innovative activities to increase and diversify Hawai'i's economic base.			
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.			✓
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;			✓
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawaii to accommodate future growth and innovation in Hawaii's economy;			✓
(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;			✓
(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;			✓
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well-designed information industry;			✓
(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;			✓
(7) Provide opportunities for Hawaii's people to obtain job training and education that will allow for upward mobility within the information industry;			✓
(8) Foster a recognition of the contribution of the information industry to Hawaii's economy; and			✓
(9) Assist in the promotion of Hawaii as a broker, creator, and processor of information in the Pacific.			✓
Analysis: **The proposed action does not directly or indirectly affect Hawai'i's capacity to be a leader in the broadband wireless communication industries, nor does it affect innovative industries from advancing Hawai'i's economic position or influence in the Pacific Region.**			

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 226-11 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.	✓		
(2) Effective protection of Hawaii's unique and fragile environmental resources.		✓	
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.		✓	
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	✓		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.		✓	
(4) Manage natural resources and environs to encourage their beneficial and multiple use without generating costly or irreparable environmental damage.			✓
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			✓
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawaii.			✓
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			✓
(8) Pursue compatible relationships among activities, facilities, and natural resources.		✓	
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.			✓
Analysis: **The proposed project is both directly and indirectly applicable to the objectives and policies for the physical environment through the installation of a sewer system which will provide an alternative to existing wastewater treatment systems in the area. The proposed action also makes prudent use of Hawai'i's resources by allowing for the potential reuse of treated wastewater and will be constructed in a previously developed area.**			
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.		✓	

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
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.		✓	
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.			✓
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.			✓
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawaii's ethnic and cultural heritage.		✓	
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.			✓
Analysis: **The proposed action is indirectly applicable to the objective and policies to preserve Hawai'i's natural and historical resources. An archeological study and cultural impact assessment conducted as part of the environmental review process demonstrates an effort to preserve Hawai'i's natural and historical resources and protect Hawai'i's ethnic and cultural heritage. The State Historic Preservation Division (SHPD) has been consulted and the proposed project will comply with SHPD's recommendations for mitigation.**			
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.	✓		
(2) Greater public awareness and appreciation of Hawaii's environmental resources.		✓	
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.			✓
(2) Promote the proper management of Hawaii's land and water resources.	✓		
(3) Promote effective measures to achieve desired quality in Hawaii's surface, ground, and coastal waters.		✓	
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawaii's people.			✓
(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.			✓
(6) Encourage design and construction practices that enhance the physical qualities of Hawaii's communities.		✓	

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) Encourage urban developments in close proximity to existing services and facilities.			✓
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawaii's people, their cultures and visitors.			✓
Analysis: **The proposed action is directly applicable to the objective and policies to maintain, improve and properly manage the quality of Hawai'i's land and water resources. The installation of a sewerline directly promotes effective measures to protect the quality of surface, ground, and coastal waters. The proposed action also indirectly encourages construction activity that enhances the community's physical qualities.**			
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.	✓		
Policies:			
(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.	✓		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.	✓		
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.			✓
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.			✓
(5) Identify existing and planned state facilities that are vulnerable to sea level rise, flooding impacts, and natural hazards.			✓
(6) Assess a range of options to mitigate the impacts of sea level rise to existing and planned state facilities.			✓
Analysis: **The proposed action is directly applicable to the objective and policies for facility systems through the construction of sewerlines to connect residences to the County sewer system. The proposed project is part of capital improvements that the County of Maui has deemed to be aligned with their strategic goals.**			
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.	✓		
(2) Provision of adequate sewerage facilities for physical and economic	✓		

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
activities that alleviate problems in housing, employment, mobility, and other areas.			
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.	✓		
(2) Promote reuse and recycling to reduce solid and liquid wastes and employ a conservation ethic.		✓	
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			✓
Analysis: **The proposed project is directly and indirectly applicable to the objectives and policies to maintain public health and sanitation standards through the provision of adequate sewerage facilities to safely and properly treat, reuse, and dispose of wastewater in the proposed project area's residential community.**			
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.	✓		
Policies:			
(b) To achieve the facility systems water objective, it shall be the policy of this State to:			
(1) Coordinate development of land use activities with existing and potential water supply.			✓
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			✓
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.			✓
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.	✓		
(5) Support water supply services to areas experiencing critical water problems.			✓
(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.			✓
Analysis: **The proposed waterline improvements are directly applicable to the goal for water systems as the project will install replacement waterlines which will provide water service for existing homes and fire hydrants in the project area.**			
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			

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
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.			✓
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			✓
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;			✓
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;			✓
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;			✓
(4) Provide for improved accessibility to shipping, docking, and storage facilities;			✓
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;			✓
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;			✓
(7) Encourage a variety of carriers to offer increased opportunities and advantages to interisland movement of people and goods;			✓
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			✓
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;			✓
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment;			✓
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;			✓
(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			✓
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives or policies for transportation systems and has no implications for the development of transportation systems or services.**			
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:			

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) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			✓
(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.			✓
(3) Greater diversification of energy generation in the face of threats to Hawaii's energy supplies and systems;			✓
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use; and			✓
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			✓
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.			✓
(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;			✓
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;			✓
(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;			✓
(4) Promote all cost-effective conservation of power and fuel supplies through measures, including:			✓
(A) Development of cost-effective demand-side management programs;			✓
(B) Education;			✓
(C) Adoption of energy-efficient practices and technologies; and			✓
(D) Increasing energy efficiency and decreasing energy use in public infrastructure			✓
(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			✓
(6) Support research, development, demonstration, and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;			✓
(7) Promote alternate fuels and transportation energy efficiency;			✓
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;			✓

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 actions that reduce, avoid, or sequester Hawaii's greenhouse gas emissions through agriculture and forestry initiatives;			✓
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			✓
(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			✓
(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.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for energy facility systems and does not impact Hawai'i's energy supply, reliance on fossil fuels, or use of renewable energy.**			
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.			✓
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.			✓
(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;			✓
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			✓
(3) Promote efficient management and use of existing telecommunications systems and services; and			✓
(4) Facilitate the development of education and training of telecommunications personnel.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for telecommunications facility systems' dependability, efficiency, or cost parameters. The proposed project will not promote research and development of telecommunications systems and resources, and does not advance efficient management and use of existing telecommunications systems and services.**			
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:			✓

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) 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-, very low-,lower-, moderate-, and above moderate-income segments of Hawaii's population.			✓
(2) The orderly development of residential areas sensitive to community needs and other land uses.			✓
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawaii's people.			✓
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.			✓
(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.			✓
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			✓
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing rental and for sale housing units and residential areas.			✓
(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.			✓
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			✓
(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.			✓
(8) Promote research and development of methods to reduce the cost of housing construction in Hawaii.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives or policies to increase homeownership or rental opportunities and does not affect the availability of affordable housing in Hawai'i.**			
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.	✓		
(2) Maintenance of sanitary and environmentally healthful conditions in Hawaii's communities.	✓		

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) Elimination of health disparities by identifying and addressing social determinants of health.			✓
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.			✓
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			✓
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			✓
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			✓
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	✓		
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.		✓	
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			✓
Analysis: **The proposed action is directly and indirectly applicable to the objectives and policies of fulfilling basic individual health needs and maintaining sanitary and environmentally healthful conditions in Hawai'i's communities through the implementation of a sewer system to treat wastewater. The proposed improvements will provide greater protection for ground water, drinking water sources, streams, and the ocean.**			
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.			✓
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			✓

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
development, physical fitness, recreation, and cultural pursuits of all groups.			
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			✓
(3) Provide appropriate educational opportunities for groups with special needs.			✓
(4) Promote educational programs which enhance understanding of Hawaii's cultural heritage.			✓
(5) Provide higher educational opportunities that enable Hawaii's people to adapt to changing employment demands.			✓
(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.			✓
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			✓
(8) Emphasize quality educational programs in Hawaii's institutions to promote academic excellence.			✓
(9) Support research programs and activities that enhance the education programs of the State.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for education, nor does it affect the State's ability to promote or enhance educational programs or opportunities.**			
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.			✓
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.			✓
(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.			✓
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawaii's communities.			✓
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			✓

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
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			✓
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for the provision of social services and will not impact the promotion of assistance programs for vulnerable populations.**			
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.			✓
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.			✓
(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.			✓
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.			✓
(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.			✓
(5) Ensure opportunities for everyone to use and enjoy Hawaii's recreational resources.			✓
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.			✓
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawaii's people.			✓
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.			✓
(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.			✓
(10) Assure adequate access to significant natural and cultural resources in public ownership.			✓
Analysis: **The proposed action is an infrastructure improvement in a residential area that does not have recreational implications and is not indirectly applicable to the objectives and policies for 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
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.			✓
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.			✓
(2) Uphold and protect the national and state constitutional rights of every individual.			✓
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			✓
(4) Ensure equal opportunities for individual participation in society.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for the advancement of individual rights and self-determination and has no implications for the alleviation of the consequences of criminal acts.**			
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.		✓	
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.		✓	
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawaii's people and which are sensitive and responsive to family and community needs.			✓
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawaii.			✓
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawaii's people and visitors.			✓
Analysis: **The proposed action is indirectly applicable to the objectives and policies for the enhancement of culture and helps to foster an increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and history through the preparation of a Cultural Impact Assessment (CIA) that was completed as part of the environmental review process.**			

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 226-26 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.			✓
(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.			✓
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawaii's people.			✓
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.			✓
(2) Encourage increased community awareness and participation in public safety programs.			✓
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.			✓
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			✓
(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.			✓
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.			✓
(2) Enhance the coordination between emergency management programs throughout the State.			✓
Analysis: **The proposed action does not directly or indirectly affect the objectives and policies for public safety. In particular, the proposed project does not address protection of life and property parameters, organizational readiness and capacity, or community responsibility for people's welfare and safety.**			

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 226-27 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.		✓	
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			✓
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.			✓
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.		✓	
(3) Minimize the size of government to that necessary to be effective.			✓
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawaii.			✓
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			✓
(6) Provide for a balanced fiscal budget.			✓
(7) Improve the fiscal budgeting and management system of the State.			✓
(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.			✓
Analysis: **The proposed action is indirectly applicable to the objectives and policies for government. Specifically, the proposed project will comply with regulatory requirements of the environmental review process that advances transparency in the flow of project-related information to the public.**			

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
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:		✓	
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.			✓
(A) Encourage investments which:			✓
(i) Reflect long term commitments to the State;		✓	
(ii) Rely on economic linkages within the local economy;		✓	
(iii) Diversify the economy;		✓	
(iv) Reinvest in the local economy;		✓	
(v) Are sensitive to community needs and priorities; and			✓
(vi) Demonstrate a commitment to provide management opportunities to Hawaii residents; and			✓
(B) Encourage investments in innovative activities that have a nexus to the State, such as:			✓
(i) Present or former residents acting as entrepreneurs or principals;			✓
(ii) Academic support from an institution of higher education in Hawaii;			✓
(iii) Investment interest from Hawaii residents;			✓
(iv) Resources unique to Hawaii that are required for innovative activity; and			✓
(v) Complementary or supportive industries or government programs or projects.			✓
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			✓
(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.			✓
(4) Seek to ensure that state business tax and labor laws and administrative policies are equitable, rational, and predictable.			✓
(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.			✓
(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.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
(7) Continue to seek legislation to protect Hawaii from transportation interruptions between Hawaii and the continental United States.			✓
(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:			✓
(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.			✓
(B) A clean industry that would have minimal adverse effects on Hawaii's environment.			✓
(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.			✓
(D) An industry that would provide reasonable income and steady employment.			✓
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawaii business.			✓
(10) Enhance the quality of Hawaii's labor force and develop and maintain career opportunities for Hawaii's people through the following actions:			✓
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			✓
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			✓
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			✓
(D) Promote career opportunities in all industries for Hawaii's people by encouraging firms doing business in the State to hire residents.			✓
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on-the-job training opportunities.			✓
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			✓
(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.			✓
(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.			✓
(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.			✓
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawaii's significant natural, scenic, historic, and cultural resources.			✓
(5) Develop and maintain career opportunities in the visitor industry for Hawaii's people, with emphasis on managerial positions.			✓
(6) Support and coordinate tourism promotion abroad to enhance Hawaii's share of existing and potential visitor markets.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			✓
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.			✓
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			✓
(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.			✓
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawaii.			✓
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			✓
(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.			✓
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			✓
(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.			✓
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			✓
(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.			✓
(6) Seek favorable freight rates for Hawaii's agricultural products from interisland and overseas transportation operators.			✓
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			✓
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			✓
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			✓
(10) Support the continuation of land currently in use for diversified agriculture.			✓
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			✓
(e) Priority guidelines for water use and development:		✓	
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.			✓
(2) Encourage the improvement of irrigation technology and promote the use of nonpotable water for agricultural and landscaping purposes.			✓
(3) Increase the support for research and development of economically feasible alternative water sources.		✓	
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
(f) Priority guidelines for energy use and development:			✓
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.			✓
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.			✓
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			✓
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			✓
(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.			✓
(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.			✓
(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.			✓
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			✓
(5) Encourage research activities, including legal research in the information and telecommunications fields.			✓
(6) Support promotional activities to market Hawaii's information industry services.			✓
(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.			✓
Analysis: **The proposed action is indirectly applicable to the State's economic priority guidelines and supports the State's long-term commitment to replace all cesspools by 2050 (Act 125 of the 2017 Legislative session). The project supports local construction activity which contributes to a diversified economy and increased employment opportunities. Additionally, the proposed sewer system will increase the amount of treated wastewater which will indirectly promote the use of non-potable water and the research and development of economically feasible alternative water sources.**			
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.			✓
(2) Manage a growth rate for Hawaii's economy that will parallel future employment needs for Hawaii's people.			✓
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			✓
(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.			✓
(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.			✓
(7) Support the development of high technology parks on the neighbor islands.			✓
(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.		✓	
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			✓
(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.			✓
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			✓
(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.			✓
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.			✓
(7) Pursue rehabilitation of appropriate urban areas.			✓
(8) Support the redevelopment of Kakaako into a viable residential, industrial, and commercial community.			✓
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.			✓
(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.			✓
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.			✓
(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.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.			✓
Analysis: **The proposed action indirectly supports the goals and priority guidelines for population growth and land resource management by providing sewer system improvements in a previously developed, urban area in close proximity to existing developments.**			
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.			✓
(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.			✓
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			✓
(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.			✓
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			✓
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			✓
Analysis: **The proposed action does not directly or indirectly support the priority guidelines for crime and criminal justice and will not affect law enforcement efficacy or conditions of correctional facilities, or provide alternative sanctions within the criminal justice system.**			
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.			✓
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			✓
(3) Improve information and analysis relative to land availability and suitability for housing.			✓
(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.			✓
(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.			✓
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			✓
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			✓
(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.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
Analysis: **The proposed action does not directly or indirectly support the priority guidelines for affordable housing and will not affect the availability of affordable housing.**			
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;			✓
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			✓
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			✓
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision making responsibilities;			✓
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			✓
(A) The electronic exchange of information;			✓
(B) Statewide electronic mail; and			✓
(C) Access to the Internet.			✓
(6) Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			✓
(7) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			✓
(8) Develop resources and programs for early childhood education;			✓
(9) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			✓
(10) Strengthen and expand educational programs and services for students with special needs.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the priority guidelines and principles for quality education and does not affect the improvement or development of educational programs and resources.**			
CHAPTER 226-108: Sustainability			
Priority guidelines and principles to promote sustainability shall include:		✓	
(1) Encouraging balanced economic, social, community, and environmental priorities;		✓	
(2) Encouraging planning that respects and promotes living within the natural resources and limits of the State;		✓	
(3) Promoting a diversified and dynamic economy;		✓	
(4) Encouraging respect for the host culture;			✓
(5) Promoting decisions based on meeting the needs of the present without compromising the needs of future generations;			✓
(6) Considering the principles of the ahupuaa system; and			✓
(7) Emphasizing that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawaii.			✓

Hawai'i State Plan, Chapter 226, HRS Part III. Priority Guidelines Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	N/A
Analysis: **The proposed action indirectly supports the priority guidelines and principles for sustainability by providing an alternative to cesspools, and through the promotion of construction activity that promotes a diversified economy.**			
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:		✓	
(1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities;			✓
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;			✓
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State;			✓
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;			✓
(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;			✓
(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;			✓
(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;			✓
(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;		✓	
(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			✓
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.		✓	
Analysis: **The proposed project indirectly supports the climate change priority guidelines as it will be implemented in an area that is outside of the tsunami evacuation zone and the 3.2-foot sea-level rise exposure area, making it resilient against climate change impacts affecting coastal areas. The project also indirectly fosters cross-jurisdictional collaboration between county and federal agencies as cross-cutting federal requirements apply with the use of SRF.**			

ANALYSIS OF PROJECT APPLICABILITY TO COUNTYWIDE POLICY PLAN

APPENDIX

F-2

APPENDIX F-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 (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.

Discussion of 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 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.		✓	
Objective:			
(1) Improve the opportunity to experience the natural beauty and native biodiversity of the islands for present and future generations.		✓	
Policies:			
(a) Perpetuate native Hawaiian biodiversity by preventing the introduction of invasive species, containing or eliminating existing noxious pests, and protecting critical habitat areas.			✓
(b) Preserve and reestablish indigenous and endemic species' habitats and their connectivity.		✓	
(c) Restore and protect forests, wetlands, watersheds, and stream flows, and guard against wildfires, flooding, and erosion.			✓
(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.			✓
(e) Protect undeveloped beaches, dunes, and coastal ecosystems, and restore natural shoreline processes.			✓
(f) Protect the natural state and integrity of unique terrain, valued natural environments, and geological features.		✓	
(g) Preserve and provide ongoing care for important scenic vistas, view planes, landscapes, and open-space resources.			✓
(h) Expand coordination with the State and nonprofit agencies and their volunteers to reduce invasive species, replant indigenous species, and identify critical habitat.			✓
Implementing Actions:			
(a) Develop island-wide networks of greenways, watercourses, and habitat corridors.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed action is indirectly applicable to the objective and policies to preserve Maui County's natural environment, and indigenous and endemic species' habitats. A biological resources study conducted as part of the environmental review process demonstrates an effort to preserve Maui County's natural biological resources. The study concluded that the proposed project is not expected to have adverse negative impacts on the project area's natural environment.			
Objective:			
(2) Improve the quality of environmentally sensitive, locally valued natural resources and native ecology of each island.		✓	
Policies:			
(a) Protect and restore nearshore reef environments and water quality.			✓
(b) Protect marine resources and valued wildlife.			✓
(c) Improve the connection between urban environments and the natural landscape, and incorporate natural features of the land into urban design.			✓
(d) Utilize land-conservation tools to ensure the permanence of valued open spaces.			✓
(e) Mitigate the negative effects of upland uses on coastal wetlands, marine life, and coral reefs.			✓
(f) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.		✓	
(g) Regulate the use and maintenance of stormwater-treatment systems that incorporate the use of native vegetation and mimic natural systems.			✓
(h) Advocate for stronger regulation of fishing, boating, cruise ship, and ecotourism activities.			✓
(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.			✓
Implementing Actions:			
(a) Develop regulations to minimize runoff of pollutants into nearshore waters and reduce nonpoint and point source pollution.			✓
Analysis: The proposed action is indirectly applicable to the objective and policies to preserve and protect Maui's natural resources, native ecology, and quality of coastal waters.			
Objective:			
(3) Improve the stewardship of the natural environment.	✓		
Policies:			
(a) Preserve and protect natural resources with significant scenic, economic, cultural, environmental, or recreational value.		✓	
(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.			✓
(c) Evaluate development to assess potential short-term and long-term impacts on land, air, aquatic, and marine environments.			✓
(d) Improve efforts to mitigate and plan for the impact of natural disasters, human influenced emergencies, and global warming.			✓
(e) Regulate access to sensitive ecological sites and landscapes.			✓
(f) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.		✓	
(g) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(h) Provide public access to beaches and shorelines for recreational and cultural purposes where appropriate.			✓
(i) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.			✓
(j) Support the acquisition of resources with scenic, environmental, and recreational value, and encumber their use.			✓
(k) Improve enforcement activities relating to the natural environment.			✓
(l) For each shoreline community, identify and prioritize beach-conservation objectives, and develop action plans for their implementation.			✓
Implementing Actions:			✓
(a) Document, record, and monitor existing conditions, populations, and locations of flora and fauna communities.	✓		
(b) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			✓
(c) Establish a baseline inventory of available natural resources and their respective carrying capacities.			✓
Analysis: The proposed project directly and indirectly meets the objective of improving the stewardship of the natural environment. The installation of a sewer system indirectly promotes effective measures to protect the quality of surface, ground, and coastal waters through the treatment of wastewater that otherwise may pollute surrounding water sources and natural resources. In addition, a flora and fauna survey addressing biological resources in the project area was conducted as part of the environmental review process which is directly applicable to the implementing action of documenting, recording, and monitoring flora and fauna communities.			
Objective:			
(4) Educate residents and visitors about responsible stewardship practices and the interconnectedness of the natural environment and people.		✓	
Policies:			
(a) Expand education about native flora, fauna, and ecosystems.			✓
(b) Align priorities to recognize that the health of the natural environment and the health of people are inextricably linked.		✓	
(c) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			✓
Analysis: The proposed action is indirectly applicable to the objective and policies to educate residents about responsible stewardship practices and the interconnectedness of the natural environment and people by prioritizing capital improvements that aim to protect the quality of the natural environment while maintaining sanitary conditions for Maui County residents.			
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.		✓	
Objective:			
(1) Perpetuate the Hawaiian culture as a vital force in the lives of residents.		✓	
Policies:			
(a) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(c) Promote the use of ahupua‘a and moku management practices.			✓
(d) Encourage the use of traditional Hawaiian architecture and craftsmanship.			✓
(e) Promote the use of the Hawaiian language.			✓
(f) Recognize and preserve the unique natural and cultural characteristics of each ahupua‘a or district.			✓
(g) Encourage schools to promote broader incorporation of Hawaiian and other local cultures’ history and values lessons into curriculum.			✓
(h) Ensure the protection of Native Hawaiian rights.			✓
(i) Promote, encourage, and require the correct use of traditional place names, particularly in government documents, signage, and the tourism industry.			✓
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.			✓
(b) Develop requirements for all County applicants to perpetuate and use proper traditional place names in all applications submitted.			✓
Analysis: The proposed project is indirectly applicable to the goal and objective to perpetuate traditional Hawaiian cultural practices. A Cultural Impact Assessment (CIA) was prepared for the proposed project as part of the environmental review process. The CIA fosters increased knowledge of Native Hawaiian cultural practices, as well as the history of the project area.			
Objective:			
(2) Emphasize respect for our island lifestyle and our unique local cultures, family, and natural environment.		✓	
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.			✓
(b) Perpetuate a respect for diversity, and recognize the historic blending of cultures and ethnicities.			✓
(c) Encourage the perpetuation of each culture’s unique cuisine, attire, dance, music, and folklore, and other unique island traditions and recreational activities.			✓
(d) Recognize the interconnectedness between the natural environment and the cultural heritage of the islands.		✓	
(e) Protect and prioritize funding for recreational activities that support local cultural practices, such as surfing, fishing, and outrigger-canoe paddling.			✓
Analysis: The proposed project indirectly supports this objective and policy as the CIA acknowledges the relationship between the natural environment and cultural resources found in the project vicinity.			
Objective:			
(3) Preserve for present and future generations the opportunity to know and experience the arts, culture, and history of Maui County.			✓
Policies:			
(a) Foster teaching opportunities for cultural practitioners to share their knowledge and skills.			✓
(b) Support the development of cultural centers.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Broaden opportunities for public art and the display of local artwork.			✓
(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.			✓
(e) Support the perpetuation of Hawaiian arts and culture.			✓
(f) Support programs and activities that record the oral and pictorial history of residents.			✓
(g) Support the development of repositories for culture, history, genealogy, oral history, film, and interactive learning.			✓
Implementing Actions:			
(a) Establish incentives for the display of public art.			✓
(b) Establish centers and programs of excellence for the perpetuation of Hawaiian arts and culture.			✓
Analysis: The proposed project is an infrastructure project that does not have direct or indirect relationships to the objective of preserving the arts, culture, and history of Maui County for present and future generations.			
Objective:			
(4) Preserve and restore significant historic architecture, structures, cultural sites, cultural districts, and cultural landscapes.		✓	
Policies:			
(a) Support the development of island-wide historic, archaeological, and cultural resources inventories.		✓	
(b) Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures to perpetuate a traditional sense of place.			✓
(c) Identify a sustainable rate of use and set forth specific policies to protect cultural resources.			✓
(d) Protect and preserve lands that are culturally or historically significant.			✓
(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.			✓
(f) Perpetuate the authentic character and historic integrity of rural communities and small towns.			✓
(g) Seek solutions that honor the traditions and practices of the host culture while recognizing the needs of the community.			✓
(h) Support the development of an Archaeological District Ordinance.			✓
(i) Protect summits, slopes, and ridgelines from inappropriate development.			✓
(j) Support the registering of important historic sites on the State and Federal historic registers.			✓
(k) Provide opportunities for public involvement with restoration and enhancement of all types of cultural resources.			✓
(l) Foster partnerships to identify and preserve or revitalize historic and cultural sites.			✓
Implementing Actions:			
(a) Identify, develop, map, and maintain an inventory of locally significant natural. cultural, and historical resources for protection.		✓	
(b) Prepare, continually update, and implement a cultural-management plan for cultural sites, districts, and landscapes, where appropriate.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Enact an Archaeological District Ordinance.			✓
(d) Nominate important historic sites to the State and Federal historic registers.			✓
Analysis: The proposed project is indirectly applicable to this objective and policy to preserve significant historic and cultural sites through the preparation of a CIA, which also indirectly supports the implementing action of identifying important cultural sites.			
C. IMPROVE EDUCATION			
Goal: Residents will have access to lifelong formal and informal educational options enabling them to realize their ambitions.			✓
Objective:			
(1) Encourage the State to attract and retain school administrators and educators of the highest quality.			✓
Policies:			
(a) Encourage the State to provide teachers with nationally competitive pay and benefit packages.			✓
(b) Encourage the State to ensure teachers will have the teaching tools and support staff needed to provide students with an excellent education.			✓
(c) Explore Maui County district- and school-based decision making in public education.			✓
Analysis: The proposed action is neither directly or indirectly applicable to the goal, objective and policies for the retention of high-quality educators and administrators.			
Objective:			
(2) Provide nurturing learning environments that build skills for the 21st century.			✓
Policies:			
(a) Expand professional-development opportunities in disciplines that support the economic-development goals of Maui County.			✓
(b) Plan for demographic, social, and technological changes in a timely manner.			✓
(c) Encourage collaborative partnerships to improve conditions of learning environments.			✓
(d) Promote development of neighborhood schools and educational centers.			✓
(e) Integrate schools, community parks, and playgrounds, and expand each community's use of these facilities.			✓
(f) Support coordination between land use and school-facility planning agencies.			✓
(g) Encourage the upgrade and ongoing maintenance of public-school facilities.			✓
(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.			✓
(i) Encourage the State to promote healthier, more productive learning environments, including by providing healthy meals, more physical activity, natural lighting, and passive cooling.			✓
(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.			✓
(k) Design school and park facilities in proximity to residential areas.			✓
(l) Support technology- and natural-environment-based learning.			✓
(m) Encourage the State to support lower student-teacher ratios in public schools.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(n) Encourage alternative learning and educational opportunities.			✓
Implementing Actions:			
(a) Develop safe walking and bicycling programs for school children.			✓
Analysis: The proposed project does not directly or indirectly affect the County's goal, objective, or policies for enhancing learning environments that build 21st Century skills.			
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.			✓
Policies:			
(a) Encourage the State to improve Maui Community College as a comprehensive community college that will serve each community.			✓
(b) Broaden the use of technology and telecommunications to improve educational opportunities throughout the County.			✓
(c) Attract graduate-level research programs and institutions.			✓
(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.			✓
(e) Integrate cultural and environmental values in education, including self-sufficiency and sustainability.			✓
(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.			✓
(g) Ensure teaching of the arts to all ages.			✓
(h) Expand and develop vocational learning opportunities by establishing trade schools.			✓
(i) Encourage the State to integrate financial and economic literacy in elementary, secondary, and higher-education levels.			✓
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.			✓
Analysis: The proposed project is not directly or indirectly applicable to the goals or policies for allowing residents to realize their ambitions through educational opportunities.			
Objective:			
(4) Maximize community-based educational opportunities.			✓
Policies:			
(a) Encourage the State and others to expand pre-school, after-school, and homebased (parent-child) learning.			✓
(b) Support public-private partnerships to develop youth-internship, -apprenticeship, and -mentoring programs.			✓
(c) Support the development of a wide range of informal educational and cultural programs for all residents.			✓
(d) Improve partnerships that utilize the skills and talents at Hawai'i's colleges and universities to benefit the County.			✓
(e) Support career-development and job-recruitment programs and centers.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(f) Attract learning institutions and specialty schools to diversify and enhance educational opportunities.			✓
(g) Expand education of important life skills for the general public.			✓
(h) Support community facilities such as museums, libraries, nature centers, and open spaces that provide interactive-learning opportunities for all ages.			✓
Analysis: As a residential infrastructure project, the proposed action does not indirectly or directly support the objectives or policies for maximizing community-based educational opportunities.			
D. STRENGTHEN SOCIAL AND HEALTHCARE SERVICES			
Goal: Health and social services in Maui County will fully and comprehensively serve all segments of the population.			✓
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.			✓
Policies:			
(a) Work with other levels of government and the nonprofit sector to expand services to address hunger, homelessness, and poverty.			✓
(b) Support the improvement of opportunities for disadvantaged youth, encourage the tradition of hanai relatives, and support expanded opportunities for foster care.			✓
(c) Support expanded long-term-care options, both in institutions and at home, for patients requiring ongoing assistance and medical attention.			✓
(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.			✓
(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.			✓
(f) Encourage equal access to social and healthcare services through both technological and traditional means.			✓
Analysis: The proposed action is not directly or indirectly applicable to the objectives and policies for the provision of social and healthcare services and will not impact access to these services or facilities.			
Objective:			
(2) Encourage the Federal and State governments and the private sector to improve the quality and delivery of social and healthcare services.			✓
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.			✓
(b) Encourage the State to improve the quality of medical personnel, facilities, services, and equipment.			✓
(c) Encourage investment to improve the recruitment of medical professionals and the quality of medical facilities and equipment throughout Maui County.			✓
(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.			✓
(e) Support improved social, healthcare, and governmental services for special needs populations.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(f) Plan for the needs of an aging population and the resulting impacts on social services, housing, and healthcare delivery.			✓
(g) Improve coordination among the police, the courts, and the public in the administration of social and healthcare services.			✓
(h) Support programs that address needs of veterans.			✓
(i) Support programs that address the needs of immigrants.			✓
Implementing Actions:			
(a) Invest in programs designed to improve the general welfare and quality of life of Native Hawaiians.			✓
(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.			✓
(c) Develop and maintain a comprehensive index that will measure the health and wellness needs of families.			✓
(d) Provide heliports countywide for emergency health and safety purposes.			✓
Analysis: The proposed action does not directly or indirectly support the objective or policies for encouraging the government or private sector to improve social services or health and mental health services.			
Objective:			
(3) Strengthen public-awareness programs related to healthy lifestyles and social and medical services.			✓
Policies:			
(a) Expand public awareness about personal safety and crime prevention.			✓
(b) Encourage residents to pursue education and training for careers in the healthcare, social services, and community-development fields.			✓
(c) Expand public awareness and promote programs to achieve healthy eating habits and drug-free lifestyles.			✓
Analysis: As an infrastructure improvement, the proposed action is not directly or indirectly applicable to the objective or policies for public-awareness programs related to healthy lifestyles and social and medical services.			
E. EXPAND HOUSING OPPORTUNITIES FOR RESIDENTS			
Goal: Quality, island-appropriate housing will be available to all residents.			✓
Objective:			
(1) Reduce the affordable housing deficit for residents.			✓
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.			✓
(b) Seek innovative ways to lower housing costs without compromising the quality of our island lifestyle.			✓
(c) Seek innovative methods to secure land for the development of low- and moderate- income housing.			✓
(d) Provide the homeless population with emergency and transitional shelter and other supportive programs.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(f) Support the Department of Hawaiian Home Lands' development of homestead lands.			✓
(g) Manage property-tax burdens to protect affordable resident homeownership.			✓
(h) Explore taxation mechanisms to increase and maintain access to affordable housing.			✓
(i) Improve awareness regarding available affordable homeowner's insurance.			✓
(j) Redevelop commercial areas with a mixture of affordable residential and business uses, where appropriate.			✓
(k) Ensure residents are given priority to obtain affordable housing units developed in their communities, consistent with all applicable regulations.			✓
(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.			✓
(m) Develop neighborhoods with a mixture of accessible and integrated community facilities and services.			✓
(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.			✓
(o) Work with lending institutions to expand housing options and safeguard the financial security of homeowners.			✓
(p) Promote the use of the community land trust model and other land-lease and land- financing options.			✓
(q) Support the opportunity to age in place by providing accessible and appropriately designed residential units.			✓
Analysis: The proposed action does not directly or indirectly support the goal or objective for the availability of housing and affordable housing, nor does it impact the policies for the increased access to housing.			
Objective:			
(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.			✓
Policies:			
(a) Seek innovative ways to develop 'ohana cottages and accessory-dwelling units as affordable housing.			✓
(b) Design neighborhoods to foster interaction among neighbors.			✓
(c) Encourage a mix of social, economic, and age groups within neighborhoods.			✓
(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.			✓
(e) Encourage the building industry to use environmentally sustainable materials, technologies, and site planning.			✓
(f) Develop workforce housing in proximity to job centers and transit facilities.			✓
(g) Provide incentives to developers and owners who incorporate green building practices and energy-efficient technologies into their housing developments.			✓
Implementing Actions:			
(a) Revise laws to support neighborhood designs that incorporate a mix of housing types that are appropriate for island living.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed project does not impact the objectives and policies to improve the mix of housing types.			
Objective:			
(3) Increase and maintain the affordable housing inventory.			✓
Policies:			
(a) Recognize housing as a basic human need, and work to fulfill that need.			✓
(b) Prioritize available infrastructure capacity for affordable housing.			✓
(c) Improve communication, collaboration, and coordination among housing providers and social-service organizations.			✓
(d) Study future projected housing needs, monitor economic cycles, and prepare for future conditions on each island.			✓
(e) Develop public-private and nonprofit partnerships that facilitate the construction of quality affordable housing.			✓
(f) Streamline the review process for high-quality, affordable housing developments that implement the goals, objectives, and policies of the General Plan.			✓
(g) Minimize the intrusion of housing on prime, productive, and potentially productive agricultural lands and regionally valuable agricultural lands.			✓
(h) Encourage long-term residential use of existing and future housing to meet residential needs.			✓
Implementing Actions:			
(a) Develop policies to even out the peaks and valleys in Maui County's construction-demand cycles.			✓
Analysis: The affordable housing inventory will not be directly or indirectly impacted by the proposed project.			
Objective:			
(4) Expand access to education related to housing options, homeownership, financing, and residential construction.			✓
Policies:			
(a) Broaden access to information about County, State, and Federal programs that provide financial assistance to renters and home buyers.			✓
(b) Expand access to information about opportunities for homeownership and self-help housing.			✓
(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.			✓
(d) Improve home buyers' education on all aspects of homeownership.			✓
Analysis: The proposed action does not directly or indirectly affect access to education or information related to homeownership, housing choice, or financing.			
F. STRENGTHEN THE LOCAL ECONOMY			
Goal: Maui County's economy will be diverse, sustainable, and supportive of community values.		✓	
Objective:			
(1) Promote an economic climate that will encourage diversification of the County's economic base and a sustainable rate of economic growth.		✓	
Policies:			
(a) Support economic decisions that create long-term benefits.			✓
(b) Promote lifelong education, career development, and technical training for existing and emerging industries.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Invest in infrastructure, facilities, and programs that foster economic diversification.		✓	
(d) Support and promote locally produced products and locally owned operations and businesses that benefit local communities and meet local demand.			✓
(e) Support programs that assist industries to retain and attract more local labor and facilitate the creation of jobs that offer a living wage.			✓
(f) Encourage work environments that are safe, rewarding, and fulfilling to employees.			✓
(g) Support home-based businesses that are appropriate for and in character with the community.			✓
(h) Encourage businesses that promote the health and well-being of the residents, produce value-added products, and support community values.			✓
(i) Foster an understanding of the role of all industries in our economy.			✓
(j) Support efforts to improve conditions that foster economic vitality in our historic small towns.			✓
(k) Support and encourage traditional host-culture businesses and indigenous agricultural practices.			✓
(l) Support public and private entities that assist entrepreneurs in establishing locally operated businesses.			✓
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.			✓
(b) Monitor the carrying capacity of the islands' social, ecological, and infrastructure systems with respect to the economy.			✓
Analysis: The proposed action indirectly supports the objectives and policies for strengthening and diversifying the economy by supporting design and construction activity which contributes to increased employment opportunities, job choices, and living standards. Businesses positively affected by the project are those which support design and construction such as engineers and material suppliers.			
Objective:			
(2) Diversify and expand sustainable forms of agriculture and aquaculture.			✓
Policies:			
(a) Support programs that position Maui County's agricultural products as premium export products.			✓
(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.			✓
(c) Capitalize on Hawai'i's economic opportunities in the ecologically sensitive aquaculture industries.			✓
(d) Assist farmers to help make Maui County more self-sufficient in food production.			✓
(e) Support ordinances, programs, and policies that keep agricultural land and water available and affordable to farmers.			✓
(f) Support a tax structure that is conducive to the growth of the agricultural economy.			✓
(g) Enhance County efforts to monitor and regulate important agricultural issues.			✓
(h) Support education, research, and facilities that strengthen the agricultural industry.			✓
(i) Maintain the genetic integrity of existing food crops.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(j) Encourage healthy and organic farm practices that contribute to land health and regeneration.			✓
(k) Support cooperatives and other types of nontraditional communal farming and efforts.			✓
(l) Encourage methods of monitoring and controlling genetically modified crops to prevent adverse effects.			✓
(m) Work with the State to ease the permitting process for the revitalization of traditional fish ponds.			✓
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.			✓
(b) Publicly identify, with signage and other means, the field locations of all genetically modified crops.			✓
(c) Create agricultural parks in areas distant from genetically modified crops.			✓
Analysis: The proposed action does not directly or indirectly affect the objectives and policies for the diversification and expansion of agriculture or aquaculture. The project area is in an urban area near other residential subdivisions. The implementation of the proposed action is not considered to adversely affect agricultural productivity of Maui County.			
Objective:			
(3) Support a visitor industry that respects the resident culture and the environment.			✓
Policies:			
(a) Promote traditional Hawaiian practices in visitor-related facilities and activities.			✓
(b) Encourage and educate the visitor industry to be sensitive to island lifestyles and cultural values.			✓
(c) Encourage a spirit of welcome for residents at visitor facilities, such as by offering kama‘aina incentives and discount programs.			✓
(d) Support the renovation and enhancement of existing visitor facilities.			✓
(e) Support policies, programs, and a tax structure that redirect the benefits of the visitor industry back into the local community.			✓
(f) Encourage resident ownership of visitor-related businesses and facilities.			✓
(g) Develop partnerships to provide educational and training facilities to residents employed in the visitor industry.			✓
(h) Foster an understanding of local cultures, customs, and etiquette, and emphasize the importance of the Aloha Spirit as a common good for all.			✓
(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			✓
(j) Improve collaboration between the visitor industry and the other sectors of Maui County’s economy.			✓
(k) Perpetuate an authentic image of the Hawaiian culture and history and an appropriate recognition of the host culture.			✓
(l) Support the programs and initiatives outlined in the Maui County Tourism Strategic Plan 2006-2015.			✓
(m) Promote water conservation, beach conservation, and open-space conservation in areas providing services for visitors.			✓
(n) Recognize the important contributions that the visitor industry makes to the County’s economy, and support a healthy and vibrant visitor industry.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed action is not directly or indirectly applicable to the objective and policies for the visitor industry and has no implications for promoting traditional Hawaiian practices or local culture in the visitor industry.			
Objective:			
(4) Expand economic sectors that increase living-wage job choices and are compatible with community values.		✓	
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.			✓
Analysis: The proposed project is directly applicable to the objective for expanding the economic sectors that increase living-wage job choices through supporting local design and construction activity. The proposed sewer improvements are aligned with the conservation values of the community. However, the proposed project does not directly or indirectly support an emerging industry.			
G. IMPROVE PARKS AND PUBLIC FACILITIES			
Goal: A full range of island-appropriate public facilities and recreational opportunities will be provided to improve the quality of life for residents and visitors.			✓
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.			✓
Policies:			
(a) Protect, enhance, and expand access to public shoreline and mountain resources.			✓
(b) Expand and enhance the network of parks, multi-use paths, and bikeways.			✓
(c) Assist communities in developing recreational facilities that promote physical fitness.			✓
(d) Expand venue options for recreation and performances that enrich the lifestyles of Maui County's people.			✓
(e) Expand affordable recreational and after-school programs for youth.			✓
(f) Encourage and invest in recreational, social, and leisure activities that bring people together and build community pride.			✓
(g) Promote the development and enhancement of community centers, civic spaces, and gathering places throughout our communities.			✓
(h) Expand affordable access to recreational opportunities that support the local lifestyle.			✓
Implementing Actions:			
(a) Identify and reserve lands for cemeteries, and preserve existing cemeteries on all islands, appropriately accommodating varying cultural and, faith-based traditions.			✓
Analysis: The proposed project is not directly or indirectly applicable to the objective or policies for expanding or improving access to recreational and public facilities. Additionally, the proposed sewerline will not encourage the development or enhancement of community centers and recreational venues.			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Objective:			
(2) Improve the quality and adequacy of community facilities.			✓
Policies:			
(a) Provide an adequate supply of dedicated shelters and facilities for disaster relief.			✓
(b) Provide and maintain community facilities that are appropriately designed to reflect the traditions and customs of local cultures.			✓
(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.			✓
(d) Maintain, enhance, expand, and provide new active and passive recreational facilities in ways that preserve the natural beauty of their locations.			✓
(e) Redesign or retrofit public facilities to adapt to major shifts in environmental or urban conditions to the extent reasonable.			✓
Analysis: The proposed action does not directly or indirectly support the objective or policies for the improvement or provision of adequate community facilities.			
Objective:			
(3) Enhance the funding, management, and planning of public facilities and park lands.			✓
Policies:			
(a) Identify and encourage the establishment of regulated and environmentally sound campgrounds.			✓
(b) Manage park use and control access to natural resources in order to rest sensitive places and utilize the resources in a sustainable manner.			✓
(c) Provide public-recreational facilities that are clean and well-maintained.			✓
(d) Develop partnerships to ensure proper stewardship of the islands' trails, public lands, and access systems.			✓
(e) Ensure that there is an adequate supply of public restrooms in convenient locations.			✓
Implementing Actions:			
(a) Encourage the State to allow for overnight fishing along the shoreline in accordance with management plans and regulations.			✓
(b) Develop and regularly update functional plans, including those relating to public facilities, parks, and campgrounds.			✓
(c) Develop and adopt local level-of service standards for public facilities and parks.			✓
(d) Identify, acquire, and develop lands for parks, civic spaces, and public uses.			✓
Analysis: The proposed action is not directly or indirectly applicable to the enhancement of funding, management, or planning of public facilities and recreational park lands.			
H. DIVERSIFY TRANSPORTATION OPTIONS			
Goal: Maui County will have an efficient, economical, and environmentally sensitive means of moving people and goods.			✓
Objective:			
(1) Provide an effective, affordable, and convenient ground-transportation system that is environmentally sustainable.			✓
Policies:			
(a) Execute planning strategies to reduce traffic congestion.			✓
(b) Plan for the efficient relocation of roadways for the public benefit.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Support the use of alternative roadway designs, such as traffic-calming techniques and modern roundabouts.			✓
(d) Increase route and mode options in the ground-transportation network.			✓
(e) Ensure that roadway systems are safe, efficient, and maintained in good condition.			✓
(f) Preserve roadway corridors that have historic, scenic, or unique physical attributes that enhance the character and scenic resources of communities.			✓
(g) Design new roads and roadway improvements to retain and enhance the existing character and scenic resources of the communities through which they pass.			✓
(h) Promote a variety of affordable and convenient transportation services that meet countywide and community needs and expand ridership of transit systems.			✓
(i) Collaborate with transit agencies, government agencies, employers, and operators to provide planning strategies that reduce peak-hour traffic.			✓
(j) Develop and expand an attractive, island-appropriate, and efficient public transportation system.			✓
(k) Provide and encourage the development of specialized transportation options for the young, the elderly, and persons with disabilities.			✓
(l) Evaluate all alternatives to preserve quality of life before widening roads.			✓
(m) Encourage businesses in the promotion of alternative transportation options for resident and visitor use.			✓
(n) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			✓
Implementing Actions:			
(a) Create incentives and implement strategies to reduce visitor dependence on rental cars.			✓
(b) Establish efficient public-transit routes between employment centers and primary workforce residential areas.			✓
(c) Create attractive, island-appropriate, conveniently located park-and-ride and ride- share facilities.			✓
Analysis: The proposed action is not directly or indirectly applicable to the objective or policies for sustainable transportation options and has no implications for the encouragement of transportation systems or services.			
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.			✓
Policies:			
(a) Make walking and bicycling transportation safe and easy between and within communities.			✓
(b) Require development to be designed with the pedestrian in mind.			✓
(c) Design new and retrofit existing rights-of-way with adequate sidewalks, bicycle lanes, or separated multi-use transit corridors.			✓
(d) Support the development of a countywide network of bikeways, equestrian trails, and pedestrian paths.			✓
(e) Support the reestablishment of traditional trails between communities, to the ocean, and through the mountains for public use.			✓
(f) Encourage educational programs to increase safety for pedestrians and bicyclists.			✓
Implementing Actions:			
(a) Design, build, and modify existing bikeways to improve safety and separation from automobiles.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(b) Increase enforcement to reduce abuse of bicycle and pedestrian lanes by motorized vehicles.			✓
(c) Identify non-motorized transportation options as a priority for new sources of funding.			✓
Analysis: **The proposed action does not directly or indirectly support reducing the reliance on automobile and fossil fuels, and has no implications for the encouragement of alternative modes of transportation.**			
Objective:			
(3) Improve opportunities for affordable, efficient, safe, and reliable air transportation.			✓
Policies:			
(a) Discourage private helicopter and fixed-wing landing sites to mitigate environmental and social impacts.			✓
(b) Encourage the use of quieter aircraft and noise-abatement procedures for arrivals and departures.			✓
(c) Encourage the modernization and maintenance of air-transportation facilities for general-aviation activities.			✓
(d) Encourage a viable and competitive atmosphere for air carriers to expand service and ensure sufficient intra-County flights and affordable fares for consumers.			✓
(e) Continue to support secondary airports, and encourage the State to provide them with adequate funding.			✓
(f) During Community Plan updates, explore the use of the smaller airports.			✓
(g) Encourage the State to provide efficient, adequate, and affordable parking and transit connections within and around airports.			✓
Analysis: **The proposed sewer line does not directly or indirectly affect the objective or policies for air transportation.**			
Objective:			
(4) Improve opportunities for affordable, efficient, safe, and reliable ocean transportation.			✓
Policies:			
(a) Support programs and regulations that reduce the disposal of maritime waste and prevent spills into the ocean.			✓
(b) Encourage the upgrading of harbors to resist damage from natural hazards and disasters.			✓
(c) Encourage the State to study the use of existing harbors and set priorities for future use.			✓
(d) Explore all options to protect the traditional recreational uses of harbors, and mitigate harbor-upgrade impacts to recreational uses where feasible.			✓
(e) Encourage the upgrading of harbors and the separation of cargo and bulk materials from passenger and recreational uses.			✓
(f) Encourage the State to provide for improved capacity at shipping, docking, and storage facilities.			✓
(g) Encourage the State to provide adequate parking facilities and transit connections within and around harbor areas.			✓
(h) Encourage the redevelopment and revitalization of harbors while preserving historic and cultural assets in harbor districts.			✓
(i) Encourage the State to provide adequate facilities for small-boat operations, including small-boat launch ramps, according to community needs.			✓
(j) Support the maintenance and cleanliness of harbor facilities.			✓
(k) Support the redevelopment of harbors as pedestrian-oriented gathering places.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: **The proposed sewer improvement project will be located inland and away from harbor facilities, and therefore, does not directly or indirectly affect the objective or policies for ocean transportation.**			
Objective:			
(5) Improve and expand the planning and management of transportation systems.			✓
Policies:			
(a) Encourage progressive community design and development that will reduce transportation trips.			✓
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.			✓
(c) Establish appropriate user fees for private enterprises that utilize public transportation facilities for recreational purposes.			✓
(d) Support the revision of roadway-design criteria and standards so that roads are compatible with surrounding neighborhoods and the character of rural areas.			✓
(e) Plan for multi-modal transportation and utility corridors on each island.			✓
(f) Support designing all transportation facilities, including airport, harbor, and mass-transit stations, to reflect Hawaiian architecture.			✓
(g) Utilize transportation-demand management as an integral part of transportation planning.			✓
(h) Accommodate the planting of street trees and other appropriate landscaping in all public rights-of-way.			✓
Analysis: **The objectives and policies for the improvement or expansion of transportation systems are not directly or indirectly applicable to this project.**			
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.	✓		
Objective:			
(1) Improve water systems to assure access to sustainable, clean, reliable, and affordable sources of water.	✓		
Policies:			
(a) Ensure that adequate supplies of water are available prior to approval of subdivision or construction documents.			✓
(b) Develop and fund improved water-delivery systems.			✓
(c) Ensure a reliable and affordable supply of water for productive agricultural uses.			✓
(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.			✓
(e) Retain and expand public control and ownership of water resources and delivery systems.			✓
(f) Improve the management of water systems so that surface-water and groundwater resources are not degraded by overuse or pollution.			✓
(g) Explore and promote alternative water-source-development methods.			✓
(h) Seek reliable long-term sources of water to serve developments that achieve consistency with the appropriate Community Plans.			✓
Implementing Actions:			
(a) Develop a process to review all applications for desalination.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: **The proposed project is directly applicable to the physical infrastructure goal as the project will provide new waterlines which will improve water quality and access to clean water.**			
Objective:			
(2) Improve waste-disposal practices and systems to be efficient, safe, and as environmentally sound as possible.	✓		
Policies:			
(a) Provide sustainable waste-disposal systems and comprehensive, convenient recycling programs to reduce the flow of waste into landfills.			✓
(b) Support innovative and alternative practices in recycling solid waste and wastewater and disposing of hazardous waste.		✓	
(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.			✓
(d) Develop strategies to promote public awareness to reduce pollution and litter, and encourage residents to reduce, reuse, recycle, and compost waste materials.			✓
(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.	✓		
Implementing Actions:			
(a) Establish recycling, trash-separation, and materials recovery programs and facilities to reduce the flow of waste into landfills.			✓
(b) Study the feasibility of developing environmentally safe waste-to-energy facilities.			✓
(c) Utilize taxes and fees as means to encourage conservation and recycling.			✓
(d) Implement and regularly update the Integrated Solid Waste Management Plan.			✓
(e) Phase out the use of injection wells.			✓
Analysis: **The proposed project is directly and indirectly applicable to the objective and policies to improve waste-disposal systems through the provision of adequate sewerage facilities to safely and properly treat, reuse, and dispose of wastewater. In addition, the proposed sewer improvements are consistent with the plans of the County's Capital Improvement Program.**			
Objective:			
(3) Significantly increase the use of renewable and green technologies to promote energy efficiency and energy self-sufficiency.			✓
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			✓
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			✓
(c) Expand education about energy conservation and self-sufficiency.			✓
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			✓
(e) Expand renewable-energy production.			✓
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			✓
(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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(h) Encourage the use of sustainable energy to power vehicles.			✓
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts and devices.			✓
(j) Encourage green footprint practices.			✓
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			✓
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			✓
(m) Promote and support environmentally friendly practices in all energy sectors.			✓
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			✓
(b) Adopt a Green Building Code, and support green building practices.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objective and policies for renewable and sustainable energy systems and does not impact Maui County's energy supply, reliance on fossil fuels, or use of renewable energy.**			
Objective:			
(4) Direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity.	✓		
Policies:			
(a) Capitalize on existing infrastructure capacity as a priority over infrastructure expansion.			✓
(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.			✓
(c) Utilize appropriate infrastructure technologies in the appropriate locations.			✓
(d) Promote land use patterns that can be provided with infrastructure and public facilities in a cost-effective manner.			✓
(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.	✓		
Implementing Actions:			
(a) Develop a streamlining system for urban infill projects.			✓
(b) Identify appropriate areas for urban expansion of existing towns where infrastructure and public facilities can be provided in a cost-effective manner.			✓
Analysis: **The sewer system improvements will be constructed in a previously developed residential area.**			
Objective:			
(5) Improve the planning and management of infrastructure systems.	✓		
Policies:			
(a) Provide a reliable and sufficient level of funding to enhance and maintain infrastructure systems.			✓
(b) Require new developments to contribute their pro rata share of local and regional infrastructure costs.			✓
(c) Improve coordination among infrastructure providers and planning agencies to minimize construction impacts.			✓
(d) Maintain inventories of infrastructure capacity, and project future infrastructure needs.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(e) Require social-justice and -equity issues to be considered during the infrastructure-planning process.			✓
(f) Discourage the development of critical infrastructure systems within hazard zones and the tsunami-inundation zone to the extent practical.			✓
(g) Ensure that infrastructure is built concurrent with or prior to development.			✓
(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.			✓
(j) Promote the undergrounding of utility and other distribution lines for health safety, and aesthetic reasons.	✓		
Implementing Actions:			
(a) Develop and regularly update functional plans for infrastructure systems.			✓
(b) Develop, adopt, and regularly update local or community-sensitive level-of service standards for infrastructure systems.			✓
Analysis: **The proposed action is an infrastructure improvement project that will provide an alternative to cesspools and will connect to the County's sewer system. Furthermore, the proposed sewerline will be constructed underground.**			
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.		✓	
Objective:			
(1) Improve land use management and implement a directed-growth strategy.		✓	
Policies:			
(a) Establish, map, and enforce urban- and rural-growth limits.			✓
(b) Direct urban and rural growth to designated areas.		✓	
(c) Limit the number of visitor-accommodation units and facilities in Community Plan Areas.			✓
(d) Maintain a sustainable balance between the resident, part-time resident, and visitor populations.			✓
(e) Encourage redevelopment and infill in existing communities on lands intended for urban use to protect productive farm land and open-space resources.			✓
(f) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			✓
(g) Restrict development in areas that are prone to natural hazards, disasters, or sea-level rise.			✓
(h) Direct new development in and around communities with existing infrastructure and service capacity, and protect natural, scenic, shoreline, and cultural resources.		✓	
(i) Establish and maintain permanent open space between communities to protect each community's identity.			✓
(j) Support the dedication of land for public uses.			✓
(k) Preserve the public's rights of access to and continuous lateral access along all shorelines.			✓
(l) Enable existing and future communities to be self-sufficient through sustainable land use planning and management practices.			✓
(m) Protect summits, slopes, and ridgelines from inappropriate development.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Implementing Actions:			
(a) Regularly update urban- and rural-growth boundaries and their maps.			✓
(b) Establish transfer and purchase of development rights programs.			✓
(c) Develop and adopt a green infrastructure plan.			✓
(d) Develop studies to help determine a sustainable social, environmental, and economic carrying capacity for each island.			✓
(e) Identify and define resort-destination areas.			✓
Analysis: **The proposed project is indirectly applicable to the objective and policies for the sustainable and prudent use of land as it will be implemented in a previously developed area near other existing residential subdivisions.**			
Objective:			
(2) Improve planning for and management of agricultural lands and rural areas.			✓
Policies:			
(a) Protect prime, productive, and potentially productive agricultural lands to maintain the islands' agricultural and rural identities and economies.			✓
(b) Provide opportunities and incentives for self-sufficient and subsistence homesteads and farms.			✓
(c) Discourage developing or subdividing agriculturally designated lands when non-agricultural activities would be primary uses.			✓
(d) Conduct agricultural-development planning to facilitate robust and sustainable agricultural activities.			✓
Implementing Actions:			
(a) Inventory and protect prime, productive, and potentially productive agricultural lands from competing non-agricultural land uses.			✓
Analysis: **The proposed project is not directly or indirectly applicable to the objectives or policies for the planning and management of agricultural or rural lands. Maui County Zoning classifies the project area in the Agricultural zone; however, in its current use, it is primarily residential and the proposed action is allowed as a minor utility according to Maui County Code Chapter 19.30.**			
Objective:			
(3) Design all developments to be in harmony with the environment and to protect each community's sense of place.			✓
Policies:			
(a) Support and provide incentives for green building practices.			✓
(b) Encourage the incorporation of green building practices and technologies into all government facilities to the extent practicable.			✓
(c) Protect and enhance the unique architectural and landscape characteristics of each Community Plan Area, small town, and neighborhood.			✓
(d) Ensure that adequate recreational areas, open spaces, and public-gathering places are provided and maintained in all urban centers and neighborhoods.			✓
(e) Ensure business districts are distinctive, attractive, and pedestrian-friendly destinations.			✓
(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.			✓
(g) Where appropriate, integrate public-transit, equestrian, pedestrian, and bicycle facilities, and public rights-of-way as design elements in new and existing communities.			✓

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.			✓
(i) Adequately buffer and mitigate noise and air pollution in mixed-use areas to maintain residential quality of life.			✓
(j) Protect rural communities and traditional small towns by regulating the footprint, locations, site planning, and design of structures.			✓
(k) Support small-town revitalization and preservation.			✓
(l) Facilitate safe pedestrian access, and create linkages between destinations and within parking areas.			✓
Implementing Actions:			
(a) Establish design guidelines and standards to enhance urban and rural environments.			✓
(b) Provide funding for civic-center and civic-space developments.			✓
(c) Establish and enhance urban forests in neighborhoods and business districts.			✓
Analysis: **The proposed project is neither directly or indirectly applicable to the objective for the design of developments, as the sewer system improvement will be implemented in a previously developed area.**			
Objective:			
(4) Improve and increase efficiency in land use planning and management.			✓
Policies:			
(a) Assess the cumulative impact of developments on natural ecosystems, natural resources, wildlife habitat, and surrounding uses.			✓
(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.			✓
(c) Encourage public and private partnerships to preserve lands of importance, develop housing, and meet the needs of residents.			✓
(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.			✓
(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.			✓
(f) Enable greater public participation in the review of subdivisions.			✓
(g) Improve land use decision making through the use of land- and geographic information systems.			✓
Implementing Actions:			
(a) Institute a time limit and sunsetting stipulations on development entitlements and their implementation.			✓
Analysis: **The proposed action is not directly or indirectly applicable to this objective or policies and has no implications for improving the efficiency in land use planning and management.**			
K. STRIVE FOR GOOD GOVERNANCE			
Objective:			
(1) Strengthen governmental planning, coordination, consensus building, and decision making.		✓	

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Policies:			
(a) Plan and prepare for the effects of social, demographic, economic, and environmental shifts.			✓
(b) Plan for and address the possible implications of Hawaiian sovereignty.			✓
(c) Encourage collaboration among government agencies to reduce duplication of efforts and promote information availability and exchange.			✓
(d) Expand opportunities for the County to be involved in and affect State and Federal decision making.			✓
(e) Plan and prepare for large-scale emergencies and contingencies.			✓
(f) Improve public awareness about preparing for natural hazards, disasters, and evacuation plans.			✓
(g) Improve coordination among Federal, State, and County agencies.		✓	
Implementing Actions:			
(a) Develop policies, regulations, and programs to protect and enhance the unique character and needs of the County's various communities.			✓
(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.			✓
(c) Study and evaluate the feasibility and implications of voting in Maui County Council elections.			✓
(d) Study and evaluate the feasibility of authorizing town governments in Maui County.			✓
Analysis: **The proposed project indirectly fosters governmental planning and coordination between county and federal agencies as cross-cutting federal requirements apply with the use of State Revolving Funds (SRF).**			
Objective:			
(2) Promote civic engagement.		✓	
Policies:			
(a) Foster consensus building through in-depth, innovative, and accessible public participatory processes.		✓	
(b) Promote and ensure public participation and equal access to government among all citizens.			✓
(c) Encourage a broad cross-section of residents to volunteer on boards and commissions.			✓
(d) Encourage the State to improve its community-involvement processes.			✓
(e) Support community-based decision making.		✓	
(f) Expand advisory functions at the community level.			✓
(g) Expand opportunities for all members of the public to participate in public meetings and forums.			✓
(h) Facilitate the community's ability to obtain relevant documentation.			✓
(i) Increase voter registration and turnout.			✓
Implementing Actions:			
(a) Implement two-way communication using audio-visual technology that allows residents to participate in the County's planning processes.			✓
(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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Explore funding mechanisms to improve participation by volunteers on boards and commissions.			✓
(d) Develop a project-review process that mandates early and ongoing consultation in and with communities affected by planning and land use activities.			✓
Analysis: **The proposed action is indirectly applicable to the objectives and policies related to civic engagement and indirectly promotes public participation in government. Specifically, the proposed project will comply with regulatory requirements of the environmental review process that advance transparency in the flow of project-related information to the public and allow for early consultation and public input for the proposed project.**			
Objective:			
(3) Improve the efficiency, reliability, and transparency of County government's internal processes and decision making.		✓	
Policies:			
(a) Use advanced technology to improve efficiency.			✓
(b) Simplify and clarify the permitting process to provide uniformity, reliability, efficiency, and transparency.			✓
(c) Improve communication with Lanaʻi and Molokaʻi through the expanded use of information technologies, expanded staffing, and the creation and expansion of government-service centers.			✓
(d) Ensure that laws, policies, and regulations are internally consistent and effectuate the intent of the General Plan.		✓	
Implementing Actions:			
(a) Update the County Code to be consistent with the General Plan.			✓
(b) Identify and update County regulations and procedures to increase the productivity and efficiency of County government.			✓
(c) Develop local level-of-service standards for infrastructure, public facilities, and services.		✓	
(d) Implement plans through programs, regulations, and capital improvements in a timely manner.			✓
(e) Expand government online services.			✓
Analysis: **The proposed action is indirectly applicable to the objective and policies for the efficiency, reliability, and transparency of the County government's internal processes and decision-making. As part of the environmental review process, the proposed project is evaluated to determine its compatibility with the County's General Plan.**			
Objective:			
(4) Adequately fund in order to effectively administer, implement, and enforce the General Plan.			✓
Policies:			
(a) Adequately fund, staff, and support the timely update and implementation of planning policy, programs, functional plans, and enforcement activities.			✓
(b) Ensure that the County's General Plan process provides for efficient planning at the County, island, town, and neighborhood level.			✓
(c) Encourage ongoing professional development, education, and training of County employees.			✓
(d) Encourage competitive compensation packages for County employees to attract and retain County personnel.			✓
(e) Enable the County government to be more responsive in implementing our General Plan and Community Plans.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(f) Review discretionary permits for compliance with the Countywide Policy Plan.			✓
(g) Strengthen the enforcement of County, State, and Federal land use laws.			✓
Implementing Actions:			
(a) Establish penalties to ensure compliance with County, State, and Federal land use laws.			✓
Analysis: **The objective to adequately fund, implement and enforce the General Plan is neither directly or indirectly applicable to the proposed project and will not further efforts to educate, train, or retain County employees.**			
Objective:			
(5) Strive for County government to be a role model for implementing cultural and environmental policies and practices.			✓
Policies:			
(a) Educate residents on the benefits of sustainable practices.			✓
(b) Encourage the retention and hiring of qualified professionals who can improve cultural and environmental practices.			✓
(c) Incorporate environmentally sound and culturally appropriate practices in government operations and services.			✓
(d) Encourage all vendors with County contracts to incorporate environmentally sound and culturally appropriate practices.			✓
Analysis: **The proposed project does not directly or indirectly affect the objective and policies for the implementation of cultural and environmental policies or practices in government.**			
L. MITIGATE CLIMATE CHANGE AND WORK TOWARD RESILIENCE			
Goal: Minimize the causes and negative effects of climate change.			✓
Objective:			
(1) Lower carbon emissions levels to mitigate climate change impacts and limit the rate of global warming.			✓
Policies:			
(a) Increase reforestation efforts by encouraging residents and visitors to plant non-invasive gardens and trees.			✓
(b) Improve communication, coordination, and collaboration among those that work to mitigate climate change impacts.			✓
(c) Promote the teaching and use of regenerative agriculture.			✓
(d) Invest in infrastructure that is not dependent on fossil fuels and utilizes renewable energy.			✓
(e) Improve efforts to mitigate and plan for the impact of natural disasters and global warming.			✓
(f) Encourage the building industry to use environmentally sustainable materials, technology, and site planning.			✓
(g) Reduce air, noise, light, land, and water pollution, and reduce Maui County's contribution to global climate change.			✓
(h) Plan and prepare for and educate visitors and residents about the possible effects of global warming.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(i) Promote programs and incentives that decrease greenhouse-gas emissions and improve environmental stewardship.			✓
(j) Support the development of carbon-emission standards and an incentive program aimed at achieving County carbon-emission goals.			✓
Implementing Actions:			
(a) Implement Federal and State policies that require a reduction of greenhouse-gas emissions.			✓
(b) Establish a Countywide Climate Action Plan			✓
(c) Develop programs that assist residents and businesses with obtaining access to renewable energy sources.			✓
(d) Revise laws to support neighborhood designs that incorporate the use of renewable energy sources that are appropriate for island living.			✓
(e) Incorporate planting of native and indigenous trees as a major component of Urban Design to both cool neighborhoods and reduce carbon dioxide.			✓
(f) Coordinate with State, County, and private landowners in the development of forestry and prioritizing of native and indigenous trees to reduce carbon dioxide.			✓
(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.			✓
Analysis: **The proposed action is not directly or indirectly applicable to this objective or policies and has no implications for improving the efficiency in land use planning and management.**			
Objective:			
(2) Reduce the impacts of sea-level rise by acknowledging climate change, adapting, mitigating, and planning accordingly.			✓
Policies:			
(a) Evaluate development to assess potential short-term and long-term sea-level rise impacts on nearshore environments.			✓
(b) Improve efforts to mitigate and plan for the impact of sea-level rise.			✓
(c) Protect undeveloped beaches, dunes, and ecosystems, and restore natural shoreline processes.			✓
(d) Develop an inventory of private wastewater systems (septic systems, cesspools) that may be affected by sea-level rise.			✓
(e) Strengthen coastal-zone management, re-naturalization of shorelines, where possible, and filtration or treatment of urban and agricultural runoff.			✓
(f) Educate the construction and landscape industries and property owners about the use of best management practices to prevent erosion and nonpoint source pollution.			✓
(g) Discourage beach hardening processes such as building sea walls and revetments that block movement of the shoreline and can accelerate erosion.			✓
(h) Discourage new entitlements for residential, resort, or commercial development along the shoreline.			✓
(i) Restrict development in areas that are prone to sea-level rise.			✓
(j) Move or rebuild public facilities away from nearshore environments to account for sea-level rise to the extent reasonable.			✓
(k) Move or rebuild roads that are in sea-level ri0se inundation zones to the extent reasonable.			✓
(l) Ensure that public or affordable housing projects include siting and design standards that promote equity and resilience for vulnerable populations.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(m) Identify, research, and evaluate innovative and sustainable financing to support mitigation and adaptation to sea level rise.			✓
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.			✓
(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.			✓
(c) Identify disaster redevelopment alternatives that support resilience-focused adaptation to sea level rise in the event of a catastrophic coastal event.			✓
Analysis: **The proposed action is not directly or indirectly applicable to this objective or policies and has no implications for improving the efficiency in land use planning and management.**			
Objective:			
(3) Significantly increase the use of renewable and green technologies to. promote energy efficiency and energy self-sufficiency.			✓
Policies:			
(a) Promote the use of locally renewable energy sources, and reward energy efficiency.			✓
(b) Consider tax incentives and credits for the development of sustainable- and renewable-energy sources.			✓
(c) Expand education about energy conservation and self-sufficiency.			✓
(d) Encourage small-scale energy generation that utilizes wind, sun, water, biowaste, and other renewable sources of energy.			✓
(e) Expand renewable-energy production.			✓
(f) Develop public-private partnerships to ensure the use of renewable energy and increase energy efficiency.			✓
(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.			✓
(h) Encourage the use of sustainable energy to power vehicles.			✓
(i) Promote the retrofitting of existing buildings and new development to incorporate energy-saving design concepts anddevices.			✓
(j) Encourage green footprint practices.			✓
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			✓
(l) Support green building practices such as the construction of buildings that aim to minimize carbon dioxide production, produce renewable energy, and recycle water.			✓
(m) Promote and support environmentally friendly practices in all energy sectors.			✓
Implementing Actions:			
(a) Adopt an energy-efficiency policy for Maui County government as a model for other jurisdictions.			✓
(b) Adopt a Green Building Code and support green building practices.			✓
Analysis: **The proposed action is not directly or indirectly applicable to this objective or policies and has no implications for improving the efficiency in land use planning and management.**			

ANALYSIS OF PROJECT APPLICABILITY TO MAUI ISLAND PLAN

APPENDIX

F-3

APPENDIX F-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.			✓
Objective:			
1.1.1 Greater retention and return of island residents by providing viable work, education, and lifestyle options.			✓
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.			✓
1.1.1.b Expand housing, transportation, employment, and social opportunities to ensure residents are able to comfortably age within their communities.			✓
1.1.1.c Measure and track resident satisfaction through surveys and community indicators.			✓
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).			✓
Analysis: **The proposed project is neither directly or indirectly applicable to the goal, objective, and policies for population and does not impact the expansion of community programs.**			
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.		✓	
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).			✓
Policies:			
2.1.1.a Perpetuate the spirit of aloha and celebrate the host Hawaiian culture and other ethnic cultures.			✓
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.			✓
2.1.1.c Ensure traditional public access routes, including native Hawaiian trails, are maintained for public use.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
Analysis: **The objective and policies related to maintaining an island culture and lifestyle that is healthy and vibrant are not directly or indirectly applicable to the proposed project.**			
Objective:			
2.2 A more effective and efficient planning and review process that incorporates the best available cultural resources inventory, protection techniques, and preservation strategies.		✓	
Policies:			
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.		✓	
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).			✓
2.1.2.c Ensure that cultural, historic, and archaeological resources are protected for the benefit of present and future generations.		✓	
Objective:			
2.3 Enhance the island's historic, archaeological, and cultural resources.			✓
Policies:			
2.1.3.a Identify and pursue a listing of the properties and sites on the State and National Register of Historic Places.			✓
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.			✓
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.			✓
2.1.3.d Promote the rehabilitation and adaptive reuse of historic sites, buildings, and structures.			✓
2.1.3.e Encourage property owners to register historic and archaeological sites on the State and National Register.			✓
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.			✓
2.1.3.g Encourage the resolution of land title questions relating to Land Commission Awards and Royal patents.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: **The proposed action is indirectly applicable to the goal, objective, and policies to protect Hawai'i's archaeological and cultural resources. An archeological study and cultural impact assessment conducted as part of the environmental review process demonstrates an effort to preserve Hawai'i's natural and historical resources and protect Hawai'i's ethnic and cultural heritage. The State Historic Preservation Division (SHPD) has been consulted and the proposed project will comply with the SHPD's recommendations for mitigation.**			
SHORELINE, REEFS, AND NEARSHORE WATERS			
Goal:			
2.2 An intact, ecologically functional system of reef, shoreline, and nearshore waters that are protected in perpetuity.		✓	
Objective:			
2.2.1 A more comprehensive and community-based ICZM program.			✓
Policies:			
2.2.1.a Encourage a management system that protects and temporarily rests the reef ecosystems from overuse.			✓
2.2.1.b Support the establishment of additional MMAs and reef replenishment areas.			✓
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 'Ahihi-Kina'u Natural Area Reserve, Honolua-Mokulē'ia Bay Marine Life Conservation District, and Mākena State Park.			✓
2.2.1.d Incorporate the following into the MIP, where consistent with the MIP:			✓
(1) Beach Management Plan for Maui;			✓
(2) Coastal Nonpoint Pollution Control Program Management Plan;			✓
(3) Implementation Plan for Polluted Runoff Control; and			✓
(4) Ocean Resource Management Plan.			✓
2.2.1.e Support greater coordination among governmental agencies involved with the protection of the island's marine resources.			✓
Objective:			
2.2.2 Improved reef health, coastal water quality, and marine life.		✓	
Policies:			
2.2.2.a Create additional mechanisms where needed to contain and control runoff and pollution.		✓	
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.			✓
2.2.2.c Carefully manage beach nourishment activities to protect the coastal and marine ecosystem.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
2.2.2.e Strictly regulate shoreline armoring in accordance with adopted Shoreline Rules, with an intent to protect the coastal and marine ecosystem.			✓
2.2.2.f Support greater protection of Keālia Pond National Wildlife Refuge through the following:			✓
(1) Enhancement of marine ecosystems;			✓
(2) Beach and sand dune restoration; and			✓
(3) Expansion of habitat for Maui's threatened or endangered sea turtles, birds, and other species.			✓
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.			✓
2.2.2.h Encourage the State to conduct a regular census of fish populations and monitor coral health.			✓
2.2.2.i Encourage the State to significantly increase the number of park rangers, enforcement officers, and marine biologists to protect coastal resources.			✓
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.			✓
Objective:			
2.2.3 Water quality that meets or exceeds State Clean Water Act standards.		✓	
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.			✓
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.			✓
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.			✓
2.2.3.d Avoid development actions that impair Maui's reef systems and remove identified stressors.			✓
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.		✓	
2.2.3.f Prohibit the development of new wastewater injection wells, except when unavoidable for public health and safety purposes.			✓
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.		✓	

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
2.2.4 Acquire additional shoreline lands and shoreline access rights.			✓
Policies:			
2.2.4.a Promote the use of conservation easements, land trusts, transfer and purchase of development rights, and mitigation banking.			✓
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.			✓
2.2.4.c Incorporate the *Shoreline Access Inventory Update - Final Report* (March 2005), and its regular updates, into this plan.			✓
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.			✓
Analysis: **The proposed project area is located inland and is not in an ecologically sensitive coastal area. However, the installation of a sewer line provides an alternative to cesspools and septic systems, ensuring the continued treatment of wastewater and indirectly promoting effective measures to protect the quality of reef, shoreline, and nearshore waters.**			
WATERSHEDS, STREAMS, AND WETLANDS ISSUES			
Goal:			
2.3 Healthy watersheds, streams, and riparian environments.	✓		
Objective:			
2.3.1 Greater protection and enhancement of watersheds, streams, and riparian environments.		✓	
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.			✓
2.3.1.b Continue to support and be an active member of watershed partnerships.			✓
2.3.1.c Support the establishment of regional water trusts, composed of public and private members, to manage water resources.			✓
2.3.1.d Support regulations to require developments to utilize ahupua‘a management practices.			✓
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.			✓
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.			✓
2.3.1.g Encourage the State to mandate instream assessment to provide adequate water for native species.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.3.1.h Maui will protect all watersheds and streams in a manner that guarantees a healthy, sustainable riparian environment.		✓	
Objective:			
2.3.2 Decreased NPS and point source pollution.		✓	
Policies:			
2.3.2.a Enforce water pollution related standards and codes.			✓
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.			✓
2.3.2.c Encourage farmers and ranchers to use agricultural BMPs to address NPS pollution.			✓
Objective:			
2.3.3 Preserve existing wetlands and improve and restore degraded wetlands.			✓
Policies:			
2.3.3.a Prohibit the destruction and degradation of existing upland, mid-elevation, and coastal wetlands.			✓
2.3.3.b Support and fund wetland protection and improvement, and restoration of degraded wetlands.			✓
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.			✓
Objective:			
2.3.4 Greater preservation of native flora and fauna biodiversity to protect native species.			✓
Policies:			
2.3.4.a Work with appropriate agencies to eliminate feral ungulate populations and invasive species.			✓
2.3.4.b Encourage the State to provide adequate funding to preserve biodiversity, protect native species, and contain or eliminate invasive species.			✓
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.			✓
Objective:			
2.3.5 Limited development in critical watershed areas.			✓
Policies:			
2.3.5.a Discourage development and subdivision of land within critical watersheds and in areas susceptible to high erosion and sediment loss.			✓
2.3.5.b Designate critical watershed areas as conservation lands.			✓
2.3.5.c Strongly encourage new subdivisions and developments that are proximate to environmentally sensitive watershed resources to prepare and implement CSD plans.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
2.3.6 Enhance the vitality and functioning of streams, while balancing the multiple needs of the community.			✓
Policies			
2.3.6.a Protect and enhance natural streambeds and discourage stream alteration.			✓
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.			✓
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).			✓
2.3.6.d Ensure that stream flows implement laws and policies found in the State Constitution and Water Code.			✓
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.			✓
Analysis: **The proposed action is directly and indirectly applicable to the goal, objectives, and policies for the protection of watersheds, streams, and riparian environments. The proposed sewer system improvements will provide greater protection for these water sources.**			
WILDLIFE AND NATURAL AREAS			
Goal:			
2.4 Maui’s natural areas and indigenous flora and fauna will be protected.		✓	
Objective:			
2.4.1 A comprehensive management strategy that includes further identification, protection, and restoration of indigenous wildlife habitats.		✓	
Policies:			
2.4.1.a Identify and inventory the following:			✓
(1) Natural, recreational, and open space resources;			✓
(2) Flora and fauna with medium, high, and very high concentrations of threatened or endangered species; and			✓
(3) Location and extent of invasive species.			✓
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.		✓	
2.4.1.c Support the implementation of Hawai`i’s Comprehensive Wildlife Conservation Strategy (October 2005).			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
2.4.2 A decrease in invasive species through programs and partnerships that eradicate undesirable species and protect native habitat.			✓
Policies:			
2.4.2.a Prevent the introduction of invasive species at all of Maui's airports and harbors.			✓
2.4.2.b Encourage the State to increase funding in support of invasive species interception, control, and eradication.			✓
2.4.2.c Encourage the State to develop programs that allow students to participate in invasive species eradication projects.			✓
Objective:			
2.4.3 Greater protection of sensitive lands, indigenous habitat, and native flora and fauna.		✓	
Policies:			
2.4.3.a Secure an interconnected network of sensitive lands, greenways, watercourses, and habitats.			✓
2.4.3.b Protect Maui's sensitive lands (see Sensitive Lands on Protected Areas Diagrams).			✓
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.			✓
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			✓
2.4.3.e Encourage discussions with communities to designate heritage areas that protect recreational and cultural lifestyles and resources.			✓
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.			✓
2.4.3.g Encourage reforestation efforts that increase native species' habitat.			✓
2.4.3.h Utilize the Natural Area Partnership Program (NAPP) and other programs to protect natural lands.			✓
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.			✓
Analysis: **The proposed project is indirectly related to the goal, objectives, and policies for the preservation of Maui's natural areas and indigenous flora and fauna. The project improvements are proposed within an area of existing development with residential and limited commercial uses. A flora and fauna survey addressing biological resources in the project area was conducted as part of the environmental review process. This assessment addresses the objective of identification, protection, and restoration of wildlife habitats.**			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
Objective:			
2.5.1 A greater level of protection for scenic resources.			✓
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.			✓
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.			✓
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.			✓
2.5.1.d Protect ridgelines from development where practicable to facilitate the protection of public views.			✓
2.5.1.e Protect scenic resources along Maui's scenic roadway corridors.			✓
Objective:			
2.5.2. Reduce impacts of development projects and public-utility improvements on scenic resources.			✓
Policies:			
2.5.2.a Enforce the policies and guidelines of the SMA regarding the protection of views.			✓
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.			✓
2.5.2.c Require appropriate building setbacks and limits on wall heights to protect views along scenic corridors.			✓
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.			✓
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.			✓
2.5.2.f Ensure little or no effect on scenic resources from utility improvements, primarily power poles.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
2.5.2.g Protect scenic vistas from intrusion by power poles.			✓
Objective:			
2.5.3 Greater protection of and access to scenic vistas, access points, and scenic lookout points.			✓
Policy:			
2.5.3.a Protect, enhance, and acquire access to Maui's scenic vistas and resources.			✓
Analysis: **The proposed action is neither directly or indirectly applicable to the goal, policies, and objectives for preserving scenic resources, attracting visitors, or promoting a sense of place.**			
CHAPTER 3 – NATURAL HAZARDS			
Goal:			
3.1 Maui will be disaster resilient.			✓
Objective:			
3.1.1 Increased inter-agency coordination.			✓
Policy:			
3.1.1.a Reinforce the island's preparedness capacity by:			✓
(1) Applying the latest data-gathering techniques/technology;			✓
(2) Pursuing funding opportunities;			✓
(3) Improving monitoring and advance warning systems;			✓
(4) Fostering public awareness; and			✓
(5) Working with external agencies to coordinate disaster mitigation and response.			✓
Objective:			
3.1.2 Greater protection of life and property.			✓
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.			✓
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.			✓
3.1.2.c Strengthen current development standards to minimize destruction of land and property.			✓
3.1.2.d Encourage the use of construction techniques that reduce the potential for damage from natural hazards.			✓
3.1.2.e Increase the County's resilience to drought.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
3.1.2.f Increase food and energy security through local production and storage.			✓
Objective:			
3.1.3 A more coordinated emergency response system that includes clearly defined and mapped evacuation routes.			✓
Policy:			
3.1.3.a Identify and expand shelter facilities and evacuation routes away from areas susceptible to natural hazards.			✓
Objective:			
3.1.4 A more educated and involved public that is aware of and prepared for natural hazards.			✓
Policies:			
3.1.4.a Promote public education and involvement related to natural hazards awareness and preparedness.			✓
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.			✓
Analysis: **The proposed project is neither directly or indirectly applicable to the goal, objectives and policies for Maui's disaster preparedness and emergency response 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.		✓	
Objective:			
4.1.1 A more diversified economy.		✓	
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.			✓
4.1.1.b Support the creation of new jobs and industries that provide a living wage.		✓	
4.1.1.c Facilitate and expedite permits and approvals.			✓
4.1.1.d Develop linkages and partnerships among international research and development activities and Maui businesses.			✓
Objective:			
4.1.2 Increase activities that support principles of sustainability.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies:			
4.1.2.a Support industries that are sustainable, and culturally and environmentally sensitive.			✓
4.1.2.b Encourage and support local businesses.			✓
4.1.2.c Substitute imports with locally-produced services and products where practicable.			✓
4.1.2.d Support the development of economic development clusters in targeted industry sectors.			✓
4.1.2.e Encourage all businesses to save energy, water, and other resources.			✓
Objective:			
4.1.3 Improve the island's business climate.			✓
Policies:			
4.1.3.a Upgrade, maintain the quality of, and improve access to telecommunications infrastructure.			✓
4.1.3.b Ensure an adequate supply of affordable workforce housing.			✓
4.1.3.c Develop neighborhoods and communities that are attractive to the workforce of a diversified economy.			✓
4.1.3.d Encourage, nurture, and reward entrepreneurship and innovation.			✓
4.1.3.e Encourage employers to establish incentive programs. Support flexibility in workforce policies compatible with business and quality of life goals.			✓
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.			✓
Analysis: **The proposed project is indirectly applicable to the goal, objectives, and policies for the economy as the project will generate short-term design and construction-related employment opportunities, and support the construction industry as a whole, including local businesses that rely on said industry.**			
TOURISM			
Goal:			
4.2 A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.			✓
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.			✓
Policies:			
4.2.1.a Engage the visitor industry in the growth of emerging sectors where practicable.			✓
4.2.1.b Support the implementation of the Maui County TSP, when consistent with the MIP.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.2.1.c Focus economic growth in the visitor industry through enhanced visitor experiences and an emphasis on attracting higher-spending.			✓
4.2.1.d Provide a rich visitor experience, while protecting the island's natural beauty, culture, lifestyles, and aloha spirit.			✓
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.			✓
4.2.1.f Recognize the important economic contributions that the visitor industry makes and support a healthy and vibrant visitor industry.			✓
4.2.1.g Support the increased availability of kama'āina discount programs.			✓
Objective:			
4.2.2 Comprehensively manage future visitor-unit expansion.			✓
Policies:			
4.2.2.a Mitigate the impact of tourism on the host culture, natural environment, and resident lifestyles.			✓
4.2.2.b Allow, where permitted by the community plan, the development of business hotels and small, sensitively-designed inns.			✓
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.			✓
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.			✓
4.2.2.e Allow the designation of retreat/mini-conference centers in appropriate locations through the community plan process.			✓
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.			✓
Objective:			
4.2.3 Maximize residents' benefits from the visitor industry.			✓
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.			✓
4.2.3.b Use the required General Plan Annual Status Report to monitor trends related to residents and visitors.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for the tourism industry and has no implications for enhancement of the visitor industry or mitigation from the impacts of tourism on the host culture.**			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
AGRICULTURE			
Goal:			
4.3 Maui will have a diversified agricultural industry contributing to greater economic, food, and energy security and prosperity.			✓
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.			✓
Policies:			
4.3.1.a Strive to substitute food/agricultural product imports with a reliable supply of locally produced food and agricultural products.			✓
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.			✓
4.3.1.c Encourage growing a diverse variety of crops and livestock to ensure the stewardship of our land while safeguarding consumer safety.			✓
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.			✓
Objective:			
4.3.2 Maintain or increase agriculture's share of the total island economy.			✓
Policies:			
4.3.2.a Encourage the export of the island's agricultural products to offshore markets.			✓
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.			✓
4.3.2.c Encourage the continued viability of sugar cane production, or other agricultural crops, in central Maui and all of Maui Island.			✓
4.3.2.d Work with the State to reduce excise taxes for commercial agricultural products produced within the State.			✓
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.			✓
Objective:			
4.3.3 Expand diversified agriculture production at an average annual rate of 4 percent.			✓
Policies:			
4.3.3.a Promote the development of locally-grown and ecologically-sound biofuels, aquaculture, and forest products.			✓
4.3.3.b Support the development of farming associations/cooperatives.			✓
4.3.3.c Work with educational institutions and appropriate agencies to provide education and training for farm owners and entrepreneurs.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Analysis: **The proposed action does not directly or indirectly affect the objectives and policies for agriculture. The project area is in an urban area near other residential subdivisions. The implementation of the proposed action is not considered to adversely affect agricultural productivity on Maui.**			
EMERGING SECTORS			
Goal:			
4.4 A diverse array of emerging economic sectors.			✓
Objective:			
4.4.1 Support increased investment and expanded activity in emerging industries.			✓
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.			✓
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.			✓
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.			✓
4.4.1.d Support a sustainable, culturally sensitive, astronomy industry.			✓
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.			✓
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.			✓
Objective:			
4.4.2 Increase the development of renewable energy technologies that are supported by the local community.			✓
Policies:			
4.4.2.a Support the expansion of the renewable energy sector and the use of solar, wind, wave, and biofuel technologies.			✓
4.4.2.b Provide incentives to encourage renewable energy development, the use of green energy technologies, and energy conservation.			✓
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.			✓
4.4.2.d Support the Maui County Energy Alliance Plan where consistent with the MIP.			✓
Analysis: **The proposed sewer system improvements is neither directly or indirectly applicable to the goal, objectives, and policies for emerging or innovative economic sectors.**			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
SMALL BUSINESS DEVELOPMENT			
Goal:			
4.5 Small businesses will play a key role in Maui's economy.			✓
Objective:			
4.5.1 Increase the number of and revenue generated by small businesses and decrease the percentage of small business failures.			✓
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.			✓
4.5.1.b Assist traditional "mom and pop" business establishments.			✓
4.5.1.c Reduce barriers to small business development.			✓
4.5.1.d Require, where feasible, the government procurement of goods and services from locally-owned, small businesses.			✓
4.5.1.e Support community markets and venues that sell locally-made produce, goods, and services.			✓
Analysis: **The proposed action is not directly or indirectly supportive of the goal, objective, and policies for small businesses.**			
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.			✓
Objective:			
4.6.1 Expand the economic benefits of the health care sector.			✓
Policies:			
4.6.1.a Encourage expanded services at MMMC and at other medical facilities.			✓
4.6.1.b Support expansion of federally qualified health centers with the direct involvement of the residents of the communities served.			✓
4.6.1.c Support the use of multimedia as a means to provide healthcare information.			✓
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.			✓
4.6.1.e Support the expansion of telemedicine.			✓
4.6.1.f Encourage expansion and improved access to emergency care in all communities.			✓
Objective:			
4.6.2 Be more efficient in the delivery of health care services and in minimizing health care costs.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies:			
4.6.2.a Support expansion of health care providers and facilities to improve access to quality care throughout the island.			✓
4.6.2.b Encourage the expansion of veteran health care services.			✓
4.6.2.c Allow home-based out-patient medical care that does not interfere with surrounding neighborhoods.			✓
Objective:			
4.6.3. Expand Maui's alternative health care services, including spiritual practices.			✓
Policies:			
4.6.3.a Support efforts to promote alternative medicine.			✓
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.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the health care sector and has no implications for the expansion of health care facilities or services.**			
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.			✓
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.			✓
Objective:			
4.7.1.a Encourage the State to implement programs such as:			✓
(1) Universally available preschool for children between the ages of one and five;			✓
(2) Mandatory kindergarten;			✓
(3) Mandatory K-5th grade classroom size limits of 1 teacher to 20 students;			✓
(4) Mandatory nutrition programs; and			✓
(5) Mandatory Native Hawaiian programs at all grade levels.			✓
4.7.1.b Encourage the DOE to extend the school day by at least an hour.			✓
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.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
4.7.1.e Encourage the UHMC to provide dormitory space for high school students.			✓
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.			✓
Objective:			
4.7.2 Encourage an increase in the number of certificate recipients and associate, bachelors, and graduate degrees conferred.			✓
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.			✓
4.7.2.b Encourage the State to expand accredited 2-year, 4-year, and graduate programs through the UHMC.			✓
4.7.2.c Encourage the education and training of our residents to meet the needs of a diversified economy.			✓
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			✓
4.7.2.e Work with educational institutions to improve and expand access to education and training through multiple modes, including distance learning.			✓
Objective:			
4.7.3 Strive to ensure that more of Maui’s jobs are developed in STEM-related sectors by 2030.			✓
Policies:			
4.7.3.a Support the development of STEM-related certificates and degrees at the two- and four year levels.			✓
4.7.3.b Support the education initiatives of the Maui Agricultural Development Plan.			✓
4.7.3.c Expand and seek funding for internships, mentoring, job shadowing, etc. to foster interest in health and green workforce careers.			✓
4.7.3.d Work with MEDB, UHMC, and other similar organizations to expand internship/education programs to support STEM careers.			✓
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.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives and policies for education, nor does it affect the State's ability to promote or enhance educational programs or opportunities for Maui residents.**			
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
5.1.1 More livable communities that provide for a mix of housing types, land uses, income levels, and age.			✓
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.			✓
5.1.1.b Promote planning approaches that provide a mix of multifamily and single-family housing units to expand housing choices.			✓
5.1.1.c Discourage gated communities.			✓
5.1.1.d Provide incentives for the rehabilitation or adaptive reuse of historic structures to facilitate more housing choices.			✓
5.1.1.e Use planning and regulatory approaches to provide higher housing densities.			✓
Objective:			
5.1.2 Better monitoring, evaluation, and refinement of affordable housing policy in conjunction with the economic cycle.			✓
Policies:			
5.1.2.a Improve data on resident and nonresident housing.			✓
5.1.2.b Utilize the following approaches to promote resident housing and to minimize offshore market impacts:			✓
(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.);			✓
(2) Encourage new housing in proximity to jobs and services, in places that are conducive/affordable to island residents; and			✓
(3) Explore taxation alternatives and building fee structures.			✓
Objective:			
5.1.3 Provide affordable housing, rental or in fee, to the broad spectrum of our island community.			✓
Policies:			
5.1.3.a Consider regulations that can help keep affordable housing available at affordable rents.			✓
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.			✓
5.1.3.c Facilitate the use of public lands in urban areas that are suitable for affordable housing.			✓
5.1.3.d Develop or support partnerships and initiatives that provide housing-related education/outreach.			✓
5.1.3.e Support the continuing efforts of the County and its community partners to:			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(1) Disseminate information on different housing/financial assistance programs (loans, grants, etc.) including information on housing rehabilitation/restoration/adaptive reuse;			✓
(2) Provide housing-related counseling including budget, credit, and financial planning assistance; and			✓
(3) Create and maintain a comprehensive/master list of available affordable housing to help residents secure a unit that satisfies their need.			✓
Objective:			
5.1.4 Provide infrastructure in a more timely manner to support the development of affordable housing.			✓
Policies:			
5.1.4.a Prioritize the development of infrastructure that supports the development of affordable housing.			✓
5.1.4.b Utilize appropriate financing approaches and assistance tools to encourage the development of infrastructure and public facilities.			✓
5.1.4.c Tailor infrastructure requirements to correspond with appropriate level-of-service standards to help control housing costs and to maintain safety.			✓
Objective:			
5.1.5 A wider range of affordable housing options and programs for those with special needs.			✓
Policies:			
5.1.5.a Ensure that residents with special needs have access to appropriate housing.			✓
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.			✓
5.1.5.c Ensure and facilitate programs to assist those with special needs from becoming homeless.			✓
5.1.5.d Promote programs that stimulate the production of sustainable homeless shelters and alternative housing technologies.			✓
5.1.5.e Support programs that offer home modification counseling on low-interest retrofit loans and grants to those with special needs.			✓
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.			✓
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.).			✓
5.1.6.b Require the construction of affordable for-sale and rental housing units as part of the construction of new housing developments.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
5.1.6.c Offer extra incentives in boom periods and withdraw incentives during slack periods.			✓
Objective:			
5.1.7 Increased preservation and promotion of indigenous Hawaiian housing and architecture.			✓
Policies:			
5.1.7.a Preserve, promote, and give priority to Hawaiian housing/architecture forms to preserve Hawaiian culture.			✓
5.1.7.b Provide for indigenous architecture as an allowable structure for native Hawaiian uses to include hula and lāʻau lapaʻau.			✓
Analysis: **The proposed action does not directly or indirectly support the priority guidelines for housing and will not affect the availability of affordable housing.**			
CHAPTER 6 – INFRASTRUCTURE AND PUBLIC FACILITES			
SOLID WASTE			
Goal:			
6.1 Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.			✓
Objective:			
6.1.1 Meet our future solid waste needs with a more comprehensive planning and management strategy.			✓
Policies:			
6.1.1.a Update and publicize the ISWMP every ten years.			✓
6.1.1.b Strengthen inter-agency coordination including Planning and Environmental Management departments.			✓
6.1.1.c Divert waste from the landfills and educate the public about the recommendations of the ISWMP.			✓
6.1.1.d Minimize future active, unlined landfill cells to the extent feasible.			✓
Objective:			
6.1.2 Divert at least 60 percent of solid waste from the island's landfills.			✓
Policies:			
6.1.2.a Require residents and commercial enterprises that generate waste to pay a fair proportion of disposal costs.			✓
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.			✓
6.1.2.d Educate residents and visitors about the impacts of and methods to reduce, reuse, and recycle.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.1.2.e Discourage the disposal of landfill leachate by diversion to wastewater treatment plants, where practicable.			✓
Analysis: **The proposed project is neither directly or indirectly applicable to the goal, objectives, and policies for solid waste as it involves wastewater.**			
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.	✓		
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.	✓		
Policies:			
6.2.1.a Encourage the use of renewable energy in support of wastewater treatment facilities.			✓
6.2.1.b Focus the expansion of wastewater systems to accommodate planned growth consistent with the MIP Directed Growth Strategy.			✓
6.2.1.c Establish new wastewater treatment plant(s) outside the tsunami zone.			✓
Objective:			
6.2.2 Adequate levels of wastewater service with minimal environmental impacts.	✓		
Policies:			
6.2.2.a Meet or exceed all State and Federal standards regulating wastewater disposal or reuse.	✓		
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.			✓
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.	✓		
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.			✓
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.			✓
6.2.2.f Require appropriate funding mechanisms, such as a sinking fund, to adequately maintain or replace aging water-system components.			✓
6.2.2.g Strongly encourage the phase out of cesspools.	✓		

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Objective:			
6.2.3 Increase the reuse of wastewater.			✓
Policies:			
6.2.3.a Strengthen coordination between the Department of Water Supply (DWS) and the WWRD to promote reuse/recycling of wastewater.			✓
6.2.3.b Expand the reuse of wastewater from the Central Maui, Kīhei, Lahaina, and other wastewater systems.			✓
Analysis: **The proposed action is directly applicable and supportive of the goal, objectives, and policies for the provision of adequate sewerage facilities that meet State and Federal regulations. The proposed sewerline provides an alternative to cesspools, and will treat and properly dispose of wastewater and encourage its reuse. Furthermore, the proposed project is part of capital improvements that the County of Maui has deemed to be aligned with their strategic goals.**			
WATER			
Goal:			
6.3 Maui will have an environmentally sustainable, reliable, safe, and efficient water system.	✓		
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.			✓
Policies:			
6.3.1.a Ensure that DWS actions reflect its public trust responsibilities toward water.			✓
6.3.1.b Ensure the WUDP implements the State Water Code and MIP's goals, objectives, and policies.			✓
6.3.1.c Regularly update the WUDP, to maintain compliance with the General Plan.			✓
6.3.1.d Ensure that the County's CIP for water-source development is consistent with the WUDP and the MIP.			✓
6.3.1.e Where desirable, retain and expand public ownership and management of watersheds and fresh-water systems.			✓
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.			✓
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.	✓		
Policies:			
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.3.2.b Encourage increased education about and use of private catchment systems where practicable for nonpotable uses.			✓
6.3.2.c Maximize the efficient use of reclaimed wastewater to serve nonpotable needs.	✓		
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.			✓
6.3.2.e Ensure water conservation through education, incentives, and regulations.			✓
6.3.2.f Acquire and develop additional sources of potable water.			✓
Objective:			
6.3 Improve water quality and the monitoring of public and private water systems.			✓
Policy:			
6.3.3.a Protect and maintain water delivery systems.			✓
Analysis: **The proposed project will improve water systems and as such, would be directly applicable to the plan.**			
TRANSPORTATION			
Goal:			
6.4 An interconnected, efficient, and well-maintained, multimodal transportation system.			✓
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.			✓
Policies:			
6.4.1.a Plan for an integrated multi-modal transportation system comprised of public transit, bicycle, pedestrian, automobile, and other transportation modes.			✓
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.			✓
6.4.1.c Encourage the use of “complete streets” design methods.			✓
6.4.1.d Encourage employers to implement TDM strategies.			✓
Objective:			
6.4.2 Safe, interconnected transit, roadway, bicycle, equestrian, and pedestrian network.			✓
Policies:			
6.4.2.a Ensure transit-, roadway-, and pedestrian-facilities design and level-of-service standards respect the unique character of our communities.			✓
6.4.2.b Prioritize transportation improvements list to cost-effectively meet existing and future needs consistent with the MIP.			✓

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.			✓
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.			✓
6.4.2.e Consider identification, acquisition where appropriate, and utilization of abandoned right of-ways for bikeways, pedestrian pathways, and open-space networks.			✓
6.4.2.f Support the implementation of the *Central Maui Pedestrian & Bicycle Master Plan* (March 2012), when consistent with the MIP.			✓
Objective:			
6.4.3 An island-wide, multimodal transportation system that respects and enhances the natural environment, scenic views, and each community's character.			✓
Policies:			
6.4.3.a Ensure that the roadway and transit alignments respect the natural environment and scenic views.			✓
6.4.3.b Ensure that roadways and transit systems in rural areas and small towns enhance community character.			✓
6.4.3.c Design all transit systems to respect visual corridors and Maui's character.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives or policies for transportation systems and has no implications for the development of transportation systems and infrastructure.**			
TRANSIT			
Goal:			
6.5 An island-wide transit system that addresses the needs of residents and visitors and contributes to healthy and livable communities.			✓
Objective:			
6.5.1 An integrated transit system that better serves all mobility needs of Maui's residents and visitors.			✓
Policies:			
6.5.1.a Maximize access to public transit in town centers, commercial districts, and employment centers.			✓
6.5.1.b Expand regional and inter-regional transit services, where appropriate, in heavily traveled corridors and within communities			✓
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.			✓
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.			✓
6.5.1.e Require new development where appropriate, to provide right-of-ways (ROWs) to accommodate transit circulation and support facilities.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
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).			✓
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).			✓
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.			✓
Objective:			
6.5.2 Plan for a more diversified and stable funding base to support transportation goals.			✓
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).			✓
6.5.2.b Collaborate with public-private entities or nonprofit organizations to reduce public transit operational expenses.			✓
6.5.2.c Coordinate with appropriate Federal, State, and County agencies to fund transportation projects in areas where growth is anticipated.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the objectives or policies for an island-wide transit system and has no implications for the development of transit systems and infrastructure.**			
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.			✓
Objective:			
6.6.1 More effective, long-range planning of parks and recreation programs able to meet community needs.			✓
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*.			✓
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.			✓
6.6.1.c Provide a balanced mix of passive and active parks, including neighborhood, community, and regional parks, in each community plan area.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.6.1.d Support the expansion of Haleakala National Park, where supported by affected communities.			✓
6.6.1.e Support loʻi and dryland taro restoration in County, State, and Federal parks.			✓
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.			✓
6.6.1.g Strengthen inter-agency coordination including State and County departments, such as resolving joint use of facilities and properties.			✓
6.6.1.h Work with the State to prepare and implement a master management plan for ʻĀhihi-Kīnaʻu and La Perouse-Keoneʻōʻio Bay to Kanaloa Point region.			✓
Objective:			
6.6.2 Achieve parks and recreation opportunities to meet the diverse needs of our community.			✓
Policies:			
6.6.2.a Establish appropriate level-of-service standards at the neighborhood, community, and regional levels.			✓
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.			✓
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.			✓
6.6.2.d Acquire lands along the shoreline, between coastal roadways and the ocean.			✓
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.			✓
6.6.2.f Require large master-planned communities that incorporate a mixture of park facilities pursuant to parks standards and functional plans.			✓
6.6.2.g Support appropriate areas for cultural parks (e.g., Kepaniwai) in each community plan area.			✓
6.6.2.h Incorporate community input to determine the appropriate location, design, and long-term stewardship of parks and recreation facilities.			✓
6.6.2.i Manage commercial activities at public parks to minimize impacts to residents.			✓
6.6.2.j Support public-private partnerships to implement the acquisition and development of parks when consistent with the General Plan.			✓
6.6.2.k Support a coordinated program to improve, operate, and maintain joint-use facilities and grounds.			✓
Objective:			
6.6.3 An expanded network of greenways, trails, pathways, and bikeways.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
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.			✓
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.			✓
6.6.3.d Facilitate the development of well-managed noncommercial campgrounds throughout the island.			✓
6.6.3.e Consider requiring commercial bike rental businesses to provide funding that supports a mauka-to-makai Haleakalā bikeway improvement program.			✓
6.6.3.f Ensure ADA compliance and seek opportunities to make all parks and recreational facilities accessible to people with disabilities.			✓
Analysis: **The proposed project is neither directly or indirectly applicable to the goal and objectives for parks and recreation facilities and opportunities.**			
PUBLIC FACILITIES			
Goal:			
6.7 Maui will have adequate public facilities that meet the diverse needs of residents.			✓
Objective:			
6.7.1 More effective planning for public facilities to meet community needs.			✓
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.			✓
6.7.1.b Establish appropriate level-of-service standards for public facilities provided by the County.			✓
6.7.1.c Pursue improvements and upgrades of County public facilities consistent with the public facilities functional plan.			✓
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.			✓
6.7.1.e Support, with community input, the relocation of the Maui Community Correctional Center from Wailuku to an appropriate location in Puʻunēnē.			✓
6.7.1.f Adequately plan and fund public safety facilities (fire, police, ambulance, civil defense) to meet community needs.			✓
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.			✓
6.7.1.h Focus future expenditures for additional government office space, parking, and related facilities in Wailuku's Civic Center District.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.7.1.i Encourage continuous and safe walkways for children within one mile of each school.			✓
6.7.1.j Encourage public-private partnerships to identify and resolve public facility plan shortcomings when consistent with the General Plan.			✓
6.7.1.k Incorporate community/area residents' input to determine the appropriate location and design of public facilities.			✓
Analysis: **The proposed project is not directly or indirectly applicable to the objective or policies for public facilities and funding for public facilities.**			
SCHOOLS AND LIBRARIES			
Goal:			
6.8 Maui will have school and library facilities that meet residents' needs and goals.			✓
Objective:			
6.8.1 Assist in providing appropriate school and library facilities in a timely manner and in strategic locations.			✓
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.			✓
6.8.1.b Allow for the expansion and intensification of uses at the UHMC including satellite campuses operating in remote areas.			✓
6.8.1.c Encourage the DOE to build and maintain smaller, community-oriented schools.			✓
6.8.1.d Encourage better cooperation by the State and County for use of State and County facilities.			✓
6.8.1.e Encourage the State to upgrade, modernize, and expand school facilities, including those in remote communities.			✓
6.8.1.f Work with the State to develop a master plan for the expansion of UHMC in accordance with the MIP.			✓
6.8.1.g Support partnerships (public/private/nonprofit) to build and staff new schools and improve existing facilities.			✓
6.8.1.h Work with the BOE HSPLS to provide centralized library services (including telecommunications) to all areas of Maui.			✓
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.			✓
6.8.1.j Work with the State to identify intermediate school sites in Central Maui and other areas where needed.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
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.			✓
Analysis: The proposed action is not directly or indirectly applicable to the goal, objectives, and policies for schools and libraries and does not affect the construction of schools or pedestrian friendly streets, pathways, and bikeways.			
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.			✓
Objective:			
6.9.1 Greater autonomy to the Maui region in their efforts to improve medical care on the island.			✓
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.			✓
6.9.1.b Support innovative financial solutions, such as capital partnerships, joint ventures, and consolidations for MMMC and other health institutions.			✓
6.9.1.c Support MMMC as a major core medical center that provides a greater range of services.			✓
6.9.1.d Support the immediate development of a critical access hospital in West Maui.			✓
6.9.1.e Support the expansion of regional critical-access facilities, where allowed by Federal regulations.			✓
6.9.1.f Improve medical service to remote and outlying regions.			✓
6.9.1.g Support transportation services for dialysis patients and community dialysis programs.			✓
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.			✓
Objective:			
6.9.2 An expansion of long-term care facilities and long-term care alternatives to meet the needs of our aging population.			✓
Policies:			
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.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
6.9.2.d Consider long-term care facilities as a major potential employment base and encourage the recruitment and training of potential employees.			✓
Objective:			
6.9.3 More support to home-care and community-based programs so they become alternatives to traditional nursing homes.			✓
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.			✓
6.9.3.b Support the establishment of senior and adult-day-care centers and senior housing.			✓
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.			✓
6.9.3.d Support funding alternatives for community-based services that assist home-care efforts.			✓
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.			✓
Objective:			
6.9.4 Improved preventative medicine and primary health care.			✓
Policies:			
6.9.4.a Develop and utilize health-status benchmarks to measure prevention and primary health care service delivery.			✓
6.9.4.b Support programs that provide family planning assistance.			✓
Analysis: **The proposed action is neither directly or indirectly applicable to the goal, objectives, and policies for health care and does not impact the provision or quality of health care services.**			
ENERGY			
Goal:			
6.10 Maui will meet its energy needs through local sources of clean, renewable energy, and through conservation.			✓
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.			✓
Policies:			
6.10.1.a Support energy efficient systems, processes, and methods in public and private operations, buildings, and facilities.			✓
6.10.1.b Support the Maui Solar Rooftop initiative.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.10.1.c Support Hawai`i Energy and other Public Utility Commission (PUC) approved energy efficiency programs.			✓
Objective:			
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.			✓
Policies:			
6.10.2.a Evaluate available renewable energy resource sites and applicable technologies.			✓
6.10.2.b Encourage the installation of renewable energy systems, where appropriate.			✓
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.			✓
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.			✓
Objective:			
6.10.3 Increased use of clean, renewable energy.			✓
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.			✓
6.10.3.b Encourage the PUC to work with the County to implement and expedite community supported renewable energy projects.			✓
6.10.3.c Encourage efforts to produce more renewable energy using distributed generation.			✓
6.10.3.d Encourage import substitution by MECO and the broader community to become more self-sufficient in energy production.			✓
6.10.3.e Educate the public on the economic and environmental benefits from the increased use of renewable energy.			✓
6.10.3.f Encourage support from the Federal government, State, and the private sector for Maui's renewable energy objectives.			✓
6.10.3.g Encourage incentives to support the development and use of renewable energy.			✓
Objective:			
6.10.4 More efficient distribution of power throughout the island while preserving island beauty.			✓
Analysis: **The proposed action is not directly or indirectly applicable to the goal, objectives, and policies for energy, renewable energy, and energy conservation.**			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
Objective:			
6.11.1 Upgraded harbor facilities to handle larger volumes of freight and passengers and additional small boat harbors.			✓
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:			✓
(1) Accommodate increasing volumes of cargo;			✓
(2) Provide deeper pier depths and greater fuel-receiving and storing capacities; and			✓
(3) Ensure safe and efficient work areas, including separating passenger operations from fuel and cargo operations.			✓
6.11.1.b Work with public and private entities to provide adequate pier slips, utilities, repair facilities, and waste-disposal capabilities.			✓
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.			✓
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.			✓
6.11.1.e Support a State and County task force to study the feasibility of a second commercial harbor on Maui.			✓
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.			✓
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).			✓
Objective:			
6.11.3 Upgraded airport facilities and navigation aids to serve the needs of passengers, freight movements, and general aviation.			✓
Policies:			
6.11.3.a Protect the island's airports from encroaching urbanization that may negatively impact the airport operations.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
6.11.3.b Support State efforts to improve Kahului Airport operations to better serve passenger and cargo needs.			✓
6.11.3.c Support State efforts to identify sites and plan to relocate and accommodate small and rotary wing aircraft.			✓
6.11.3.d Encourage the State to improve airport safety including lighting, fuel transmission, fuel safety, etc.			✓
6.11.3.e Consider expansion of rental car facilities in West and South Maui.			✓
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).			✓
6.11.3.g Encourage the State to maintain airport capacity and to encourage more responsive air services to Hāna and Kapalua.			✓
Analysis: **The proposed action is a sewer system improvement in a residential area and does not have implications for airport or harbor facilities.**			
CHAPTER 7 – LAND USE			
AGRICULTURAL LANDS			
Goal:			
7.1 Maui will have a prosperous agricultural industry and will protect agricultural lands.			✓
Objective:			
7.1.1 Significantly reduce the loss of productive agricultural lands.			✓
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.			✓
7.1.1.b Require, where appropriate, the review and approval of CSD plans prior to the subdivision of agricultural land.			✓
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.			✓
7.1.1.d Consider requirements for public notification and review of the subdivision of agricultural land into four or more lots.			✓
7.1.1.e Focus urban growth, to the extent practicable, away from productive and important agricultural lands.			✓
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.			✓
7.1.1.g Further develop the requirements for agricultural assessments found under Section 19.510, MCC.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
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.			✓
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.			✓
7.1.1.k Support and promote the viability of Maui's agricultural businesses through property tax incentives and other programs and subsidies.			✓
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.			✓
Objective:			
7.1.2 Reduction of the island's dependence on off-island agricultural products and expansion of export capacity.			✓
Policies:			
7.1.2.a Coordinate with the agricultural community, associations/community groups, agricultural landowners, and the State to designate IALs.			✓
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.			✓
7.1.2.c Actively look to acquire land and provide infrastructure to expand the agricultural park and establish new agricultural parks.			✓
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.			✓
7.1.2.e Support local cooperative extension services to facilitate timely technology transfer opportunities.			✓
7.1.2.f Support plans and programs to develop additional sources of water for irrigation purposes.			✓
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.			✓
7.1.2.h Support the recommendations, policies, and actions contained within the Maui Agricultural Development Plan, July 2009, when consistent with the MIP.			✓
7.1.2.i Allow water and tax discounts for legitimate farming operations on rural and agricultural land.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.1.2.k Support programs that control pests and diseases that affect agriculture.			✓
7.1.2.l Support the development of training and apprenticeship programs to encourage an adequate supply of agricultural workers.			✓
Objective:			
7.1.3 Support and facilitate connectivity between communities.			✓
Policies:			
7.1.3.a Evaluate the impact of gated communities on interconnectivity.			✓
7.1.3.b Discourage land use and urban design that impedes interconnectivity between adjacent communities.			✓
Analysis: **The proposed action does not directly or indirectly affect the objectives and policies for agriculture. The project area is near other residential subdivisions. The implementation of the proposed action is not considered to adversely affect agricultural productivity on Maui.**			
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.			✓
Objective:			
7.2.1 Reduce the proliferation and impact of residential development outside of urban, small town, and rural growth boundaries.			✓
Policies:			
7.2.1.a Focus development to areas inside urban, small town, and rural growth boundaries to preserve natural, cultural, and agricultural resources.			✓
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.			✓
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.			✓
7.2.1.d Encourage basic goods/services in business country towns.			✓
7.2.1.e Allow for mixed uses, including residential uses, within Business Country Town Districts.			✓
7.2.1.f Encourage the use of alternative stormwater management techniques that minimize land disturbance and preserve natural drainage features.			✓
7.2.1.g Encourage green belts, open space buffers, and riparian zones to minimize conflicts between agriculture and residential uses.			✓
7.2.1.h Evaluate the impact of gated communities on inter-connectivity.			✓
Objective:			
7.2.2 More appropriate service/infrastructure standards to enhance and protect the island's rural character and natural systems.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
Policies:			
7.2.2.a Minimize impermeable surfaces within rural areas.			✓
7.2.2.b Protect and support the character, economic viability, and historic integrity of Maui's small towns.			✓
7.2.2.c Use infrastructure, public service, and design standards that are appropriate to rural areas.			✓
7.2.2.d Discourage land use and urban design that impede interconnectivity between adjacent communities.			✓
Analysis: **The proposed action will not be implemented in a rural area and does not interfere with the goals or objectives for rural communities.**			
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.			✓
Objective:			
7.3.1 Facilitate and support a more compact, efficient, human-scale urban development pattern.			✓
Policies:			
7. 3.1.a Ensure higher-density compact urban communities, infill, and redevelopment of underutilized urban lots within Urban Growth Boundaries.			✓
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.			✓
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.			✓
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.			✓
7.3.1.e Evaluate the impact of gated communities on inter-connectivity.			✓
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.			✓
7.3.1.g Discourage future pyramid zoning within the industrial zoning districts, while allowing accessory commercial uses and grandfathering existing uses.			✓
7.3.1.h Promote agriculture by encouraging community gardening, community-supported agricultural programs, and farmers markets within and adjacent to urban areas.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
7.3.1.i Discourage land use and urban design that impedes inter-connectivity between adjacent communities.			✓
Objective:			
7.3.2 Facilitate more self-sufficient and sustainable communities.			✓
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.			✓
7.3.2.b Site community facilities such as schools, parks, libraries, and community centers within walking and biking distance of residences.			✓
7.3.2.c Facilitate self-sufficient communities and shorten commutes by:			✓
(1) Directing residential development to job-rich areas;			✓
(2) Allowing for appropriate commercial development and community services to shorten commutes; and			✓
(3) Allowing home occupations or home-based businesses that are compatible with surrounding neighborhoods and lifestyles.			✓
7.3.2.d Ensure, where appropriate, that affordable employee housing and multi-modal transportation opportunities are located near major employment centers.			✓
7.3.2.e Discourage the establishment of bedroom communities where long commutes are required to employment centers.			✓
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.			✓
7.3.2.g Provide incentives to facilitate the development of multifamily housing.			✓
7.3.2.h Encourage the placement of rental housing projects in the same areas as for-sale housing to facilitate mixed-income communities.			✓
7.3.2.i Develop communities that provide sufficient parks, schools, libraries, and other essential public facilities and services to serve resident needs.			✓
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.			✓
Objective:			
7.3.3 Strengthen the island's sense of place.			✓
Policies:			
7.3.3.a Protect and enhance the unique architectural and landscape characteristics of each community.			✓
7.3.3.b Encourage Hawaiian architecture and tropical building designs.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
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.			✓
7.3.3.d Strongly encourage the preservation of buildings, structures, and sites of historic significance.			✓
7.3.3.e Require community input through Design Workshops for major new urban expansion, new towns, and major urban infill projects.			✓
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.			✓
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.			✓
Objective:			
7.3.4 Strengthen planning and management for the visitor industry to protect resident quality of life and enhance the visitor experience.			✓
Policies:			
7.3.4.a Discourage the conversion of hotel units to timeshares and fractional ownership.			✓
7.3.4.b Monitor and manage the amount of, and impacts from, timeshares and fractional ownership.			✓
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.			✓
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.			✓
Objective:			
7.3.5 Ensure that Maui's planning and development review process becomes more transparent, efficient, and innovative.		✓	
Policies:			
7.3.5.a Encourage greater community involvement in land use planning and decision making.		✓	
7.3.5.b Establish a predictable and timely development review process that facilitates the approval of projects that meet planning and regulatory requirements.			✓
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.		✓	
7.3.5.d Provide greater certainty and transparency in the development review process.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
Analysis: **The proposed project is an infrastructure improvement in a previously developed area and is not directly applicable to the objectives and policies for urban development patterns, sustainable communities, and strengthening the island's sense of place. Ongoing coordination with various County, State, and Federal agencies ensures that the proposed action accounts for and mitigates, to the extent possible, potential long-term cumulative impacts resulting from the project.**				
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.	✓		
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.	✓		
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.			✓
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.			✓
8.1.d	The unique character and function of existing small towns shall be protected to retain and preserve their sense of place.			✓
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.			✓
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.			✓
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.			✓
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.	✓		
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
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.			✓
Analysis: **The proposed project area is located within the Small Town Growth Boundary. The project is in consonance with the related STB of the MIP.**				
RURAL GROWTH AREA				
Goal:				
8.2	Maui will maintain opportunities for agriculture and rural communities through sound planning and clearly defined development expectations.			✓
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.			✓
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.			✓
8.2.c	Environmental protection and compatibility will be a top priority in rural growth areas.			✓
8.2.d	All development within rural growth areas should avoid encroachment upon prime agricultural land.			✓
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.			✓
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.			✓
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.			✓
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.			✓
8.2.i	Urban development standards shall not be required within RGBs except in fulfillment of Federal law.			✓
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.			✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable		DA	IA	NA
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.			✓
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.			✓
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.			✓
8.2.n	At the time of zoning from agricultural to rural, Council will consider prohibiting restrictions on agricultural activity.			✓
Analysis: **The proposed project is not located within the Rural Growth Boundary and will not hinder opportunities for agriculture and rural communities.**				
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.			✓
Analysis: **Protected areas, as defined in Table 8-2 of the MIP are those lands categorized as preservation, park, greenbelt, greenway, and sensitive land. Diagram WC-1 shows that the project area is not located within the identified protected areas.**				

MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.