

MICHAEL P. VICTORINO
Mayor

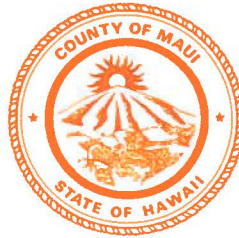
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**COUNTY OF MAUI
DEPARTMENT OF
ENVIRONMENTAL MANAGEMENT**

2145 KAOHU STREET, SUITE 102
WAILUKU, MAUI, HAWAII 96793

September 28, 2022

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

Subject: Proposed North Kihei Wastewater Collection and Transmission System Project;
Kihei, Maui, Hawai'i; Publication of the Draft Environmental Assessment and
Anticipated Finding of No Significant Impact

Dear Ms. Evans:

With this letter, the County of Maui, Department of Environmental Management hereby submits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Proposed North Kihei Wastewater Collection and Transmission System Project in Kihei, Maui, Hawai'i, for publication in the next available edition of the Environmental Notice. A complete listing of the affected Tax Map Keys (TMKs) for the project are provided in **Table 1**, below.

Table 1. List of Parcels Affected by the Proposed Project

Project Component	TMK	Landowner	Lot Area
WWPS No. 2	(2)3-8-077:011	State of Hawai'i	0.234 acres
WWPS No. 3	(2)3-9-001:147(por.)	County of Maui	2.606 acres
WWPS No. 4	(2)3-9-052:037	County of Maui	0.237 acres
WWPS No. 5	(2)3-9-027:028	County of Maui	0.230 acres
Kihei Community Center/Kihei Aquatic Center	(2)2-2-024:023(por.)	County of Maui	9 acres
South Maui Community Park expansion	(2)2-2-002:042 (por.)	County of Maui	42.126 acres
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui	1.932 acres

Project Component	TMK	Landowner	Lot Area
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:088	County of Maui	0.775 acres
Land abutting the Kīhei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.	2,175.38 acres
Kīhei WWRF	(2)2-2-024:010	County of Maui	12.931 acres
Kīhei WWRF	(2)2-2-024:011	County of Maui	10.512 acres
Proposed underground gravity sewerline – S. Kīhei Road ROW	(2)3-9-001 (2)-3-9-007	County of Maui	Roadway
Proposed underground force main – Pi‘ikea Avenue ROW	(2)3-9-002	County of Maui	Roadway
Proposed underground gravity sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui	Roadway
Proposed underground force main – Liloa Drive ROW	(2)2-2-002	County of Maui	Roadway
Proposed underground force main – Old/E. Welakahao Road ROW	(2)2-2-029	County of Maui	Roadway
Proposed underground force main – Pi‘ilani Highway ROW	(2)2-2-999	State of Hawai‘i	Roadway

In addition to this letter, we have also submitted the electronic version of the Environmental Review Program Publication Form and a searchable PDF-formatted copy of the DEA-AFONSI through the online submission platform.

If there are any questions, please call Deborah Aweau of the Wastewater Reclamation Division at (808) 270-7417.

Sincerely,



for ERIC A. NAKAGAWA, P.E.
Director of Environmental Management

cc: Juan Rivera, County of Maui Department of Environmental Management
Deborah Aweau, County of Maui Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering, Inc.
Kari Luna Nunokawa, Munekiyo Hiraga
K:\DATA\WUEN Kihei Mauka Trans\Applications\Draft EA\Draft EA AFNSI_Ltr.doc

From: webmaster@hawaii.gov
Sent: Thursday, October 13, 2022 12:27 PM
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice

Action Name
North Kihei Wastewater Collection and Transmission System Project
Type of Document/Determination
Draft environmental assessment and anticipated finding of no significant impact (DEA-AFNSI)
HRS §343-5(a) Trigger(s)
<ul style="list-style-type: none">(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)3-8-077:011; (2)3-9-001:147(por.); (2)3-9-052:037; (2)3-9-027:028; (2)2-2-024:023(por.); (2)2-2-002:042(por.); (2)2-2-002:087; (2)2-2-002:088; (2)2-2-002:084(por.); (2)2-2-024:010; (2)2-2-024:011; (2)3-9-001; (2)3-9-007; (2)3-9-002; (2)2-2-024; (2)2-2-002; (2)2-2-029; (2)2-2-999
Action type
Agency
Other required permits and approvals
See Chapter VIII.
Proposing/determining agency
County of Maui Department of Environmental Management
Agency contact name
Deborah Aweau
Agency contact email (for info about the action)
Deborah.Aweau@co.maui.hi.us
Email address or URL for receiving comments
Deborah.Aweau@co.maui.hi.us
Agency contact phone
(808) 270-8230
Agency address
2200 Main Street Suite 610 Wailuku, HI 96793 United States Map It
Was this submittal prepared by a consultant?
Yes
Consultant
Munekiyo Hiraga

Consultant contact name

Kari Nunokawa

Consultant contact email

planning@munekiyohiraga.com

Consultant contact phone

(808) 244-2015

Consultant address

305 High Street
Suite 104
Wailuku, HI 96793
United States
[Map It](#)

Action summary

The County of Maui, Department of Environmental Management (DEM), Wastewater Reclamation Division (WWRD) is proposing to upgrade the North Kihei Wastewater Collection and Transmission System. The system and certain elements of it are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. The proposed project will include replacing the gravity sewerline to WWPS No. 3, replacing the gravity sewerlines to WWPS No. 4, a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Piikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft.) until it reaches the proposed new WWPS near the Kihei Aquatic Center, and a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility (WWRF). The proposed project will also involve upgrading the WWPS Nos. 2, 3, 4, and 5. All improvements

Reasons supporting determination

Please refer to the Significance Criteria discussion (Section VII) in the EA document.

Attached documents (signed agency letter & EA/EIS)

- [N Kihei Wastewater Collection and Transmission System Draft EA Oct-2022.pdf](#)
- [N Kihei Wastewater Collection and Transmission System -DEM AFNSI 09.28.22.pdf](#)

Action location map

- [N Kihei Wastewater Collection and Transmission System Shapefile.zip](#)

Authorized individual

Kari Luna Nunokawa

Authorization

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



Draft Environmental Assessment

PROPOSED NORTH KĪHEI WASTEWATER COLLECTION AND TRANSMISSION SYSTEM, KĪHEI, MAUI, HAWAI‘I

Prepared for:

**County of Maui,
Department of Environmental Management,
Wastewater Reclamation Division**

October 2022

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by Munekiyo Hiraga**



MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.



Draft Environmental Assessment

PROPOSED NORTH KĪHEI WASTEWATER COLLECTION AND TRANSMISSION SYSTEM, KĪHEI, MAUI, HAWAI‘I

Prepared for:

**County of Maui,
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October 2022

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Executive Summary

Project Name:	Proposed North Kīhei Wastewater Collection and Transmission System, Kīhei, Maui, Hawai'i
Type of Document:	Draft Environmental Assessment
Legal Authority:	Chapter 343, Hawai'i Revised Statutes
Anticipated Determination:	Anticipated Finding of No Significant Impact (AFNSI)
Applicable Environmental Assessment review "Trigger":	Use of State and County Lands and Funds
Location:	Maui Island Kīhei (TMK Nos. (2)2-2-002; (2)2-2-002:042 (por.); (2)2-2-002:084(por.); (2)2-2-002:087; (2)2-2-002:088; (2)2-2-999; (2)2-2-024; (2)2-2-024:010; (2)2-2-024:011; (2)2-2-024:023(por.); (2)2-2-029; (2)3-8-077:011; (2)3-9-001; (2)3-9-001:147(por.); (2)3-9-002; (2)3-9-007; (2)3-9-027:028; and (2)3-9-052:037)
Landowner:	County of Maui 200 South High Street Wailuku, Hawai'i 96793 Phone: (808)270-8230 State of Hawai'i Department of Land and Natural Resources 1151 Punchbowl Street Honolulu, Hawai'i 96813 Phone: (808)587-0400 State of Hawai'i Department of Transportation 650 Palapala Drive Kahului, Hawai'i 96732 Phone: (808)873-3535 Haleakalā Ranch Company 529 Kealahoa Avenue Makawao, Hawai'i 96768 Phone: (808)572-1500

**Proposing and Determining
Agency:**

County of Maui
Department of Environmental Management Wastewater
Reclamation Division
2200 Main Street
One Main Plaza Building, Suite 610
Wailuku, Hawai'i 96793
Contact: Deborah Aweau
Phone No.: (808)270-8230

Consultant:

Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawai'i 96793
Contact: Kari Luna Nunokawa, Senior Manager
Phone No.: (808)244-2015

Project Summary:

The County of Maui, Department of Environmental Management (DEM), Wastewater Reclamation Division (WWRD) is proposing to upgrade the North Kihei Wastewater Collection and Transmission System. The system is located along South Kihei Road and runs from north to south. This system is made up of four (4) wastewater pump stations (WWPS) and conveys wastewater from its service area to Kihei WWPS No. 6, which then pumps to the Kihei Wastewater Reclamation Facility (WWRF). The transmission system running along South Kihei Road consists of gravity sewers ranging in size from 8 to 27 inches in diameter and discharge force mains from the WWPSs ranging from 10 to 16 inches in diameter. Gravity collection mains feed into the trunk transmission system at various points along South Kihei Road. The system and certain elements of it are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area.

The proposed project will include replacing the gravity sewerline to WWPS No. 3 with a larger pipe, replacing the gravity sewerlines to WWPS No. 4 with larger pipes, a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft.) until it reaches the new WWPS near the Kihei Aquatic Center, a new WWPS at the Lipoa Street and Liloa Drive intersection, and a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility (WWRF).

The proposed project will also involve upgrading the WWPS Nos. 2, 3, 4, and 5. Pump station upgrade work will entail switching the existing drywell pumps for wet well

submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPS. These improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of the WWPSs, building improvements, may be necessary. More specific to WWPS No. 2, along with the previous noted upgrades, improvements may also include sea level rise mitigation, odor control, a possible change from a two-pump to a three-pump system, and building expansion or construction of a new electrical building. All improvements at the existing WWPSs will occur within existing developed areas of the parcel.

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

Furthermore, funds from the State of Hawai'i's Clean Water State Revolving Funds (CWSRF) will also be utilized for the project. As such, compliance with applicable Federal cross-cutter requirements will also be addressed during the Chapter 343, HRS environmental review process.

List of Acronyms

AFNSI	Anticipated Finding of No Significant Impact
AIS	Archaeological Inventory Survey
ALISH	Agricultural Lands of Importance to the State of Hawai'i
amsl	Above Mean Sea Level
APE	Area of Potential Effect
BMP	Best Management Practice
CIA	Cultural Impact Assessment
CO2 EQ	Carbon Dioxide Equivalent
CWRM	Commission on Water Resource Management
CWSRF	Clean Water State Revolving Fund
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DA	Department of Army
DBEDT	Department of Business Economic Development and Tourism
DEM	Department of Environmental Management
DLNR	Department of Land and Natural Resources
DOE	Department of Education
DOH	Department of Health
DOH-CWB	Department of Health, Clean Water Branch
DOH-SDWB	Department of Health Safe Drinking Water Branch
DWS	Department of Water Supply
EA	Environmental Assessment
EMI	East Maui Irrigation
EPA	Environmental Protection Agency
ERP	Environmental Review Program
ESA	Environmental Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highways Administration
FIRM	Flood Insurance Rate Map
ft.	feet
GHG	Greenhouse Gases
ha	hectare
HAR	Hawai'i Administrative Rules
HCZMP	Hawai'i Coastal Zone Management Plan
HDD	Horizontal Directional Drilling
HECO	Hawaiian Electric Company
HILT	Hawai'i Islands Land Trust
HRS	Hawai'i Revised Statutes
LSB	Land Study Bureau
LWCFA	Land and Water Conservation Fund Act
m	meters
mgd	million gallons per day
MIP	Maui Island Plan
MPC	Maui Planning Commission
MPD	Maui Police Department
msl	Mean Sea Level
NHO	Native Hawaiian Organization
NHPA	National Historic Preservation Act

NO.	Number
NPDES	National Pollutant Discharge Elimination System
NPS	National Park Service
NRCS	Natural Resources Conservation Service
PUC	Public Utilities Commission
PVC	Polyvinyl Chloride
R-1	Non-Potable Reclaimed Water
RGB	Rural Growth Boundary
ROW	Rights-of-Way
SCAP	Stream Channel Alteration Permit
SCS	Scientific Consultant Services, Inc.
SHPD	State Historic Preservation Division
SIP	State Implementation Plan
SLR-XA	Sea Level Rise Exposure Area
SMA	Special Management Area
SSSPCP	Site Specific Spill Prevention and Control Plan
TMK	Tax Map Key
UGB	Urban Growth Boundary
UH	University of Hawai'i
UHMC	University of Hawai'i Maui College
USACE	U.S. Army Corp of Engineering
USDOT	United States Department of Transportation
USFWS	U.S. Fish and Wildlife Service
WQC	Water Quality Certification
WWPS	Wastewater Pump Station
WWRD	Wastewater Reclamation Division
WWRF	Wastewater Reclamation Facility



PROJECT OVERVIEW



I. PROJECT OVERVIEW

A. PROPERTY LOCATION, EXISTING USE AND LAND OWNERSHIP

The County of Maui, Department of Environmental Management (DEM), Wastewater Reclamation Division (WWRD) proposes the upgrade to the North Kīhei Wastewater Collection and Transmission System. The system is located along South Kīhei Road and runs from north to south. This system is made up of four (4) wastewater pump stations (WWPS) and conveys wastewater from its service area to Kīhei WWPS No. 6, which then pumps to the Kīhei Wastewater Reclamation Facility (WWRF). The transmission system running along South Kīhei Road consists of gravity sewers ranging in size from 8 to 27 inches in diameter and discharge force mains from the WWPSs ranging from 10 to 16 inches in diameter. Gravity collection mains feed into the trunk transmission system at various points along South Kīhei Road. The areas affected by the project are summarized in **Table 1**, below. See **Figure 1** and **Figure 2**.

Table 1. List of Parcels Affected by the Proposed Project

Project Component	TMK	Landowner	Lot Area
WWPS No. 2	(2)3-8-077:011	State of Hawai'i	0.234 acres
WWPS No. 3	(2)3-9-001:147(por.)	County of Maui	2.606 acres
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WWPS No. 5	(2)3-9-027:028	County of Maui	0.230 acres
New WWPS adjacent to Kīhei Community Center/Kīhei Aquatic Center	(2)2-2-024:023(por.)	County of Maui	9 acres
Construction Staging (temporary use only)	(2)2-2-002:042(por.)	County of Maui	42.126 acres
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui	1.932 acres
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:088	County of Maui	0.775 acres
Proposed Force Main in land abutting the Kīhei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.	2,175.38 acres
Kīhei WWRF	(2)2-2-024:010	County of Maui	12.931 acres
Kīhei WWRF	(2)2-2-024:011	County of Maui	10.512 acres
Proposed underground gravity sewerline – South Kīhei Road ROW	(2)3-9-001 (2)-3-9-007	County of Maui	Roadway
Proposed underground force main – Pi'ikea Avenue ROW	(2)3-9-002	County of Maui	Roadway
Proposed underground gravity sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui	Roadway

Project Component	TMK	Landowner	Lot Area
Proposed underground force main – Liloa Drive ROW	(2)2-2-002	County of Maui	Roadway
Proposed underground force main – Old/East Welakahao Road ROW	(2)2-2-029	County of Maui	Roadway
Proposed underground force main – Pi'ilani Highway ROW	(2)2-2-999	State of Hawai'i	Roadway

Project construction covers approximately 1.4 acres (ac). The majority of the project area falls within lands designated by the State Land Use Commission as “Urban”, with a small portion of the project within an “Agriculture” designated area by the Kīhei WWRF. Given the linear expanse of the project area, the Community Plan and zoning designations vary. **Table 2** summarizes the State land use classification, Community Plan designation, and zoning district for the subject parcels.

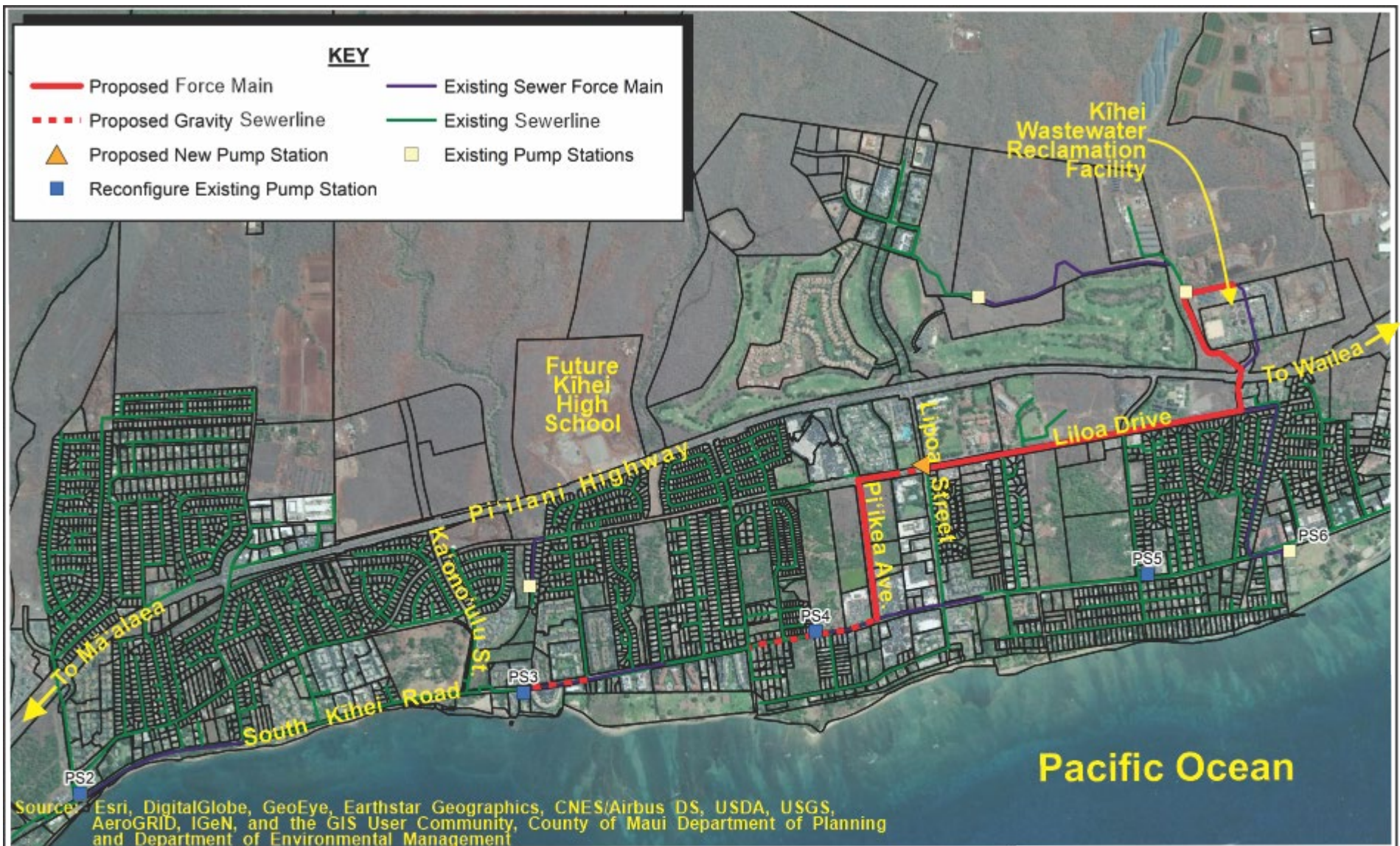



Figure 1
 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
 Project Location Map - Overview





Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Maui County Department of Planning

Figure 2 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Project Location Map



Table 2. List of Parcels and Land Use Classification, Zoning, and Designations

Project Component	TMK	District	Land Use Designations	
			Community Plan	County Zoning
WWPS No. 2	(2)3-8-077:011	Urban	PK (Park)	A-1, Apartment PK (Park)
WWPS No. 3	(2)3-9-001:147(por.)	Urban	PK (Park)	
WWPS No. 4	(2)3-9-052:037	Urban	Single Family Residential	R-3, Residential
WWPS No. 5	(2)3-9-027:028	Urban	Public/Quasi-Public	R-2, Residential
New WWPS adjacent to Kīhei Community Center/Kīhei Aquatic Center	(2)2-2-024:023(por.)	Urban	Project District 5	Project District 5, Parks
Construction Staging (temporary use only)	(2)2-2-002:042(por.)	Urban	Project District 5	Project District
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	Urban	Project District	Project District
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:088	Urban	Project District 5/ Roadway Plan	Project District
Proposed Force Main in land abutting the Kīhei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Agriculture	Agriculture	Agriculture
Kīhei WWRF	(2)2-2-024:010	Agriculture	Public/Quasi-Public	Agriculture
Kīhei WWRF	(2)2-2-024:011	Agriculture	P/QP-Public/Quasi-Public	Agriculture
Proposed underground gravity sewerline – S. Kīhei Road ROW	(2)3-9-001 (2)3-9-007	Urban	Not applicable	Not applicable
Proposed underground force main – Pi‘ikea Avenue ROW	(2)3-9-002	Urban	Not applicable	Not applicable
Proposed underground gravity sewerline – Liloa Drive ROW	(2)2-2-024	Urban	Not applicable	Not applicable
Proposed underground force main – Liloa Drive ROW	(2)2-2-002	Urban	Not applicable	Not applicable
Proposed underground force main – Old/E. Welakahao Road ROW	(2)2-2-029	Urban	Not applicable	Not applicable
Proposed underground force main – Pi‘ilani Highway ROW	(2)2-2-999	Urban/Agriculture	Not applicable	Not applicable

B. BACKGROUND AND PROJECT NEED

The existing wastewater systems are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. Future development mauka of the Pi'ilani Highway will require major upgrades to the existing system along South Kīhei Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills. The County of Maui, WWRD has implemented a proactive program to alleviate failures and wastewater spill events to area beaches and potential Environmental Protection Agency (EPA) fines as stipulated in the EPA Consent Decree filed November 8, 1999.

C. PROPOSED ACTION

The proposed North Kīhei Wastewater Collection and Transmission System project will include replacing the gravity sewerline to WWPS No. 3 with a larger pipe; replacing the gravity sewerlines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kīhei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft.) until it reaches a new proposed WWPS near the Kīhei Aquatic Center; a new WWPS at the Lipoa Street and Liloa Drive intersection; and a second new force main that heads south on Liloa Drive and continues on to the Kīhei Wastewater Reclamation Facility. It is important to note that the Kīhei WWRF is able to accommodate the anticipated future wastewater flows. Refer to **Figure 1**.

The proposed force main along Liloa Drive will cross Kēōkea and Waimāha'iha'i gulches. The new 16-inch force main pipe will be installed under Kēōkea Gulch and Waimāha'iha'i Gulch utilizing the horizontal directional drilling (HDD) method. This will involve the use of a drill rig that will bore beneath the gulches in a parabolic path with a guided drill bit. The new PVC pipe will then be inserted into the bore hole, thereby avoiding any surface disturbance or impact to Kēōkea Gulch and Waimāha'iha'i Gulch at the crossings.

Further, the County will work to upgrade WWPS Nos. 2, 3, 4, and 5 by switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPS. These improvements to the WWPSs are a process the County is working towards to standardize their facilities and to improve efficiency and reliability. Depending upon the existing conditions of the WWPSs, building improvements, may be necessary. More specific to WWPS No. 2, along with the previous noted upgrades, improvements may also include sea level rise mitigation, odor control, a possible change from a two-pump to a three-pump system, and building expansion or construction of a new electrical building. All improvements at the existing WWPSs will occur within existing developed areas of the parcel.

More detail on the proposed scope of work is presented in the Final Supplemental Preliminary Engineering Report in **Appendix “A”**.

D. REGULATORY CONTEXT

1. Chapter 343, Hawai‘i Revised Statutes

The proposed North Kihei Wastewater Collection and Transmission System will involve the use of State and County lands and funding. The use of State and County lands and funds are triggers for the preparation of an Environmental Assessment (EA), pursuant to Chapter 343, Hawai‘i Revised Statutes (HRS). Based on the scope of work for the proposed project, this is being prepared in accordance with Chapter 200.1 of Title 11, Hawai‘i Administrative Rules (HAR) in order to review the project’s technical characteristics, environmental impacts, alternatives, and advance findings and conclusions relative to the significance of the project. The DEM will serve as the Approving Agency for the project.

2. Clean Water State Revolving Fund Cross-Cutter Requirements

Funds from the State of Hawai‘i Clean Water State Revolving Fund (CWSRF) will be utilized for this project. As such, compliance with applicable Federal Cross-cutter requirements will also be addressed during the Chapter 343, HRS environmental review process.

3. Special Management Area Use Permit

A portion of the proposed project area is located within the County of Maui’s Special Management Area (SMA) and outside of the shoreline setback area. As such, a SMA Use Permit will be sought from the Maui Planning Commission (MPC). This EA document will serve as the primary technical supporting document for the SMA Use Permit.

4. Stream and Gulch Regulations

As noted above, the proposed project involves installation of upgraded sewerlines and force main lines that cross two (2) gulches, Kēōkea Gulch and Waimāha‘iha‘i Gulch.

Inasmuch as the sewerlines will be installed utilizing horizontal directional drilling (HDD) and there will be no surface disturbance to the gulches, the U.S. Army Corps of Engineers (USACE) determined that No Permit was required for the project.

Further, the State of Hawai'i, Commission of Water Resource Management (CWRM) provided a letter on March 3, 2022 stating that the CWRM will not require a Stream Channel Alteration Permit (SCAP) because the proposed work does not adversely affect instream uses of water.

5. Special Flood Hazard Area Development Permit

Portions of the proposed project corridor are also located within the County's High Hazard Flood Zone AE (7 ft.), AE (45 ft.), VE (10 ft.), VE (12 ft.), AH (6 ft.), AH (7 ft.). As applicable, a Special Flood Hazard Area Development Permit will be secured for the proposed action.

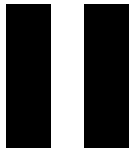
E. PROJECT COST AND IMPLEMENTATION SCHEDULE

The cost of the proposed North Kīhei Wastewater Collection and Transmission System project is estimated to be approximately \$20.5 million.

Project construction is estimated to take approximately 24 months. The project proposes work to be done within the rights-of-way (ROW) on South Kīhei Road, Pi'ikea Avenue, Liloa Drive, Old/East Welakahao, and Pi'ilani Highway. At a minimum, lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures are not preferred, but are possible depending on the field conditions.



**DESCRIPTION OF THE
EXISTING CONDITIONS,
POTENTIAL IMPACTS AND
MITIGATION MEASURES**



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

A. PHYSICAL SETTING

1. Surrounding Land Use

a. Existing Conditions

The proposed project is situated within the urban Kīhei area. The project spans across residential neighborhoods, civic, business/commercial areas, and agriculture lands. The entire project area covers terrain that lies across the street from the Pacific Ocean up to the foothills of Haleakalā mountain. Refer to **Figure 1** and **Figure 2**.

The area surrounding the Wastewater Pump Station (WWPS) No. 4 is a residential neighborhood and across from the Pacific Ocean. The proposed new WWPS will be built on land adjacent to the Kīhei Community Center and the Kīhei Aquatic Center and is within a business area and across the street from two (2) public schools, Kīhei Elementary and Lokelani Intermediate. The existing Kīhei WWRF is located on agriculture lands next to the Maui Nui Golf Course and within the Kīhei Tech Park II.

b. Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have an adverse impact on surrounding land uses. With the exception of the new WWPS adjacent to the Kīhei Community Center, the improvements will be limited to existing WWPS facilities and new or upgraded sewerlines and force mains, which will be underground. During construction, temporary lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures are not preferred, but are possible depending on the field conditions. A County-approved Traffic Control Plan will be developed and implemented to mitigate construction-related traffic impacts resulting from the project to surrounding land uses. From a long-term perspective, significant adverse impacts to surrounding land uses are not anticipated because the improvements will be largely underground or at existing WWPS facilities. Development of the new WWPS adjacent to the Kīhei Community Center will be coordinated with the County of Maui, Department of Parks and Recreation such that the WWPS does not adversely impact the Kīhei Community Center use and operations.

2. Climate

a. Existing Conditions

Like most areas of Hawai'i, South Maui's climate is relatively uniform year-round. South Maui's tropical latitude, its position relative to storm tracts and the Pacific anticyclone, and the surrounding ocean combine to produce this stable climate. Variations in climate among different regions on Maui are, therefore, dictated by the inherent characteristics of local terrain.

The Kīhei coast is generally sunny, warm, and dry throughout the entire year. Average daily temperatures typically range between 66.3 degrees and 83.9 degrees Fahrenheit in Kīhei. August is historically the warmest month, while February is the coolest (County of Maui, Office of Economic Development 2020).

Rainfall in South Maui is low and can vary from month to month. January is the wettest month, with 2.48 inches on average, and April is the driest, with 0.75 inch (County of Maui, Office of Economic Development, 2020).

b. Potential Impacts and Mitigation Measures

The proposed project will be constructed within urban Kīhei and primarily consist of underground improvements and improvements at existing WWPS facilities. Significant adverse impacts to climate conditions are not anticipated.

3. Greenhouse Gas Considerations

a. Existing Conditions

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

The Federal Greenhouse Gas Reporting Program (40 CFR Part 98) requires mandatory reporting of GHG emissions from sources that emit

25,000 metric tons or more of carbon dioxide equivalent (CO₂ EQ) per year in the United States. Categories of use which are generally associated with this level of reporting include power plants, petroleum and natural gas systems, refineries, and other heavy manufacturing processes. On Maui, the facilities operating at or above the 25,000 metric ton level include Hawaiian Electric Company's Kahului Power Plant, Mā'alaea Power Plant, and the Central Maui Landfill (U.S. Environmental Protection Agency (EPA), 2017).

It is noted that the State of Hawai'i has set a renewable energy portfolio standard of 100 percent by the year 2045 (Section 269-92, Hawai'i Revised Statutes (HRS)) to minimize dependence of 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). The State is on track to meet these goals (Hawai'i Department of Health, 2019, Hawai'i Public Utilities Commission (PUC), 2018), which will result in a reduction of GHG impact of the proposed action along with reductions of GHG emissions statewide.

b. Potential Impacts and Mitigation Measures

The proposed project involves improvements to WWPS Nos. 2, 3, 4, and 5, new sewerlines, new force mains, construction of a new WWPS near the Kīhei Community Center, and new lines to the Kīhei WWRF.

Inasmuch as the project is a utility improvement project, it will not generate significant direct or indirect GHG emissions. The only anticipated GHG emissions will happen during power outages, when emergency diesel generators are used to maintain pump station operation. One (1) emergency diesel generator will be added as part of this project. The generator will not run continuously and as such, will not generate significant direct or indirect GHG emissions.

4. Topography and Soil Characteristics

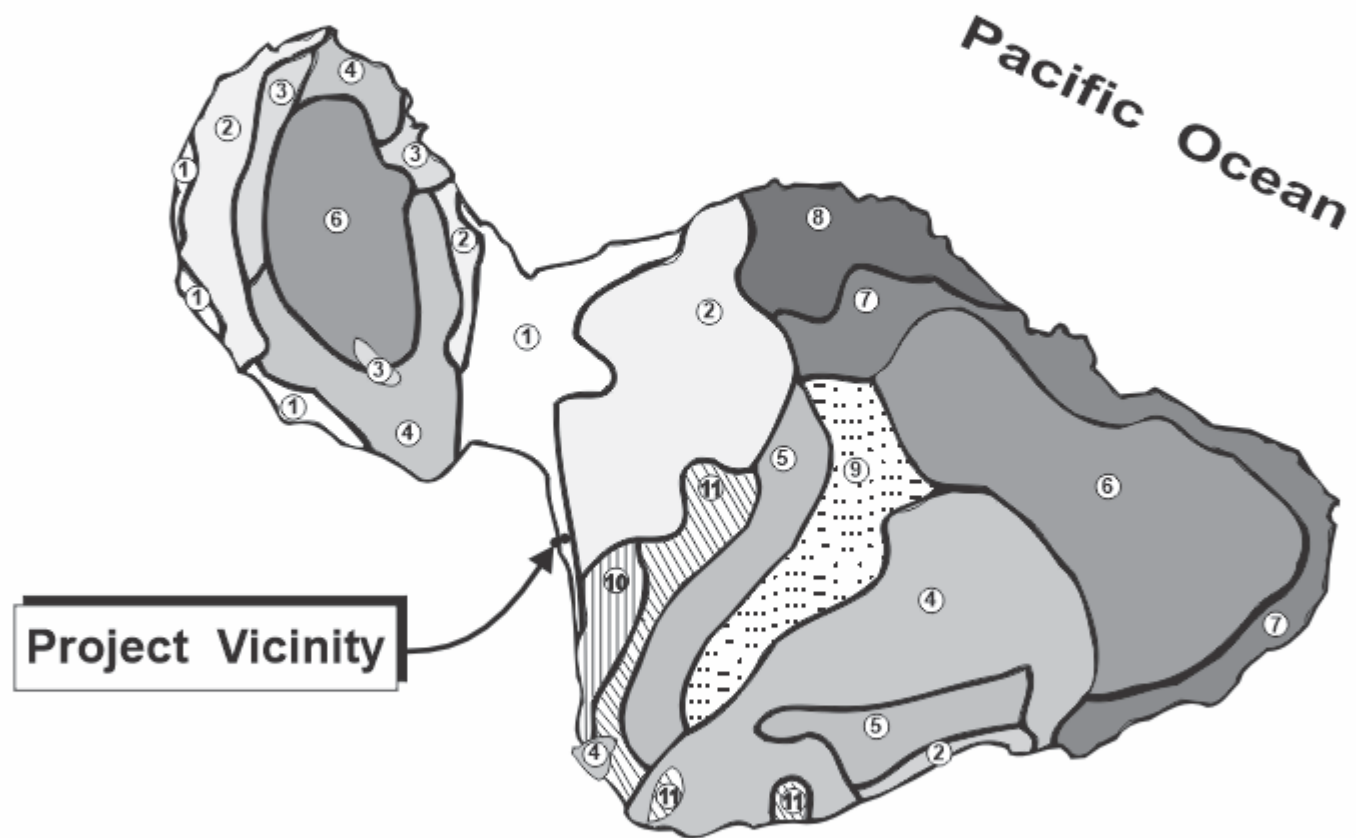
a. Existing Conditions

The lands the project scope spans range from sea level up to 220 feet (ft.) above mean sea level (amsl) on the slopes of Haleakalā. The project site as a whole generally slopes upward from the west to the east. The ground surface elevation along South Kīhei Road remains fairly constant, at approximately 10 ft. amsl, where the gravity sewers and force mains are located. Along the Liloa Drive corridor, the ground surface elevation ranges from 30 ft. in the north to 70 ft. amsl near Welakahao Street.

The project area spans over two (2) general soil associations. The Pulehu-Ewa-Jaucas and the Waiakoa-Keahua-Molokai associations. See **Figure 3**. The Soil Survey of the islands of Kauai, O'ahu, Maui, Moloka'i, and Lāna'i, State of Hawai'i characterizes the soils of the Pulehu-Ewa-Jaucas association as consisting of well-drained and excessively drained, moderately fine to coarse-textured soils on alluvial fans and in basins. These soils are nearly level to moderately sloping, which developed in material weathered from basic igneous rock, coral, and seashells. The association makes up about four (4) percent of the island (U.S. Department of Agriculture, 1972). The second association is the Waiakoa-Keahua-Molokai association. Its characteristics are well-drained, moderately fine textured soils on low uplands. The soils are nearly level to moderately steep and were formed in material weathered from basic igneous rocks. This type of soils makes up of about 15 percent of the island. The specific soil classifications underlying the proposed project are presented in **Figure 4** and summarized in **Table 3**.

LEGEND

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



Source: USDA, Soil Conservation Service

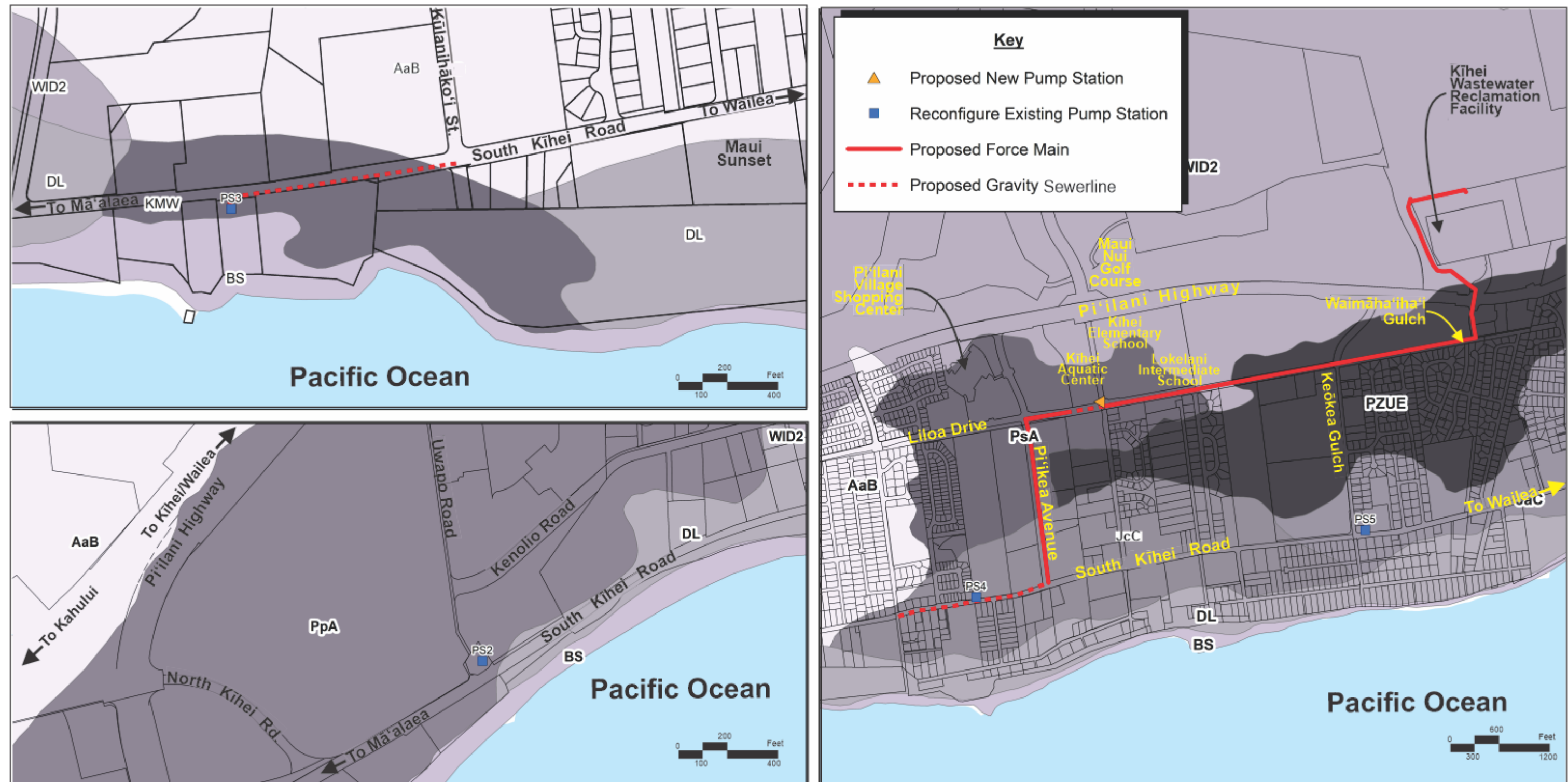
Figure 3 Proposed North Kihei Wastewater Collection and Transmission System Improvements Soil Association Map

NOT TO SCALE



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA



Source: USDA Soil Survey Geographic Database and County of Maui, Department of Planning

Figure 4 Proposed North Kihei Wastewater Collection and Transmission System Improvements
Soil Classification Map



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUEN Kihei Maui Trans/Applications/Figures/FIRM

Table 3. Project Soil Classification

Location	Soil Symbol	Soil Name	Description of Soil
WWPS No. 2	Ppa	Pulehu silt loam, 0 to 3 percent slopes	Similar to Pulehu clay loam, 0 to 3 percent slopes, except the texture is silt loam. This soil is used for sugar cane and small acreage homesites.
WWPS No. 3	KMW	Kealia silt loam	A poorly drained soil with a high content of salt. Ponding occurs in low areas after a heavy rain. Permeability is moderately rapid and runoff is slow to very slow.
Proposed new gravity sewerline within South Kīhei ROW from WWPS No. 3	KMW	Kealia silt loam	A poorly drained soil with a high content of salt. Ponding occurs in low areas after a heavy rain. Permeability is moderately rapid and runoff is slow to very slow.
	AaB	Alae sandy loam, 3 to 7 percent slopes	Runoff is slow, and the erosion hazard is slight. This type of soil is also used for sugar cane and pasture.
WWPS No. 4	JcC	Jaucas sand, saline, 0 to 12 percent slopes	This type of soil occurs near the ocean where the water table is near the surface and salts have accumulated. This type of soil is normally used for pasture, wildlife habitat, and urban development.
Proposed new gravity sewerline within South Kīhei ROW into and out of WWPS No. 4	JcC	Jaucas sand, saline, 0 to 12 percent slopes	This type of soil occurs near the ocean where the water table is near the surface and salts have accumulated. This type of soil is normally used for pasture, wildlife habitat, and urban development.
Proposed new force main along Pi'ikea ROW	JcC	Jaucas sand, saline, 0 to 12 percent slopes	This type of soil occurs near the ocean where the water table is near the surface and salts have accumulated. This type of soil is normally used for pasture, wildlife habitat, and urban development.
	PsA	Pulehu clay loam, 0 to 3 percent slopes	This is a moderate-drained soil with low runoff hazard. This type of soil occurs on alluvial fans between sea level and 300 feet in elevation stream terraces and basins.
Proposed new force main along Liloa Drive	PsA	Pulehu clay loam, 0 to 3 percent slopes	This is a moderate-drained soil with low runoff hazard. This type of soil occurs on alluvial fans between sea level and 300 feet in elevation stream terraces and basins.
	PSVE	Pu'u pa very stony silt loam, 7 to 40 percent slopes	This type of soil is well-drained found on the southern intermediate slopes of Haleakalā. Permeability is moderately rapid and runoff is slow to medium.

Location	Soil Symbol	Soil Name	Description of Soil
	WID2	Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded	This type of soil is part of a series of well-drained soils on the uplands of Maui. Runoff is medium, and the erosion hazard is severe.
Proposed new gravity sewerline along Liloa Drive	PsA	Pulehu clay loam, 0 to 3 percent slopes	This is a moderate-drained soil with low runoff hazard. This type of soil occurs on alluvial fans between sea level and 300 feet in elevation stream terraces and basins.
	PSVE	Pu'u pa very stony silt loam, 7 to 40 percent slopes	This type of soil is well-drained found on the southern intermediate slopes of Haleakalā. Permeability is moderately rapid and runoff is slow to medium.
	WID2	Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded	This type of soil is part of a series of well-drained soils on the uplands of Maui. Runoff is medium, and the erosion hazard is severe.
Proposed new WWPS on corner of Liloa Drive and Lipoa Street	PsA	Pulehu clay loam, 0 to 3 percent slopes	This is a moderate-drained soil with low runoff hazard. This type of soil occurs on alluvial fans between sea level and 300 feet in elevation stream terraces and basins.
Proposed new force main from the proposed new WWPS to the Kīhei WWRF	PsA	Pulehu clay loam, 0 to 3 percent slopes	This is a moderate-drained soil with low runoff hazard. This type of soil occurs on alluvial fans between sea level and 300 feet in elevation stream terraces and basins.
	PSVE	Pu'u pa very stony silt loam, 7 to 40 percent slopes	This type of soil is well-drained found on the southern intermediate slopes of Haleakalā. Permeability is moderately rapid and runoff is slow to medium.

b. Potential Impacts and Mitigation Measures

Site work will involve installation of underground infrastructure and maintenance improvements to the WWPS Numbers 2, 3, 4, and 5. WWPS No. 2 may have additional improvements and could include sea level rise mitigation, odor control, a possible change from a two-pump to a three-pump system, and building expansion or construction of a new electrical building. Best Management Practices (BMPs) will be implemented in accordance with applicable provisions of the Maui County Code and the project-specific National Pollutant Discharge Elimination System (NPDES) permit. The proposed new WWPS at the corner of Lipoa Street and Liloa Drive will also utilize BMPs throughout construction to control runoff, sedimentation, and erosion that may occur.

5. Agriculture

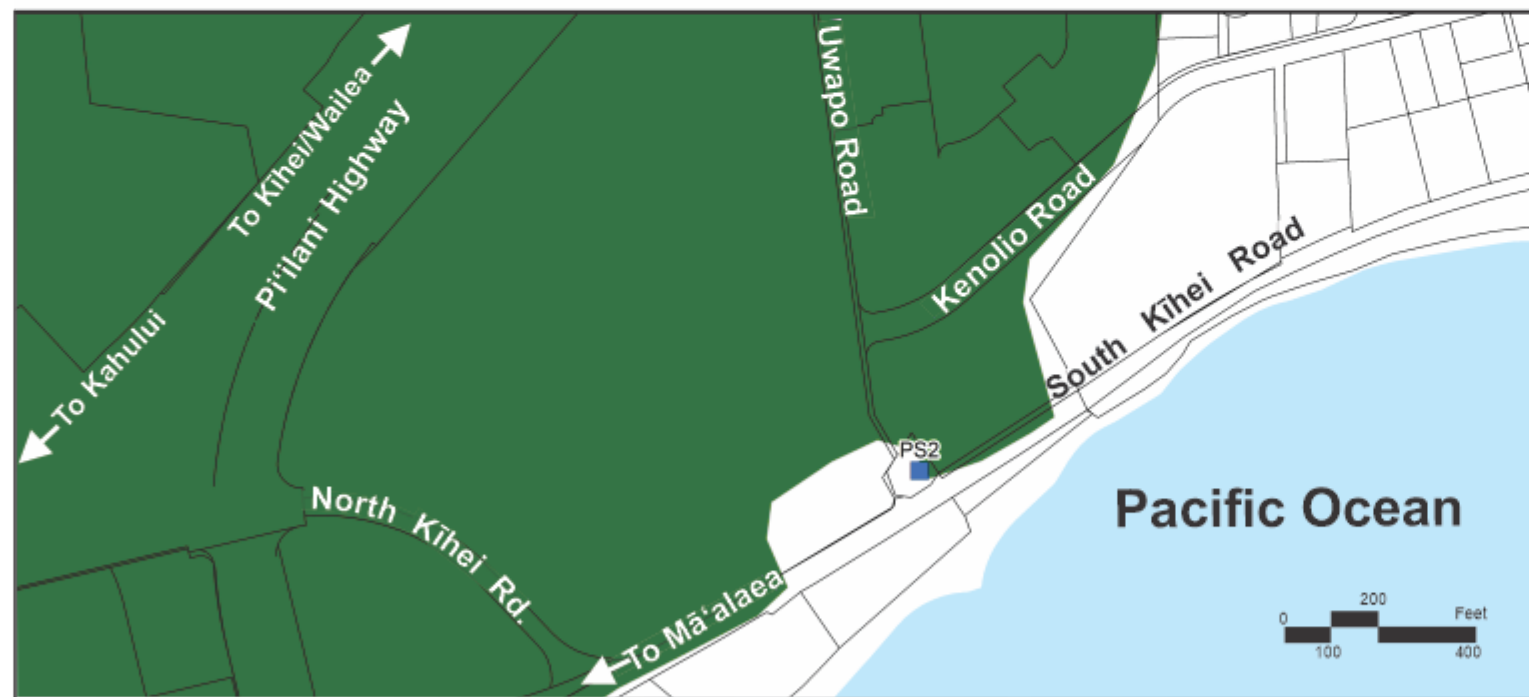
a. Existing Conditions

The State Department of Agriculture has established three (3) categories of Agricultural Lands of Importance to the State of Hawai'i (ALISH). The ALISH system classifies lands into "Prime", "Unique", and "Other Important Agricultural Land". The remaining lands are "Unclassified". Utilizing modern farming methods, "Prime" agricultural lands have the soil quality, growing season, and moisture supply needed to produce sustained crop yields economically, while "Unique" agricultural lands possess a combination of soil quality, location, growing season, and moisture supply currently used to produce sustained high yields of a specific crop. "Other Important Agricultural Land" includes those which have not been rated as "Prime" or "Unique". The majority of the project area is located on lands that have already been developed and occur within existing right-of-ways and, thus, are not rated by the ALISH rating system. See **Figure 5**.

Additionally, the University of Hawai'i (UH) Land Study Bureau (LSB) developed the Overall Productivity rating, which classified soils according to five (5) levels, with "A" representing the class of highest productivity soils and "E" representing the lowest. Urbanized lands are not categorized by the LSB system. As such, the majority of the project area is unclassified. However, the proposed new gravity sewerline and force main that will travel from the proposed new WWPS at the corner of Liloa Drive and Lipoa Street will cross lands classified as "E", which is the lowest productivity rating. See **Figure 6**.

b. Potential Impacts and Mitigation Measures

The proposed project will be located in the urban core of Kīhei. There is no active agricultural activities occurring within the project area. Adverse impacts to agricultural productivity will not occur as a result of the proposed project.



Source: State Department of Agriculture and County of Maui, Department of Planning

Figure 5 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Agricultural Lands of Importance to the State of Hawai'i Map



Prepared for: County of Maui, Department of Environmental Management

 MUNEKIYO HIRAGA

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Source: University of Hawai'i, Land Study Bureau and County of Maui, Department of Planning

Figure 6 Proposed North Kihei Wastewater Collection and Transmission System Improvements
Land Study Bureau Map



Prepared for: County of Maui, Department of Environmental Management

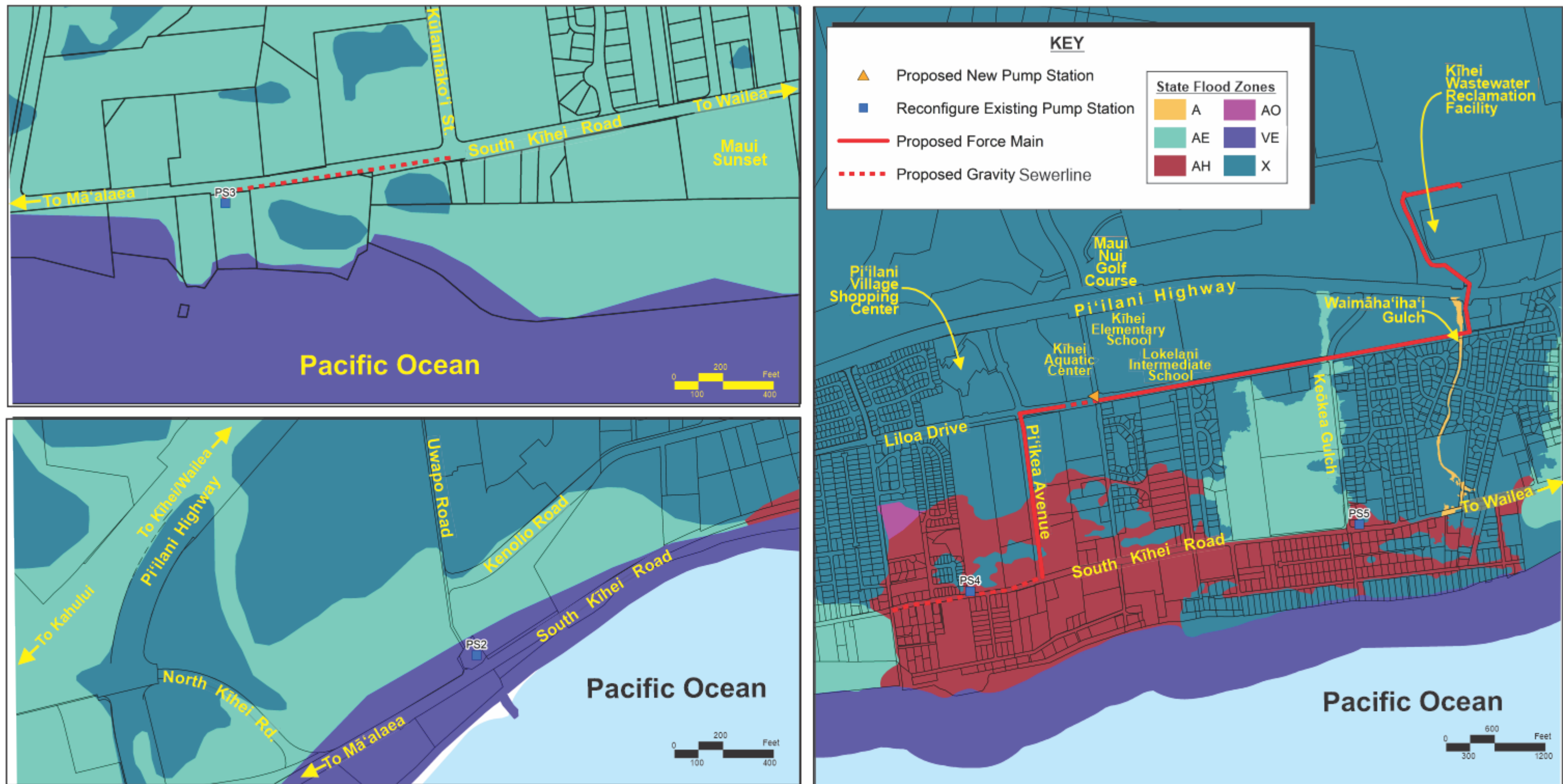
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6. Flood and Tsunami Hazard

a. Existing Conditions

Given the project's location in a coastal area of Kīhei, a portion of the project area is located within special flood hazard zones, as identified by the Flood Insurance Rate Map (FIRM), and the tsunami evacuation zone or extreme tsunami evacuation zone. See **Figure 7**, **Figure 8**, and **Table 4**.



Source: Federal Emergency Management Agency and County of Maui, Department of Planning

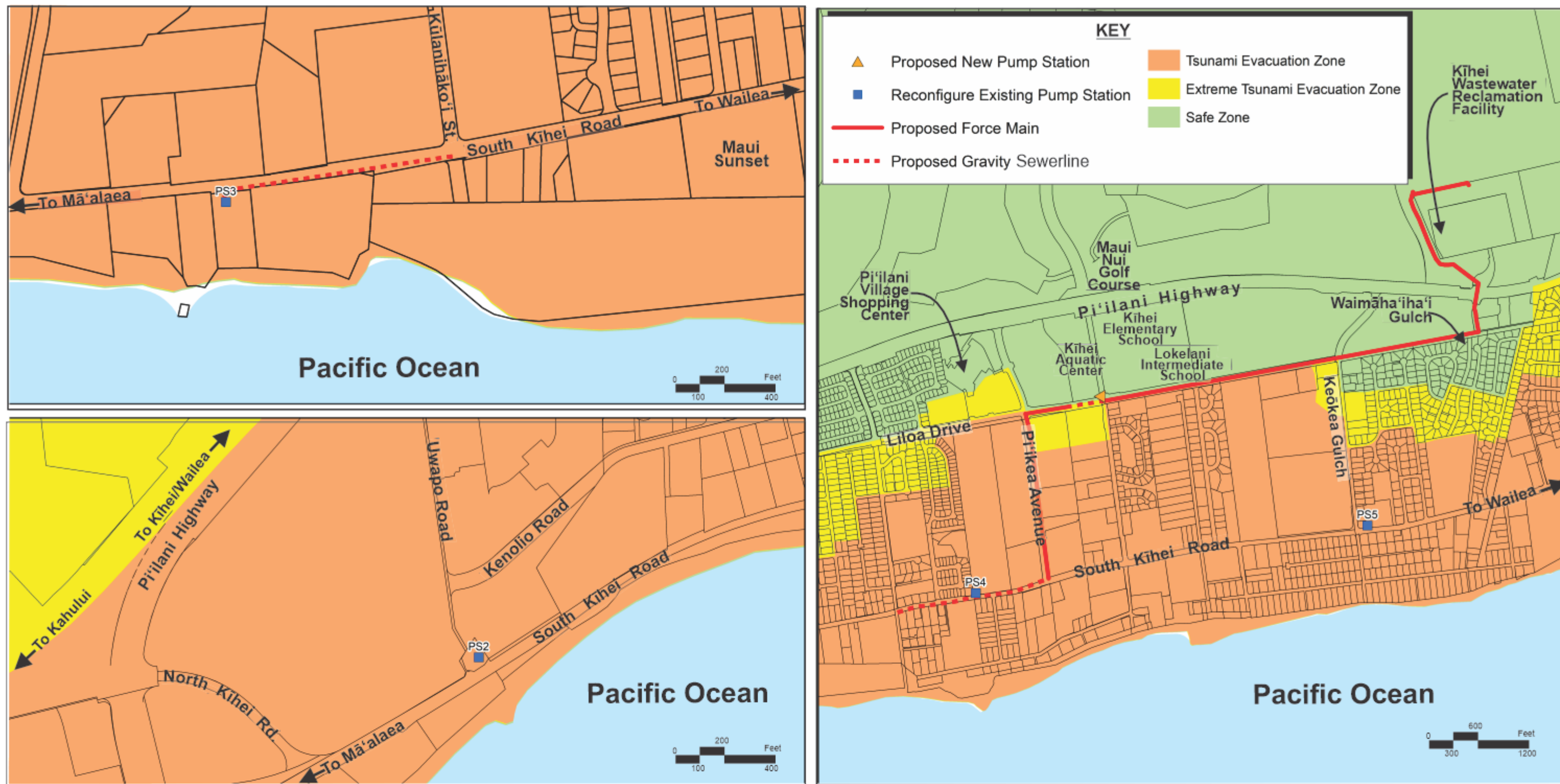
Figure 7 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Flood Insurance Rate Map



Prepared for: County of Maui, Department of Environmental Management

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WUEN Kihei Mauka Trans/Applications/Figures/FIRM



Source: County of Maui, Civil Defense Agency and County of Maui, Department of Planning

Figure 8 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Tsunami Evacuation Map



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUEN Kīhei Mauka Trans/Applications/Figures/Tsunami

Table 4. Project Flood Zone and Tsunami Evacuation Zone Designations

Location	Flood Insurance Rate Map (FIRM) Zone	Description of FIRM Zone		Tsunami Evacuation Zone
WWPS No. 2	VE (12 ft.)	High risk coastal area with a one (1) percent or greater chance of annual flooding with increased risk due to storm waves and base flood elevations determined.		Tsunami Evacuation Zone
WWPS No. 3	AE (7 ft.), VE (10 ft.)	AE	High risk area where base flood elevations are determined.	Tsunami Evacuation Zone
		VE	High risk coastal area with a one (1) percent or greater chance of annual flooding with increased risk due to storm waves and base flood elevations determined	
Proposed new gravity sewerline within S. Kihei ROW from WWPS No. 3	AE (7 ft.)	AE	High risk area where base flood elevations are determined.	Tsunami Evacuation Zone
WWPS No. 4	X, AH (6 ft.)	X	Moderate to low risk area determined to be outside the 500-year flood plain.	Tsunami Evacuation Zone
		AH	High risk area where there is a one (1) percent chance of annual shallow flooding and flood depths of 1 to 3 feet (usually areas of ponding) and base flood elevations determined.	
Proposed new gravity sewerline within S. Kihei ROW into and out of WWPS No. 4	AH	AH	High risk area where there is a one (1) percent chance of annual shallow flooding and flood depths	Tsunami Evacuation Zone
Proposed new force main along Pi'ikea ROW	AH, X	AH	High risk area where there is a one (1) percent chance of annual shallow flooding and flood depths of 1 to 3 feet (usually areas of ponding) and base flood elevations determined.	Tsunami Evacuation Zone
		X	Moderate to low risk area determined to be outside the 500-year flood plain.	
Proposed new force main along Liloa Drive	X	X	Moderate to low risk area determined to be outside the 500-year flood plain.	Tsunami Evacuation Zone
Proposed new gravity sewerline along Liloa Drive	X	X	Moderate to low risk area determined to be outside the 500-year flood plain.	Extreme Tsunami Zone

Location	Flood Insurance Rate Map (FIRM) Zone	Description of FIRM Zone	Tsunami Evacuation Zone
Proposed new WWPS at corner of Liloa Drive and Lipoa Street	X	X Moderate to low risk area determined to be outside the 500-year flood plain.	Safe Zone
Construction staging area at South Maui Community Park expansion	X	X Moderate to low risk area determined to be outside the 500-year flood plain.	Safe Zone
Proposed new force main from the proposed new WWPS to the Kihei WWRF	X, AE (45 ft.)	X Moderate to low risk area determined to be outside the 500-year flood plain. AE High risk area where base flood elevations are determined.	Safe Zone
Kihei WWRF	X	X Moderate to low risk area determined to be outside the 500-year flood plain.	Safe Zone
WWPS No. 5	AH (7ft.)	AH High risk area where there is a one (1) percent chance of annual shallow flooding and flood depths of 1 to 3 feet (usually areas of ponding) and base flood elevations determined.	Tsunami Evacuation Zone

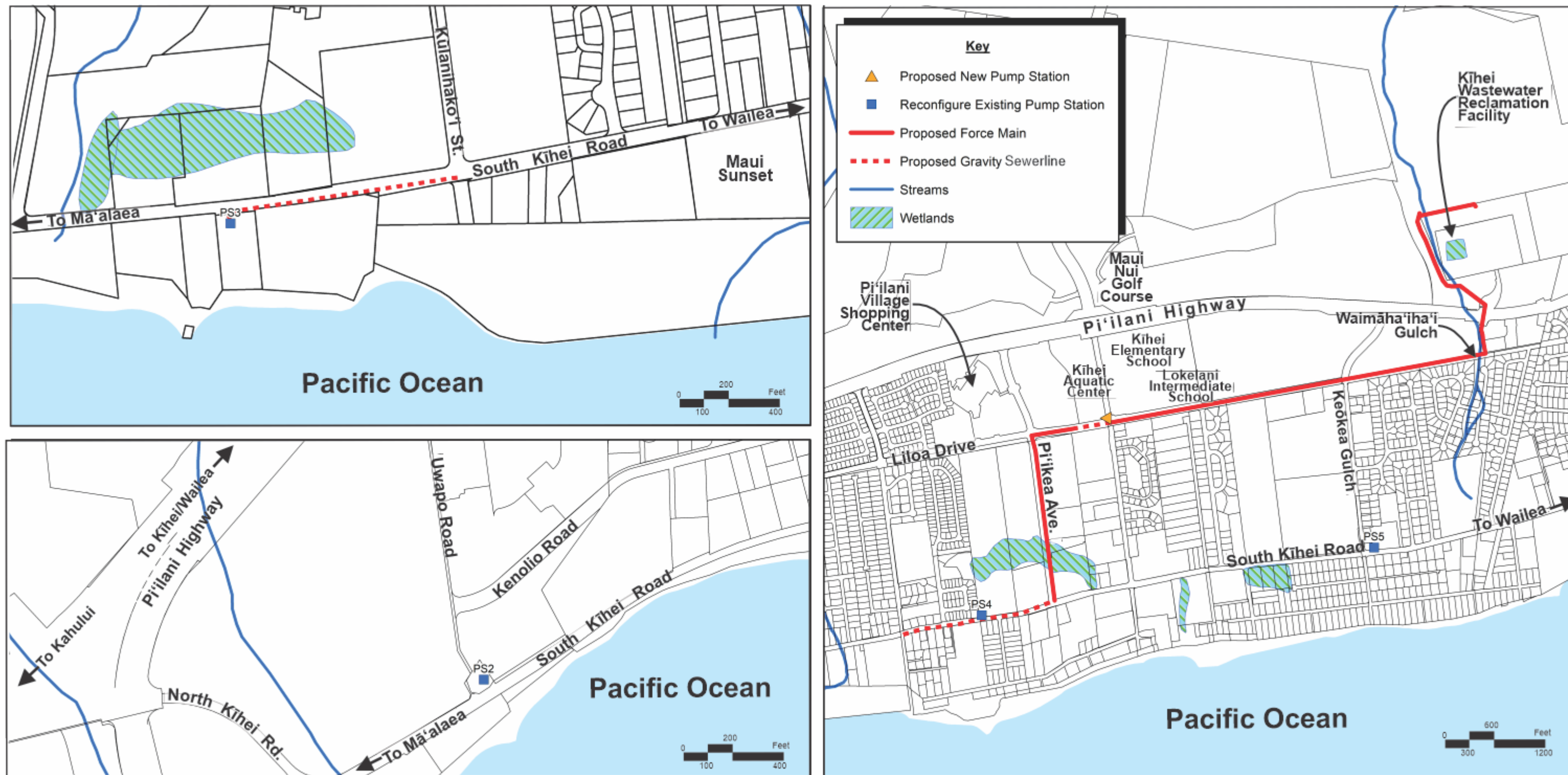
b. Potential Impacts and Mitigation Measures

Portions of the project will involve work within Special Flood Hazard areas and tsunami evacuation zone. The proposed sewerlines and force mains will be located underground and will not present additional flood or tsunami hazard risks. Other improvements within Special Flood Hazard areas and the tsunami evacuation zone include improvements to existing WWPS facilities. Notably, the proposed new WWPS at the corner of Liloa Drive and Lipoa Street is located in Flood Zone X and outside of the Tsunami Evacuation Area. A Special Flood Hazard Area Development Permit will be sought for improvements within the Special Flood Hazard area, as applicable. Based on the foregoing, significant adverse impacts related to flood and tsunami hazards are not anticipated as a result of the proposed project.

7. Streams and Wetlands

a. Existing Conditions

Within the project limits, there are two (2) gulches; Kēōkea Gulch and Waimāha'iha'i Gulch. See **Figure 9**. A Natural Resources Assessment



Source: USGS Digital Line Graphs, 1983 version; CWRM Hawai'i Stream Assessment database, 1993, DLNR Division of Aquatic Resources, 2004, and County of Maui, Department of Planning

Figure 9 Proposed North Kihei Wastewater Collection and Transmission System Improvements
Streams and Wetlands Map



was conducted for the two (2) gulches, including a delineation of jurisdictional waters. See **Appendix “B”**.

Kēōkea Gulch and Waimāha‘iha‘i Gulch are part of the Hāpapa Watershed which occupies 10,721 ha (26,493 ac) of the western flank of Haleakalā and extends from approximately 1,500 m (4,900 ft) above sea level (ASL) to the ocean shore. The localities of Kīhei occur within the watershed.

Kēōkea Gulch is well-defined around the project area, where the gulch passes between undeveloped land and a Hawaiian Electric (HECO) substation on the right bank, and East Welakahao Road on the left bank. Kēōkea Gulch has a direct surface connection to the Pacific Ocean. The upper drainage basin of the gulch encompasses portions of the State Kula Forest Reserve and the Kula-Kēōkea district. The gulch bifurcates above the Maui Nui Golf Club and the Kīhei WWRF mauka of Pi‘ilani Highway. The southern fork of this gulch becomes Waimāha‘iha‘i Gulch.

Waimāha‘iha‘i Gulch passes beneath Pi‘ilani Highway and enters the project area between undeveloped land on the right bank and East Welakahao on the left bank. Waimāha‘iha‘i Gulch has no defined surface connection to the Pacific Ocean and no channel or surface connection is visible via modern aerial imagery.

Both the Kēōkea Gulch and Waimāha‘iha‘i Gulch are ephemeral gulches, meaning water flows only briefly during and following a period of rainfall in the immediate locality. Refer to **Appendix “B”**.

The National Wetlands Inventory identifies a 9.7-acre freshwater emergent wetland in the vicinity of Pi‘ikea Avenue. Refer to **Figure 9**. The wetland, as mapped, spans both developed and undeveloped areas on either side of the existing Pi‘ikea Avenue. The proposed work in the vicinity of the wetland will be limited to within the existing Pi‘ikea Avenue ROW and will not disturb wetland features.

b. Potential Impacts and Mitigation Measures

The proposed project will involve force main lines that cross Kēōkea Gulch and Waimāha‘iha‘i Gulch. Horizontal directional drilling (HDD) will be utilized to install the 16-inch force main under the gulches. This will involve the use of a drill rig that will bore beneath the gulches in a parabolic path with a guided drill bit. The new PVC pipe will then be inserted into the bore hole, thereby avoiding any surface disturbance or impact to Kēōkea Gulch and Waimāha‘iha‘i Gulch at the crossings. No work is proposed within wetland areas in the vicinity of Pi‘ikea Avenue.

Appropriate mitigation measures will be developed in consultation with applicable government agencies and the State of Hawai'i, the landowner. During construction, BMPs will be implemented for erosion and sedimentation control to mitigate potential impacts from construction within the gulches and nearby waterbodies.

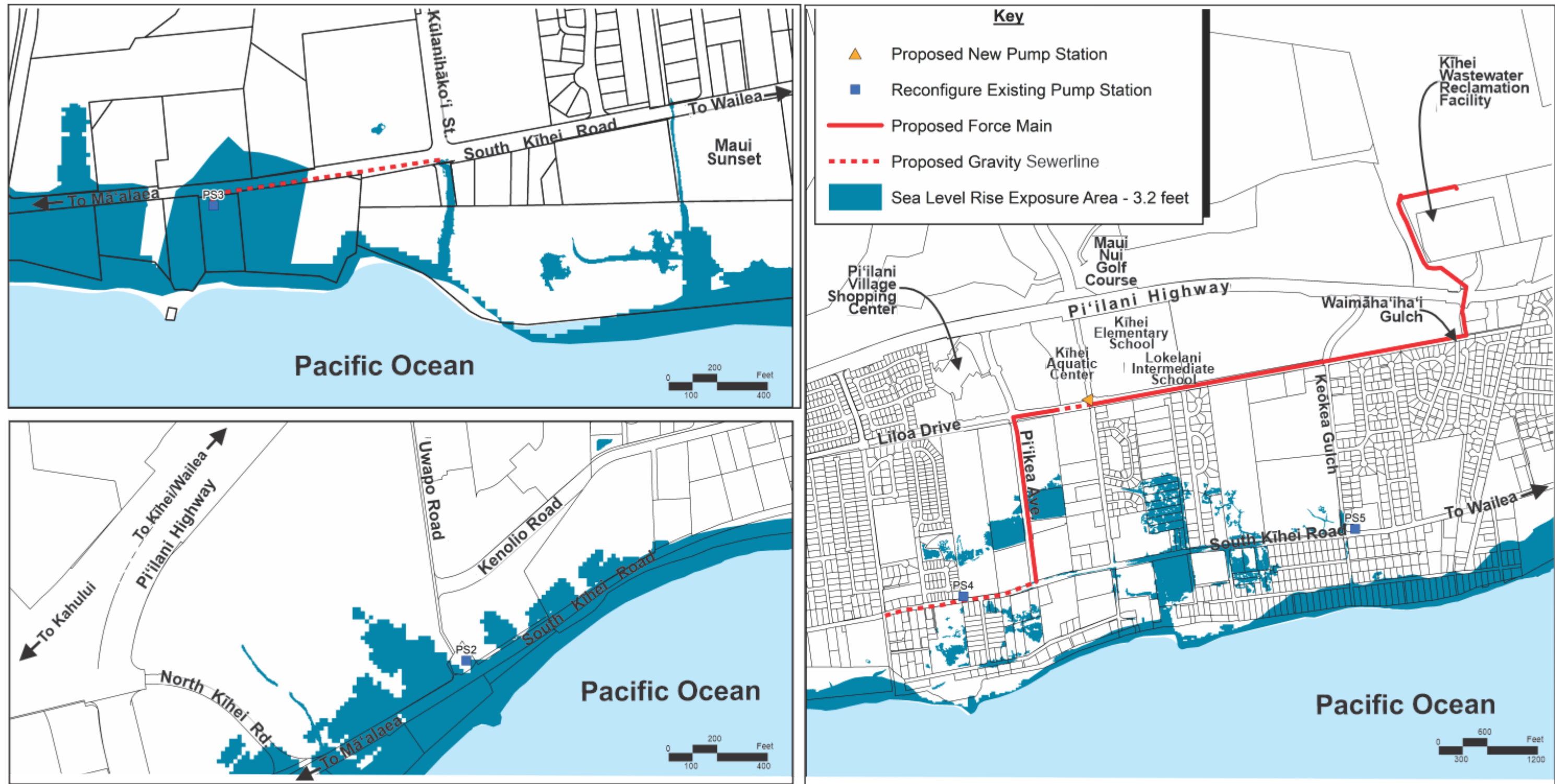
8. Sea Level Rise

a. Existing Conditions

Due to Hawai'i's location in the Pacific Ocean, it is often faced with risks due to extreme weather events. Changing climatic patterns caused by climate change result in impacts, including rising sea levels, storm surge, increased flood potential, and beach erosion for ocean fronting and shoreline parcels. The *Hawai'i Sea Level Rise Vulnerability and Adaptation Report* (Report) updated in 2018 provided the first State-wide assessment of Hawai'i's vulnerability to sea level rise and recommendations to reduce exposure and sensitivity to sea level rise and increase the State's capacity to adapt. The Report presents a Sea Level Rise Exposure Area (SLR-XA) to depict the area exposed to potential chronic flooding based on modeling of passive flooding, annual high wave flooding, and coastal erosion. Although the Report provides a range of sea level rise projections and vulnerability scenarios, the 3.2-ft. SLR-XA was chosen to depict hazards that may occur in the mid to latter half of this century. The majority of the project area is located outside of the 3.2-ft. SLR-XA. However, existing WWPS Nos. 2 and 3 and associated sewerlines are located in the 3.2-ft. SLR-XA (Hawai'i Climate Change Mitigation and Adaptation Commission, 2018). See **Figure 10**.

b. Potential Impacts and Mitigation Measures

As previously noted, the majority of the improvements are proposed outside of the SLR-XA. Work within the 3.2-foot SLR-XA are associated with existing WWPS facilities which are part of critical infrastructure systems servicing the Kīhei region. The proposed project does not propose the placement of new above-ground facilities within the 3.2-foot SLR-XA area. The proposed new WWPS is located outside of the 3.2-foot SLR-XA. Significant adverse impacts from sea level rise are not anticipated as a result of the proposed project.



Source: The Pacific Ocean Observing System (PacIOOS) and County of Maui, Department of Planning

Figure 10 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Sea Level Rise Exposure Area Map



Prepared for: County of Maui, Department of Environmental Management

9. **Flora and Fauna**

a. **Existing Conditions**

The North Kīhei Wastewater Collection and Transmission System Project lies on level to gently sloping land along roadways running mostly through an urban residential community in north Kīhei. Elevations range from zero (0) ft. sea level along South Kīhei Road up to around 220 ft. asl; around the Kīhei WWRF. Vegetation varies from urban roadside landscaping to dry grasslands with scattered trees in the upper areas.

i. **Flora**

In November 2020, a Flora and Fauna Survey was conducted by Robert W. Hobdy to identify and document existing flora and fauna within the vicinity of the proposed North Kīhei Wastewater Collection and Transmission System project. A walk-through survey method was conducted which covered the entire project corridor. See **Appendix “C”**.

The vegetation in the project area was represented by 76 plant species. One (1) species was abundant throughout the area, the buffleggrass. Two (2) other species were common, Bermuda grass and scarlet spiderling. Over half of the species were herbaceous weedy plants that thrive on the margins of the roadways, surviving in regular mowing. Twenty-three (23) species were ornamental plants that were purposely placed in the landscape.

Eight (8) native plant species were recorded during the survey. These included the endemic palm, loulou lolo, and seven (7) indigenous species, ‘uhaloa, ‘ākulikuli, kou, kīpūkai, koali kuahulu, mānawanawa, and naupaka kahakai. Four (4) of the eight (8) native species were planted as landscape ornamentals, and four (4) were of natural occurrence. None of the native species are rare.

ii. **Fauna**

According to the November 2020 Flora and Fauna Survey conducted, just one (1) non-native mammal was recorded in the project area during two (2) site visits. Tracks and droppings were observed in the upper portion of the project corridor of axis deer which are usually active nocturnally. Other non-native mammal

species likely to occur in the project vicinity include dogs, cats, mongoose, rats, and mice.

A special effort was made to look for any occurrence of the endangered ōpeʻapeʻa or Hawaiian hoary bat. Evening surveys at four (4) locations along the project corridor was conducted and also included the use of a bat detecting device (Batbox IIID). No bats were detected during the site visits or with the use of the device.

Birdlife was moderate in numbers within the project area. Eight (8) non-native species were recorded in the urban corridor during two (2) site visits. Two (2) species were common, the zebra dove and the common chicken. Three (3) other species were uncommon, the house sparrow, the common myna, and the spotted dove. Of rare occurrence were the house finch, the gray francolin, and the cattle egret. No native birds were expected or observed in this urban habitat.

Insects were mostly uncommon in the project area. A total of seven (7) non-native species were found. Three (3) species were uncommon, the honey bee, the short-horned grasshopper, and the dung fly. Four (4) other insects were of rare occurrence. No native insects were seen.

All of the mammal, bird, and insect fauna species that were found within the urban project area are non-native in Hawai'i. The endangered Hawaiian hoary bat was not detected and is not expected to be found in this type of densely urban environment. Further, the urban habitat is also unsuitable for other federally protected native fauna including the nēnē, forest birds, water birds, and sea birds.

Further, the DEM requested a species list from the U.S. Fish and Wildlife Service (USFWS). This request initiated an informal consultation with the USFWS pursuant to Section 7 as the project will utilize the Clean Water State Revolving Fund (CWSRF) to fund the project. The State of Hawai'i, Department of Health (DOH) is the local agency that is given jurisdiction over the federal Environmental Protection Agency (EPA) consults. The DOH completed the Section 7 informal consultation with the USFWS.

The USFWS indicated that the following species may occur or transit through the vicinity of the proposed project area: the green sea turtle or honu (*Chelonia mydas*); the endangered Hawaiian

hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*); the indigenous wedge-tailed shearwater or 'ua'u kani (*Ardena pacificus*); endangered Hawaiian petrel or 'ua'u (*Pterodroma sandwichensis*), threatened Newell's shearwater or 'a'o (*Puffinus auricularis newelli*), and endangered Hawai'i Distinct Population Segment (DPS) band-rumped storm-petrel or 'akē'akē (*Oceanodroma castro*) (collectively referred to as Hawaiian seabirds); the endangered Hawaiian stilt or ae'o (*Himantopus mexicanus knudseni*), the endangered Hawaiian coot or 'alae ke'oke'o (*Fulica alai*); and the endangered Hawaiian duck or koloa (*Anas wyvilliana*) (collectively referred to as Hawaiian waterbirds); and the endangered Blackburn's sphinx moth (*Manduca blackburni*).

b. Potential Impacts and Mitigation Measures

The vegetation in this urban project corridor is predominantly non-native in character. All of the eight (8) native species recorded are common throughout Hawai'i, though they were rare or uncommon within the project corridor. None of the non-native plant species are of any environmental interest or concern.

No endangered or threatened native plant species were found within the project area. According to the study, there is little of botanical concern with regard to the project area and is not expected to have a significant negative impact on the botanical resources in this part of Maui.

No federally listed endangered or threatened species (USFWS, 2020) occur in the project area and no critical habitat for any such species occur in the area either. There are no specific environmental concerns with reference to the fauna in this project area. The proposed action is not expected to have any significant negative impacts on the fauna resources in this part of Maui. Refer to **Appendix "C"**.

The USFWS recommended the following impacts and mitigation measures be implemented for the project.

i. Green Sea Turtle (Chelonia mydas)

Suitable habitat for green sea turtles may be present on beaches adjacent to the proposed project area. Green sea turtles may nest on beaches nearby when suitable habitat is present. Optimal sea turtle nesting habitat is a dark beach free of barriers that restrict sea turtle movement. Nesting turtles may be deterred from approaching

or laying successful nests on lighted or disturbed beaches. The turtles may become disoriented by artificial lighting, leading to exhaustion and placement of a nest in an inappropriate location (such as at or below the high tide line). Hatchlings that emerge from nests may be disoriented by artificial lighting. Inland areas visible from the beach should be sufficiently dark to allow for successful navigation by hatchlings to the ocean.

To avoid and minimize impacts to sea turtles from lighting the following measures will be incorporated:

- Avoid nighttime work during the nesting and hatching season (May to December). Turn off lights when human activity is not occurring in the project area.
- Minimize the use of lighting on or near beaches and shield all project-related lights so the light is not visible from any beach.
- If lights can't be fully shielded or if headlights must be used, the light sources will be fully enclosed with light filtering tape or filters.

ii. **Hawaiian Hoary Bat ('Ōpe'ape'a)**

The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 ft. or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. Additionally, Hawaiian hoary bats forage for insects from as low as three (3) ft. to higher than 500 ft. above the ground and can become entangled in barbed wire used for fencing.

To avoid and minimize impacts to the endangered 'Ōpe'ape'a, the following measures will be incorporated into the project description:

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

iii. **Hawaiian Seabirds ('Ua'u kani, 'Ua'u, A'o, and 'Akē'akē)**

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 impacts to seabirds, the following measures will be incorporated into the 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.

The USFWS further recommended for the project to consult with the State of Hawai'i Department of Land and Natural Resources (DLNR) Department of Fish and Wildlife and the Migratory Bird Treaty Act for their recommendations to protect the wedge-tailed shearwater or 'ua'u kani (*Ardenna pacificus*). The project will adhere to the following avoidance and minimization measures specific to the 'ua'u kani:

- Surveys will be conducted throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas.
- If wedge-tailed shearwaters nest within a proposed project area and the project would cause ground disturbance, the

project construction will occur outside of the breeding season.

- If outdoor lighting is needed, light shields will be used that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach.

iv. **Hawaiian Waterbirds (Koloa, Ae‘o, and ‘Alea Ke‘oke‘o)**

Hawaiian waterbirds are currently found in a variety of wetland habitats, including freshwater marshes and ponds, coastal estuaries and ponds, artificial reservoirs, *Colocasia esculenta* (kalo or taro) lo‘i or patches, irrigation ditches, sewage treatment ponds. 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.

To avoid and minimize impacts to Hawaiian waterbirds, the following measures will be incorporated into the 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 onsite.
- 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 three (3) days of project initiation and after any subsequent delay of work of three (3) or more days (during which the birds may attempt to nest). If a nest or active brood is found:
 - Contact the USFWS 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 fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

v. Blackburn's Sphinx Moth

The adult Blackburn's sphinx moth feeds on nectar from native plants, including *Ipomoea pescaprae* (beach morning glory), *Plumbago zeylanica* ('ilie'e), *Capparis sandwichiana* (maiapilo), and others. Blackburn's sphinx moth larvae feed on nonnative *Nicotiana glauca* (tree tobacco), and native, federally listed, *Nothocestrum spp.* ('aiea). 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.

The following survey recommendations will be utilized 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. As mentioned prior, a Flora and Fauna Study was conducted and the biologist did not report any evidence of the Blackburn's sphinx moth. However, the project may decide to conduct another study prior to the start of construction during the wettest portions of the year and will:
 - 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 three (3) feet tall, are found during the survey, please contact the USFWS for additional guidance to avoid impacts to this species.
- If moths or the native 'aiea or tree tobacco over three (3) feet tall are found during the survey, the USFWS will be contacted for additional guidance to avoid take.

- If no Blackburn's sphinx moth, 'aiea, or tree tobacco are found, measures will be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site.

As a result of these findings and the inclusion of the USFWS' mitigation measures, the DOH concluded and the USFWS concurred, as part of the Section 7 consultation, that the project may affect, but is not likely to adversely affect determination. See **Appendix "D"**.

Construction Best Management Practices (BMP), as well as implementation of the USFWS' recommended standard BMPs, will be utilized throughout the project corridor including but not limited to, dust screens and drainage and runoff control.

10. Air Quality and Noise

a. Existing Conditions

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

b. Potential Impacts and Mitigation Measures

Air quality impacts attributed to the proposed project area will include dust generated by short-term construction-related activities. Site work, such as clearing, grubbing and grading, and roadwork and construction will generate airborne particulates. Dust control measures, such as dust fences and regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Graded and grubbed areas will be vegetated to mitigate dust-generated impacts. In the long term, the proposed project is not expected to adversely impact local and regional ambient air quality.

11. Historical and Archaeological Resources

a. Existing Conditions

The area of Kīhei was developed during the 1960s and 1970s. During this time, the SHPD did not have requirements for the protection of significant cultural, historical, and archaeological properties. As such, the development of the area likely took place without monitoring for those historical artifacts and traditional and historical cultural features may have been destroyed. With the implementation of the SHPD requirements in the 1990s, there have been many archaeological projects conducted in coastal Kīhei. Some of those findings include temporary use sites dating to the pre-Contact Period.

Throughout the years, several archaeological investigations were conducted in adjacent areas to the project's area of proposed work as evidenced by the Archaeological Monitoring Plan (AMP) that was prepared for the project. An early study that conducted surveys of leeward Maui and took inventory of both coastal and upland sites of the Kula District, found upcountry heiau locations, the presence of which indicates dense settlements far from the coast and more inland. Three (3) environmental zones were identified by the Cordy (1977) study; inland, coastal, and transitional or "barren"; where the highest population found in the inland zone, followed by the coastal zone, and lastly, the barren zone. The barren zone is viewed as relatively inhabitable to permanent habitation due to its dryness, rocky soils, and minimal natural resources. A previous study for the Pi'ilani Highway that traverses through a portion of this project area, found only small, temporary habitation features and post-Contact homes. Another archaeological study also confirmed this settlement pattern probably from ancient times through the early post-Contact period. These types of discoveries, or lack thereof, within the Kīhei region, appears to be common.

An AIS done for the Maui Research and Technology Park found only historic agriculture features or sites related to WWII training exercises. One pre-Contact location and direction marker, as well as a boundary wall was located, but the SHPD required only informal preservation of the boundary wall. Traditional structures, surface architecture, or midden/artifact scatters, deposits, or areas thought to potentially yield cultural materials were not identified. Further mauka of the project area, a foot survey was conducted and found more pre-Contact agricultural structures but no historic properties were identified.

Within the project area, specifically between WWPS No. 2 and WWPS No. 3, a survey was conducted with trenches dug for study. No historic properties were identified. However, in 2020, 12 pre-Contact features north of Kalepolepo were discovered including a fishpond wall, a burned post, a hearth, a living floor, an L-shaped wall, post molds, canine remains, and a porcine jaw. Ten (10) fragmented human remains belonging to two (2) individuals were recovered and no pit or subsurface burial features were found. Many other studies have been conducted around the project area, however, due to the highly disturbed nature of Kīhei, the historic properties that have been noted in the AMP for this project, were recorded. Most of the findings include subsurface features and materials associated with temporary habitation and marine resource procurement with a few human burials on sandy soil matrices, which are also characteristic to the project area and vicinity.

In accordance with the HRS, the project engaged in a Chapter 6E consultation with the State Historic Preservation Division (SHPD). See **Appendix “E-1”**. The Chapter 6E consultation identifies some of the historical sites that exist in close proximity to the project area. Two (2) sites close to the APE: Sites 50-50-10-1710 and -1711, are both in the southern portion of the project site. Site 50-50-10-1710 is a Historic era animal enclosure and Site 50-50-10-1711 consists of the Kēōkea agricultural complex. There are other multiple sites in the general area of the corridor and WWPS locations but no sites within the current APE.

b. Potential Impacts and Mitigation Measures

Excavation will be needed for this project to lay the new sewerlines and force mains and also for the construction of the new WWPS. The entirety of the sewerline trenching work will be within corridors containing existing utilities and thus, previously disturbed/filled contexts. The new WWPS excavation work will encompass 10,000 sq. ft. with maximum depths of 20 ft. below surface. The majority of the project primarily occurs in a built environment where sewerlines will be placed within existing utility corridors and thus, a disturbed/filled area. The WWPS work locations also occur in developed areas. Based on the foregoing, the DEM proposed a “no effect” determination as part of the Chapter 6E, HRS consultation with SHPD. Refer to **Appendix “E-1”**. However, if during construction, any historical or cultural artifact is discovered, work will immediately cease and the SHPD will be contacted.

It is also noted that consultation pursuant to Section 106 of the National Historic Preservation Act (NHPA) was also conducted for the subject

project. See **Appendix “E-2”**. The DOH consulted with many Native Hawaiian Organizations and/or interested persons and as a result of that consultation, along with a review and inventory of historic properties in the project vicinity, proposed a “no historic properties affected” determination for the subject project. On August 5, 2022, the SHPD reviewed both the Chapter 6E consultation as well as the Section 106 consultation packages and concurred with the DOH that the determination of “no historic properties” affected pursuant to 36 CFR 800.4(d)(1)c, as no historic properties eligible for listing in the National Register of Historic Places have been identified within the APE. See **Appendix “E-3”**. With respect to the Chapter 6E consultation, the SHPD requested that Archaeological Monitoring be conducted for identification purposes. As such, the project has submitted an archaeological monitoring plan (AMP) to meet the requirements in HAR Section 13-279-4 to the SHPD for review and acceptance. A copy of the AMP is presented in **Appendix “E-4”**.

12. Cultural Impact Assessment

a. Existing Conditions

A Cultural Impact Assessment (CIA) report was prepared by Scientific Consulting Services (SCS) in December 2021 for the proposed project. See **Appendix “F”**. The purpose of the report was to identify the possibility of on-going cultural activities and resources within the project area, or its vicinity, and then assess the potential for impacts on these cultural resources. The CIA report contains archival and documentary research as well as communication with organizations and individuals having knowledge of the project area, its cultural resources, and its practices and beliefs.

In terms of traditional Hawaiian perspectives, the project area is located in the village of Kīhei, which means “cape, cloak”, within the Ahupua‘a of Pūlehunui, Ka‘ono‘ulu, Waiohuli, and Kēōkea, in the Districts of Wailuku and Makawao (Kula). Wastewater Pump Station (WWPS) No. 2 is the northern terminus of the project area and the Kīhei WWRF is the southern terminus. Elevation in the project area ranges from approximately 19 ft. amsl at WWPS No. 2 to approximately 121 ft. amsl at the Kīhei WWRF.

Kīhei has traditionally been associated with a small area adjacent to a landing built in the 1890s. Currently, Kīhei refers to a six (6) mile section along the coast from Waiakoa Gulch, in the north to Keawakapu Beach and in the south. There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s.

Scattered amongst the agricultural and habitation sites were places of cultural significance to the kama'āina of the district including two (2) heiau, Kaumehe'iwa and Kaimupeelua.

Pre-Contact, there was a small village at Kalepolepo whose inhabitants subsisted primarily on marine resources. There were also several important fishponds in the Kīhei area; Waiohuli, Kēōkea-kai, and Kalepolepo Pond also known by the ancient name of Kō'ie'ie Pond. These three (3) fishponds were some of the most important royal fishponds on Maui.

There are trails that extended from the coast to the mountains, which linked them for economic and social reasons. A trail known as the alanui or "long road" built by Kihapi'ilani, extended along the coast, passing through all the major communities between Lāhainā and Mākena, including Kīhei. One trail named Kekuawaha'ula'ula extended from the inlands of Kīhei to Kēōkea. Another, the Kalepolepo trail, began at the Kalepolepo Fishpond and continued to upland Waiohuli. These trails were used prior to 1778 and the introduction of westerners to the Hawaiian Islands but were expanded to accommodate wagons bringing produce to the coast in the 1850s.

Post-Contact period there is evidence of the lack of significant agricultural productivity on leeward Maui. There is some reference to Keālia Pond and the production of salt but for the most part, there are many counts of the south part of Maui being very barren with little inhabitants.

The Māhele is a very complex issue. Traditional land tenure gave way to private ownership and division and set the stage for vast changes to land holdings within the islands because it introduced the foreign concept of land ownership. In some instances, the Hawaiian government sold lands to generate income for the Kingdom, known as land grants. It is noted in the report that the project area does not appear to be located within any Land Grants.

The leeward side of Maui picked up in activity during the mid 19th to early 20th century. Kīhei became an important provisioning area, including a whaling station that was maintained at Kalepolepo. Kīhei's growth continued through sugarcane production with the Kīhei Plantation Company and ultimately, Hawaiian Commercial and Sugar Company (HC&S). People began inhabiting the area more and more, and today, Kīhei is a heavily populated part of Maui known for catering to its visitor industry while also supporting economic diversification efforts with the Maui Research and Technology Park. The report notes that the project area

corridor primarily consists of previously disturbed ground. Refer to **Appendix “F”**.

Part of the CIA process is to consult with relevant individuals and organizations, conduct ethnographic interviews and archival and historical research, identify cultural resources and practices located within the project area or in proximity, and assess the impact of the proposed action and its mitigation measures on the cultural practices or resources identified. Letters were sent out to thirty-one (31) individuals and organizations who have knowledge or information pertaining to cultural resources and/or practices currently, or previously, conducted in the vicinity of the proposed project area. Responses were received from seven (7) individuals via e-mail and four (4) interviews were conducted.

In the seven (7) written email responses received, no concerns were expressed regarding the proposed project. The four (4) interviews that were conducted were with individuals who are familiar with the proposed project area and are knowledgeable about history, traditional cultural practices, and cultural resources associated with the greater Kīhei area. Summaries of the interviews are included in **Appendix “F”**.

It is noted that the CIA study area is defined to be greater than the area over which work is proposed to take place to ensure that cultural practices that occur outside of the project area, but which may still be affected, are included in the assessment. As such, the CIA defined the “project area” as the entire ahupua‘a. In this context, the cultural practices identified during the consultation process are related to the interment of the dead and the procurement of marine and near-coastal marine resources through fishing, gathering, and aquaculture (i.e., fishponds), and the cultivation of food crops. Fresh water was identified as an important cultural resource and is also associated with spiritual beliefs and practices.

b. Potential Impacts and Mitigation Measures

The findings of the CIA report did not identify any traditional cultural practices previously or currently conducted within the immediate vicinity of the proposed North Kīhei Wastewater Collection and Transmission System project area. As noted previously, the entire ahupua‘a, which extends into the Pacific Ocean to the inside of the inner-most reef has been considered in the CIA report. Valued cultural and natural resources (i.e., marine and near-coastal marine resources, fresh groundwater and springs, and the associated spiritual beliefs and practices) and the on-going cultural activities associated with the procurement and protection of those

resources within the broader shoreline and coastal areas of South Kīhei have been identified through the consultation process. Overall, the CIA did not suggest any further recommendations given that traditional cultural practices do not occur within the immediate vicinity of the project area.

The proposed project will implement construction BMPs to control runoff, sedimentation, and erosion. Inlet filters will be installed at existing drain inlets within existing roadway corridors and at undeveloped areas along the project corridor, silt fence and/or filter socks will be installed along the downstream side of the work area to protect and ensure water quality. In addition, a Site Specific Spill Prevention and Control Plan (SSSPCP) will be prepared and implemented to avoid pipeline damage and sewage spills. A Reaction Plan that identifies the resources and equipment kept at hand and the procedures to be taken to contain and immediately clean up an inadvertent spill will also be implemented as necessary. Based on the foregoing, significant adverse impacts to cultural resources are not anticipated.

13. Scenic and Open Space Resources

a. Existing Conditions

The project site is located within urban Kīhei. Haleakalā mountain is visible to the east of the project site, with Mauna Kahālāwai (West Maui Mountains) visible to the northwest. In certain viewplanes of the project area, the ocean is visible and as the project site moves east, Pi'ilani Highway is within site. Residential and business/commercial areas surround the project site to the east, west, north, and south.

b. Potential Impacts and Mitigation Measures

The proposed project site encompasses a vast range within urban Kīhei. Mountain and ocean views from mauka of Pi'ilani Highway will not be impacted as a result of the project, nor will viewplanes be altered due to the work being done. The new WWPS located at Liloa Drive and Lipoa Street will not impact any scenic corridors as it is located in the midst of a built environment lacking views to the ocean. Adverse impacts to scenic or open space resources resulting from the project are not anticipated.

14. Traditional Beach and Mountain Access

a. Existing Conditions

The proposed project will be implemented within urban areas of Kīhei. There are no known traditional beach or mountain access points within the project area.

b. Potential Impacts and Proposed Mitigation Measures

The proposed project will occur within urban areas, including work within existing road ROWs. Temporary lane or road closures may be necessary to complete work, however, beach access will be maintained. Significant adverse impacts to traditional beach and mountain access are not anticipated as a result of the project.

B. SOCIO-ECONOMIC ENVIRONMENT

1. Regional Setting

a. Existing Conditions

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

b. Potential Impacts and Mitigation Measures

The proposed North Kīhei Wastewater Collection and Transmission System project supports the County of Maui's efforts in providing efficient and environmentally safe wastewater connections throughout South Maui. The proposed project is located within existing development and is intended to improve the wastewater capacity for the general public. In this respect, adverse impacts to the regional character of the Kīhei area are not anticipated.

2. Population and Demography

a. Existing Conditions

According to the 2020 U.S. Census, the population of Maui County was 164,754, an increase of 6.4 percent since 2010, when the County had a population of 154,834. (U.S. Census Bureau, 2020). It is noted, however, that population growth over the past decade has been uneven, with stronger growth in the early part of the decade. The U.S. Census Bureau's annual population estimates data indicates that Maui County population grew steadily between 2010 and 2014, when annual population growth rates ranged from 1.2 percent to 1.3 percent. The estimated population in 2014 was 163,036. The 2020 U.S. Census resident count for Maui County is actually lower than the Census Bureau's previous population estimates for 2016 to 2019 (U.S. Census Bureau, 2019).

The State of Hawai'i, Department of Business, Economic Development and Tourism (DBEDT) publishes population projections through 2045. According to the latest forecast, which was published in 2018, Maui County's population is expected to grow to 211,500 by 2045 (State of Hawai'i, DBEDT, 2018).

The proposed project is located within the South Maui Community Plan Area (also known as the Kihei-Makena Community Plan Area). According to the Population and Employment Forecast prepared for the South Maui Community Plan update, in 2019, South Maui had approximately 29,000 residents, or 17 percent of Maui County's estimated population. The percentage of the county's population living in South Maui has been consistently around 17 percent for the last decade. The communities of Kihei and Wailea, in turn, have about 77 percent and 21 percent of South Maui's population, respectively, with the remaining percentages living in Mā'alaea and Mākena. It is assumed that South Maui will continue to comprise 17 percent of countywide population. As such, the population of South Maui is projected to increase by between 3,700 residents, in a low growth scenario, and 6,100 residents, in a high growth scenario, by 2045 (Leland Consulting Group, 2021). South Maui households have historically been smaller than households in the county as a whole. In April 2018, South Maui averaged 2.59 residents per household, compared to 3.05 for the rest of Maui County. Household income in South Maui has a slightly smaller share of households (15 percent versus 19 percent) earning \$100,000.00 to \$149,999.00 and a slightly higher share of households in the highest income category, those earning \$150,000.00 and up (21 percent versus 19 percent) (Leland Consulting Group, 2021).

In regards to population, according to the 2020 Census, the various regions that make up what is collectively known as South Maui; Mā‘alaea, Kīhei, Wailea, and Mākena were estimated to have a residential population of approximately 27,956 people (U.S. Census, 2020). This accounts for about 18 percent of Maui island's total population. In terms of race, South Maui is predominately made up of people who identify as being of one (1) race. Approximately 54 percent of the total South Maui population is White. People who identify as Asian make up about 18 percent of the South Maui population, and only six (6) percent of Native Hawaiians. (U.S. Census, 2020). There are about 17 percent of those people who identify with being two (2) or more races that live in the area. Compared to Maui island as a whole, the 2020 Census points out that 34 percent of Maui's population identifies as White; 27 percent as Asian; 11 percent as Native Hawaiian; and 24 percent who are two (2) or more races (U.S. Census, 2020).

b. Potential Impacts and Mitigation Measures

The proposed project will not adversely affect regional population or demographic parameters. Rather, the project will provide capacity to support the projected population growth in the region. Specifically, the proposed project is intended to address capacity limits within the existing North Kīhei Wastewater Collection and Transmission System. Overall, the project represents an adequate and appropriate means for the County to address wastewater system needs to serve an area that is identified for future housing and economic opportunities.

3. Economy and Labor Force

a. Existing Conditions

The economy of Maui is heavily dependent upon the visitor industry, and in turn, this industry compliments and supports the retail and service industries. The dependency on the visitor industry is especially evident in the Kīhei-Mākena region, which is one of the State's major tourist destination areas. The foundation for the region's visitor strength lies in the availability of vacation rentals, hotel-condominiums, world-class resorts, and recreational facilities throughout Kīhei, Wailea, and Mākena. Since the 2008 economic downturn, the average daily visitor census for Maui County has increased from 64,473 visitors in 2018 to 66,363 in 2019 (Hawaii'i Tourism Authority, 2019). The COVID-19 pandemic impacted visitor arrivals in 2020 and early part of 2021, but visitor arrivals began returning to pre-pandemic levels as restrictions were lifted.

Alongside visitor accommodations, service support for the visitor industry is found in Kīhei, where numerous retail commercial centers are located. North Kīhei contains mixed retail, office and warehouse spaces, south Kīhei offers beach-oriented retail, and Wailea offers higher-end retail and offices. In the vicinity of the project site, there are retail and office spaces in shopping center spaces, public recreation spots, schools, and residential neighborhoods. Meanwhile, in support of the resident population, a number of business and medical offices are located in Kīhei as well.

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, Hawai'i, and across the nation. Stay-at-home regulations and travel quarantines aimed to curb the spread of the COVID-19 virus in Hawai'i caused many businesses to shut down or drastically reduce operations. In April 2020, the unemployment rate in Maui County reached 35 percent, compared to 2.6 percent in February 2020 (Department of Labor and Industrial Relations, 2020). Since that time, the economy has recovered. In July 2022, the State's unemployment rate was 4.8 percent (Department of Labor and Industrial Relations, 2022).

b. Potential Impacts and Mitigation Measures

The proposed project is limited to improvements to the actions described previously. In the short term, construction-related jobs will be created to construct the proposed project areas. From a long-term perspective, the proposed project is not anticipated to have significant adverse impacts to the economy or labor force.

4. Housing

a. Existing Conditions

The project site is located in Kīhei, the commercial and residential center of South Maui. Kīhei contains a mix of affordable and market priced single- and multi-family residential neighborhoods. In contrast, the resort-oriented communities of Wailea and Mākena generally offer higher-end homes and luxury condominiums, primarily for part-time residents. The Maui County General Plan and Maui Island Plan expands residential growth in the Kīhei-Mākena region with a number of new residential and in-fill developments being captured within the Urban Growth Boundary of the Maui Island Plan.

b. Potential Impacts and Mitigation Measures

The proposed project is to improve and increase the capacity of the North Kīhei Wastewater Collection and Transmission System. As previously stated, the proposed project is not a population generator and is not anticipated to have any adverse impacts to housing supply and demand in South Maui.

C. PUBLIC SERVICES

1. Solid Waste Disposal

a. Existing Conditions

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

b. Potential Impacts and Mitigation Measures

Construction of the proposed project will generate waste associated with site preparation and construction. Construction waste will be disposed of at an approved facility. As the proposed project is limited to the improvements of utilities, future generation of solid waste as a result of the project is not anticipated.

2. Medical Facilities

a. Existing Conditions

The only major medical facility on the island is Maui Memorial Medical Center, located approximately 12 miles from Kīhei, midway between Wailuku and Kahului. The 214-bed facility provides general, acute, and emergency care services.

Clinics and offices are situated throughout the Kīhei and Wailea areas, however, these offer medical services on a lesser scale. Such clinics include Kīhei Clinic and Wailea Medical Services, Kīhei Pediatric Clinic,

Kīhei Physicians, the Kīhei-Wailea Medical Center, Maui Medical Group, and Kaiser Permanente.

b. Potential Impacts and Mitigation Measures

The proposed utilities improvement project is not anticipated to adversely affect the demand for or service capabilities of emergency medical or general care operations.

3. Police and Fire Protection

a. Existing Conditions

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

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

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

b. Potential Impacts and Mitigation Measures

As an improvement utilities project, the proposed action will not result in an expansion of existing police or fire service limits. The proposed action will serve to benefit the existing community and support future development.

Temporary lane and road closures may be required during project construction. A Traffic Control Plan will be developed and lane and road closures will be coordinated with emergency response providers.

4. Educational Facilities

a. Existing Conditions

The State Department of Education (DOE) operates three (3) schools in the Kīhei area which are part of the Maui High School complex. Kīhei Elementary School and Kamali'i Elementary School each covers grades Kindergarten to 5, and Lokelani Intermediate School covers grades 6 to 8. Maui High School, which covers grades 9 to 12 and is located in Kahului, is the designated public high school for Kīhei residents. Future educational facilities in the Kīhei region include the new Kīhei High School, which is currently under construction. The Kīhei Public Charter School for grades Kindergarten to 12 is also located in the region, with an enrollment of 609 students in the 2018-2019 school year (State of Hawai'i DOE, 2018).

The University of Hawai'i-Maui College (UHMC), located in Kahului, is the primary higher education institution serving Maui.

b. Potential Impacts and Mitigation Measures

Kīhei Elementary School and Lokelani Intermediate School are located in the vicinity of the proposed new WWPS. Improvements at Liloa Drive in the vicinity of the schools include proposed force main and gravity sewerlines as well. The DEM and its general contractor will consult with both schools prior to and during construction. Further, the contractor will be required to notify schools within the vicinity of the project area of construction activities and provide safe access as needed through the construction site. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit. From a long-term perspective, significant adverse impacts to educational resources are not anticipated as a result of the project.

5. Recreational Facilities

a. Existing Conditions

Diverse recreational opportunities are available in the Kihei-Makena Community Plan region. Shoreline activities, such as fishing, surfing, jogging, camping, picnicking, snorkeling, swimming, and windsurfing, are the predominant forms of recreation in the area. Numerous public park facilities exist within a relatively short driving distance of the project site, including Kalepolepo Beach and Waipu'ilani parks. Other recreational resources available in Kīhei, Wailea, and Mākena include the Kīhei Community Center and Aquatic Center, as well as resort-affiliated,

worldclass golf courses and tennis centers. It is noted that the new South Maui Community Park is located in close proximity to parts of the project site. The South Maui Community Park provides soccer fields and baseball diamonds, among other park facilities.

b. Potential Impacts and Mitigation Measures

The proposed new WWPS will be located on the corner of Liloa Drive and Lipoa Street, on the same parcel as the Kīhei Aquatic Center and Kīhei Community Center. The new WWPS has been planned in consultation with the County of Maui, Department of Parks and Recreation to ensure compatibility with existing recreational uses on the site. There is an existing drainage detention basin on the parcel that serves the Aquatic Center and surrounding uses. The proposed WWPS will not affect the drainage detention basin.

Part of the future expansion area of the South Maui Community Park will be utilized for staging during construction. The construction staging area represents a temporary use and is anticipated to be completed prior to future expansion of the park.

The proposed project is not anticipated to create an increase in demands for recreational resources in the region nor is it expected to create adverse impacts to recreational resources.

D. INFRASTRUCTURE

1. Roadways

a. Existing Conditions

The proposed project is located within an urban area of Kīhei. Roadways in the vicinity of the project are described below.

i. Pi'ilani Highway

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

ii. **South Kīhei Road**

South Kīhei Road is a two-lane, undivided County collector roadway that runs in a north-south direction along the Kīhei coastline from its intersection with North Kīhei Road to Okolani Drive in Wailea. At its northern terminus, South Kīhei Road turns into North Kīhei Road, which continues north to Māʻalaea. South Kīhei Road provides local access to residences, visitor accommodations, shopping areas, and parks along the Kīhei coastline. The posted speed limit is 20 mph.

iii. **North Kīhei Road**

This two-lane, undivided State roadway runs along the coastline and adjacent to the Keālia Pond National Refuge. Near the southern end of this roadway, there are a number of residential complexes at Sugar Beach. In the north, North Kīhei Road intersects Honoapiʻilani Highway at Māʻalaea. North Kīhei Road is used primarily by vehicles traveling between West Maui, Central Maui, and Kīhei.

iv. **Liloa Drive**

Liloa Drive (also referred to as the North-South Collector Road), is currently a two-lane, undivided roadway between East Waipuʻilani Road and Halekuai Street. Exclusive left-turn lanes are provided at its major intersections. The intersection with Piʻikea Avenue has been converted to a roundabout. Secondary accessways to the proposed Downtown Kīhei project will be via this roadway. The posted speed limit is 20 mph.

v. **Lipoa Street**

Lipoa Street is a two-lane County road that runs from Piʻilani Highway at its east terminus, to South Kīhei Road at its west end. The Kīhei Community Center and Kīhei Aquatic Center are located along this road, as well as Kīhei Elementary School. The proposed new WWPS will be on the corner of Lipoa Street and Liloa Drive.

vi. **Piʻikea Avenue**

Piʻikea Avenue is a two-lane County roadway that runs from Piʻilani Highway to South Kīhei Road. It runs in an east-west direction and contains a roundabout at its intersection with Liloa Drive.

vii. Old/E. Welakahao Road

Old/E. Welakahao Road is a two-lane County roadway that runs from S. Kīhei Road and ends at Pi'ilani Highway. It runs in an east-west direction and terminates prior to Pi'ilani Highway.

b. Potential Impacts and Mitigation Measures

The proposed project will involve construction in the following roadways:

- South Kīhei Road - proposed gravity sewerline and proposed force main
- Pi'ikea Avenue - proposed force main
- Liloa Drive - proposed gravity sewerline and force main
- Pi'ilani Highway - proposed force main
- Old/East Welakahao Road - proposed force main

At a minimum, lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures are not preferred, but are possible depending on the field conditions. Site and phase specific detour plans will be submitted concurrently with construction plans for review and approval. Further, the project team will provide a County-approved Traffic Control Plan, which is required for the project to obtain a Work on County Highway Permit. Construction will take approximately 24 months. Following construction, the proposed project will not be a trip generator and will not create adverse traffic impacts.

2. Water System

a. Existing Conditions

The Kīhei area is served by the County of Maui, Department of Water Supply's (DWS) Central Maui System. The main sources of potable water for the Central Maui System are the designated 'Īao aquifer, Waihe'e aquifer, and the 'Īao-Waikapū Ditch.

It is noted that this region of Kīhei is also serviced by a non-potable water storage, transmission, and distribution system that is developed and managed by the DEM, WWRD. A 12-inch diameter transmission/distribution line provides non-potable (R-1) reclaimed water to the region.

b. Potential Impacts and Mitigation Measures

As a wastewater infrastructure project consisting of improvements to existing pump stations, a new pump station, and proposed force main and gravity sewerlines, the proposed project will not generate new potable or nonpotable water demands. The new pump station will be connected to the potable water supply. It is anticipated that a 3/4 inch water lateral will be required to provide water for washdown, irrigation, and stilling well cleanup. Significant adverse impacts to the DWS Central Maui Water System are not anticipated.

3. Wastewater System

a. Existing Conditions

The Kīhei region is currently serviced by a wastewater collection, treatment, and disposal system mostly owned and operated by the DEM, WWRD. The County-owned system consists of ten (10) pump stations and force mains which convey wastewater through the County's transmission lines. The combined flows are transported to the Kīhei WWRF which is located mauka of Pi'ilani Highway. The Kīhei WWRF provides treatment for the South Maui region to produce Kīhei WWRF recycled water at the R-1 level, according to State Department of Health standards. R-1 recycled water is the highest quality of recycled water identified by the State Department of Health. There are also a number of private pump stations and sewers that exist in Kīhei, though all of them discharge into the County-owned system.

The project's 2018 Preliminary Engineering Report noted that the existing Kīhei WWRF has a design capacity of 15 million gallons per day (MGD) which is adequate to handle the future projected flows from North Kīhei (Kennedy Jenks, 2018).

b. Potential Impacts and Mitigation Measures

The proposed project will increase capacity of the North Kīhei Wastewater Collection and Transmission System to provide needed capacity to convey planned future wastewater flows from new development in the service area.

The General Contractor will prepare a Site Specific Spill Prevention and Control Plan (SSSPCP). The SSSPCP will include a Prevention Plan that details the precautions that will be taken to avoid pipeline damage and sewage spills as well as a Reaction Plan identifying the resources and equipment kept at hand and the procedures to be taken to contain and

immediately clean up an inadvertent spill, should one occur. An NPDES Permit for construction stormwater discharge will also be obtained and temporary BMPs will be installed during construction.

4. Drainage

a. Existing Conditions

Generally, storm runoff flows east to west (mauka to makai) and eventually outlets to the ocean. In urban Kīhei, stormwater from the existing roadways are collected by underground drainage systems. In undeveloped areas, stormwater sheet flows to the nearest east/west gulch. This project will not alter any existing drainage patterns.

b. Potential Impacts and Mitigation Measures

It is anticipated that existing drainage will be maintained with respect to the improvements being done on the existing WWPSs and within existing roadway ROWs where sewerlines and force mains will be installed.

With the exception of the proposed new WWPS, the proposed project will not add impervious surfaces as the improvements consist of underground sewerlines or force mains and improvements to existing WWPS facilities. Stormwater runoff from the proposed new WWPS will be limited to predevelopment flow rates and follow existing flow patterns which drain to the adjacent detention basin. Additional stormwater from the added impervious area will be captured on site and infiltrated via grassed swale or bioretention areas. It is anticipated that runoff will be minimal due to the limited additional impervious area.

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

a. Existing Conditions

There are overhead utility lines along South Kīhei Road, Liloa Drive and Piʻikea Avenue near its intersection with South Kīhei Road. The utility lines on Piʻikea Avenue service the Azeka Place and Longs Drugs commercial centers located along South Kīhei Road. Existing development east of Liloa Drive along Piʻikea Avenue are served by underground utility lines.

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

b. Potential Impacts and Mitigation Measures

The proposed project is not anticipated to have significant impacts to electrical, telephone, or cable TV services.

E. CUMULATIVE AND SECONDARY IMPACTS

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

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

In this case, the context for analyzing secondary and cumulative impacts is defined by the time horizon within which "reasonably foreseeable" conditions may occur. From a planning standpoint, the future context for wastewater infrastructure can be established by the Kihei-Makena Community Plan and the Maui County General Plan. The Maui County General Plan defines general parameters for maintenance and growth while the Kihei-Makena Community Plan specifies those parameters to suit the specific community's needs. The Maui County General Plan was updated in 2012 through the Countywide Policy Plan. The Kihei-Makena Community Plan was updated in 1998 and is currently in the process of going through its update. These two (2) documents work together and thus, "reasonably foreseeable" conditions may be considered within this future context.

The Maui County General Plan and the Kihei-Makena Community Plan, as set forth in Chapter 2.80B of the Maui County Code, is a long-term comprehensive blueprint for the physical, economic, environmental development and cultural identity of the County through 2030. The components of the General Plan include the following:

- The Countywide Policy Plan provides broad policies and objectives which portrays the desired direction of the County's future. It includes a countywide vision, statement of core principles, and objectives and policies for population, land use, the environment, the economy, infrastructure, and housing.
- The Maui Island Plan (MIP) provides a land use strategy, water assessment, nearshore ecosystem assessment, an implementation strategy, and milestone measurements. An essential element of the MIP is a Managed and Directed Growth Plan which identifies existing and future land use patterns and determines planned growth.

- The Kihei-Makena Community Plan provides implementing actions based on consistency with the Countywide Policy Plan and MIP's vision, goals, objectives, and policies.

A discussion of how the proposed project is consistent with specific goals, objectives, and policies of the Countywide Policy Plan, Maui Island Plan, and Kihei-Makena Community Plan are presented in Chapter III of this EA document.

The Countywide Policy Plan covers planning goals and objectives at the broadest levels and the regional Community Plans consider specific regional needs and opportunities, they work together to address functional elements of the General Plan, and address islandwide and specific regional growth parameters which will ultimately dictate wastewater infrastructure needs on the island.

The MIP is used by the County Council, Maui Planning Commission (MPC), County administration and the community as a policy foundation for day-to-day decision making by doing the following:

- Providing direction for the development of future policies and regulations (for example, zoning and other ordinances, guidelines and area-specific plans that describe what kind of development can occur where);
- Providing policies to help determine the appropriateness of development proposals; and
- Assigning resource for capital investments and programmatic initiatives.

The Directed Growth Plan, which is a key element of the MIP, provides a framework for managing outcomes of growth based on analysis of natural hazards, sensitive lands, cultural resources, scenic corridors, and related environmental and human community parameters. An important component of the Directed Growth Plan are maps that delineate urban and rural growth areas. Referred to as Urban and Rural Growth Boundaries, these maps set the boundaries for the physical limits of development. In so doing, the Directed Growth Plan seeks to manage the use of non-urban and non-rural resources important in sustaining the island to the year 2030.

In light of the foregoing, the assessment of cumulative and secondary impacts is undertaken in the context of planned growth recommended by the General Plan update process, particularly the MIP and its Urban and Rural Growth boundary maps, while also taking into consideration the existing infrastructure in place, as identified in the PER (refer to **Appendix "A"**). Thus, the proposed urban and rural growth boundaries provide the basis for acknowledging that the proposed project will facilitate implementation of the General Plan, as mandated by the County Charter. Future and planned development currently envisioned by the General Plan within Kihei represents the "reasonably

foreseeable” future for considering potential impacts of the proposed project. The improvements that are planned for the wastewater system in Kīhei will support the County planned growth in the region. The Kīhei WWRF’s current capacity, as identified in the PER (refer to **Appendix “A”**), is designed to accommodate the increased wastewater flow.

In summary, the proposed project is being planned in consideration of the long-term infrastructural requirements necessary to support planned future growth in the North Kīhei area and the Kīhei-Mākena region. The proposed project is not anticipated to have a significant adverse impact on the physical environment. Assessing the project in the context of the future planned growth in the Kīhei-Makena region in the foreseeable future, the proposed action is not anticipated to result in significant adverse secondary or cumulative impacts.



**RELATIONSHIP TO
GOVERNMENTAL PLANS,
POLICIES, AND CONTROLS**



III. RELATIONSHIP TO GOVERNMENTAL PLANS, POLICIES, AND CONTROLS

A. STATE LAND USE DISTRICTS

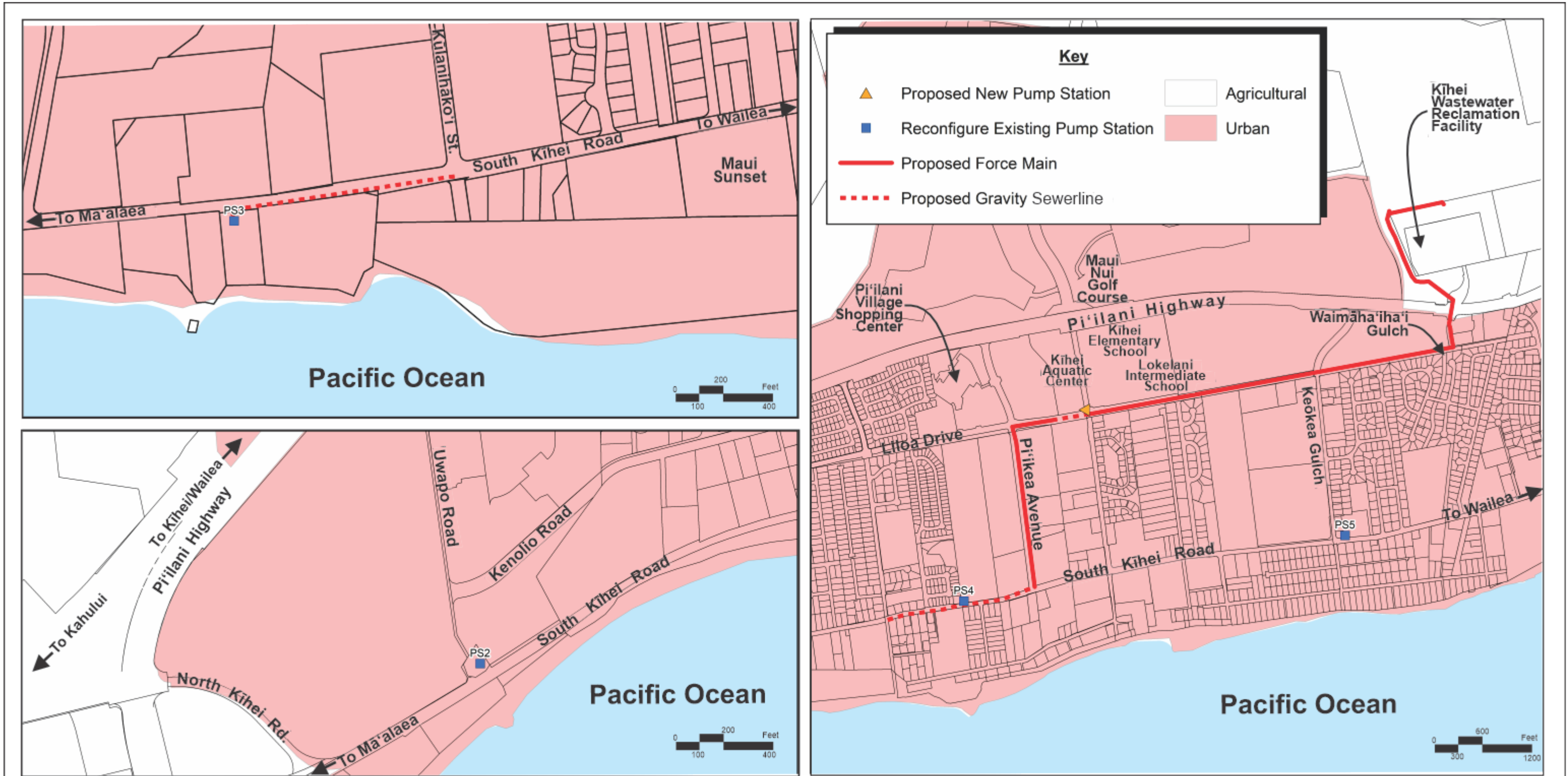
Pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), all lands in the State have been placed into one (1) of four (4) major land use districts by the State Land Use Commission. These land use districts are designated "Urban", "Rural", "Agricultural", and "Conservation". The North Kihei Wastewater Collection and Transmission System corridor is primarily located within the State "Urban" district, with a small portion of the corridor in the vicinity of the Kihei Wastewater Reclamation Facility located in the State "Agricultural" district. See **Figure 11**. Pursuant to Chapter 205, Hawai'i Revised Statutes (HRS), the "Urban" districts shall include uses or activities provided by ordinances or regulations of the County in which the "Urban" district is located. **Section F** below, outlines the County of Maui's zoning regulations that are applicable to the proposed project. Pursuant to HRS Section 205-4.5 (7), permitted uses in the "Agricultural" district include *"Public, private, and quasi-public utility lines and roadways, transformer stations, communications equipment buildings, solid waste transfer stations, major water storage tanks, and appurtenant small buildings such as booster pumping stations, but not including offices or yards for equipment, material, vehicle storage, repair or maintenance, treatment plants, corporation yards, or other similar structures"*. As such, the proposed project is consistent with both the "Urban" and "Agricultural" district designations.

B. HAWAI'I STATE PLAN

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

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

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



Source: State Land Use Commission and County of Maui, Department of Planning

Figure 11 Proposed North Kihei Wastewater Collection and Transmission System Improvements
State Land Use Designation Map



Prepared for: County of Maui, Department of Environmental Management

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

1. A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations.
2. A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.
3. Physical, social, and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.

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

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

1. **Directly applicable**: the action and its potential effects directly advances or promotes the objective, policy or priority guideline.
2. **Indirectly applicable**: the action and its potential effects indirectly supports or advances the objective, policy or priority guideline.
3. **Not applicable**: the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Hawai'i State Plan.

In general, a proposed action's applicability to the objectives, policies and priority guidelines of the Hawai'i State Plan is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 5** and summarized below focuses on key elements of the proposed action's relationship to the Hawai'i State Plan. Detailed discussion on the applicability of the proposed action to each goal and related objectives, policies, and implementing actions of the Hawai'i State Plan is provided in **Appendix "G-1"**.

Table 5. Proposed Action's Relationship to the Hawai'i State Plan

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.			✓
(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.			✓

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 226-9 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.		✓	
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.	✓		

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 226-15 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:			
(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:			

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 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.		✓	
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.			✓

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 226-25 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:			
(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 North Kīhei Wastewater Collection and Transmission System project is directly applicable to objectives and policies related to facility systems, representing an action that will improve capacity and ensure reliable service for the community. The project indirectly supports other objectives and policies of the Hawai'i State Plan, including those related to water, population, housing, and the economy, among others. The increased system capacity will accommodate future planned growth in the region and ensure that infrastructure capacity is available for projected population growth.

Priority Guidelines

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

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

Table 6 below summarizes the relationship between the proposed action and the priority guidelines of the Hawai'i State Plan. More detailed discussion is presented in **Appendix "G-1"**.

Table 6. Proposed Action and the Priority Guidelines of the Hawai'i State Plan

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	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:			✓
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 North Kīhei Wastewater Collection and Transmission System project is directly applicable to the economic priority guidelines and the population growth and land resources priority guidelines for the State. The project will ensure adequate wastewater

services for existing and future commercial business land uses. With respect to population growth and land resources, the project will ensure the timely provision of wastewater services to support future housing and commercial development projects in North Kīhei. This project will also help to protect Hawai'i's shoreline. By increasing the wastewater capacity for existing population and future growth, it will mitigate the chances for potential wastewater spills or leakage into the ocean. Drainage improvements will support the capture of stormwater runoff onsite and prevent runoff from entering adjacent properties and the nearshore marine environment.

Indirectly, the project will support climate change adaptation, the visitor industry, water use and development, and affordable housing priority guidelines. Increasing the wastewater capacity will support the future development projects within North Kīhei that may involve future affordable housing development projects. Further, the North Kīhei Wastewater Collection and Transmission System provides a significant amount of R-1 water, which relieves the use of potable water for irrigation use and indirectly supports the health and quality of the visitor industry, as well as water use. The project will also indirectly support the climate change adaptation priority because the proposed improvements will not adversely impact climate change or sea level rise.

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 7** provides an assessment of the relationship between the proposed action and each of the 13 Functional Plans.

Table 7. Relationship Between the Proposed North Kīhei Wastewater Collection and Transmission 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	The proposed project is not applicable to the the State Agricultural Functional Plan.
2	Conservation Lands State Functional Plan (1991)	Department of Land and Natural Resources	Addresses issues of population and economic growth and its strain on current natural resources; broadening public use of natural resources while protecting lands and shorelines from overuse; additionally, promotes the aquaculture industry	The proposed project does not involve any Conservation designated lands in the North Kīhei service area. As such, the proposed project is not applicable to the Conservation Lands State Functional Plan.
3	Education State Functional Plan (1989)	Department of Education	Improvements to Hawai'i's educational curriculum, quality of educational staff, and access to adequate facilities	The proposed project is not applicable to the Education State Functional Plan.
4	Employment State Functional Plan (1990)	Department of Labor and Industrial Relations	Improve the qualifications, productivity, and effectiveness of the State's workforce through better education and training of workers as well as efficient planning of economic development, employment opportunities, and training activities	The proposed project is directly applicable to the Employment State Functional Plan. During construction the proposed project will support employment in the construction and trades industry. It will also support future commercial and business expansion in the North Kīhei area.
5	Energy State Functional Plan (1991)	Department of Business, Economic Development and Tourism	Lessen the reliance on petroleum and other fossil fuels in favor of alternative sources of energy so as to keep up with the State's increasing energy demands while also becoming a more sustainable island state; achieving dependable, efficient, and economical statewide energy systems	The proposed project is not applicable to the Energy State Functional Plan.
6	Health State Functional Plan (1989)	Department of Health	Improve health care system by providing for those who don't have access to private health care providers; increasing preventative health measures; addressing 'quality of care' elements in private and public sectors to cut increasing costs	The proposed project is not applicable to the Health State Functional Plan.

Table 7. Relationship Between the Proposed North Kīhei Wastewater Collection and Transmission System and the State Functional Plans
(continued)

State Functional Plan		State Coordinating Agency	Purpose	Analysis
7	Higher Education Functional Plan (1984)	University of Hawai'i	Prepare Hawai'i's citizens for the demands of an increasingly complex world through providing technical and intellectual tools	The proposed project is not applicable to the Higher Education Functional Plan.
8	Historic Preservation State Functional Plan (1991)	Department of Land and Natural Resources	Preservation of historic properties, records, artifacts and oral histories; provide public with information/education on the ethnic and cultural heritages and history of Hawai'i	Planning and permitting for the proposed project involved archaeological investigation and a cultural impact assessment. The CIA report, through its consultation with individuals, cultural resources, and lineal descendants, did not identify any traditional cultural practices previously or currently conducted within the immediate vicinity of the proposed North Kīhei Wastewater Collection and Transmission System project area. As a result of Chapter 6E consultation and Section 106 consultation findings, an Archaeological Monitoring Plan (AMP) has been prepared.
9	Housing State Functional Plan (1989)	Hawai'i Housing Finance and Development Corporation	Provide affordable rental and for-sale housing; increase homeownership and amount of rental housing units; acquiring public and privately-owned lands for future residential development; maintain a statewide housing data system	The proposed project involves improvements to the North Kīhei wastewater system which will provide additional wastewater capacity to service future development, including new housing to support projected population growth.
10	Human Services State Functional Plan (1989)	Department of Human Services	Refining support systems for families and individuals by improving elderly care, increasing preventative measures to combat child/spousal abuse and neglect; providing means for 'self-sufficiency'	The proposed project is not applicable to the Human Services State Functional Plan.

Table 7. Relationship Between the Proposed North Kīhei Wastewater Collection and Transmission System and the State Functional Plans
(continued)

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 project is not applicable to the Recreation State 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 project is not applicable to the Tourism State Functional Plan.
13	Transportation State Functional Plan (1991)	Department of Transportation	Development of a safer, more efficient transportation system that also is consistent with planned physical and economic growth of the state; construction of facility and infrastructure improvements; develop a transportation system balanced with new alternatives; pursue land use initiatives which help reduce travel demand	The Transportation State Functional Plan is not applicable to the proposed wastewater infrastructure improvement project.

D. 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.

Table 8 below summarizes the relationship between the proposed action and the 11 goals of the Countywide Policy Plan. The relationship between the action and the goals are categorized into the following groups. More detailed analysis and discussion, including the methodology used, is presented in **Appendix "G-2"**.

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

2. **Indirectly applicable:** the action and its potential effects indirectly supports, advances or affects the objective, policy or priority guideline.
3. **Not applicable:** the action and its potential effects have no direct or indirect relationship to the objectives and policies of the Countywide Policy Plan.

In general, a proposed action's applicability to the goals, objectives, policies and implementing actions of the Countywide Policy Plan is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 8** and summarized below focuses on key elements of the proposed action's relationship to the Countywide Policy Plan. 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 "G-2"**.

Table 8. Proposed Action's Relationship to the 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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)			
	DA	IA	NA
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 Maui Countywide Policy Plan has twelve (12) main goals. The proposed North Kīhei Wastewater Collection and Transmission System Project is directly applicable to three (3) of those. Those three (3) include improving the physical infrastructure, promoting sustainable land use and growth management, and striving for good governance. As a wastewater systems improvement project, this is a prime example of the County directly impacting infrastructure. The project proposes to address the capacity issues of North Kīhei while also upgrading the existing WWPS with equipment that is standardized across the County. Wastewater is a key component of the County's infrastructure. Also of note, this proposed project supports managed growth. Provision of wastewater capacity will facilitate urban growth to urban designated areas that the system serves and helps to improve efficiency in land use planning and management. This infrastructure improvements project also supports good governance. This project is being done in anticipation of future demographic and economic shifts to accommodate planned population and business growth within urban Kīhei.

Indirectly, this project supports goals related to protecting the natural environment, preserving local cultures and traditions, expanding housing opportunities for residents, strengthening the local economy, and improving parks and public facilities. This proposed wastewater improvement project will help to prevent potential wastewater spills into the environment by increasing its capacity and upgrading the operating systems. The increased capacity in wastewater will also indirectly benefit any future planned affordable housing development projects, commercial businesses, and public parks and facilities within North Kīhei.

2. **Maui Island Plan**

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

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

1. *An island-wide land use strategy, including a managed and directed growth plan*
2. *A water element assessing supply, demand and quality parameters*
3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

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

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

Additionally, an essential element of the MIP is its directed growth plan which provides a management framework for future growth in a manner that is fiscally, environmentally, and culturally prudent. Among the directed growth management tools developed through the MIP process are maps delineating urban growth boundaries (UGB), small town boundaries and rural growth boundaries. The

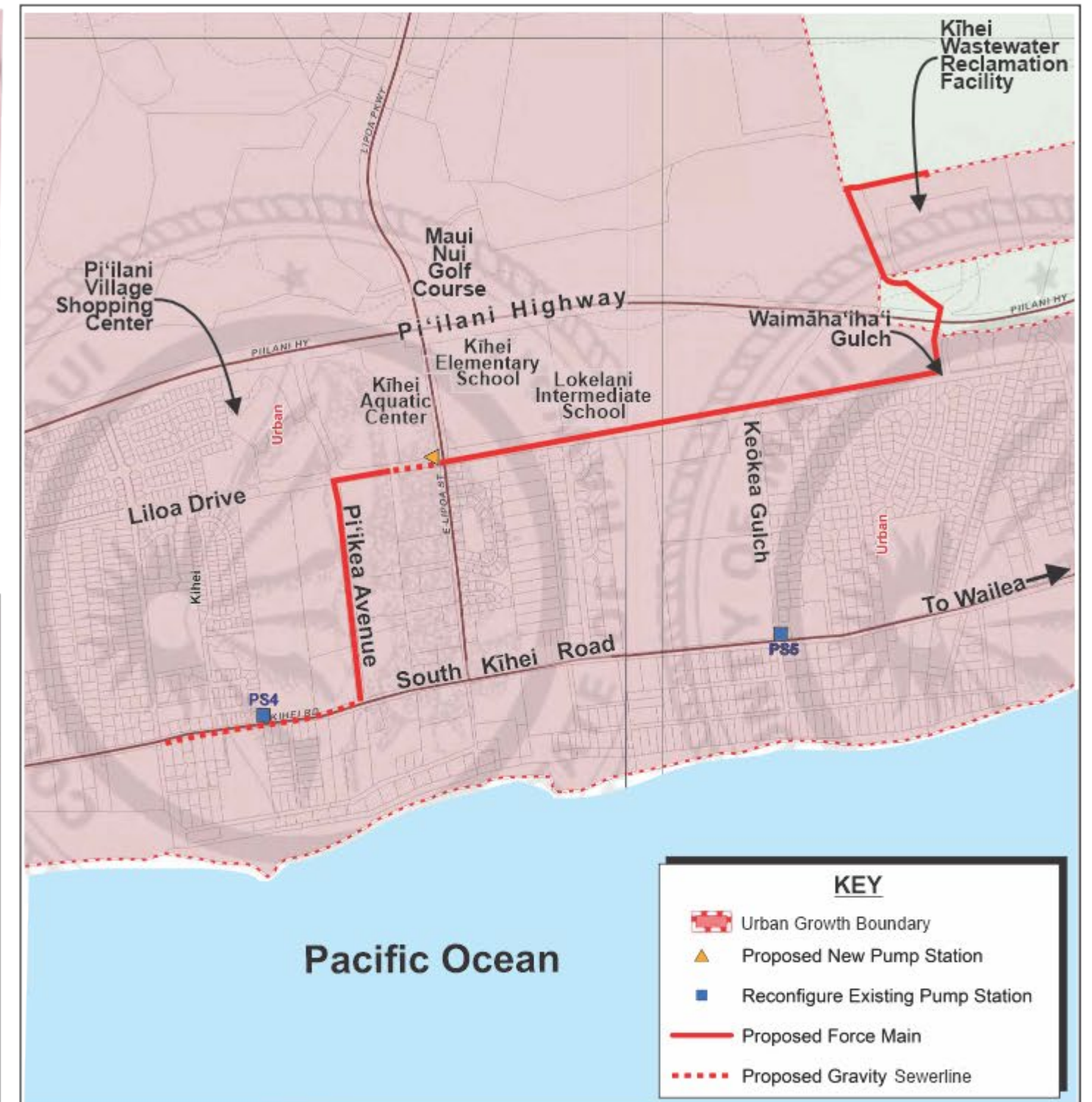
respective boundaries identify areas appropriate for future growth and their corresponding intent with respect to development character.

The proposed project is located within the UGB 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**.

Table 9 below summarizes the relationship between the proposed action and the goals of the MIP. The relationship between the action and the goals are categorized into the following groups. More detailed analysis and discussion, including the methodology used, is presented in **Appendix “G-3”**.

1. **Directly applicable:** the action and its potential effects directly advances or promotes the objective, policy or priority guideline.
2. **Indirectly applicable:** the action’s potential effects indirectly supports or advances the objective, policy or priority guideline.
3. **Not applicable:** The action and its potential effects have no direct or indirect relationship to the objectives and policies of the Maui Island Plan.

In general, a proposed action's applicability to the MIP is judged on the basis of the action's direct or indirect relationship to the respective objectives, policies and priority directions. It is recognized that the categorization of "applicability" is subject to interpretation and should be appropriately considered in the context of local and regional conditions. The analysis presented in **Table 9** and summarized below focuses on key elements of the proposed action’s relationship to the MIP. Detailed discussion on the applicability of the proposed action to each goal and related objectives, policies, and implementing actions of the MIP is provided in **Appendix “G-3”**.



KEY	
	Urban Growth Boundary
	Proposed New Pump Station
	Reconfigure Existing Pump Station
	Proposed Force Main
	Proposed Gravity Sewerline

Source: County of Maui, Department of Planning

Figure 12 Proposed North Kīhei Wastewater Collection and Transmission System Improvements
Maui Island Plan Map

NOT TO SCALE



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUEIN_Kihei_Maui_Trans/Applications/Figures/MIP

Table 9. Proposed Action's Relationship to the 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.						✓
EMERGING SECTORS						
4.4 A diverse array of emerging 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			
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 FACILITIES			
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.			✓
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.		✓	

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

Overall, the proposed North Kīhei Wastewater Collection and Transmission System project is directly applicable to the Maui Island Plan's goals, objectives, and policies for wastewater. This is an improvement project to increase capacity of the wastewater system in North Kīhei. The North Kīhei Wastewater Collection and Transmission System is reaching its limitations. This project will support the

existing and any future developments in North Kīhei, an area located within the Urban Growth Boundary of Maui.

This proposed action indirectly supports many of the other goals of the Maui Island Plan including population, disaster resiliency, water, heritage resources, economic development, housing, infrastructure, land use, and directed growth plans. The improvement of the existing WWPSs, as well as increasing the capacity of wastewater by adding another WWPS, will indirectly support the County in reaching these goals. Wastewater infrastructure is a key component to providing a healthy, vibrant environment, preserving our precious cultural and natural resources, and supporting the diversification of Maui's economy and housing goals. This project will also indirectly support the land use goals and directed growth plan for Maui because by improving and increasing wastewater capacity in North Kīhei, it will support future projects and expansion in the area that is set aside for growth and the land use pattern determined by the County.

E. KIHEI-MAKENA COMMUNITY PLAN

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

The project area travels through various land use designations as determined by the Kihei-Makena Community Plan map. See **Figure 13** and **Table 10**.



A number line starting at 0 and ending at 1700. A tick mark is placed at 850. The segment from 0 to 850 is labeled '425' below it. The segment from 850 to 1700 is labeled 'Fee' above it.



MUNEKIYO HIRAGA

Table 10. List of Parcels and Community Plan Designations

Project Component	Kihei-Makena Community Plan Designation
WWPS No. 2	PK (Park)
WWPS No. 3	PK (Park)
WWPS No. 4	Single Family Residential
WWPS No. 5	Public/Quasi-Public
New WWPS adjacent to Kīhei Community Center/Kīhei Aquatic Center	Project District 5
Construction Staging Area (temporary use only)	Project District 5
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park (Parcel 87)	Project District
Proposed Force Main in future Liloa Drive extension corridor below South Maui Community Park (Parcel 88)	Project District 5/Roadway Plan
Proposed Force Main in land abutting the Kīhei WWRF to the west, north, and east	Agriculture
Kīhei WWRF (Parcel 10)	Public/Quasi-Public
Kīhei WWRF (Parcel 11)	P/QP – Public/Quasi-Public
Proposed underground gravity sewerline – S. Kīhei Road ROW	Not applicable
Proposed underground force main – Pi‘ikea Avenue ROW	Not applicable
Proposed underground gravity sewerline – Liloa Drive ROW	Not applicable
Proposed underground force main – Liloa Drive ROW	Not applicable
Proposed underground force main – Old/E. Welakahao Road ROW	Not applicable
Proposed underground force main – Pi‘ilani Highway ROW	Not applicable

The proposed action is a wastewater improvements project which will allow the County to be proactive in upgrading the system and increase the capacity of the system which has reached its limit. This will help to mitigate any potential spills or leakage into the ocean as well as account for the planned growth in the area. The proposed North Kīhei Wastewater Collection and Transmission System project is in consonance with the following goal and objectives and policies of the Kihei-Makena Community Plan as outlined below.

LAND USE

Goal:

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

Objective and Policy:

- *Identify priority growth areas to focus public and private efforts on the provision of infrastructure and amenities to serve existing residents and to accommodate new growth.*

Discussion and Response:

The project area lies within the UGB as designated within the MIP. Furthermore, the project areas are located on lands with appropriate existing land use designations with respect to the Kihei-Makena Community Plan and Maui County Zoning to support the proposed infrastructure improvements.

The proposed action is directly related to the goal of a well-planned community to achieve efficient and timely provision of infrastructural community needs. The County of Maui DEM WWRD is proposing to improve and expand the wastewater transmission system in Kihei. The system has reached its capacity limits and the action will support the growth of the area as well as the future planned development for Kihei. This project is directly related to the goal, objective and policies of a well-planned community to achieve efficient and timely provision of infrastructural community needs.

ENVIRONMENT

Goal:

Preservation, protection, and enhancement of Kihei-Makena's unique and fragile environmental resources.

Objectives and Policies:

- *Maintain and enhance the long-term availability of shoreline resources for public enjoyment through adequate access, space, and facility provisions, and through on-going resource management programs.*
- *Require that new shoreline development respect shoreline resources and maintain public access:*
 - *Storm water run-off from proposed developments shall not adversely affect the marine environment and nearshore and offshore water quality.*
- *Planning, design, and layout for new development shall be integrated with public shoreline use and sound principles of resource management.*
- *Protect the quality of nearshore waters by ensuring that land-based discharges meet water quality standards. Continued monitoring of*

existing and future waste disposal systems is necessary to ensure their efficient operation. Programs should be implemented to reduce the reliance on injection wells for wastewater disposal.

Discussion and Response:

Part of the North Kihei Wastewater Collection and Transmission System is located along South Kihei Road and near the ocean. The proposed project will upgrade and improve the existing system in an effort to accommodate existing and future planned growth in the area as well as mitigate any unintentional spills or leakage of wastewater into the ocean. The project will implement construction BMPs, obtain a NPDES permit, and create and implement a Site Specific Spill Prevention and Control Plan (SSSPCP). Collectively, these mitigation measures will ensure the protection and preservation of the area's unique and fragile environmental resources.

CULTURAL RESOURCES

Goal:

- *Identification, preservation, enhancement, and appropriate use of cultural resources, cultural practice, and historic sites that:*
 - a. *provides a sense of history and defines a sense of place for the Kihei-Makena region; and*
 - b. *preserves and protects native Hawaiian rights 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).*

Objectives and Policies:

- *Identify, preserve, protect and restore significant historical and cultural sites.*
- *Foster an awareness of the diversity and importance of cultural and archaeological resources and of the history of Kihei-Makena. Promote distinct cultural resources as an identifying characteristic of the region.*
- *Encourage and protect traditional mauka and makai accesses, cultural practices and rural lifestyles.*
- *Protect those areas, structures and elements that are a significant and functional part of Hawaii's ethnic and cultural heritage.*
- *Encourage community stewardship of historic sites.*
- *Preserve and restore historical roads and paths as cultural*

resources, and require such resources to be available to the public.

- *Recognize and respect family ancestral ties to certain sites.*

Discussion and Response:

Archaeological consultation was conducted and a Cultural Impact Assessment (CIA) for the project has been undertaken. Refer to **Appendix “E-1”** and **Appendix “F”**, respectively. The CIA concluded that there are no traditional cultural practices previously or currently conducted within the immediate vicinity of the proposed project area. The SHPD concluded that based on information received from the Section 106 consultation, a “no historic properties affected” determination would be appropriate for the proposed project. As requested by SHPD, an AMP has also been prepared for the project. Refer to **Appendix “E-4”**.

PHYSICAL AND SOCIAL INFRASTRUCTURE

Goal:

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

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

a. Liquid and Solid Waste

Objectives and Policies

- Coordinate improvements to sewer transmission lines and wastewater reclamation facilities to meet the needs of future population growth. Require that the Wailea Resort Company and the Wailea Makena Alliance work toward a solution that would enable the Wailea sewerage system to be dedicated to the County.*
- Provide efficient, safe and environmentally sound systems for the reuse, recycling, and disposal of liquid and solid wastes.*

Discussion and Response:

The North Kihei Wastewater Collection and Transmission System project is directly related to the objectives and policies as it relates to liquid and solid waste. The proposed action is a wastewater system improvements project that is aimed to update the existing system and increase its capacity. The current system has

reached its capacity limits and the proposed action will support the planned growth for the area. Further, the improvements will mitigate any potential wastewater spills or leakage into the Pacific Ocean. Refer to **Figure 13**.

F. COUNTY OF MAUI ZONING

The project travels through various County zoning designations. Please refer to **Table 2** and see **Figure 14**. The proposed project primarily involves infrastructure improvements within existing roadway ROWs. The proposed new WWPS adjacent to the Kīhei Community Center and Kīhei Aquatic Center is designated Project District 5, Parks. It is noted that permitted uses within the Project District 5 designation include any buildings or premises used by the federal, state, or county governments for public purposes and public utilities substations, which are not and will not be hazardous or a nuisance to the surrounding areas.

G. HAWAI'I COASTAL ZONE MANAGEMENT PROGRAM – OBJECTIVES AND ENFORCEABLE POLICIES

The Hawai'i Coastal Zone Management Program (HCZMP), as formalized in Chapter 205A-2, HRS, establishes objectives and policies for the preservation, protection, and restoration of natural resources of Hawai'i's coastal zone. The applicability of coastal zone management considerations applies to all lands in the State of Hawai'i and, as such, has been reviewed and assessed as follows.

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*



Figure 14

Proposed North Kihei Wastewater Collection and Transmission System Improvements Maui County Zoning Map

NOT TO SCALE



to the State for recreation when restoration is not feasible or desirable;

- iii. Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
- iv. Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
- v. Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
- vi. Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*
- vii. Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
- viii. Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting that dedication against the requirements of section 46-6.*

Response: The project will support the increase of wastewater capacity to alleviate failures and wastewater spill events to area beaches. There will be no impacts on coastal recreational resources as a result of the proposed action.

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: The project engaged in a Chapter 6E, HRS and Section 106 consultation with the SHPD. The majority of the project primarily occurs within a built environment where sewerlines will be placed within existing utility corridors and WWPS work occurring in developed areas. The SHPD concluded that based on the information received from the Section 106 consultation, a “no historic properties affected” determination would be appropriate for the proposed project. As requested by the SHPD, an AMP has also been prepared for the project. Refer to **Appendix “E-4”**. The CIA recognized that cultural practices within the ahupua‘a include interment of the dead and procurement of marine and near-coastal marine resources. However, the CIA noted that no traditional cultural practices previously or currently are conducted within the immediate vicinity of the project area.

3. Scenic and Open Space Resources

Objective:

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

Policies:

- a. *Identify valued scenic resources in the coastal zone management area;*
- b. *Ensure that new developments are compatible with their visual environment by designing and locating those developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;*
- c. *Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and*
- d. *Encourage those developments that are not coastal dependent to locate in inland areas.*

Response: The proposed project entails upgrading and improving existing WWPSs, new gravity sewerlines, new force mains, and a proposed new WWPS in order to increase capacity for the public and ensure wastewater safety. Impacts to scenic and open space resources are not anticipated.

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: In seeking to preserve coastal ecosystems, a number of measures will be implemented during the construction phase of the proposed project. During construction, the project will implement a Best Management Practice (BMP) plan approved by the Department of Health (DOH) under a National Pollutant Discharge Elimination System (NPDES) permit. With these measures, the proposed action is not anticipated to contravene the objective and policies for coastal ecosystems. Upon completion, the project will mitigate future wastewater spills into the ocean.

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 will create positive short term economic benefits through construction spending and employment. From a long term perspective, the proposed project represents the County's desire to upgrade existing WWPSs and ensure wastewater capacity to avoid any environmental and/or coastal damage. The proposed action is not anticipated to have an impact on coastal development necessary to support the State's economy.

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: As the proposed project scope is limited to a County of Maui utilities improvement project, adverse impacts related to tsunami hazards are not anticipated. It is noted that the construction of the proposed improvements are not anticipated to result in significant adverse drainage impacts to surrounding or downstream properties.

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: Opportunity for public review and consideration of the proposed action is provided through the EA and SMA Use Permit application review processes. Through these processes, the potential short term and long term impacts of the proposed action will be identified and analyzed and will allow appropriate mitigation measures to be presented at early stages of the project.

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: The project planning process has been consistent with the public participation objectives and policies of Chapter 205A, HRS. Opportunity for public awareness, education, and participation pertaining to significant resource attributes of the coastal zone, is provided through the EA and SMA Use Permit application review processes. A public hearing will be held by the Maui Planning Commission to review the SMA Use Permit application for the project area. Noticing for the public hearing will be conducted in accordance with the Maui Planning Commission's SMA rules.

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: No adverse impacts to beach processes are anticipated with implementation of the proposed project.

10. **Marine and Coastal Resources**

Objective:

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

Policies:

- a. *Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
- b. *Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*

- c. *Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
- d. *Promote research, study, and understanding of ocean and coastal processes, impacts of climate change and sea level rise, marine life, and other ocean resources to acquire and inventory information necessary to understand how coastal development activities relate to and impact ocean and coastal resources; and*
- e. *Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

Response: With the incorporation of BMPs, and in the context of the project's location, scale and scope, the proposed North Kīhei Wastewater Collection and Transmission System project is not anticipated to present significant adverse impacts on marine resources and water quality in the vicinity of the project locations. Further, the contractor will be required to submit a Site Specific Spill Prevention and Control Plan (SSSPCP) prior to commencing construction. Upon completion, the project will mitigate future wastewater spills.

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

No special management area use permit or special management area minor permit shall be granted for structures that allow artificial light from floodlights, uplights, or spotlights used for decorative or aesthetic purposes when the light:

- (1) *Directly illuminates the shoreline and ocean waters; or*
- (2) *Is directed to travel across property boundaries toward the shoreline and ocean waters.*

In addressing light pollution issues, the proposed project lighting call for all lights to be shielded and downward facing to mitigate light pollution and to prevent lighting to travel across property boundaries toward the shoreline and ocean.

HRS 205A-26 Special Management Area (SMA) Guidelines

The proposed project is consistent with the State's guidelines for issuance of a SMA Use Permit by the Maui Planning Commission, as set forth in HRS, Chapter 205A-26:

- (1) *All development in the special management area shall be subject to reasonable terms and conditions set by the authority in order to ensure:*
 - (A) *Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas, and natural*

reserves is provided to the extent consistent with sound conservation principles;

- (B) Adequate and properly located public recreation areas and wildlife preserves are reserved;*
- (C) Provisions are made for solid and liquid waste treatment, disposition, and management which will minimize adverse effects upon special management area resources; and*
- (D) Alterations to existing land forms and vegetation, except crops, and construction of structures shall cause minimum adverse effect to water resources, beaches, coastal dunes, and scenic and recreational amenities and minimum impacts from floods, wind damage, storm surge, landslides, erosion, sea level rise siltation, or failure in the event of earthquake.*

(2) No development shall be approved unless the authority has first found:

- (A) That the development will not have any significant adverse environmental or ecological effect, except as any adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests. Those adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each of which taken by itself might not have a significant adverse effect, and the elimination of planning options;*
- (B) That the development is consistent with the objectives, policies, and special management area guidelines of this chapter and any guidelines enacted by the legislature; and*
- (C) That the development is consistent with the county general plan, community plan, and zoning; provided that a finding of consistency shall not preclude concurrent processing where a general plan, community plan, or zoning amendment may also be required.*

(3) The authority shall seek to minimize, where reasonable:

- (A) Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;*
- (B) Any development that would reduce the size of any beach or other area usable for public recreation;*
- (C) Any development that would reduce or impose restrictions upon public access to tidal and submerged lands, beaches,*

portions of rivers and streams within the special management areas and the mean high tide line where there is no beach;

- (D) Any development that would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and*
- (E) Any development that would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.*

H. SPECIAL MANAGEMENT AREA (SMA) RULES OF THE MAUI PLANNING COMMISSION

The SMA Rules of the Maui Planning Commission, Chapter 202 were established in order to implement Hawai'i Revised Statutes, Chapter 205A relating to Coastal Zone Management (CZM) and Special Management Areas. In addition to establishing procedures for processing of SMA applications and procurement of related permits, the rules assist the Commission in giving consideration to state policy regarding coastal zones.

The SMA Rules of the Maui Planning Commission confirm that the objectives and policies of Chapter 202 shall be as set forth under Section 205A-2, HRS, discussed in the previous part of this section, and that the SMA guidelines shall be set forth under Section 205A-26, HRS, also discussed above. The SMA Rules of the Maui Planning Commission also provide that in implementing these objectives and policies of the Maui Planning Commission, it shall fully consider ecological, cultural, historic, and aesthetic values, as well as need for economic development.

Under Section 205A-22, HRS, a SMA Use Permit is required for development for which the valuation exceeds \$500,000.00, or which may have a substantial adverse environmental or ecological effect, while also taking into account potential cumulative effects. The valuation of the proposed Project area exceeds \$500,000.00, and, therefore, an SMA Use Permit will be required. Based on the analysis herein, the proposed Project area, with applicable mitigation, is not likely to have a substantial adverse environmental or ecological effect under the Maui Planning Commission's SMA Rules.

This section addresses the project's relationship to applicable CZM considerations as set forth in the Special Management Area Rules of the Maui Planning Commission. Section 12-202-12(e) sets forth the following criteria for determining whether a proposed action may have a substantial adverse environmental or ecological effect, while also taking into account potential cumulative adverse effects. The criteria have been reviewed and

analyzed with respect to whether the proposed action may have a significant adverse effect on the environment.

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

The project area spans across existing residential, business and commercial uses. As documented by the Flora and Fauna Survey Report and the accompanying analysis presented in Chapter II, there are no significant adverse effects on natural resources anticipated as a result of the project area. As also discussed in Chapter II, appropriate surveys have been conducted to address potential impacts on natural and cultural resources.

2. **Significantly curtails the range of beneficial uses of the environment.**

The proposed project areas involve the upgrade and improvements to existing WWPSs, as well as the development of a new WWPS to address the wastewater capacity limits currently occurring. The project will increase wastewater capacity and the health and safety of the general public. The proposed project will not curtail the range of beneficial uses of the environment. The SHPD concluded that based on information received from the Section 106 consultation, a “no historic properties affected” determination would be appropriate for the proposed project. As requested by SHPD, an AMP has also been prepared for the project.

3. **Conflicts with the county’s or the state’s long-term environmental policies or goals.**

The proposed project area is consistent with the property’s underlying land use designations, which were established to guide development patterns, limiting the land uses considered to be compatible with the regional context and suitable for the regional environment. As described in earlier sections of this chapter, the proposed action is in consonance with State and County environmental policies.

4. **Substantially affects the economic or social welfare and activities of the community, county, or state.**

On a short term basis, the Project area will support construction and construction related industries, thereby, increasing employment opportunities to result in a beneficial impact on the local economy during the period of construction. The proposed North Kīhei Wastewater Collection and Transmission System project will upgrade the local wastewater network to improve wastewater capacity efficiencies. In this context, the proposed action is not anticipated to adversely affect economic and social welfare parameters.

5. **Involves substantial secondary impacts, such as population changes and increased effects on public facilities, streets, drainage, sewage, and water systems, and pedestrian walkways.**

The proposed action involves the upgrades and improvements to existing WWPSs, as well as the construction of a new WWPS. The result of the project will be increased wastewater capacity. There are no substantial secondary effects of the project area that are deemed detrimental to the community's well-being.

The area of Kīhei is projected to experience growth in the visitor economy, jobs in the technology sector, and further residential expansion. As this is an infrastructure improvements project, the proposed action will support the anticipated growth for the area to provide appropriate wastewater capacity and mitigate any potential spills or leakage into the ocean.

6. **In itself has no significant adverse effects but cumulatively has considerable effect upon the environment or involves a commitment for larger actions.**

There are no other immediately foreseeable significant capacity enhancing wastewater improvement projects in the Kīhei Town area. The proposed action is part of the County's initiative to improve the WWPSs and provide the necessary capacity for the public. The implementation of the project will increase wastewater capacity for the Kīhei community. There are no significant cumulative adverse effects associated with this project.

7. **Substantially affects a rare, threatened, or endangered species of animal or plant, or its habitat.**

A Flora and Fauna Survey was conducted to ensure that any sensitive biological resources within the project site would be identified and provided adequate protection. Refer to **Appendix "C"**. The survey concluded that the proposed project area will not have a significant impact on native botanical resources.

Consultation with the USFWS was undertaken pursuant to Section 7 of the Endangered Species Act. The USFWS determined that the project may affect, but is not likely to adversely affect endangered or threatened species. Refer to **Appendix "D"**.

8. **Is contrary to the state plan, county's general plan, appropriate community plans, zoning and subdivision ordinances.**

As discussed herein, the proposed project area is in compliance with underlying land use designations and is not considered to be contrary to the State Plan, the County's General Plan, Kihei-Makena Community Plan, zoning, or subdivision ordinances.

9. Detrimentially affects air or water quality or ambient noise levels.

Construction activities association with the proposed North Kīhei Wastewater Collection and Transmission System project will have temporary effects on ambient air and noise quality. Appropriate Best Management Practices (BMPs) will be employed to mitigate the nuisance effects to air, downstream water quality, and noise during construction.

From a long term perspective, wastewater capacity will increase for the health and safety of the general public. In the context of the region's current air quality, these impacts are not considered to be adverse.

Generally, storm runoff flows east to west (mauka to makai) and eventually outlets to the ocean. In urban Kīhei, stormwater from the existing roads is collected by underground drainage systems. In undeveloped areas, stormwater sheet flows to the nearest east/west gulch. The project will not alter any existing drainage patterns.

In the short-term noise perspective, noise will be increased due to construction related activities. However, in the long term, there will be no effects on noise volumes considered above adverse.

10. Affects an environmentally sensitive area, such as flood plains, shoreline, tsunami zone, erosion-prone area, geologically hazardous land, estuary, fresh waters, or coastal waters.

The proposed project includes upgrades to existing WWPS and construction of underground sewerlines and force mains that are located within a Special Flood Hazard area, tsunami evacuation zone, or sea level rise exposure area. Notably, the proposed new WWPS is located outside of a Special Flood Hazard area, tsunami evacuation zone, and sea level rise exposure area. Significant impacts related to environmentally sensitive areas are not anticipated as a result of the project.

11. Substantially alters natural land forms and existing public views to and along the shoreline.

The proposed project consists of improvements and upgrades to existing WWPS numbers 2, 3, 4, and 5, new gravity sewerlines and force mains, and the development of a new WWPS near the Kīhei Aquatic Center. The various project areas are on previously graded and alterations of natural land forms will be minimal. As the project actions are limited to this scope, there will be minimal impacts to existing public views to and along the shoreline.

12. Is contrary to the objectives and policies of chapter 205A, HRS.

A review of the objectives and policies of Chapter 205A, HRS, is provided in its entirety in the previous part of this section, which addresses the project's relationship to the CZM objectives and policies. Based on the foregoing analysis, the project area will appropriately and adequately mitigate impacts to SMA relevant areas of interest. Accordingly, there are no anticipated environmental and ecological impacts attributed to the proposed Project area, which would contravene the objectives and policies of Chapter 205A, HRS.

I. FEDERAL REGULATORY REQUIREMENTS

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

The proposed project will be funded in part by the Hawai'i Clean Water State Revolving Fund (CWSRF). As such, the project will comply with the Environmental Cross-Cutters and Federal Requirements for Clean Water SRF projects. **Table 11** provides a listing of the environmental cross-cutters, as well as the documentation received for the proposed project in addressing the requirement criteria.

Table 11. Environmental Cross-Cutters and Project Documentation

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
1.	Archaeological and Historical Preservation Act of 1974	Obtain review for all projects.	State Historic Preservation Division (SHPD).	The project engaged in a Section 106 Consultation with the SHPD. As a result of the consultation with various Native Hawaiian Organizations and/or interested individuals, including a review and inventory of historic properties in the project vicinity, the SHPD concurred with the DOH in concluding that a “no historic properties affected” determination for the subject project.	Refer to Appendix “E-2” for Section 106 documentation.
2.	Bald and Golden Eagle Protection Act	Permit required for taking eagles.	U.S. Department of the Interior	Not applicable. Bald and Golden Eagles do not exist in Hawai‘i.	Not applicable.
3.	Clean Air Act	Coordinate to assure project conforms with State Implementation Plan (SIP).	State Department of Health, Clean Air Branch.	The Draft EA will be provided to the Department of Health for review and comment.	See Chapter II (Section A-10) of this EA document for discussion of potential air quality impacts and mitigation measures.
4.	Coastal Barrier Resources Act	Obtain review, if project is located on a coastal barrier island.	State Coastal Zone Management Agency.	Not applicable. Project site is not located on a coastal barrier island.	Not applicable.
5.	Coastal Zone Management Act	Obtain review, if project is located in coastal zone.	State Coastal Zone Management Agency.	Pursuant to Chapter 205A-2, HRS, the project site is within the Coastal Zone Management Area, which encompasses all lands of the State. Some parts of the project site are located within the Special Management Area (SMA) and, as such, a SMA Use permit is required.	See Chapter III (Section E) of this 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 will be provided to USFWS for review and comment. Section 7 consultation was completed with the USFWS.	Refer to Appendix “D” for Section 7 documentation.

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. The link from the Environmental Review Program (ERP) publication to this project's Draft EA will be sent to the EPA for their specific notification. The EPA will be able to provide comments if deemed necessary.	Refer to Chapter II (Section B) of this EA document for a discussion of socioeconomic and demographic parameters.
8.	Floodplain Management	Obtain review, if project is located in or affects 100-year flood plain.	Federal Emergency Management Agency (FEMA)	Due to the vast expanse of the proposed project actions, the project area goes through various flood zones as determined by the Flood Insurance Rate Map (FIRM). A Special Flood Hazard Area Development Permit will be obtained for work done within the flood zones. A majority of the proposed new work will lie outside of the flood and tsunami hazard areas.	Refer to Chapter II (Section A-6) of this EA document for a discussion of flood and tsunami hazards.
9.	Protection of Wetlands	Obtain review, if project area contains wetlands.	U.S. Army Corps of Engineers (USACE)	There is a wetland feature in the vicinity of the proposed project. The proposed project involves the installation of a force main in Pi'ikea Avenue. All work will be confined to the existing roadway right-of-way. No work will occur in the surrounding wetland feature.	Refer to Chapter II (Section A-7) of this EA document for a discussion of streams and wetlands.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
10.	Farmland Protection Policy Act	Obtain review, if project area contains prime farmland.	Natural Resources Conservation Service (NRCS)	A small portion of the project will be located in an area designated as Prime Agricultural land by the Agricultural Lands of Importance to the State of Hawai'i. However, the portion of the proposed project designated as Prime Agricultural land is located within an existing urbanized area of Kihei, primarily consisting of an existing roadway corridor and lands owned by the County of Maui, Department of Parks and Recreation. The link from the ERP publication to this project's Draft EA will be sent to the NRCS for their specific notification. The NRCS will be able to provide comments if deemed necessary.	Refer to Chapter II (Section A-5) of this EA document for discussion of agriculture.
11.	Fish and Wildlife Coordination Act	Obtain review for all projects.	USFWS	The Draft EA will be provided to USFWS for review and comment.	Refer to Chapter II (Section A-9) of this EA document for discussion of flora and fauna resources.
12.	Marine Mammal Protection Act	Permit required for taking of marine mammals.	USFWS	The proposed project is located in urban areas inland from the coastline. The proposed project will not affect marine mammal habitats.	Refer to Chapter III (Section E) of this EA document for a discussion of coastal zone management and Chapter II Section A-9 of this EA document for a discussion on Flora and Fauna.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
13.	Migratory Bird Treaty Act	Obtain review, if project impacts breeding bird species.	USFWS	The Draft EA will be provided to USFWS for review and comment.	Refer to Chapter IX of this EA document for the Draft EA distribution list. Refer to Chapter II (Section A-9) of this EA document for discussion of flora and fauna resources, as well as Appendix "D" regarding Section 7 consultation.
14.	National Historic Preservation Act	Obtain review for all projects.	SHPD	The project engaged in a Section 106 Consultation with the SHPD. As a result of the consultation with various Native Hawaiian Organizations and/or interested individuals, including a review and inventory of historic properties in the project vicinity, the SHPD concurred with the "no historic properties affected" determination for the subject project.	Refer to Appendix "E-2" for Section 106 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 will involve force main lines that cross Kēōkea Gulch and Waimāha'īha'ī Gulch. Horizontal Directional Drilling (HDD) will be utilized to install the 16-inch force main under the gulches. This will involve the use of a drill rig that will bore beneath the gulches in a parabolic path with a guided drill bit. The new PVC pipe will then be inserted into the bore hole, thereby avoiding any surface disturbance or impact to Kēōkea Gulch and Waimāha'īha'ī Gulch at the crossings.	Refer to Chapter II Section (A-7) of this EA document for a discussion on streams and wetlands. Refer to Appendix "G" to review concurrence letter by the Army Corps of Engineers.

No.	Environmental Authority	Procedure	Responsible Agency	Response	Project Documentation
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 will be provided to the DOH-SDWB for review and comment.	Refer to Chapter II (Section A-7 and 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 area with Wild and Scenic Rivers.	National Park Service	Not applicable. The project site is not located in an area with Wild or Scenic Rivers. There are no Wild or Scenic Rivers in the State of Hawai'i.	Not applicable.
18.	Consultation Process Under the Magnuson-Stevens Fishery Conservation and Management Act	Obtain review, if it will affect essential fish habitat.	National Marine Fisheries Service	Not applicable. The project site is located in an urban area inland of the coastline. The proposed project will not affect essential fish habitats.	Not applicable.

2. Department of the Army

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

The proposed project involves sewerlines crossing Kēōkea Gulch and Waimāha'iha'i Gulch. Horizontal directional drilling will be utilized to install the sewerlines such that there will be no surface disturbance at the gulch. As such, the DA has issued a No Permit Required determination for the project. Refer to **Appendix "H"**.

3. Section 401 Water Quality Certification

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

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

4. Coastal Zone Management Consistency Review

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

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

Section 4(f) refers to the section of the U.S. Department of Transportation Act of 1966 which provided for consideration of park and recreation lands, wildlife and

waterfowl refuges, and historic sites during transportation project development. Requirements of Section 4(f) applies only to the U.S. Department of Transportation (U.S. DOT) and is implemented by the Federal Highway Administration (FHWA) and the Federal Transit Administration. Inasmuch as the proposed North Kīhei Wastewater Collection and Transmission System project is utilizing the State Clean Water Revolving Funds from the EPA, and thus, Section 4(f) is not an applicable consideration.

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

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

7. Section 106 of the National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires Federal agencies to consider the effects on historic properties of projects they carry out, assist, fund, permit, license, or approve throughout the country. As noted previously, the proposed North Kīhei Wastewater Collection and Transmission System project is a Federal-Aid project and accordingly, will require Section 106 compliance. In the State of Hawai'i, Section 106 regulations place particular emphasis on consultation with Native Hawaiian Organizations (NHO). In this regard, Section 106 consultation has been initiated and concluded for the proposed North Kīhei Wastewater Collection and Transmission System project. Refer to **Appendix "E-2"**. As a result of the consultation with various Native Hawaiian Organizations and/or interested individuals, including a review and inventory of historic properties in the project vicinity, the SHPD concurred with the "no historic properties affected" determination for the subject project.

8. Section 7 of the Endangered Species Act

The Endangered Species Act (ESA) directs all Federal agencies to work to conserve endangered and threatened species and to use their authorities to further the purposes of the ESA. Section 7 of the ESA, called "Interagency Cooperation,"

is the mechanism by which Federal agencies ensure the actions they take, including those they fund or authorize, do not jeopardize the existence of any listed species. As the proposed North Kīhei Wastewater Collection and Transmission System project will be federally funded, Section 7 consultation has been undertaken. In this regard, consultation has been initiated with the U.S. Fish and Wildlife Service (USFWS) to identify potential types of listed species which may occur in the proposed action area, and what effect the proposed action may have on those species.

Through consultation, the USFWS recommended the following BMPs and mitigation measures:

(a) Green Sea Turtle (Chelonia mydas)

To avoid and minimize project impacts to sea turtles from lighting the following measures will be implemented:

- Avoid nighttime work during the nesting and hatching season (May to December). Turn off lights when human activity is not occurring in the project area.
- Minimize the use of lighting on or near beaches and shield all project-related lights so the lights is not visible from any beach.
- If lights can't be fully shielded or if headlights must be used, the light sources will be fully enclosed with light filtering tape or filters.

(b) Hawaiian Hoary Bat (‘Ōpe‘ape‘a)

To avoid and minimize impacts to the endangered ‘Ōpe‘ape‘a, the following measures will be incorporated into the 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.

(c) Hawaiian Seabirds (‘Ua‘u kani, ‘Ua‘u, A‘o, and ‘Akē‘akē)

To avoid and minimize impacts to seabirds, the following measures will be incorporated into the 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.

The USFWS further recommended for the project to consult with the State of Hawai'i Department of Land and Natural Resources (DLNR) Department of Fish and Wildlife and the Migratory Bird Treaty Act for their recommendations to protect the wedge-tailed shearwater or 'ua'u kani (*Ardenna pacificus*). The project will adhere to the following avoidance and minimization measures specific to the 'ua'u kani:

- Surveys will be conducted throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas.
- If wedge-tailed shearwaters nest within a proposed project area and the project would cause ground disturbance, the project construction will occur outside of the breeding season.
- If outdoor lighting is needed, light shields will be used that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach.

(d) Hawaiian Waterbirds (Koloa, Ae'o, and 'Alea Ke'oke'o)

To avoid and minimize impacts to Hawaiian waterbirds, the following measures will be incorporated into the 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 onsite.
- The project may have a biological monitor that is familiar with the species' biology conduct Hawaiian waterbird nest surveys where appropriate habitat could occur within the vicinity of the proposed project site prior to project initiation. A repeat of the survey would take place again within three (3) days of project initiation and after any subsequent delay of work of three (3) or more days (during which the birds may attempt to nest). If a nest or active brood is found, the project will:

- Contact the USFWS 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 fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

(e) **Blackburn's Sphinx Moth**

The following survey recommendations will be utilized 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 to April or several weeks after a significant rain), to the extent possible, and within 4 to 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 three (3) feet tall are found during the survey, the USFWS will be contacted for additional guidance to avoid impacts to this species.
- If moths or the native 'aiea or tree tobacco over three (3) feet tall are found during the survey, the USFWS will be contacted for additional guidance to avoid take.
- If no Blackburn's sphinx moth, 'aiea, or tree tobacco are found, measures will be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site.

With the implementation of the avoidance and minimization measures described, the DOH determined that the project may affect, but is not likely to adversely affect, the threatened green sea turtle or honu (*Chelonia mydas*); the endangered Hawaiian hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*); the indigenous wedge-tailed shearwater or 'ua'u kani (*Ardenna pacificus*); endangered Hawaiian petrel or 'ua'u (*Pterodroma sandwichensis*), threatened Newell's shearwater or 'a'o (*Puffinus auricularis newelli*), and endangered Hawai'i Distinct Population Segment (DPS) band-rumped storm-petrel or 'akē'akē (*Oceanodroma castro*); the endangered Hawaiian stilt or ae'o (*Himantopus mexicanus knudseni*), the endangered Hawaiian coot or 'alaie ke'oke'o (*Fulica alai*); the endangered Hawaiian duck or koloa (*Anas wyvilliana*); and the endangered Blackburn's sphinx moth (*Manduca blackburni*). Please refer to **Appendix "D"**. As a result of the inclusion of the USFWS' mitigation measures as well as the Biological Survey that was done, the DOH concluded and the USFWS concurred, via the Section 7 consultation, with the "may affect, but is not likely to adversely affect" determination.

J. STREAM CHANNEL ALTERATION PERMIT

The Commission on Water Resource Management's (CWRM) Stream Protection and Management Branch is responsible for protecting stream channels from alteration whenever practicable and for managing the sharing of surface water resources. A Stream Channel Alteration Permit (SCAP) is required for any temporary or permanent activity within the stream bed or banks that may: (1) Obstruct, diminish, destroy, modify, or relocate a stream channel; (2) Change the direction of flow of water in a stream channel; (3) Place any materials or structures in a stream channel; or (4) Remove any material or structure from a stream channel.

The proposed project will involve force main lines that cross Kēōkea Gulch and Waimāha'iha'i Gulch. Horizontal directional drilling will be utilized to install the 16-inch force main under the gulches. This will involve the use of a drill rig that will bore beneath the gulches in a parabolic path with a guided drill bit. The new PVC pipe will then be inserted into the bore hole, thereby, avoiding any surface disturbance or impact to Kēōkea Gulch and Waimāha'iha'i Gulch at the crossings. Coordination and consultation with the CWRM was undertaken to ensure that applicable requirements of Title 13, Chapter 169, Subchapter 5, of the Hawai'i Administrative Rules, relating to Stream Channel Alteration Permits (SCAP) are appropriately addressed. On March 3, 2022, the CWRM determined that the project will not require a SCAP because the proposed work does not adversely affect instream uses of water. See **Appendix "I"**.



**SUMMARY OF ADVERSE
ENVIRONMENTAL EFFECTS
WHICH CANNOT BE
AVOIDED**

IV



IV. SUMMARY OF ADVERSE ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED

Assessment of construction-related impacts, noise and air quality impacts, and potential impacts on the physical and socio-economic, as well as consultation with State Historic Preservation Division (SHPD) and various Native Hawaiian organizations, and a cultural impact assessment were carried out as part of an environment assessment documentation process. The proposed project will have a limited, unavoidable construction-related impact on the environment, as described in **Chapter II**.

Construction-related impacts 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), such as dust barriers, water wagons and/or sprinklers to control dust, and watering graded areas upon completion of daily construction activities. Upon completion, the proposed project is not expected to be a source of long term adverse air or noise conditions.

During construction of the project, traffic related impacts are anticipated along the roadways that work is being done. A traffic control plan will be implemented. Communication with County agencies such as the Maui Police Department, Fire Department, Department of Transportation, and the Maui Economic Opportunity will be done in advance of any possible road closures. These impacts will be in the short term, during construction and will not continue once the project is complete.

In the long term, the proposed North Kīhei Wastewater Collection and Transmission System project will further increase the wastewater capacity for Kīhei residents and effectively reduce any potential wastewater spills.



**ALTERNATIVES TO THE
PROPOSED ACTION**

V



V. ALTERNATIVES TO THE PROPOSED ACTION

A. PREFERRED ALTERNATIVE

The proposed project, as outlined in Chapter I, Project Overview, is the preferred alternative and involves improvements to the existing wastewater treatment facilities in Kīhei, including a new wastewater pump station to accommodate the growing capacity and future developments.

The improvements to the existing pump stations, underground sewerlines and force mains, along with a new wastewater pump station are, therefore, considered to be a viable preferred alternative. The project will ensure any potential wastewater spill and capacity issues. The preferred alternative was selected due to its flexibility and total added additional capacity.

B. NO ACTION ALTERNATIVE

The proposed project will provide much needed increased wastewater capacity for South Maui. The no action alternative would involve the continued use of the existing wastewater pump stations, sewerlines, and force mains without meeting the increased demand of the system. Thus, wastewater spills could be a highly likely occurrence. As such, the no action alternative was rejected.

C. DEFERRED ACTION ALTERNATIVE

Similar to the no action alternative, the deferred action alternative does not address the need for the increase in wastewater capacity in Kīhei. The existing wastewater system will continue to be exacerbated if the system is not upgraded and a new pump station is not constructed. For this reason, the deferred action alternative was not deemed appropriate.

D. DESIGN ALTERNATIVE

Various design alternatives were considered by the County of Maui, Department of Environmental Management, Wastewater Reclamation Division in the early stages of planning and design for this project. Four (4) design alternatives were initially identified, with two (2) proposed transmission alignment options examined in detail.

The design alternative that was not selected included a new gravity collection line running south along the North-South Collector Road (Liloa Drive) between South Kīhei Road and Pi'ilani Highway that would intercept gravity flow and prevent it from reaching the existing wastewater conveyance system along South Kīhei Road. This alternative would redirect an estimated 2.22 MGD of ultimate buildout design peak flow from the existing system and cost an estimated \$16.5 to \$24.7 million in 2018 dollars to construct. The

disadvantages of this alternative far outweighed its benefits when compared to the chosen design. Evaluation of the options were based on the following: analysis of existing wastewater flows based on data and record drawings provided by WWRD; development of future flow projections; determination of upgrade requirements for the existing gravity system to meet future flow projections; determination of key alignment constraints, construction methods, and design guidelines for the alternatives; identification of permitting and approval requirements; and the development of conceptual estimates of construction costs. The WWRD elected to move forward with the alternative presented in this EA based on the relief provided to the existing North Kīhei wastewater collection system, its flexibility, and the total added capacity for the system.



**IRREVERSIBLE AND
IRRETRIEVABLE
COMMITMENTS OF
RESOURCES**

VI



VI. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed action will not entail a substantial commitment of public services or facilities. The proposed improvements to the existing wastewater pump stations, as well as the construction of a new wastewater pump station, within existing infrastructure and ROWs, will increase the capacity of the County of Maui's wastewater service areas. The proposed action will provide for additional wastewater capacity to existing and future residents and businesses of South Maui. Implementation of the proposed project area will involve a commitment of energy, labor, fiscal, and material resources. The use of these resources, when weighed against the expected benefit derived from the project area, is not considered an adverse commitment.



**SIGNIFICANCE CRITERIA
ASSESSMENT**

VII



VII. SIGNIFICANCE CRITERIA ASSESSMENT

The “Significance Criteria”, Section 13 of the Hawai‘i Administrative Rules (HAR), Title 11, Chapter 200.1, “Environmental Impact Statement Rules”, was reviewed and analyzed to determine whether the proposed project area will have significant impacts on the environment. The following criteria and analysis are provided.

1. Irrevocably commit a natural or cultural resource.

The project area will occur within developed areas, existing infrastructure, and existing right-of-ways, surrounded by residential, business, commercial, and public land uses. As documented by the Flora and Fauna Study Report and the accompanying analysis represented in Chapter II, there are no significant adverse effects on natural resources anticipated as a result of the project area. Refer to **Appendix “C”**.

The majority of the project primarily occurs within a built environment where sewerlines will be placed within existing utility corridors and WWPS work occurring in developed areas. The State Historic Preservation Division (SHPD) concluded that based on information received from the Section 106 consultation, a “no historic properties affected” determination would be appropriate for the proposed project. As requested by the SHPD, an Archaeological Monitoring Plan (AMP) has also been prepared for the project. Refer to **Appendix “E-3”** and **Appendix “E-4”**. A CIA was also prepared for the project. The CIA recognized that cultural practices within the ahupua‘a include interment of the dead and procurement of marine and near-coastal marine resources. However, the CIA noted that no traditional cultural practices previously or currently are conducted within the immediate vicinity of the project area. Refer to **Appendix “F”**.

2. Curtail the range of beneficial uses of the environment.

The proposed action is limited to the improvements to the existing wastewater pump stations, improvements to the underground sewerlines and force mains, and the construction of a new wastewater pump station within existing infrastructure, development, and right-of-ways. The project will not curtail the range of beneficial uses of the environment.

3. Conflict with the State’s environmental policies or long-term environmental goals established by law.

The proposed action conforms with the State’s Environmental Policy and Guidelines as set forth in Chapter 344, Hawai‘i Revised Statutes (HRS).

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

The proposed project will provide added wastewater infrastructure capacity to the region, which will have a positive impact on the economic and social welfare.

The CIA report noted that in the broader area of Kihei, traditional cultural practices were identified as it relates to the interment of the dead and the procurement of marine and near-coastal marine resources through fishing, gathering, and aquaculture (i.e., fishponds), and the cultivation of food crops. Fresh water was identified as an important cultural resource and also associated with spiritual beliefs and practices. However, the CIA report concluded that there were no cultural and traditional practices occurring within the immediate vicinity of the proposed project area.

5. **Have a substantial adverse effect on public health.**

No adverse impacts to public health and welfare are anticipated as a result of the proposed action.

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

In this case, the context for analyzing secondary and cumulative impacts is defined by the time horizon within which “reasonably foreseeable” conditions may occur. From a planning standpoint, the future context for wastewater infrastructure can be established by the Kihei-Makena Community Plan and the Maui County General Plan. The Maui County General Plan defines general parameters for maintenance and growth while the Kihei-Makena Community Plan specifies those parameters to suit the specific community’s needs.

The Maui County General Plan was updated in 2012 through the Countywide Policy Plan. The Kihei-Makena Community Plan was updated in 1998 and is currently in the process of going through its update. These two (2) documents work together and thus, “reasonably foreseeable” conditions may be considered within this future context.

The Maui County General Plan and the Kihei-Makena Community Plan, as set forth in Chapter 2.80B of the Maui County Code, is a long-term comprehensive blueprint for the physical, economic, environmental development and cultural identity of the County through 2030. The components of the General Plan include the following:

- The Countywide Policy Plan provides broad policies and objectives which portrays the desired direction of the County's future. It includes a countywide vision, statement of core principles, and objectives and policies for population, land use, the environment, the economy, infrastructure, and housing.
- The Maui Island Plan (MIP) provides a land use strategy, water assessment, nearshore ecosystem assessment, an implementation strategy, and milestone measurements. An essential element of the MIP is a Managed and Directed Growth Plan which identifies existing and future land use patterns and determines planned growth.
- The Kihei-Makena Community Plan provides implementing actions based on consistency with the Countywide Policy Plan and MIP's vision, goals, objectives, and policies.

A discussion of how the proposed project is consistent with specific goals, objectives, and policies of the Countywide Policy Plan, Maui Island Plan, and Kihei-Makena Community Plan are presented in Chapter III of this EA document.

The Countywide Policy Plan covers planning goals and objectives at the broadest levels and the regional Community Plans consider specific regional needs and opportunities, they work together to address functional elements of the General Plan, and address islandwide and specific regional growth parameters which will ultimately dictate wastewater infrastructure needs on the island.

The MIP is used by the County Council, MPC, County administration and the community as a policy foundation for day-to-day decision making by doing the following:

- Providing direction for the development of future policies and regulations (for example, zoning and other ordinances, guidelines and area-specific plans that describe what kind of development can occur where);
- Providing policies to help determine the appropriateness of development proposals; and
- Assigning resource for capital investments and programmatic initiatives.

The Directed Growth Plan, which is a key element of the MIP, provides a framework for managing outcomes of growth based on analysis of natural hazards, sensitive lands, cultural resources, scenic corridors, and related environmental and human community parameters. An important component of the Directed Growth Plan are maps that delineate urban and rural growth areas. Referred to as Urban and Rural Growth Boundaries, these maps set the boundaries for the physical limits of development. In so doing, the Directed Growth Plan seeks to

manage the use of non-urban and non-rural resources important in sustaining the island to the year 2030.

In light of the foregoing, the assessment of cumulative and secondary impacts is undertaken in the context of planned growth recommended by the General Plan update process, particularly the MIP and its Urban and Rural Growth boundary maps. The proposed urban and rural growth boundaries provide the basis for acknowledging that the proposed project will facilitate implementation of the General Plan, as mandated by the County Charter. Future and planned development currently envisioned by the General Plan within Kīhei represents the “reasonably foreseeable” future for considering potential impacts of the proposed project. The improvements that are planned for the wastewater system in Kīhei will support the County planned growth in the region.

In summary, the proposed project is being planned in consideration of the long-term infrastructural requirements necessary to support planned future growth in the North Kīhei area and the Kīhei-Mākena region. The proposed project is not anticipated to have a significant adverse impact on the physical environment. Assessing the project in the context of the future planned growth in the Kīhei-Makena region in the foreseeable future, the proposed action is not anticipated to result in significant adverse secondary or cumulative impacts.

7. Involves a substantial degradation of environmental quality.

Construction activities associated with the proposed North Kīhei Wastewater Collection and Transmission System project will have temporary effects on ambient air and noise quality. Appropriate Best Management Practices (BMPs) will be employed to mitigate the nuisance effects to air, downstream water quality, and noise during construction.

From a long-term perspective, the project will mitigate the risk of any hazardous wastewater spills and contribute to a safer and cleaner environment. In the context of the region’s current air quality, there are no impacts that would adversely affect air quality.

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

There are no other immediately foreseeable significant capacity enhancing wastewater improvement projects in the Kīhei area. The proposed action is part of the County of Maui’s initiative to upgrade all the wastewater pump stations and accommodate for capacity to avoid any potential hazardous wastewater spills or leakages. The implementation of the project will ensure the mitigation against this. There are no adverse cumulative effects associated with the project.

9. **Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat.**

A flora and fauna survey was completed for the proposed project areas and found that no rare, threatened, or endangered species or its habitat would be substantially affected by the proposed project areas. Please refer to **Appendix “C”**.

The DEM will implement mitigation measures recommended by the USFWS related to the threatened green sea turtle or honu (*Chelonia mydas*); the endangered Hawaiian hoary bat or ‘ōpe‘ape‘a (*Lasiurus cinereus semotus*); the indigenous wedge-tailed shearwater or ‘ua‘u kani (*Ardenna pacificus*); endangered Hawaiian petrel or ‘ua‘u (*Pterodroma sandwichensis*), threatened Newell’s shearwater or ‘a‘o (*Puffinus auricularis newelli*), and endangered Hawai‘i Distinct Population Segment (DPS) band-rumped storm-petrel or ‘akē‘akē (*Oceanodroma castro*); the endangered Hawaiian stilt or ae‘o (*Himantopus mexicanus knudseni*), the endangered Hawaiian coot or ‘alae ke‘oke‘o (*Fulica alai*); the endangered Hawaiian duck or koloa (*Anas wyvilliana*); and the endangered Blackburn’s sphinx moth (*Manduca blackburni*). With implementation of mitigation measures, the USFWS has issued a may affect but not likely to adversely affect determination for the project.

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

Short term construction activities will have an impact on air and noise quality; these impacts will be minimal and temporary. Dust control measures, such as regular watering and sprinkling, will be implemented to minimize wind-blown emissions. Noise impacts will be mitigated by limiting construction activities to daylight work hours and mitigated through compliance with applicable provisions of the State of Hawai‘i, Department of Health Administrative Rules (HAR) 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 HAR. Implementation of drainage improvements designed in accordance with the Drainage Standards of the County of Maui to address stormwater runoff from the project area will include permanent BMPs to protect water quality and coastal resources in the area.

The General Contractor will be required to prepare a “Site Specific Spill Prevention and Control Plan” (SSSPCP). The SSSPCP will include a Prevention Plan that details the precautions that will be taken to avoid pipeline damage and sewage spills, as well as a Reaction Plan identifying the resources and equipment kept at

hand, and the procedures to be taken to contain and immediately clean up an inadvertent spill, should one occur.

The sewerline crossings at Kēōkea Gulch and Waimāha‘iha‘i Gulch will be constructed utilizing horizontal directional drilling, to ensure no surface disturbance at the gulches. BMPs will be implemented as part of project construction to minimize and mitigate impacts to topography, soils and downstream properties and water bodies.

In the long term, with appropriate mitigative measures in place, the proposed action is not anticipated to have a significant impact on air and 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 proposed project includes upgrades to existing WWPS and construction of underground sewerlines and force mains that are located within a Special Flood Hazard area, tsunami evacuation zone, or sea level rise exposure area. Notably, the proposed new WWPS is located outside of a Special Flood Hazard area, tsunami evacuation zone, and sea level rise exposure area. Significant impacts related to environmentally sensitive areas are not anticipated as a result of the project.

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

The proposed project area is limited to the improvements to the existing Wastewater Pump Stations 2, 3, 4, and 5, laying underground sewerlines and force main lines, and the construction of a new wastewater pump station at the corner of Lipoa Street and Liloa Drive. The new pump station will be low profile and located on land that slopes downward towards the ocean. The new pump station is located approximately one (1) mile from the shoreline and will not adversely impact any scenic vistas or viewplanes. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of the WWPSs, building improvements may be necessary. More specific to WWPS No. 2, improvements may also include sea level rise mitigation, odor control, a possible change from a two-pump to a three-pump system, and building expansion or construction of a new electrical building. These improvements will remain within the WWPSs footprint and not adversely impact scenic vistas and viewplanes.

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

The proposed action involves the improvements to the existing wastewater pump stations, underground sewerlines and force mains, and the construction of a new wastewater pump station within existing developed areas of South Maui. The action does not represent a new use in the South Maui region that would require substantial energy consumption, nor is the project considered a source of greenhouse gases.

Based on the foregoing findings, it is anticipated that the proposed action will result in an Anticipated Finding of No Significant Impact (AFNSI).



**LIST OF PERMITS AND
APPROVALS**

VIII



VIII. LIST OF PERMITS AND APPROVALS

The following list of permits and approvals are anticipated to be needed for project implementation:

Federal

1. Compliance with Section 7, Endangered Species Act
2. Compliance with Section 106, National Historic Preservation Act

State

1. Hawai'i Administrative Rules (HAR) Chapter 11-46, Community Noise Control, as applicable
2. National Pollution Discharge Elimination System (NPDES) Permit, as applicable
3. Hawai'i Revised Statutes (HRS) Chapter 6E Review
4. Work to Perform on State Highway

County of Maui

1. Construction Permits (Grading, Building, Plumbing, Electrical)
2. Special Management Area Use Permit
3. Work on County Highway Permit
 - Traffic Control Plan



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

IX

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. National Marine Fisheries Service,
Pacific Islands Regional Office
1845 Wasp Boulevard, Building 176
Honolulu, HI 96818
2. Mr. Wally Jennings
Natural Resources Conservation Service
U.S. Department of Agriculture
P. O. Box 396
Hoolehua, HI 96729
3. Mr. Kahana Stone, Soil Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
77 Hookele Street, Suite 202
Kahului, HI 96732
4. Mr. Larry Yamamoto, State Conservationist
Natural Resources Conservation Service
U.S. Department of Agriculture
P.O. Box 50004
Honolulu, HI 96850-0001
5. Ms. Kay Zukeran
NOAA Inouye Regional Center
NMFS/PIRO
1845 Wasp Blvd., Building 176
Honolulu, HI 96818
6. Ms. Linda Speerstra, Chief
U.S. Department of the Army, Regulatory
Branch
U.S. Army Engineer District, Honolulu
Regulatory Branch, Building 230
Fort Shafter, HI 96858-5440
7. U.S. Department of the Army
Army Corps of Engineers
Pacific Ocean Division
Building 525, Suite 300
Fort Shafter, HI 96858-5440
8. U.S. Environmental Protection Agency
Region IV
Pacific Islands Contact Office
P.O. Box 50003
Honolulu, HI 96850
9. Ms. Michelle Bogardus, Island Team Leader
U. S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Honolulu, HI 96850
10. Mr. Stephen Anthony, Center Director
U.S. Geological Survey
Pacific Islands Water Science Center
Inouye Regional Center
1845 Wasp Blvd., B176
Honolulu, HI 96818
11. Department of Interior
National Parks Service
Pacific Islands Support Office
300 Ala Moana Boulevard, Room 6-226
Honolulu, HI 96850
12. Department of Interior
U.S. Fish and Wildlife Service
300 Ala Moana Blvd., Rm. 3-122
Honolulu, HI 96850
13. Department of Commerce
National Marine Fisheries Service
Pacific Islands Regional Office
1845 Wasp Blvd., Building 176
Honolulu, HI 96818

State Agencies

14. Senator Rosalyn H. Baker
Hawai'i State Senate
Hawai'i State Capitol, Room 230
415 S. Beretania Street
Honolulu, HI 96813
15. Representative Tina Wildberger
House of Representatives
Hawai'i State Capitol, Room 311
415 S. Beretania Street
Honolulu, HI 96813
16. Ms. Patti Kitkowski
State of Hawai'i
Department of Health
Maui Sanitation Branch
54 South High Street, Room 300
Wailuku, HI 96793
17. Mr. Keith Kawaoka, Acting Director
State of Hawai'i
Department of Health
Office of Environmental Quality Control
235 S. Beretania Street, Suite 702
Honolulu, HI 96813
18. Mr. Edmund "Fred" Hyun, Temporary Acting Director
State of Hawai'i
Department of Public Safety
919 Ala Moana Boulevard, 4th Floor
Honolulu, HI 96814
19. Mr. Jade Butay, Director
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813
20. Dr. Sylvia Hussey, Chief Executive Officer
State of Hawai'i
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, HI 96817
21. State of Hawai'i
Department of Education
Office of Planning
3633 Waialae Avenue, Suite C-209
Honolulu, HI 96816
22. Mr. William Aila, Jr., Chair
State of Hawai'i
Department of Hawaiian Home Lands
P.O. Box 1879
Honolulu, HI 96805
23. Dr. Elizabeth Char, PhD, Director
State of Hawai'i
Department of Health
1250 Punchbowl St., Room 325
Honolulu, HI 96813
24. Mr. Alec Wong, P.E., Chief
State of Hawai'i
Department of Health
Clean Water Branch
Hale Ola, Room 225
2827 Waimano Home Road
Pearl City, HI 96782
25. State of Hawai'i
Department of Health
Environmental Health Administration
P.O. Box 3378
Honolulu, HI 96801
26. Mr. Lene Ichinotsubo
State of Hawai'i
Department of Health
Solid and Hazardous Waste Branch
2827 Waimano Road, Suite 100
Pearl City, HI 96782-1407
27. Mr. Roderick K. Becker, Director
State of Hawai'i
Department of Budget and Finance
P.O. Box 150
Honolulu, HI 96810
28. Mr. Mike McCartney, Director
State of Hawai'i
Department of Business, Economic
Development & Tourism
P.O. Box 2359
Honolulu, HI 96804
29. Major General Kenneth Hara, Adjutant General
State of Hawai'i
Department of Defense
3949 Diamond Head Road
Honolulu, HI 96816

30. Dr. Christina Kishimoto, Superintendent
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, HI 96804
 31. M. Kaleo Manuel, Deputy Director
State of Hawai'i
Commission on Water Resource
Management
P.O. Box 621
Honolulu, Hawaii 96809
 32. Mr. Curt Otaguro, Comptroller
State of Hawai'i
Department of Accounting and General
Services
1151 Punchbowl Street, #426
Honolulu, HI 96813
 33. Ms. Denise Albano, Chair
State of Hawai'i
Department of Agriculture
1428 South King Street
Honolulu, HI 96814-2512
 34. Ms. Suzanne Case, Chairperson
State of Hawai'i
Department of Land and Natural Resources
P. O. Box 621
Honolulu, HI 96809
 35. Ms. Mary Alice Evans, Director
State of Hawai'i
Office of Planning
P. O. Box 2359
Honolulu, HI 96804
- Maui County Agencies**
36. Mr. Eric Nakagawa, Director
County of Maui
Department of Environmental Management
2050 Main Street, Suite 2B
Wailuku, HI 96793
 37. Ms. Marcy Martin, Administrator
County of Maui
Department of Finance - Real Property
Division
200 South High Street
Wailuku, HI 96793
 38. Chief David Thyne, Chief
County of Maui
Department of Fire and Public Safety
200 Dairy Road
Kahului, HI 96732
 39. Ms. Lori Tsuhako, Director
County of Maui
Department of Housing and Human
Concerns
2200 Main Street, Suite 546
Wailuku, HI 96793
 40. Ms. Karla Peters, Director
County of Maui
Department of Parks and Recreation
700 Halia Nakoa Street, Unit 2F
Wailuku, HI 96793
 41. Chief Tivoli Faaumu
County of Maui
Maui Police Department
55 Mahalani Street
Wailuku, HI 96793
 42. Ms. Michele Chouteau McLean, Director
County of Maui
Department of Planning
2200 Main Street, Suite 315
Wailuku, HI 96793
 43. Ms. Rowena Dagdag-Andaya, Director
County of Maui
Department of Public Works
200 South High Street
Wailuku, HI 96793
 44. Mr. Marc Takamori, Director
County of Maui
Department of Transportation
David Trask Building, Suite 102
2145 Kaohu Street
Wailuku, HI 96793
 45. Mr. Jeffrey Pearson, Director
County of Maui
Department of Water Supply
200 South High Street, 5th Floor
Wailuku, HI 96793
 46. Mr. Herman Andaya, Administrator
County of Maui
Maui Emergency Management Agency
200 South High Street
Wailuku, HI 96793

47. Ms. JoAnn Inamasu, Director
County of Maui
Office of Economic Development
2200 Main Street, Suite 305
Wailuku, HI 96793

48. Honorable Shane Sinenci
Maui County Council
200 South High Street
Wailuku, HI 96793

49. Mayor Michael P. Victorino
County of Maui
Office of the Mayor
200 South High Street
Wailuku, HI 96793

50. Honorable Yuki Lei Sugimura
Maui County Council
200 South High Street
Wailuku, HI 96793

51. Honorable Keani Rawlins-Fernandez,
Council Vice Chair
Maui County Council
200 South High Street
Wailuku, HI 96793

52. Honorable Kelly King
Maui County Council
200 South High Street
Wailuku, HI 96793

53. Honorable Gabe Johnson
Maui County Council
200 South High Street
Wailuku, HI 96793

54. Honorable Tasha Kama
Maui County Council
200 South High Street
Wailuku, HI 96793

55. Honorable Alice Lee, Council Chair
Maui County Council
200 South High Street
Wailuku, HI 96793

56. Honorable Mike Molina
Maui County Council
200 South High Street
Wailuku, HI 96793

57. Honorable Tamara Paltin
Maui County Council
200 South High Street
Wailuku, HI 96793

Maui County Organizations

58. Mr. Mike Moran
Kīhei Community Association
P. O. Box 662
Kīhei, HI 96753

59. Ms. Debbie Cabebe, Chief Executive Officer
Maui Economic Opportunity
99 Mahalani Street
Wailuku, HI 96793



Natural Resources
Conservation Service

Pacific Islands Area
Kahului Field Office

77 Hookele St., # 202
Kahului, HI 96732

Voice
808-871-5500 ext. 3
Fax
855-878-2454

February 18, 2021

Kari Luna Nunokawa, ED. D., Senior Manager
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Subject: Chapter 343, Hawai'i Revised Statutes, Early Consultation
Request for Proposed North Kihei Mauka Transmission
System, Kihei, Maui, Hawai'i

Dear Ms. Nunokawa:

I have no comments.

Sincerely,

A handwritten signature in black ink, appearing to read "Gerald Gregory", written over a horizontal line.

Gerald Gregory
District Conservationist

October 17, 2022

Gerald Gregory, District Conservationist
United States Department of Agriculture
Natural Resources Conservation Service
Pacific Islands Area
77 Ho'okele Street, Suite 202
Kahului, Hawai'i 96732

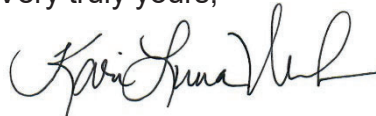
SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater Collection and Transmission System, Kīhei, Maui, Hawai'i

Dear Mr. Gregory:

Thank you for your letter dated February 18, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we acknowledge that the United States Department of Agriculture (USDA) Natural Resources Conservation Service, Pacific Islands Area has no comments at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

K:\DATA\WUE\N Kihei Mauka Trans\Applications\EC\EC Response\USDA.docx

Subject: FW: Scoping Comments for Maui Wastewater Transmission System, North Kihei, Maui

From: Maaninen, Michael A CIV USARMY CEPOH (USA) <Michael.A.Maaninen@usace.army.mil>

Sent: Monday, March 8, 2021 11:40 AM

To: Kari Luna Nunokawa <kari@munekiyohiraga.com>; General eMail <planning@munekiyohiraga.com>

Subject: Scoping Comments for Maui Wastewater Transmission System, North Kihei, Maui

Aloha Kari,

The US Army Corps of Engineers (Corps) received your request for comments or input for the proposed improvements to the wastewater transmission system in Kihei, Maui. As your Environmental Assessment (EA) is still being developed, the submittal letter did not have a lot of information available for us to review pertaining to our Regulatory program. The Corps understands that you are in the process of developing your scoping analysis. Therefore, our comments will be general at this point.

A Department of the Army permit is needed if work occurs in Waters of the United States (WOTUS) under Section 10 of the Rivers and Harbors Act and/or Section 404 of the Clean Water Act. When your project is being developed, we ask that you identify areas that may fall within the Corps jurisdiction as WOTUS such as streams, rivers, and wetlands. Our first requirement is to avoid impacts to our WOTUS. If impacts are unavoidable (such as a stream crossing), then a permit will be needed from the Corps.

If a permit is needed from the Corps, then would require an application be provided. We must also evaluate the project for any impacts to resources such as threatened or endangered species, historic properties, and/or essential fish habitat, and consult if necessary.

A permit is not required if all work being done is located in uplands.

We look forward to a more specific review once the EA has been completed. Please submit your information to me at Michael.a.maaninen@usace.army.mil

Please let me know if you have any questions and I'll be happy to discuss. Thank you -Michael

Michael Maaninen
Biologist
Regulatory Office
U.S. Army Corps of Engineers
Honolulu District
Building 252 Fort Shafter, HI 96858-5440
Phone: (808) 835-4307
Fax: (808) 835-4126
Michael.A.Maaninen@usace.army.mil

October 17, 2022

via email: Michael.A.Maaninen@usace.army.mil

Michael Maaninen
United States Army Corps of Engineers

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater
Collection and Transmission System, Kīhei, Maui, Hawai'i (Army File
Number POH-2021-00044)

Dear Mr. Maaninen:

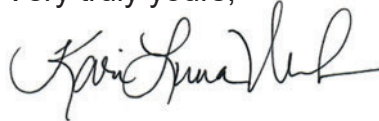
Thank you for your email dated March 8, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

Thank you for the information regarding permit requirements for work occurring in Waters of the United States. By letter dated January 27, 2022, the Department of Army confirmed that the proposed project will not involve an activity subject to the regulatory jurisdiction of the Corps and, therefore, a Department of Army (DA) permit is not required (POH-2021-00205).

Michael Maaninen
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa', written in a cursive style.

Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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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-TA-0197

March 15, 2021

Ms. Kari Nunokawa
Munekiyo Hiraga
305 High Street
Suite 104
Wailuku, Hawai'i

Subject: Response to your Request for Technical Assistance for the proposed North Kihei
Mauka Transmission System, Maui

Dear Ms. Nunokawa:

Thank you for your recent correspondence requesting technical assistance on species biology, habitat, or life requisite requirements. The Pacific Islands Fish and Wildlife Office (PIFWO) of the U.S. Fish and Wildlife Service (Service) appreciates your efforts to avoid or minimize effects to protected species associated with your proposed actions. We provide the following information for your consideration under the authorities of the Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531 *et seq.*), as amended.

Due to significant workload constraints, PIFWO is currently unable to specifically address your information request. The table below lists the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. Based on your project location and description, we have noted the species most likely to occur within the vicinity of the project area, in the '**Occurs In or Near Project Area**' column. Please note this list is not comprehensive and should only be used for general guidance. We have added to the PIFWO website, located at <https://www.fws.gov/pacificislands/promo.cfm?id=177175840> recommended conservation measures intended to avoid or minimize adverse effects to these federally protected species and best management practices to minimize and avoid sedimentation and erosion impacts to water quality. If your project occurs on the island of Hawai'i, we have also enclosed our biosecurity protocol for activities in or near natural areas.

If you are representing a federal action agency, please request an official species list following the instructions at our PIFWO website <https://www.fws.gov/pacificislands/articles.cfm?id>

INTERIOR REGION 9 COLUMBIA-PACIFIC NORTHWEST

IDAHO, MONTANA*, OREGON*, WASHINGTON
*PARTIAL

INTERIOR REGION 12 PACIFIC ISLANDS

AMERICAN SAMOA, GUAM, HAWAII, NORTHERN
MARIANA ISLANDS

=149489558. You can find out if your project occurs in or near designated critical habitat here: <https://ecos.fws.gov/ipac/>.

Under section 7 of the ESA, it is the Federal agency's (or their non-Federal designee) responsibility to make the determination of whether or not the proposed project "may affect" federally listed species or designated critical habitat. A "may affect, not likely to adversely affect" determination is appropriate when effects to federally listed species are expected to be discountable (i.e., unlikely to occur), insignificant (minimal in size), or completely beneficial. This conclusion requires written concurrence from the Service. If a "may affect, likely to adversely affect" determination is made, then the Federal agency must initiate formal consultation with the Service. Projects that are determined to have "no effect" on federally listed species and/or critical habitat do not require additional coordination or consultation.

Implementing the avoidance, minimization, or conservation measures for the species that may occur in your project area will normally enable you to make a "may affect, not likely to adversely affect" determination for your project. If it is determined that the proposed project may affect federally listed species, we recommend you contact our office early in the planning process so that we may assist you with the ESA compliance. If the proposed project is funded, authorized, or permitted by a Federal agency, then that agency should consult with us pursuant to section 7(a)(2) of the ESA. If no Federal agency is involved with the proposed project, the applicant should apply for an incidental take permit under section 10(a)(1)(B) of the ESA. A section 10 permit application must include a habitat conservation plan that identifies the effects of the action on listed species and their habitats and defines measures to minimize and mitigate those adverse effects.

We appreciate your efforts to conserve endangered species. We regret that we cannot provide you with more specific protected species information for your project site. If you have questions that are not answered by the information on our website, you can contact PIFWO at (808) 792-9400 and ask to speak to the lead biologist for the island where your project is located.

Sincerely,

**Aaron
Nadig**

Digitally signed by
Aaron Nadig
Date: 2021.03.15
15:59:09 -10'00'

Island Team Manager
Pacific Islands Fish and Wildlife Office

Enclosure (2)

The tables below list the protected species most likely to be encountered by projects implemented within the Hawaiian Islands. For your guidance, we have marked species that may occur in the vicinity of your project, this list is not comprehensive and should only be used for general guidance.

Enclosure 1. Federal Status of Animal Species

<u>Scientific Name</u>	<u>Common Name / Hawaiian Name</u>	<u>Federal Status</u>	<u>May Occur In Project Area</u>
Mammals			
<i>Lasiurus cinereus semotus</i>	Hawaiian hoary bat/‘ōpe‘ape‘a	E	<input checked="" type="checkbox"/>
Reptiles			
<i>Chelonia mydas</i>	green sea turtle/honu - Central North Pacific distinct population segment (DPS)	T	<input type="checkbox"/>
<i>Eretmochelys imbricata</i>	hawksbill sea turtle/ honu‘ea	E	<input type="checkbox"/>
Birds			
<i>Anas wyvilliana</i>	Hawaiian duck/koloa	E	<input type="checkbox"/>
<i>Branta sandvicensis</i>	Hawaiian goose/nēnē	T	<input type="checkbox"/>
<i>Fulica alai</i>	Hawaiian coot/‘alae kea	E	<input type="checkbox"/>
<i>Gallinula galeata sandvicensis</i>	Hawaiian gallinule/‘alae ‘ula	E	<input type="checkbox"/>
<i>Himantopus mexicanus knudseni</i>	Hawaiian stilt/ae‘o	E	<input type="checkbox"/>
<i>Oceanodroma castro</i>	band-rumped storm-petrel Hawai‘i DPS/‘akē‘akē	E	<input checked="" type="checkbox"/>
<i>Pterodroma sandwichensis</i>	Hawaiian petrel/‘ua‘u	E	<input checked="" type="checkbox"/>
<i>Puffinus auricularis newelli</i>	Newell’s shearwater/‘a‘o	T	<input checked="" type="checkbox"/>
<i>Ardenna pacificus</i>	wedge-tailed shearwater/‘ua‘u kani	MBTA	<input type="checkbox"/>
<i>Buteo solitarius</i>	Hawaiian hawk/‘io	MBTA	<input type="checkbox"/>
<i>Gygis alba</i>	white tern/manu-o-kū	MBTA	<input type="checkbox"/>
Insects			
<i>Manduca blackburni</i>	Blackburn’s sphinx moth	E	<input checked="" type="checkbox"/>
<i>Megalagrion pacificum</i>	Pacific Hawaiian damselfly	E	<input type="checkbox"/>
<i>Megalagrion xanthomelas</i>	orangeblack Hawaiian damselfly	E	<input type="checkbox"/>
<i>Megalagrion nigrohamatum nigrolineatum</i>	blackline Hawaiian damselfly	E	<input type="checkbox"/>

Enclosure 2. Federal Status of Plant Species

Plants				
<u>Scientific Name</u>	<u>Common Name or Hawaiian Name</u>	<u>Federal Status</u>	<u>Locations</u>	<u>May Occur In Project Area</u>
<i>Abutilon menziesii</i>	ko'oloa'ula	E	O, L, M, H	<input type="checkbox"/>
<i>Achyranthes splendens</i> var. <i>rotundata</i>	'ewa hinahina	E	O	<input type="checkbox"/>
<i>Bonamia menziesii</i>	no common name	E	K, O, L, M, H	<input type="checkbox"/>
<i>Canavalia pubescens</i>	'āwikiwiki	E	Ni, K, L, M	<input type="checkbox"/>
<i>Colubrina oppositifolia</i>	kauila	E	O, M, H	<input type="checkbox"/>
<i>Cyperus trachysanthos</i>	pu'uka'a	E	K, O	<input type="checkbox"/>
<i>Gouania hillebrandii</i>	no common name	E	Mo, M	<input type="checkbox"/>
<i>Hibiscus brackenridgei</i>	ma'o hau hele	E	O, Mo, L, M, H	<input type="checkbox"/>
<i>Ischaemum byrone</i>	Hilo ischaemum	E	K, O, Mo, M, H	<input type="checkbox"/>
<i>Isodendrion pyrifolium</i>	wahine noho kula	E	O, H	<input type="checkbox"/>
<i>Marsilea villosa</i>	'ihi'ihhi	E	Ni, O, Mo	<input type="checkbox"/>
<i>Mezoneuron kavaense</i>	uhiuhi	E	O, H	<input type="checkbox"/>
<i>Nothocestrum breviflorum</i>	'aiea	E	H	<input type="checkbox"/>
<i>Panicum fauriei</i> var. <i>carteri</i>	Carter's panicgrass	E	Molokini Islet (O), Mo	<input type="checkbox"/>
<i>Panicum niuhauense</i>	lau'ehu	E	K	<input type="checkbox"/>
<i>Peucedanum sandwicense</i>	makou	E	K, O, Mo, M	<input type="checkbox"/>
<i>Pleomele (Chrysodracon)</i> <i>hawaiiensis</i>	halapepe	E	H	<input type="checkbox"/>
<i>Portulaca sclerocarpa</i>	'ihi	E	L, H	<input type="checkbox"/>
<i>Portulaca villosa</i>	'ihi	E	Le, Ka, Ni, O, Mo, M, L, H, Nihoa	<input type="checkbox"/>
<i>Pritchardia affinis</i> (<i>maideniana</i>)	loulu	E	H	<input type="checkbox"/>
<i>Pseudognaphalium</i> <i>sandwicense</i> var. <i>molokaiense</i>	'ena'ena	E	Mo, M	<input type="checkbox"/>
<i>Scaevola coriacea</i>	dwarf naupaka	E	Mo, M	<input type="checkbox"/>
<i>Schenkia (Centaurium)</i> <i>sebaeoides</i>	'āwiwi	E	K, O, Mo, L, M	<input type="checkbox"/>
<i>Sesbania tomentosa</i>	'ōhai	E	Ni, Ka, K, O, Mo, M, L, H, Necker, Nihoa	<input type="checkbox"/>
<i>Tetramolopium rockii</i>	no common name	T	Mo	<input type="checkbox"/>
<i>Vigna o-wahuensis</i>	no common name	E	Mo, M, L, H, Ka	<input type="checkbox"/>

Location key: O=O'ahu, K=Kaua'i, M=Maui, H=island of Hawai'i, L=Lāna'i, Mo=Moloka'i, Ka=Kaho'olawe, Ni=Ni'ihau, Le=Lehua

October 17, 2022

Aaron Nadig, Island Team Manager
U. S. Department of Interior
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater
Collection and Transmission System, Kīhei, Maui, Hawai'i
(Reference No. 01EPIF00-2021-TA-0197)

Dear Mr. Nadig:

Thank you for your letter dated March 15, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

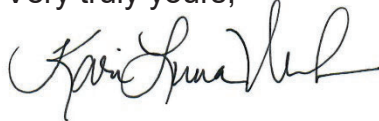
The project team notes the table submitted by the Pacific Islands Fish and Wildlife Office which reflects the protected species that could be encountered by the projects implementation.

The DEM, via the State of Hawai'i Department of Health (DOH), separately initiated consultation with the U.S. Fish and Wildlife Service pursuant to Section 7 of the Endangered Species Act. The species identified by the Service and recommended mitigation measures will be incorporated into the Draft EA.

Aaron Nadig, Island Team Manager
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa'.

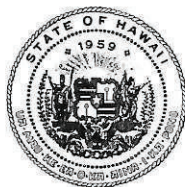
Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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DAVID Y. IGE
GOVERNOR OF HAWAII



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

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

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

February 23, 2021

Ms. Kari Luna Nunokawa, Ed.D.
Senior Manager
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nunokawa:

**Subject: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for
Proposed North Kihei Mauka Transmission System, Kihei, Maui,
Hawai`i
TMK: (2) 3-8-077:011 (includes multiple TMKs in Kihei area)**

Thank you for the opportunity to review this project. We have no comments to offer. It is strongly recommended that you review the department's website at <https://health.hawaii.gov/epo/landuse/> and contact the appropriate program that concerns your project.

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

Sincerely,

A handwritten signature in blue ink that reads "Patti Kitkowski".

Patti Kitkowski
District Environmental Health Program Chief

c Alec Wong, Acting EMD Administrator

October 17, 2022

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

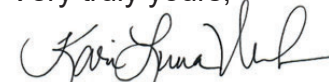
SUBJECT: Early Consultation for the Proposed North Kihei Wastewater Collection
and Transmission System, Kihei, Maui, Hawai'i

Dear Ms. Kitkowski:

Thank you for your letter dated February 23, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we acknowledge that the State of Hawai'i, Department of Health, Maui District Health Office has no comments at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering
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DAVID Y. IGE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF PUBLIC SAFETY
919 Ala Moana Boulevard, 4th Floor
Honolulu, Hawaii 96814

MAX N. OTANI
DIRECTOR

Maria C. Cook
Deputy Director
Administration

Tommy Johnson
Deputy Director
Corrections

Jordan Lowe
Deputy Director
Law Enforcement

No. 2021-0551

February 23, 2021

Kari Luna Nunokawa, Ed. D.
Senior Manager
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Dear Ms. Nunokawa:

Subject: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for
Proposed North Kihei Mauka Transmission System, Kihei, Maui, Hawaii

In response to your letter dated February 10, 2021, to Mr. Edmund "Fred" Hyun, Temporary Acting Director, we reviewed the subject proposed North Kihei Mauka Transmission System project and have no comments. The project does not impact any of the Department of Public Safety projects and or existing facilities.

If you or your staff have any questions, please contact Mr. Wayne Takara, Chief Planner, at (808) 587-3463 or email him at wayne.j.takara@hawaii.gov.

Sincerely,

Maria C. Cook
Deputy Director of Administration

c: Wayne Takara, Chief Planner

October 17, 2022

Maria C. Cook, Deputy Director of
Administration
State of Hawai'i
Department of Public Safety
919 Ala Moana Boulevard, 4th Floor
Honolulu, Hawai'i 96814

SUBJECT: Early Consultation for the Proposed North Kihei Wastewater
Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Ms. Cook:

Thank you for your letter dated February 23, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we acknowledge that the State of Hawai'i, Department of Public Safety has no comments and the project will not impact any of the Department's projects or facilities.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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Solid and Hazardous Waste Branch Standard Comments

Solid and Hazardous Waste Branch Standard Comments

November 26, 2018

The Solid and Hazardous Waste Branch administers programs in the areas of:

- 1) Management of hazardous waste;
- 2) Management of solid waste; and
- 3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at <https://www.capitol.hawaii.gov/hrscurrent/>.

Hazardous Waste Program

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [<http://health.hawaii.gov/shwb/hwrules/>]. These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

Solid Waste Section

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 342I, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control". [<http://health.hawaii.gov/shwb/solid-waste/>].
- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.
- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.
- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226.

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Solid and Hazardous Waste Branch Standard Comments

- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. The project developer is highly encouraged to develop a solid waste management plan to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Office of Solid Waste Management

- The Office of Solid Waste Management (OSWM) administers statewide integrated solid waste management planning activities, which apply to the counties, as well as various recycling programs, e.g. the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC Program is conducted pursuant to chapter 342G, HRS, which contains compliance and enforcement provisions, and chapter 11-282, HAR, "Deposit Beverage Recycling" [<http://health.hawaii.gov/hi5/rules-regulations-additional-links/>]. OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to chapter 342H, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [<http://health.hawaii.gov/shwb/solid-waste/>]. Authority for the integrated solid waste management planning and ADF programs is contained in chapter 342G, HRS.
- Glass Advance Disposal Fee Program: Businesses that import glass containers into Hawaii are required to register with the Department of Health and pay a 1.5 cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.
- Deposit Beverage Container Program: Business that manufacture or import deposit beverage containers into Hawaii are required to register with the Department of Health and pay the five cent deposit and one cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.
- The Department of Health reimburses and pays an associated handling fee for the redemption of deposit beverage containers (DBC). These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which standardizes the redemption process).
- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. Businesses, property managers and developers, and government entities are highly encouraged to develop solid waste management plans to ensure proper handling of wastes and divert recyclables from being landfilled. The project developer is highly encouraged to develop a solid waste management plan to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to

For further information about these programs, please contact
the Solid and Hazardous Waste Branch at (808) 586-4226.

Solid and Hazardous Waste Branch Standard Comments

maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

- Solid waste management plans seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Underground Storage Tank Program

- The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR, [<http://health.hawaii.gov/shwb/underground-storage-tanks/>], include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS.
- A permit is required prior to the installation and operation of a UST. Any new UST system that will be installed must have secondary containment with interstitial monitoring. Refer to subchapters 2, 3, 4, and 12 of chapter 11-280.1, HAR. The installation permit expires **1** year from the date of issuance. The operation permit expires 5 years from the date of issuance.
- §11-280.1-50, HAR, requires owners and operators of USTs or tank systems to notify DOH within twenty-four (24) hours and follow the procedures in § 11-280.1-52, HAR, if any of the following occur, with specific exceptions found in the rules:
 - 1) The discovery by any person of evidence of regulated substances which may have been released at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, or nearby surface water);
 - 2) Unusual UST system operating conditions observed or experienced (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST, or an unexplained presence of water in the tank); or
 - 3) Monitoring results from a release detection method required under §§11-280.1-41 or 11-280.1-42 indicate a release may have occurred.
- For release response actions, responsible parties and their consultants and contractors should follow the applicable guidance in the Department of Health Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website [<http://eha-web.doh.hawaii.gov/eha-cma/Org/HEER/>], including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations (EHE)/Environmental Hazard Management Plans (EHMP).

For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226.

October 17, 2022

Lene Ichinotsubo
State of Hawai'i
Department of Health
Solid and Hazardous Waste Branch
2827 Waimano Road, Suite 100
Pearl City, Hawai'i 96782-1407

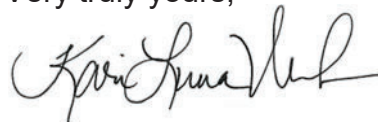
SUBJECT: Early Consultation for the Proposed North Kihei Wastewater
Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Mr. Ichinotsubo:

Thank you for your letter dated March 3, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we thank you for providing the Department of Health Solid and Hazardous Waste Branch standard comments. The project team has reviewed the standard comments and will comply with applicable State regulations.

Thank you for your participation in the Chapter 343, HRS review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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STATE OF HAWAII
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAII 96804

OFFICE OF FACILITIES AND OPERATIONS

March 10, 2021

Kari Luna Nunokawa
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

Re: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for the
Proposed North Kihei Mauka Transmission System, Kihei, Maui, Hawaii

Dear Ms. Nunokawa:

The Hawaii State Department of Education (HIDOE) has the following comments for the preparation of a Draft Environmental Assessment (DEA) the proposed North Kihei Mauka Transmission System (Project). The Project proposes to upgrade and increase capacity of the existing North Kihei Wastewater Transmission System through the installation of new force mains, increasing capacity of the existing gravity sewer lines, and improvements to wastewater pump stations located in Kihei, Island of Maui.

The HIDOE schools that will be impacted by the Project are Kihei Elementary and Lokelani Intermediate schools. The new force main along Liloa Drive is adjacent to both schools. There are two driveways off of Liloa Drive servicing both schools. One of these driveways provides the only access to Lokelani Intermediate.

Both schools will be subject to short-term construction related impacts from traffic, fugitive dust, and noise. The HIDOE requests early consultation with each school prior to and during construction to further identify and minimize impacts in general and during school hours.

Further comments will be provided after reviewing the Project DEA.

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

Sincerely,

A handwritten signature in blue ink, appearing to read "Roy Ikeda".

Roy Ikeda
Public Works Manager TA
Planning Section

RI:rl

c: Kathleen Dimino, Complex Area Superintendent, Baldwin/Kekaulike/Maui Complex Areas

October 17, 2022

Roy Ikeda
Public Works Manager TA
Planning Section
State of Hawai'i
Department of Education
P.O. Box 2360
Honolulu, Hawai'i 96804

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater
Collection and Transmission System, Kīhei, Maui, Hawai'i

Dear Mr. Ikeda:

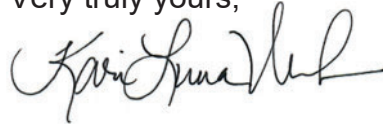
Thank you for your letter dated March 10, 2021 responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following comments to the comments noted in your letter.

Thank you for your comments regarding construction-related impacts at Kihei Elementary and Lokelani Intermediate schools. We note that Kīhei Elementary is accessed via Lipoa Street and Lokelani Intermediate is accessed via Liloa Drive. The DEM and its general contractor will consult with both schools prior to and during construction. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit.

Roy Ikeda
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa', written in a cursive style.

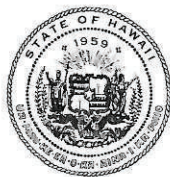
Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

K:\DATA\WUE\N Kihei Mauka Trans\Applications\EC\EC Response\DOE.docx

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)21.026

FEB 25 2021

Ms. Kari Luna Nunokawa
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Maui, Hawaii 96793

Dear Ms. Nunokawa:

Subject: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for
Proposed North Kihei Mauka Transmission System
Kihei, Maui, Hawaii

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

October 17, 2022

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

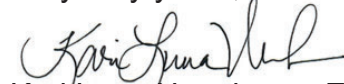
SUBJECT: Early Consultation for the Proposed North Kihei Wastewater
Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Ms. Kinimaka:

Thank you for your letter dated February 25, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we acknowledge that the State of Hawai'i, Department of Accounting and General Services (DAGS) has no comments at this time.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



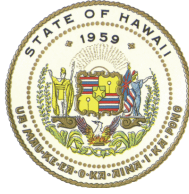
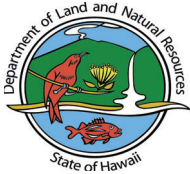
Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

K:\DATA\WUE\N Kihei Mauka Trans\Applications\EC\EC Response\DAGS.docx

DAVID Y. IGE
GOVERNOR OF HAWAII



SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 08, 2021

Munekiyo Hiraga
Attn: Ms. Kari Luna Nunokawa
305 High Street, Suite 104
Wailuku, Hawaii 96793

via email: planning@munekiyohiraga.com

Dear Ms. Nunokawa:

SUBJECT: Early Consultation Request for Proposed Upgrade to Existing **North Kihei Mauka Transmission System** located at South Kihei Road, Island of Maui; TMKs: (2) Various on behalf of County of Maui, Department of Environmental Management

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

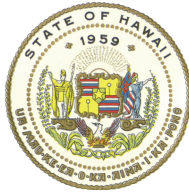
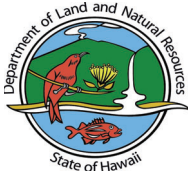
At this time, enclosed are comments from the Engineering Division on the subject matter. Should you have any questions, please feel free to contact Darlene Nakamura at (808) 587-0417 or email: darlene.k.nakamura@hawaii.gov. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Enclosures
cc: Central Files



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 22, 2021

FROM:

MEMORANDUM

TO:

DLNR Agencies:

☐ Div. of Aquatic Resources

☐ Div. of Boating & Ocean Recreation

☒ **Engineering Division** (DLNR.ENGR@hawaii.gov)

☒ Div. of Forestry & Wildlife (rubyrosa.t.terrago@hawaii.gov)

☐ Div. of State Parks

☒ Commission on Water Resource Management (DLNR.CWRM@hawaii.gov)

☐ Office of Conservation & Coastal Lands

TO:

☒ Land Division – Maui District (daniel.l.ornellas@hawaii.gov)

FROM:

Russell Y. Tsuji, Land Administrator *Russell Tsuji*

SUBJECT:

Early Consultation Request for Proposed Upgrade to Existing **North Kihei Mauka Transmission System**

LOCATION:

South Kihei Road, Island of Maui; TMKs: (2) Various

APPLICANT:

Munekiyo Hiraga on behalf of County of Maui, Department of Environmental Management

Transmitted for your review and comment is information on the above-referenced subject matter. Please submit any comments by **March 8, 2021**.

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

- () We have no objections.
() We have no comments.
(✓) Comments are attached.

Signed:

A handwritten signature in black ink, appearing to be "Carty S. Chang".

Print Name:

Carty S. Chang, Chief Engineer

Division:

Engineering Division

Date:

Feb 26, 2021

Attachments

cc: Central Files

**DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION**

LD/Russell Y. Tsuji

**Ref: Early Consultation Request for Proposed Upgrade to Existing North Kihei
Mauka Transmission System**

Location: South Kihei Road, Island of Maui

TMK(s): Various

**Applicant: Munekiyo Hiraga on behalf of County of Maui, Department of
Environmental Management**

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a Special Flood Hazard Area (high risk areas). State projects are required to comply with 44CFR regulations as stipulated in Section 60.12. Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zones are designated on FEMA's Flood Insurance Rate Maps (FIRM), which can be viewed on our Flood Hazard Assessment Tool (FHAT) (<http://gis.hawaiiinfip.org/FHAT>).

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

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4896.

Signed: 
CARTY S. CHANG, CHIEF ENGINEER

Date: Feb 26, 2021




STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

March 8, 2021

REF: RFD.5594.6

TO: Kari Luna Nunokawa, Ed.D., Senior Manager
Munekiyo Hiraga

FROM: M. Kaleo Manuel, Deputy Director 
Commission on Water Resource Management

SUBJECT: Chapter 343, Hawaii Revised Statutes, Early Consultation Request for Proposed North Kihei
Mauka Transmission System, Kihei, Maui

FILE NO.: RFD.5594.6
TMK NO.:

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

Our comments related to water resources are checked off below.

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

http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf.

- ☒ 9. There may be the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- ☐ 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- ☐ 11. A Well Construction Permit(s) is (are) are required before the commencement of any well construction work.
- ☐ 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- ☐ 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- ☐ 14. Ground-water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- ☐ 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration can be made to the bed and/or banks of a steam channel.
- ☐ 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is constructed or altered.
- ☐ 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- ☐ 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.

☐ OTHER:

If you have any questions, please contact Neal Fujii of the Commission staff at 587-0216.

October 17, 2022

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

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater Collection and Transmission System, Kīhei, Maui, Hawai'i

Dear Mr. Tsuji:

Thank you for your letter dated March 8, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

Engineering Division Comments

The project team acknowledges the rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR). The Draft EA will identify the Flood Hazard Zones the project falls within and the project will comply with 44CFR regulations as stipulated in Section 60.12, as well as Maui's community flood ordinances.

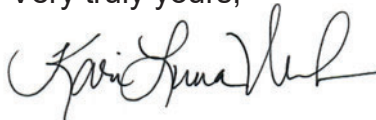
Commission on Water Resources Management Comments

5. Best Management Practices (BMPs) for stormwater management will be incorporated into the project design. Discussion of project BMPs will be included in the Draft EA.
9. We note your comment regarding the potential for ground or surface water degradation/contamination. The State Department of Health has been and will continue to be consulted with as the project proceeds. It is also noted that the

General Contractor will be required to prepare a "Site Specific Spill Prevention and Control Plan" (SSSPCP). The SSSPCP will include a Prevention Plan that details the precautions that will be taken to avoid pipeline damage and sewage spills as well as a Reaction Plan identifying the resources and equipment kept at hand and the procedures to be taken to contain and immediately clean up an inadvertent spill, should one occur. A National Pollutant Discharge Elimination System (NPDES) Permit for construction stormwater discharge will be obtained. Temporary BMPs will be installed during construction.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

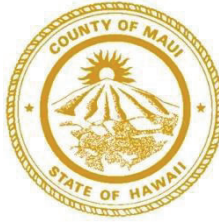
cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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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

February 21, 2021

Munekiyo Hiraga
Attn: Kari Luna Nunokawa
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: CHAPTER 343, HAWAII REVISED STATUTES, EARLY CONSULTATION REQUEST FOR PROPOSED NORTH KIHEI MAUKA TRANSMISSION SYSTEM, KIHEI, MAUI, HAWAII

Dear Kari,

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 the in district Fire Department Companies with a schedule of any road closures required for work or system repairs that may affect the stations operations or access as they become known. Also provide advance notice to The Kihei Fire station for work scheduled for WW PS No.6.

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,

A handwritten signature in black ink, appearing to read "Oliver Vaas".

Oliver Vaas – Fire Prevention Bureau

October 17, 2022

Oliver Vaas
County of Maui
Fire Prevention Bureau
313 Manea Place
Wailuku, Hawai'i 96793

SUBJECT: Early Consultation for the Proposed North Kihei Wastewater Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Mr. Vaas:

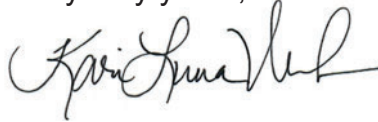
Thank you for your letter dated February 21, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

1. Thank you for your comment. There are no anticipated changes to the finished design of the roadways. All proposed work is to occur within existing right-of-ways (ROW) and not affect the overall design of the roads. If there are any design changes, the County acknowledges the Fire Prevention Bureau's right to review the proposed changes.
2. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit. The DEM will provide advance notice to the Department of Fire and Public Safety ahead of construction, including any road closures or system repairs that may affect operations. It is noted that the project scope does not include any work to be done on Wastewater Pump Station Number 6.

Oliver Vaas
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa', written in a cursive style.

Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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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

February 18, 2021

Kari Luna Nunokawa, Ed. D. Senior Manager
Munekiyo Hiraga
305 High Street, Suite 104
Wailuku, Hawaii 96793

**Subject: Chapter 343, Hawaii Revised Statutes, Early Consultation Request
for Proposed North Kihei Mauka Transmission System, Kihei, Maui,
Hawaii**

Dear Ms. Nunokawa:

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 owner will not be required to execute a Residential Workforce Housing Agreement.

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

Sincerely,

A handwritten signature in black ink, appearing to be "C. BUDDY ALMEIDA".

C. BUDDY ALMEIDA
Housing Administrator

cc: Lori Tzuhako, Director of Housing and Human Concerns

TO SUPPORT AND EMPOWER OUR COMMUNITY TO REACH IT'S FULLEST POTENTIAL
FOR PERSONAL WELL-BEING AND SELF-RELIANCE

October 17, 2022

Buddy Almeida, Housing Administrator
County of Maui
Department of Housing and Human Concerns
2200 Main Street, Suite 546
Wailuku, Hawai'i 96793

SUBJECT: Early Consultation for the Proposed North Kihei Wastewater
Collection and Transmission System, Kihei, Maui, Hawai'i

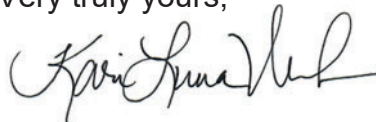
Dear Mr. Almeida:

Thank you for your letter dated February 18, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following response to your comment noted.

As this is a utilities improvements project, we acknowledge that it is not subject to Chapter 2.96, Maui County Code and will not need to execute a Residential Workforce Housing Agreement.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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MICHAEL P. VICTORINO
Mayor

ROWENA M. DAGDAG-ANDAYA
Director

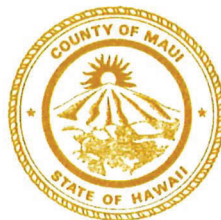
JORDAN MOLINA
Deputy Director

GLEN A. UENO, P.E., L.S.
Development Services Administration

RODRIGO "CHICO" RABARA, P.E.
Engineering Division

JOHN R. SMITH, P.E.
Highways Division

Telephone: (808) 270-7845
Fax: (808) 270-7955



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
200 SOUTH HIGH STREET, ROOM 434
WAILUKU, MAUI, HAWAII 96793

April 30, 2021

Ms. Kari Luna Nunokawa
MUNEKIYO HIRAGA
305 High Street, Suite 104
Wailuku, Maui, Hawai'i 96793

Dear Ms. Luna Nunokawa:

**Subject: CHAPTER 343, HAWAII REVISD STATUTES, EARLY
CONSULTATION REQUEST FOR PROPOSED NORTH KIHEI
MAUKA TRANSMISSION SYSTEM**

We reviewed the subject application and have the following comments:

Comments from the Engineering Division:

1. Drainage improvements shall comply with the following:
 - Title MC-15, Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui";
 - Title MC-15, Chapter 111, "Rules for the Design of Storm Water Treatment Best Management Practices"; and
 - Title 20, Chapter 20.08, "Soil Erosion and Sedimentation Control".
2. The project must evaluate whether existing traffic signal detection equipment at signalized intersections will be affected. The Department will require temporary detection systems be installed, tested, approved, and in operation at all affected intersections prior to any ground disturbance.

Ms. Kari Luna Nunokawa
April 30, 2021
Page 2

3. Include site/phase specific detour plans with construction plans for review and approval.
4. Plan for resurfacing of routes upon completion of construction. Discuss with the Department the requirements of pavement restoration during development of this project.

Please call Jordan Molina at 270-7845 if you have any questions regarding this letter.

Sincerely,



FOR

ROWENA M. DAGDAG-ANDAYA
Director of Public Works

RMDA:JM:da

xc: Highways Division
Engineering Division

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October 17, 2022

Jordan Molina, Director
County of Maui
Department of Public Works
200 South High Street, Room 434
Wailuku, Maui, Hawai'i 96793

SUBJECT: Early Consultation for the Proposed North Kihei Wastewater Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Mr. Molina:

Thank you for your letter dated April 31, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

1. The project will comply with Title MC-15, Chapter 4, "Rules for the Design of Storm Drainage Facilities in the County of Maui"; Title MC-15, Chapter 111, "Rules for the Design of Storm Water Treatment Best Management Practices"; and Title 20, Chapter 20.08, "Soil Erosion and Sedimentation Control".
2. The Applicant acknowledges the Department of Public Works' comment regarding the evaluation of whether existing traffic signal detection equipment at signalized intersections will be affected. The project will conduct this evaluation and if necessary, provide temporary detection systems at all affected intersections prior to any ground disturbance.
3. Site/phase specific detour plans will be submitted concurrently with construction plans for review and approval. Further, the project team will provide a County-approved Traffic Control Plan, which is required for the project to obtain a Work on County Highway Permit.

4. The project team will work collaboratively with the Department of Public Works (DPW) on the resurfacing plans of routes upon completion of construction. The DEM and its consultants will consult with the DPW on the requirements of pavement restoration.

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,



Kari Luna Nunokawa, Ed. D.
Senior Manager

KLN:ab

Enclosures

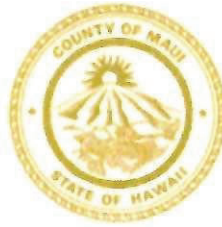
cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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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

February 22, 2021

Munekiyo Hiraga
Kari Luna Nunokawa
305 High Street, Suite 104
Wailuku, HI 96793

SUBJECT: Chapter 343, Hawai'i Revised Statutes, Early Consultation Request for Proposed North Kihei Mauka Transmission System, Kihei, Maui, Hawai'i

Dear Ms. Nunokawa,

We appreciate the opportunity to provide comments on the Proposed North Kihei Mauka Transmission System Project in Kihei, Maui.

There are two Maui Bus routes that provides services within the Kihei area. They are the Kihei Islander Route #10 and the Kihei Villager Route #15. Both routes run on an hour headway and primarily run along South Kihei Road. Kihei Villager runs between Pi'ilani Village Shopping Center and Ma'alaea Harbor Village. The Kihei Islander runs between Central Maui through Kihei to Wailea along South Kihei Road. See Attachment "A" of the two Maui Bus Routes in Kihei.

It is important that should any of the roadways where the Maui Bus travels in Kihei be closed that ample notice is provided to the County Department of Transportation. Riders will need to be notified of potential impacts to their services which may also cause route detours to occur. Bus stop notifications will have to be posted at all affected bus stops.

The department asks that if a bus stop will have to be closed for a long duration that the contractor install temporary bus stops along the "detour" path so riders who utilize public transit are still able to continue to use the service.

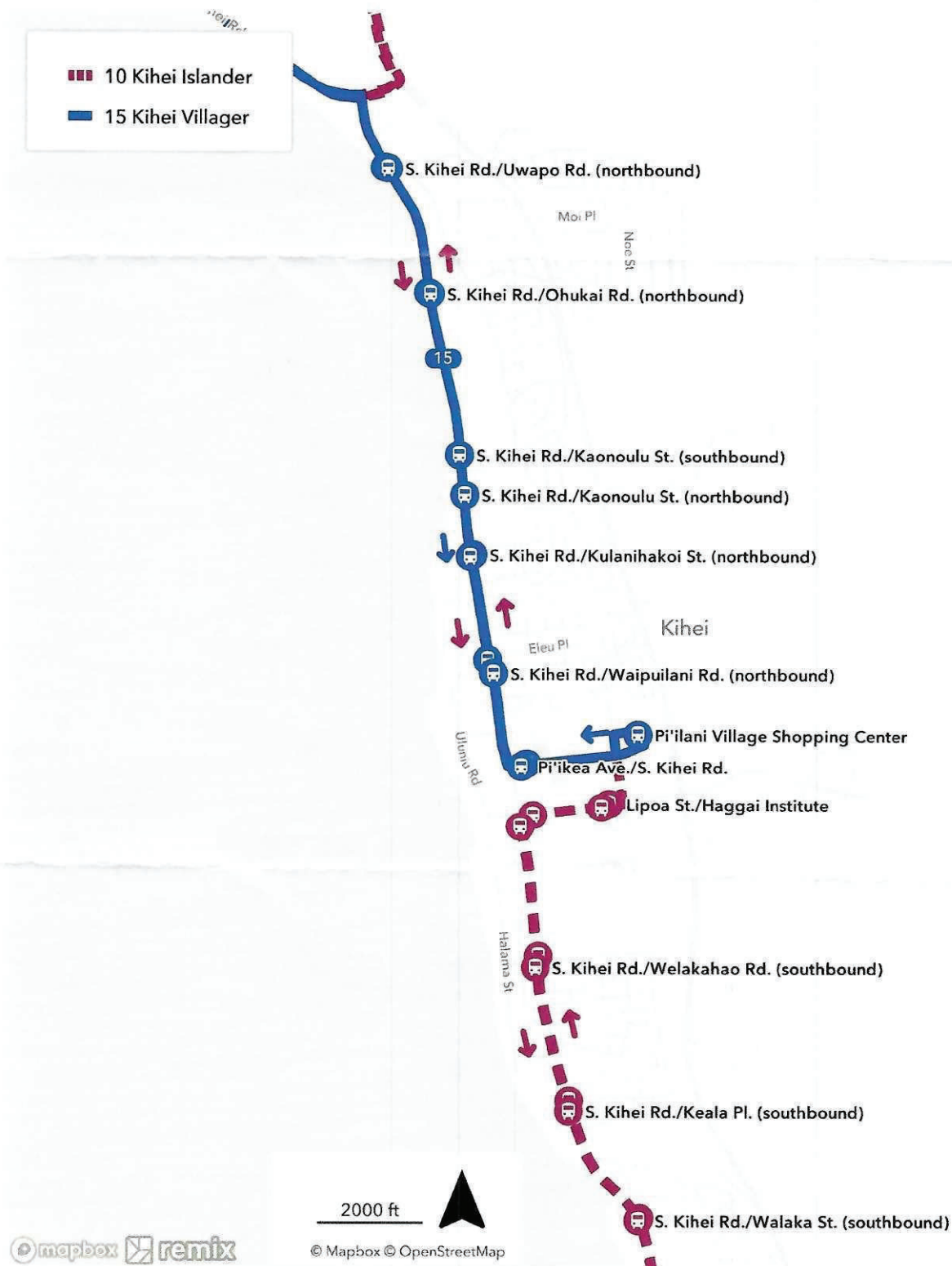
Please feel free to contact me if you have any questions.

Sincerely,

Marc Takamori
Director

Attachment "A"

Maui Bus Routes – Kihei Islander Route 10 & Kihei Villager Route 15



October 17, 2022

Marc Takamori, Director
County of Maui
Department of Transportation
200 South High Street
Wailuku, Hawai'i 96793

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater
Collection and Transmission System, Kīhei, Maui, Hawai'i

Dear Mr. Takamori:

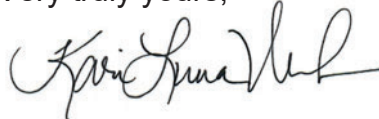
Thank you for your letter dated February 22, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

Thank you for the information regarding the two (2) Maui Bus routes that provide service within the Kīhei area. At a minimum, lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures are not preferred, but are possible depending on the field conditions. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit. The DEM will coordinate with the County Department of Transportation ahead of construction initiation to discuss potential impacts and detour routes, if necessary.

Marc Takamori, Director
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa'.

Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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Kihei Community Association

"e malama pono"...dedicated to protecting,
sustaining and enhancing our 'āina, kai and 'ohana

February 17, 2021

Munekiyo Hiraga
Attention Kari Luna Nunokawa
305 High Street, Suite 104
Wailuku, Hawaii 96793

RE: Proposed North Kihei Mauka Transmission System

Dear Kari Luna Nunokawa:

By letter to the Kihei Community Association you requested comments on the proposed North Kihei Mauka Transmission System. We have reviewed your proposed project and have the following comments.

1. We fully support your project to upgrade the sewer collection system for north Kihei. This upgrade should help preclude damaging sewer spills into the sensitive coastal waters. We support having infrastructure in place before development occurs.
2. The construction of the transmission lines from Kulanihakoi Gulch to Piikea Avenue along South Kihei Road could cause considerable disruption to traffic since during the day and at high season South Kihei Road is at or near capacity. In the construction of this system, we suggest that a consideration be studied to restrict construction to non-peak hours or there should be consideration to some night time work. We understand that effecting such construction conditions could add to the cost and might not be viable. However, since Piilani Highway is also at capacity there is no good alternate for traffic. Additionally, Piilani Highway has its own challenges as the intersection at Kulanihakoi is reconstructed to accommodate the new high school.
3. In the construction of utility line in existing streets, the resurfacing of the trenches often cause damage to the pavement surfaces with either bumps or sags. Where trenches are cut in the pavement, the road surfaces are often damaged requiring extensive resurfacing. After the trenches are backfilled and surfaced, we would like to have a consideration given to including the resurfacing and restriping including bike lanes, in the construction contracts.
4. Since much of the tourism in South Maui is low due to the travel restriction, construction of this project would benefit from somewhat lower traffic during this time. We suggest building the project as soon as possible.

Thank you for allowing us to comment on this project. Again, we are very much in favor of the project even though we have some concerns about the disruption during construction and the resulting condition of the surfacing of South Kihei Road.

Respectfully Submitted,

Mike Moran, President
Kihei Community Association

October 17, 2022

Mike Moran, President
Kīhei Community Association
P.O. Box 662
Kīhei, Hawai'i 96753

SUBJECT: Early Consultation for the Proposed North Kīhei Wastewater
Collection and Transmission System, Kīhei, Maui, Hawai'i

Dear Mr. Moran:

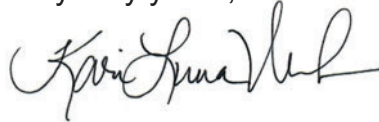
Thank you for your letter dated February 17, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kīhei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

1. We thank the Kīhei Community Association for its support of this project.
2. We note your concern regarding traffic impacts during construction of the project. At a minimum, lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures aren't preferred, but are possible depending on the field conditions. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit.
3. Thank you for your comment regarding resurfacing the roadway. The DEM will coordinate with the Department of Public Works regarding resurfacing of the roadways following construction, should funding be available.
4. We note your comment regarding initiating construction while tourism levels are lower due to COVID-19-related travel restrictions. The project is slated to begin in 2024 and, as soon as environmental review and permitting processes are completed.

Mike Moran, President
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

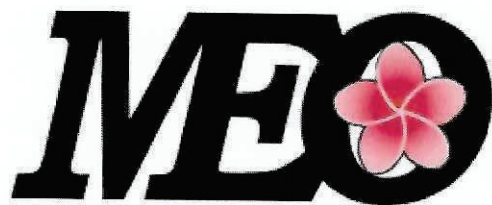
A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa'.

Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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Maui Economic Opportunity, Inc.

P.O. Box 2122
Kahului, HI 96733
808-249-2990
Fax: 808-249-2991
www.meoinc.org

February 19, 2021

Kari Luna Nunokawa
Munekiyo Hiraga
305 High St., Suite 104
Wailuku, HI 96793

Ms. Nunokawa:

Maui Economic Opportunity supports the proposed North Kihei Mauka Transmission System project and the expansion and improvement of the sewer system and its capacity in South Maui.

Our concerns center on the period of construction and possible road closures. Because we operate the Maui Bus paratransit service, we ask that traffic management around the construction sites allow for our paratransit buses, which serve persons with disabilities, to reach their destinations with no more than minor delays.

MEO offers programs countywide for business development; youths, including workforce preparation, substance abuse prevention and Head Start; senior club coordination; rental and energy assistance; and integration of formerly incarcerated individuals into the community.

The 56-year-old nonprofit also runs the Maui Bus ADA paratransit service through a contract with Maui County and operates human services transportation, providing rides for seniors, persons with disabilities, youths and residents in rural areas throughout Maui County.

Sincerely,

Debbie Cabebe, SHRM-SCP, SPHR
Chief Executive Officer

The Promise of Community Action

Community Action changes people's lives, embodies the spirit of hope, improves communities, and makes America a better place to live. We care about the entire community, and we are dedicated to helping people help themselves and each other.



October 17, 2022

Debbie Cabebe, Executive Director
Maui Economic Opportunity
P.O. Box 2122
Kahului, Hawai'i 96733

SUBJECT: Early Consultation for the Proposed North Kihei Wastewater
Collection and Transmission System, Kihei, Maui, Hawai'i

Dear Ms. Cabebe:

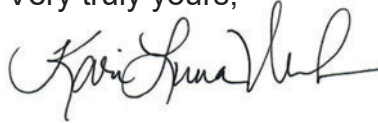
Thank you for your letter dated February 19, 2021, responding to our request for early consultation in preparation of the Draft Environmental Assessment (EA) for the proposed North Kihei Wastewater Collection and Transmission System project. On behalf of the County of Maui, Department of Environmental Management (DEM), we offer the following responses to the comments noted in your letter.

Thank you for your comment regarding Maui Economic Opportunity, Inc.'s (MEO) concerns regarding period of construction and possible road closures. At a minimum, lane and intersection closures will be required. Construction will occur during the day with night work optional. Full road closures are not preferred, but are possible depending on the field conditions. A County-approved Traffic Control Plan will be required by the project's Work on County Highway Permit.

Debbie Cabebe, Executive Director
October 17, 2022
Page 2

Thank you for your participation in the Chapter 343, Hawai'i Revised Statutes review process. A copy of your letter will be included in the Draft EA. A copy of the Draft EA will be sent to your office for further review and comment. In the meantime, if there are any questions or if additional information is needed, please feel free to contact me at (808) 244-2015.

Very truly yours,

A handwritten signature in black ink, appearing to read 'Kari Luna Nunokawa', written in a cursive style.

Kari Luna Nunokawa, Ed.D
Senior Manager

KLN:yp

cc: Juan Rivera, Department of Environmental Management
Deborah Aweau, Department of Environmental Management
Derek Ono, Warren S. Unemori Engineering

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REFERENCES

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**FINAL SUPPLEMENTAL
PRELIMINARY
ENGINEERING REPORT**

APPENDIX

A



Kennedy Jenks Consultants

707 Richards Street, Suite 528
Honolulu, Hawaii 96813
808-218-6030

**North Kihei Mauka
Transmission System
Kihei, Maui, Hawaii**

**FINAL
SUPPLEMENTAL
PRELIMINARY
ENGINEERING REPORT**

April 2020

Prepared for

**County of Maui,
Wastewater Reclamation
Division**

2200 Main Street, Suite 610
Wailuku, Maui, Hawaii, 96793

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Appendix A: Flow Monitoring Report
Appendix B: WWRD Capacity Evaluations
Appendix C: Opinion of Probable Construction Costs

List of Abbreviations and Acronyms

ADWF	Average Dry Weather Flow
ARV	Air Relief Valve
CATV	Community Antenna Television
DOT	Department of Transportation
DI	Ductile Iron
DWI	Dry Weather Infiltration/Inflow
EPA	Environmental Protection Agency
fps	Feet per Second
GIS	Geographic Information System
gpm	Gallons per Minute
gpcd	Gallons per Capita per Day
HDD	Horizontal Directional Drilling
HDPE	High Density Polyethylene
hp	Horsepower
KJ	Kennedy Jenks Consultants
MGD	Million Gallons per Day
NPDES	National Pollutant Discharge Elimination System
OPCC	Opinion of Probable Construction Cost
PER	Preliminary Engineering Report (dated August 2018)
PVC	Polyvinyl Chloride
PWWF	Peak Wet Weather Flow
ROW	Right of Way
SFM	Sewer Force Main
SHPD	State Historic Preservation Division
SIC	Sandwich Isles Communications
SMA	Special Management Area
SMH	Sewer Manhole
TM	Technical Memorandum
UOA	Use & Occupancy Agreement
USI	Underground Services, Inc.
WW/I	Wet Weather Infiltration/Inflow
WWPS	Wastewater Pump Station
WWRD	Wastewater Reclamation Division
WWRF	Wastewater Reclamation Facility

Section 1: Introduction

1.1 Project Background and Scope of Work

In March 2017, the County of Maui, Department of Environmental Management, Wastewater Reclamation Division (WWRD) contracted with Kennedy Jenks Consultants (KJ) to provide an analysis of possible wastewater transmission alternatives for the North Kihei wastewater collection system.

The existing North Kihei wastewater collection and transmission system, consists of gravity sewers, wastewater pump stations (WWPS), and sewer force mains. The system and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area.

Future development mauka of the Piilani Highway will require major upgrades to the existing system along South Kihei Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills. The County of Maui, WWRD has implemented a proactive program to alleviate failures and wastewater spill events to area beaches and potential Environmental Protection Agency (EPA) fines as stipulated in the EPA Consent Decree filed November 8, 1999.

Included in the project was preparation of a Preliminary Engineering Report (PER) to identify transmission alternatives to limit major wastewater conveyance system infrastructure upgrades within South Kihei Road. The project area limits for the PER extended from the north at Kihei WWPS 2, at Uwapo Road, and south to the Kihei WWPS 6, between Waimahaihai Street and Halelani Place by Kalama Park in the south.

The PER was submitted to WWRD in August 2018 which identified four (4) transmission alternatives and a recommendation to proceed with the WWRD selected Alternative 3. Preparation of the PER included:

- Analysis of existing wastewater flows based on data and record drawings provide by WWRD
- Development of future flow projections
- Determination of upgrade requirements for the existing gravity system to meet future flow projections
- Identification of four (4) alternative transmission system options
- Determination of key alignment constraints, construction methods, and design guidelines for the identified alternatives
- Identification of permitting and approval requirements
- Development of conceptual estimates of construction costs
- Recommendation to proceed with Alternative 3

WWRD elected to move forward with Alternative 3, based on the relief provided to the existing North Kihei wastewater collection system, its flexibility, and the total added capacity for the system. In January 2019 WWRD requested KJ develop a scope and fee for the design of the pump station associated with Alternative 3. In development of the scope, WWRD noted that the existing wastewater flow rates provided by the County for preparation of the PER may not be representative of actual conditions. In addition, recently constructed utilities lines within Liloa

Drive would present a challenge for construction of the recommended 30-inch diameter gravity line, resulting in deeper and more expensive construction.

WWRD requested that KJ include the following as part of the pump station design scope: collect wastewater flow data near Kihei WWPS 3 and 4 to verify the assumptions of the PER, evaluate the option to reroute Kihei WWPS 4 force main instead of WWPS 3, and prepare this supplement to the August 2018 PER. This Supplemental Preliminary Engineering Report includes discussion of the following:

- Wastewater flow data collected from seven (7) monitoring locations near Kihei WWPS No. 3 and 4 as shown in Exhibit 3-2
- Evaluation of the observed flow data in comparison to the calculated flow data from the PER
- Recommendations on adjustments to wastewater pump stations at Kihei WWPS 3, 4 and the proposed new WWPS on Liloa Drive and force main sizing, based on the recently collected flow data
- Review of Alternative 3 and recommended modifications to the proposed alignment
- Conceptual estimate of construction cost for the proposed alignment

It should be noted that this Supplemental PER is not intended to replace the August 2018 PER or all the information and alternatives developed in the PER in relation to the updated flow data. This report serves to update only portions of the PER and is limited to reviewing the impacts of existing flows at Kihei WWPS 3 and 4. No flow data was gathered near the other WWPS's and no additional analysis was conducted on future flow projections. Only Alternative 3 was reviewed to determine modifications to the proposed alignment.

1.2 Supplemental PER Organization

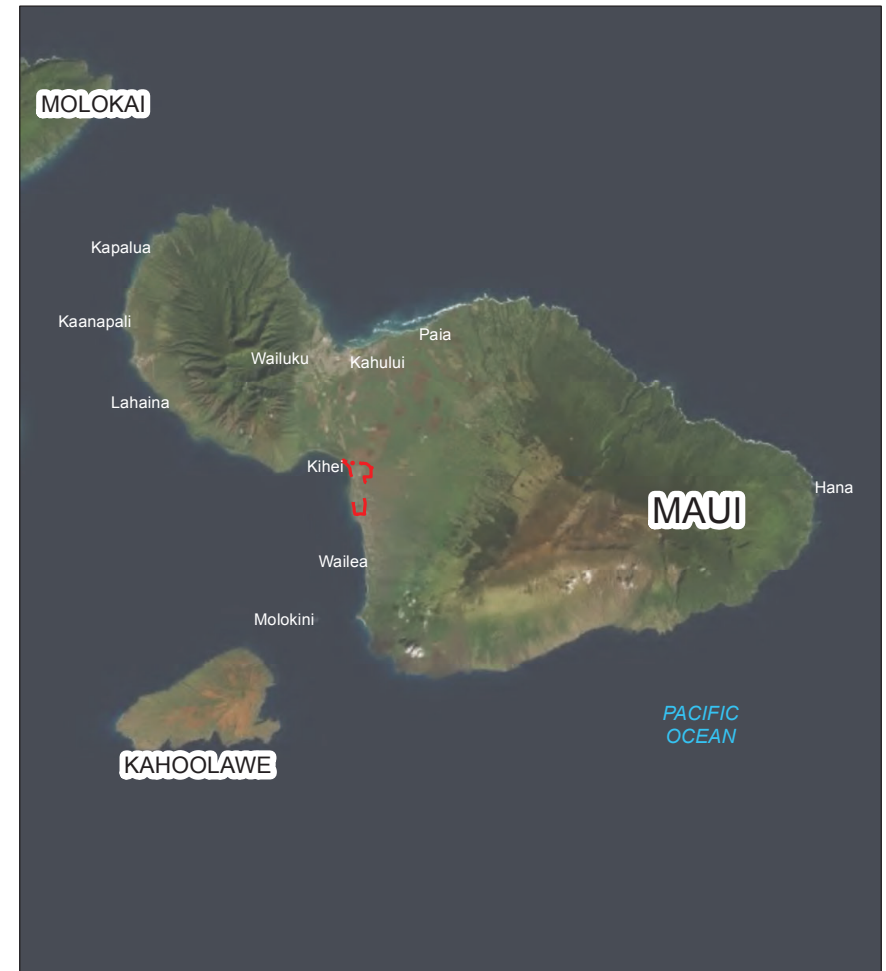
The report is organized into four (4) Sections as follows:

- Section 1** Discussion of the project background and scope of work. Provides an overview of the existing North Kihei wastewater collection system.
- Section 2** Discussion of the selected Alternative 3 and identified project challenges driving this supplemental PER.
- Section 3** Evaluation of the existing wastewater flows, comparing the calculated wastewater flow generation provided in the PER with the flow data collected through wastewater flow monitoring for this supplement to the PER.
- Section 4** Discussion of recommendations for pump station and force main sizing and proposed alignment modifications to Alternative 3.

1.3 System Description

The North Kihei transmission system is located along South Kihei Road and runs from north to south. This system is made up of four (4) wastewater pump stations (WWPS) and conveys wastewater from its service area to Kihei WWPS 6, which then pumps to the Kihei Wastewater Reclamation Facility (WWRF). The transmission system running along South Kihei Road consists of gravity sewers ranging in size from 8 to 27 inches in diameter and discharge force mains from the WWPSs ranging from 10 to 16 inches in diameter. Gravity collection mains feed into the trunk transmission system at various points along South Kihei Road.

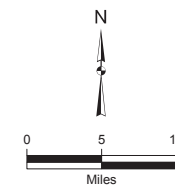
An island map, location map, and existing sewer system and development area map are provided as Exhibits 1-1, 1-2, and 1-3 respectively on the following pages. Projected future flows are shown on Exhibit 1-4.



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

 Project Area



Kennedy/Jenks Consultants
North Kihei Mauka Transmission
Supplemental PER
Kihei, Maui, Hawaii

Island Map

1967006*00
April 2020
Exhibit 1-1



Service Layer Credits:

Legend

- Study Area
- Kihei WWRF Property Boundary
- Existing Sewer Basin Flows
- Existing Gravity Sewer
- Existing Maui County WWPS
- Existing Private WWPS
- Existing Sewer Force Main
- County Owned
- Privately Owned



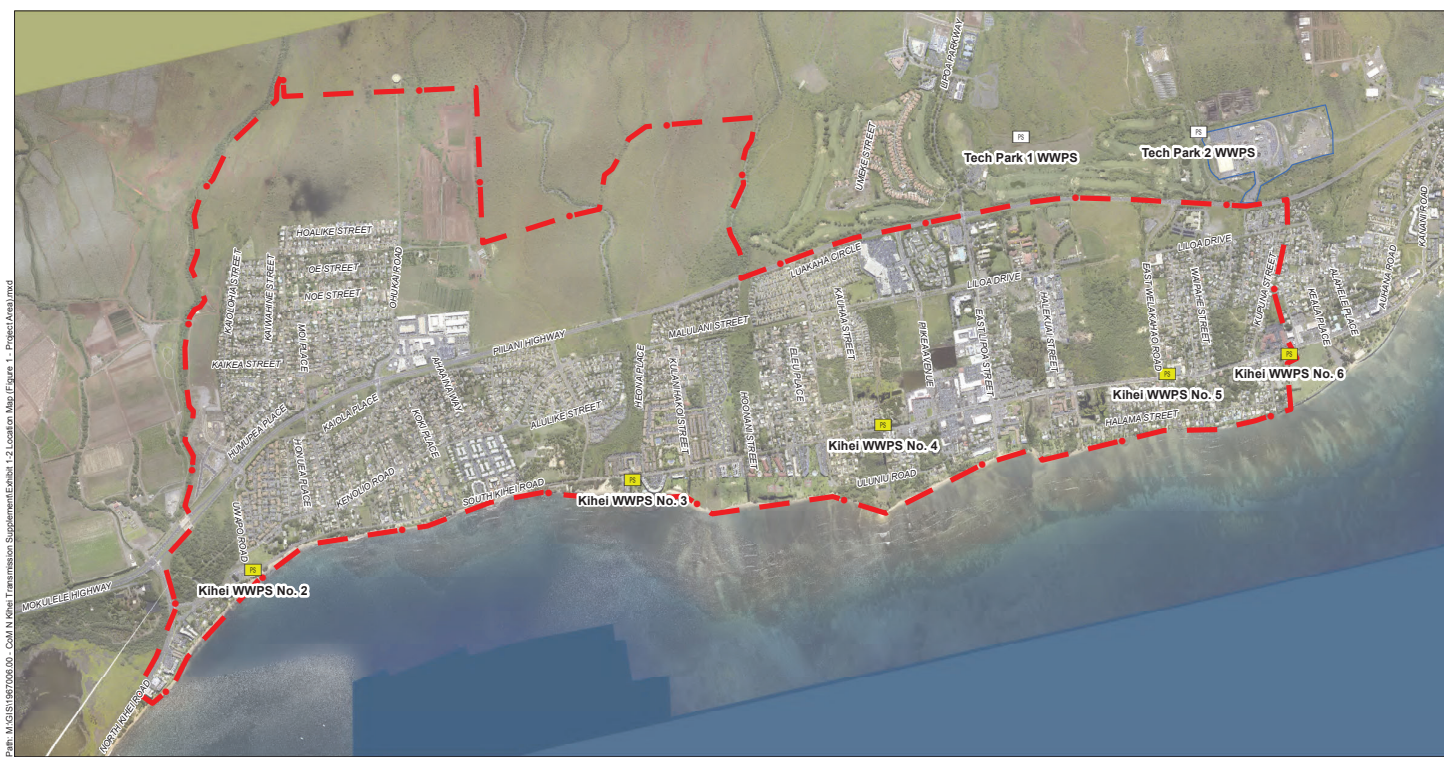
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Kennedy/Jenks Consultants

North Kihei Mauka Transmission
Supplemental PER
Kihei, Maui, Hawaii

Existing Sewer System and
Development Area Map

1967006'00
April 2020
Exhibit 1-3



Service Layer Credits:

Legend

- Study Area
- Kihei WWRF Property Boundary
- Existing Sewer Basin Flows
- Existing Gravity Sewer
- Existing Maui County WWPS
- Existing Private WWPS
- Existing Sewer Force Main
- County Owned
- Privately Owned



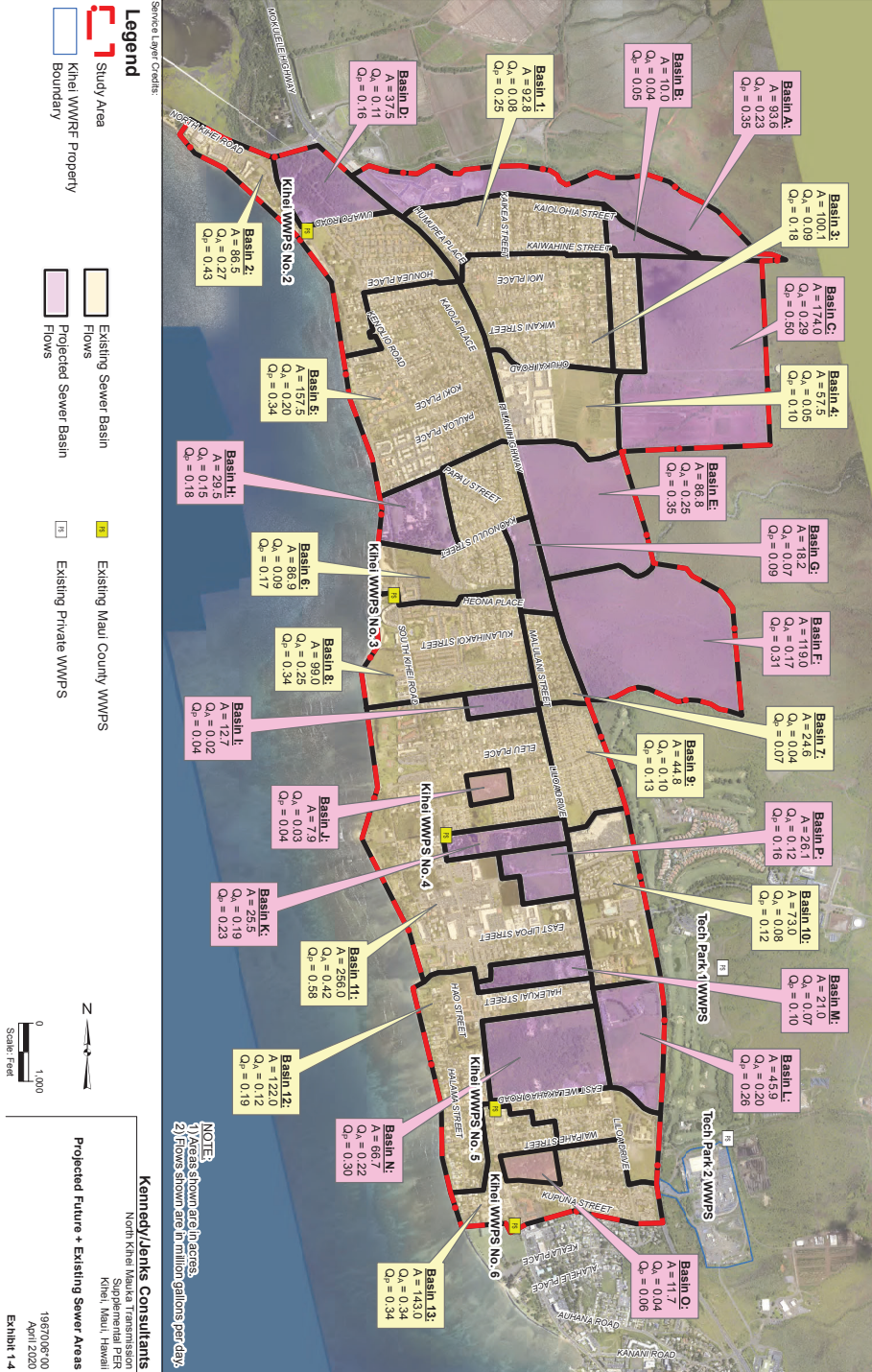
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Scale: Feet

Kennedy/Jenks Consultants

North Kihei Mauka Transmission
Supplemental PER
Kihei, Maui, Hawaii

Location Map

1967006'00
April 2020
Exhibit 1-2



Section 2: Alternative 3 Improvement Challenges

Descriptions of the existing North Kihei wastewater collection system and background information such as topography, geotechnical conditions, surrounding utilities, and constraints are available in the August 2018 PER. Alternative 3 was the recommended transmission alternative in the PER to provide relief for the existing North Kihei wastewater collection and transmission system due to its flexibility and total added additional capacity versus other alternatives considered.

2.1 Alternative 3 Improvements

The August 2018 PER included a recommendation for proceeding with Alternative 3 as shown in Exhibit 2-1, conveying flows as calculated in the PER. The proposed improvements included diverting flow from the South Kihei Road system by rerouting WWPS 3 force main alignment uphill to a gravity transmission line along the North South Collector Road (Liloa Drive). This gravity flow would be conveyed to a new WWPS near South Maui Community Park, where the collected wastewater would then be pumped to the WWRF.

The developers for Basin Areas C and E would be responsible for a new WWPS that would pump flow under Piilani Highway to a transition manhole near the stream crossing south of Mahealani Street. A new 18-inch gravity transmission line would pick up the flow from this point and continue south along the Liloa Drive right-of-way. The WWPS 3 force main would be extended along South Kihei Road to Namaau Place where it would turn mauka and continue to Liloa Drive before discharging into a transmission manhole. The gravity transmission line after Namaau Place would be 30-inch diameter to the new WWPS. A 15-inch diameter SFM would convey flow from the WWPS to the WWRF.

2.2 Project Challenges

During discussions with WWRD and development of the scope for design of the new gravity sewer lines, force mains, and pump station associated with Alternative 3, additional challenges were identified with the proposed improvements. The identified challenges are discussed below.

2.2.1 Existing Flow Data

Input from WWRD operators suggested that the existing flows provided by the County during the development of the PER may not be representative of actual conditions. As such, the calculated wastewater flows may over-estimate the average and peak flow rates, leading to oversizing of wastewater infrastructure.

Obtaining flow data near Kihei WWPS 3 and 4 would provide insight into the actual requirements for the proposed new improvements, such as pump and force main sizing. Additionally, accurate flow data would also help to confirm if upsizing of existing gravity lines within South Kihei Road is necessary and help with evaluating if rerouting Kihei WWPS 4 force main instead of WWPS 3 force main, is beneficial.

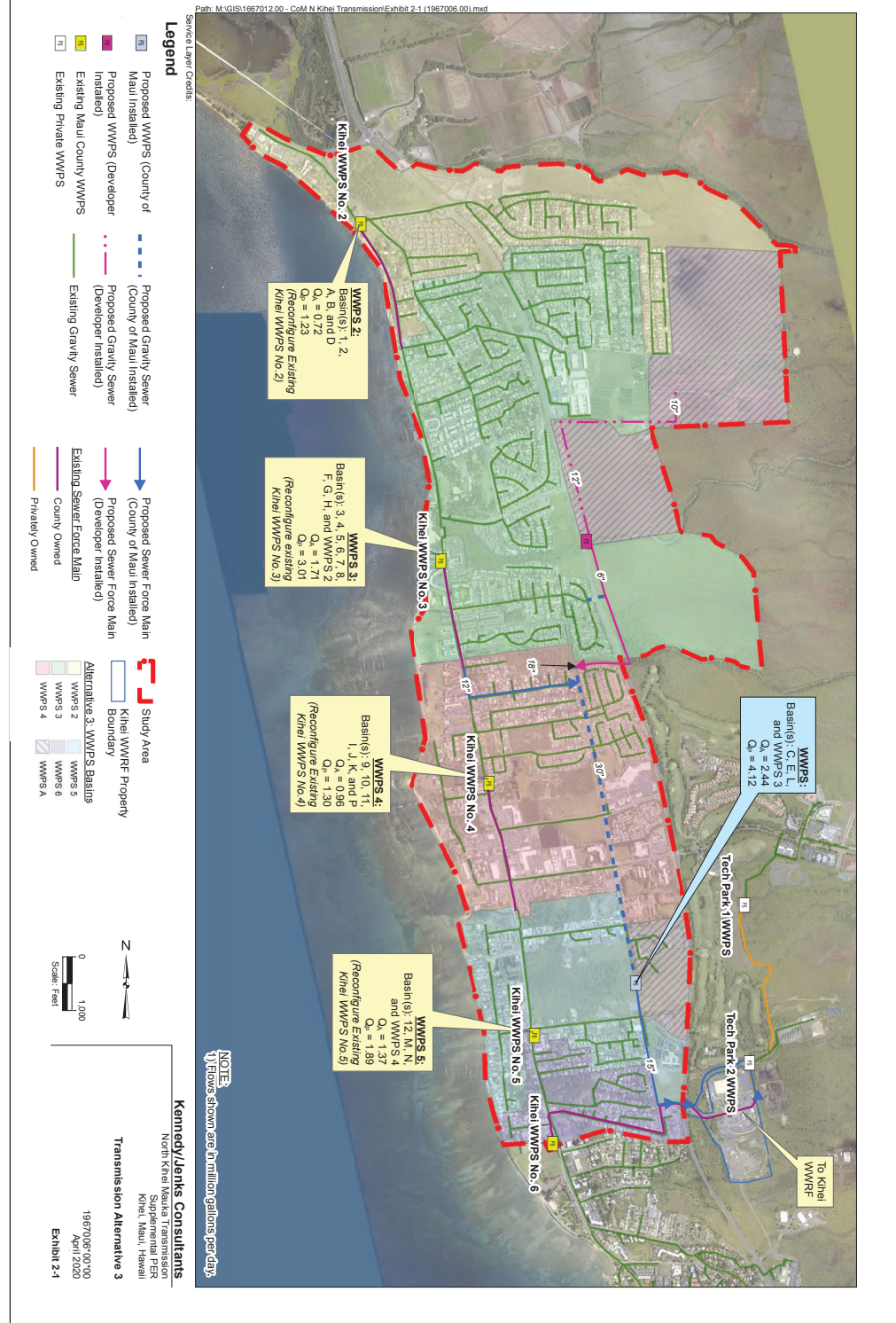
2.2.2 New Utilities

Review of the alignment and profile of the proposed 30-inch diameter gravity line in Liloa Drive identified newly constructed utilities (water and lines and storm drains) that presented challenges in construction. Revisions to the 36-inch potable water line in Liloa Drive, between

Namauu Place and Waipuilani Road Place and associated thrust blocks, limited the placement of the transmission line. Drainage structures also presented potential conflicts.

2.2.3 Pump Station Wet Well Inverts

The proposed 30-inch diameter gravity line in Liloa Drive from Waipuilani Road to the new pump station location at South Maui Community Park was approximately 4,600 linear feet in length. Because of the elevation gains near the park, even with a minimal slope, the transmission line inverts were over 30 feet deep at the proposed pump station. Geotechnical surveys done in the vicinity showed rock was encountered at depths in the three to five-foot range. This would mean that the majority of trenching would be done in rock, driving up the construction cost.



Section 3: Flow Projections

Following is a description of the process used to reconsider the flow projections used in the PER. That process compared the flows calculated from available data sources with actual measured flow rates in critical locations in the system. The concern expressed by County representatives addressed the implications of potentially over sizing the facilities; oversized facilities will increase the construction costs, and large than needed facilities can compromise the intended performance of a collection system. Oversized collection and pumping facilities can result in increased odors, highly corrosive conditions and poor solids flushing during normal conditions.

3.1 Existing Calculated Flows

The PER divided the service area into basins for the North Kihei transmission system and estimated the existing average daily wastewater flow. The existing basins are shown in Exhibit 3-1.

Flow monitoring was conducted on the gravity sewer system in the vicinity of Kihei WWPSs 3 and 4 to verify the existing flow rates. Some service area basins were further divided into sub-basins corresponding with the areas contributing to the flow monitoring locations to ensure that similar contributing basins were being compared. The sub-basins and flow monitoring locations are shown in Exhibit 3-2. Table 3-1 identifies the estimated, calculated average daily wastewater flow for each basin and sub-basin, and the associated pump station.

Existing wastewater flows for sub-basins were calculated similar to the PER, based on the following:

Average Base Flow = $\sum(\text{Population} \times \text{Base Unit Flow Rate})$, where;

- Basin Population
 - Population was based on the year 2000 Census population data
 - Capita breakdown (resident, hotel unit, and employee counts) was based on 2005 TAZ data (from Maui County Planning Department)
- Sub-basin Population
 - Capita breakdown (resident, hotel unit, and employee counts) based on information available on the following websites: the County of Maui Wastewater Infrastructure ArcGIS database, base layer image (date accessed: January 2020), and Maui hotel and vacation rental.
 - The County of Maui Wastewater Flow Standards (2006) gallons per capita per day (gpcd) were adjusted as follows:
 - Hotel guests assuming 1 guest per room.
 - Residents assuming 3 capita per home, to adjust for additional homes that were constructed since 2000.

- Base Flow Unit Rates were based on the City and County of Honolulu's Infiltration/Inflow Study (70 gpcd for residents, 30 gpcd for transient employees, and 100 gpcd for hotel guests)¹

Dry Weather Infiltration/Inflow (DWI) = $(\text{Average Dry Weather Flow} - \text{Average Base Flow}) / \text{Total Population}$, where;

- Average Dry Weather Flow was determined by flow monitoring previously conducted by WWRD¹
- North Kihei DWI unit rates were based on the "Hydraulic Model Report"

Design Average Flow = $(\text{Average Base Flow} + \text{DWI})$

The existing Wet Weather Infiltration/Inflow (WWI/I) rate was calculated as follows²:

WWI/I Rate = $(\text{PWWF} - \text{ADWF}) / \text{Pump Station Basin Area}$

Peak Design Flow was calculated based on the following:

Design Peak Flow = $(\text{Design Average Flow} + \text{WWI/I})$

Table 3-1: Existing Development Wastewater Flows

Basin	Acreage	Description	WWPS	Design Average Flow (MGD)	Design Peak Flow (MGD)
1	93	Hale Piilani Subdivision	2	0.08	0.25
2	86.5	Kihei Villages and Sugar Beach Resort Area	2	0.27	0.43
3	100	Kihei Heights, Makai Heights, Ohukai Subdivision	3	0.09	0.18
4	57.5	Industrial Area south of Ohukai St	3	0.05	0.10
5	157.5	Residential Area West of Piilani Hwy Between Honuea Pl and Wailana Pl	3	0.20	0.34
6	87	Kihei Bay Vista, Kihei Bay Surf, Villas at Kenolio, Ka'ono'ulu Estates	3	0.09	0.17
7	24.5	Piilani Development Subdivision	3	0.04	0.07
8	99	West of South Kihei Rd between Menehune Shores and Kauhale Makai	3	0.25	0.34
9	45	Piilanai Village Subdivision	4	0.10	0.13
	23.4	(Sub-1)		0.069	0.083
	21.6	(Sub-2)		0.033	0.047
10	73	Development between Piilani Hwy and Liloa Dr, and Safeway and Lokelani Intermediate School	4	0.08	0.12

¹ Existing wastewater flows were provided by the WWRD through their wastewater hydraulic model (XPSWMM) and the "Hydraulic Model Report", dated April 2010, prepared by Fukunaga and Associates, Inc.

² The existing Wet Weather Infiltration/Inflow rates were estimated based on PWWF and ADWF from the Facility Capacity Evaluation provided by WWRD.

11	256	West of South Kihei Rd between Luana Kai and Aloha Aku Inn and Suites	4	0.42	0.58
	44.1	(Sub-1)		0.117	0.144
	42.1	(Sub-2)		0.046	0.073
	21.0	(Sub-3)		0.058	0.071
	29.1	(Sub-4)		0.040	0.058
	119.8	(Sub-5) See Note 1		0.159	0.234
12	122	West of South Kihei Rd between Kapu Pl and 1745 Halama St	5	0.12	0.19
13	143	West of South Kihei Rd Between 1745 Halama St and Kalama Park	6	0.34	0.34

Notes:

1. Basin 11 Sub-5 was estimated by subtracting the other sub-basin flows from overall Basin 11. Capita vary from the existing hydraulic model, resulting in lower flow rates.

3.2 Flow Monitoring

3.2.1 Selection of Flow Monitoring Locations

For this Supplemental PER, the Kennedy Jenks team collected flow data near Kihei WWPSs 3 and 4 to verify the assumptions of the PER and assist in evaluating the necessary wastewater system improvements. The flow monitoring focused on the Kihei WWPSs 3 and 4 gravity sewer system to develop current data to help identify the preferred route for the revised Alternative 3 option, as directed by WWRD.

Kennedy Jenks' subconsultant Underground Services, Inc. conducted flow monitoring at 7 (seven) existing manhole locations, shown in Exhibit 3-2. Flow monitoring was conducted at the most downstream manhole (unless noted otherwise) for sub-basins within the focus area.

Table 3-2: Flow Monitoring Location Descriptions

Location	Manhole ID	Description
1	KI13XB0100	Basins 1 through 6 (Flow from north tributary pipe to Kihei WWPS No. 3)
2	KI13XA0200	Basins 7 and 8 (Flow from south tributary pipe to Kihei WWPS No. 3)
3	KI12XA0500	Basin 11 Sub-1 (Flow from residential and hotel areas)
4	KI12XA0420	Basins 1 through 8 (Discharge from Kihei WWPS No. 3)
5	KI12XA0300	Basins 1 through 9, Basin 11 Sub-1 and Sub-2 (Flow from north tributary pipe to Kihei WWPS No. 4, missing flows from Basin 9 Sub-2 and Basin 11 Sub-4)
6	KI12XB0300	Basin 10 and Basin 11 Sub-5 (Flow from primarily commercial area south of Kihei WWPS No. 4)
7	KI12XB0210	Basin 11 Sub-3 (Flow from residential area west of South Kihei Road)

Manhole KI12XB0200 was initially identified for monitoring the flow entering Kihei WWPS 4 from the south. However, during field investigation it was found that there was steady infiltration entering the manhole from a crack in the side of the manhole. The infiltration would cause

turbulence in the manhole that would impact collected flow monitoring data. Because of this, the next upstream manhole, KI12XB0300, was used.

Manhole KI12XA0100 was initially identified to monitor the flow entering Kihei WWPS 4 from the north. However, the manhole could not be located during field investigation. It is assumed that the manhole was paved over during recent road repaving work on South Kihei Road. Manhole KI12XA0300 was used instead to monitor flow from the north.



Service Layer Credits:

Legend

Study Area

Existing Sewer Basin Flows

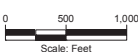
Existing Sewer Sub-Basin Flows

Existing Gravity Sewer

Existing Sewer Force Main

County Owned

Existing Maui County WWPS



NOTE: (1) Flow monitoring at Location 2 did not include flow from Menehune Shores Hotel (154 units). (2) Flow monitoring did not include flow from Basin 11 (Sub-4). (3) Monitoring location moved to upstream manhole as KI12XA0100 could not be found in the field. (4) Monitoring location moved to upstream manhole due to Dry Weather I/I observed in KI12XB0200. (5) Basin 11 (Sub-5) was calculated by subtracting other sub-basin calculated flows from Basin 11.

Kennedy/Jenks Consultants

North Kihikihi Mauka Transmission
Supplemental PER
Kihikihi, Maui, Hawaii

Inset 1 - Flow Monitoring Locations and Sub Basins

1967006'00
April 2020
Exhibit 3-2



Service Layer Credits:

Legend

Inset 1 (See Exhibit 3-2)

Study Area

Kihikihi WWRF Property Boundary

Existing Sewer Basin Flows

Existing Gravity Sewer

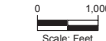
Existing Sewer Force Main

County Owned

Privately Owned

Existing Maui County WWPS

Existing Private WWPS



Kennedy/Jenks Consultants

North Kihikihi Mauka Transmission
Supplemental PER
Kihikihi, Maui, Hawaii

Existing Sewer System and Development Area Map

1967006'00
April 2020
Exhibit 3-1

3.2.2 Flow Monitoring Data

Flow monitoring included gathering 2-weeks' worth of data for each location. Equipment installation was completed on November 5, 2019. The study period began on November 6, 2019 and was completed on November 19, 2019. The flow monitoring data is summarized in Table 3-3, and the report is included in Appendix A.

The flow monitoring included collection of depth and peak velocity measurements. These measurements were used to calculate the flow quantity.

Flow Quantity (Q) = Wetted Area (A) x Average Velocity (V), where;

- Data was collected in 5-minute intervals
- Flow depth was collected via ultrasonic and pressure depth sensors.
- Peak velocity was collected using an ultrasonic signal.

According to the flow monitoring report, the Continuity Equation is used to calculate the flow quantity from depth of flow and velocity measurements. The Continuity Equation is considered more accurate than the Manning Equation because the Manning Equation assumes uniform, steady flow hydraulic conditions with non-varying roughness, which are typically invalid assumptions in most sanitary sewers.

Average velocity is needed to calculate flows using the Continuity Equation. The flow monitoring equipment used manual field velocity readings and the raw velocity recorded by the meter to measure peak velocity. Field crews conduct cross-sectional velocity profiles in order to develop a relationship between peak and average velocity in lines that meet the hydraulic criteria. This ratio is used in converting the peak velocity measured by the sensor to the average velocity. In locations that do not meet these criteria, it is standard practice to apply an average to peak ratio of 0.90.

Table 3-3 is a summary of the flow monitoring data at each location. As noted in the "Hydraulic Model Report" (Fukunaga, 2010), some flow monitors experience inconsistent flows, including negative (backwater) flows, due to the configuration of the short distances between pump stations which pump into each other in a series configuration.

Table 3-3: Flow Monitoring Data

Location	Manhole ID	Depth (inches)			Velocity (ft/s)			Flow (MGD) ¹		
		Avg	Min	Max	Avg	Min	Max	Avg	Min	Max
1	KI13XB0100	8.13	5.79	10.06	1.26	0.87	1.68	0.843	0.363	1.416
2	KI13XA0200 ²	3.16	2.19	4.32	1.31	0.66	1.79	0.145	0.045	0.274
3	KI12XA0500 ³	1.84	1.14	2.99	1.69	0.74	2.52	0.109	0.026	0.279
4	KI12XA0420	7.94	4.88	10.61	1.73	1.13	2.25	0.956	0.334	1.749
5	KI12XA0300	7.95	4.49	10.97	1.89	1.56	2.20	1.046	0.393	1.762
6	KI12XB0300 ⁴	2.81	2.07	5.37	3.05	2.56	3.32	0.250	0.150	0.577
7	KI12XB0210	1.92	1.30	2.93	1.61	0.56	2.31	0.070	0.015	0.165

Notes:

1. There were no rainfall events during flow monitoring period. Therefore, observed flows are for dry weather.
2. Flow monitoring at Location 2 did not include flow contribution from Menehune Shores Hotel (154 units).

3. Flow monitoring location was moved to upstream manhole because Manhole KI12XA0100 could not be found in the field.
4. Flow monitoring location was moved to upstream manhole because Dry Weather Infiltration/Inflow was observed in Manhole KI12XB0200.

A review of flow balancing shows a slight imbalance for average flows where downstream flow at Location 4 (0.956 MGD) is less than the sum of Location 1 and Location 2 (0.988 MGD). This imbalance may be due to the application of the typical average to peak ratio of 0.90, but appears to be within an acceptable tolerance.

It is expected that flows at downstream Location 5 are higher than the sum of Location 3 and Location 4 because there are additional areas that contribute flow to Location 5. However, Locations 3 and 4 combined observe dry weather average flow (1.065 MGD) is greater than the flow observed at Location 5 (1.046MGD). This imbalance could also be due to the application of the typical average to peak ratio of 0.90, but appears to be within an acceptable tolerance. Also, Locations 3 and 4, combined, observed dry weather peak flow (2.028 MGD) is greater than the flow observed at Location 5 (1.762 MGD). This imbalance could be due to the reported peak flow occurred at a different time for the flow monitoring location, so the peaks are not summed.

3.3 Flow Calculations vs Flow Monitoring Comparison

For evaluation of the existing system, the calculated wastewater flow and observed flow monitoring data were compared, summarized in Table 3-4.

Table 3-4: Calculated and Observed Flows

Location	Manhole ID	Calculated Wastewater Flow (MGD)		Observed Flow Monitoring (MGD) ¹	
		Design Avg Flow	Design Peak Flow	Observed Avg Flow	Observed Peak Flow
1	KI13XB0100	0.772	1.463	0.854	1.291
2	KI13XA0200	0.297	0.411	0.145	0.274
3	KI12XA0500	0.117	0.144	0.109	0.279
4	KI12XA0420	1.069	1.874	0.956	1.749
5	KI12XA0300	1.300	2.174	1.046	1.762
6	KI12XB0300	0.237	0.363	0.250	0.577
7	KI12XB0210	0.058	0.071	0.070	0.165

Notes:

1. There were no rainfall events during flow monitoring period. Therefore, observed flows are for dry weather.

Conservatively, the higher value of the calculated and observed wastewater flows were used for preliminary sizing of system components. This occurred at the following locations:

- At Location 1 the observed average flow was greater than the design average flow by 0.071 MGD. Therefore, the flows at downstream Location 4 and 5 were increased by the same amount.

- At Location 3 the observed peak flow was greater than the design peak flow by 0.135 MGD. Therefore, the flow downstream at Location 5 was increased by the same amount.
- At Location 6 the observed average flow was greater than the design average flow by 0.013 MGD and the observed peak flow was greater than the design peak flow by 0.214 MGD.
- At Location 7 the observed average flow was greater than the design average flow by 0.012 MGD and the observed peak flow was greater than the design peak flow by 0.094 MGD.

3.4 Pump Station Capacity Evaluation vs Flow Monitoring Comparison

By conservatively taking the higher of the calculated and observed flows and adding in the sub-basins not captured in the flow morning, average and peak existing flows were determined for Kihei WWPSs 3 and 4. They are found to be:

- Kihei WWPS 3: Ave = 1.06 MGD / Peak = 1.78 MGD
- Kihei WWPS 4: Ave = 1.44 MGD / Peak = 2.59 MGD

WWRD conducted a pump station capacity evaluation in October 2018 through January 2019. The Pump Station Capacity Evaluation Report, January 2019, is included in Appendix B. The observed flow monitoring data was compared to the pump station capacity evaluation, summarized in Table 3-5.

Table 3-5: Observed Pump Station Flows and Capacity Evaluation

Pump Station	Sampling Locations	Capacity Evaluation Station Wastewater Flow (MGD)		Observed Flow Monitoring (MGD) ¹	
		Avg Dry Weather Flow	Peak Dry Weather Flow	Observed Avg Flow	Observed Peak Flow
Kihei 3	1, 2	0.812	1.474	1.061	1.777
Kihei 4	5, 6, 7	1.485	2.209	1.439	2.591

Notes:

1. There were no rainfall events during flow monitoring period. Therefore, observed flows are for dry weather.

The observed flow monitoring data and pump station capacity evaluation results appear to be similar, which helps to verify the observed flow monitoring results.

Adding in the projected future flows from the PER resulted in average and peak flows for Kihei WWPS 3 and 4 as follows:

- Kihei WWPS 3: Ave = 1.97 MGD / Peak = 3.01 MGD
- Kihei WWPS 4: Ave = 2.89 MGD / Peak = 4.76 MGD

Section 4: Revised Transmission Alternative 3

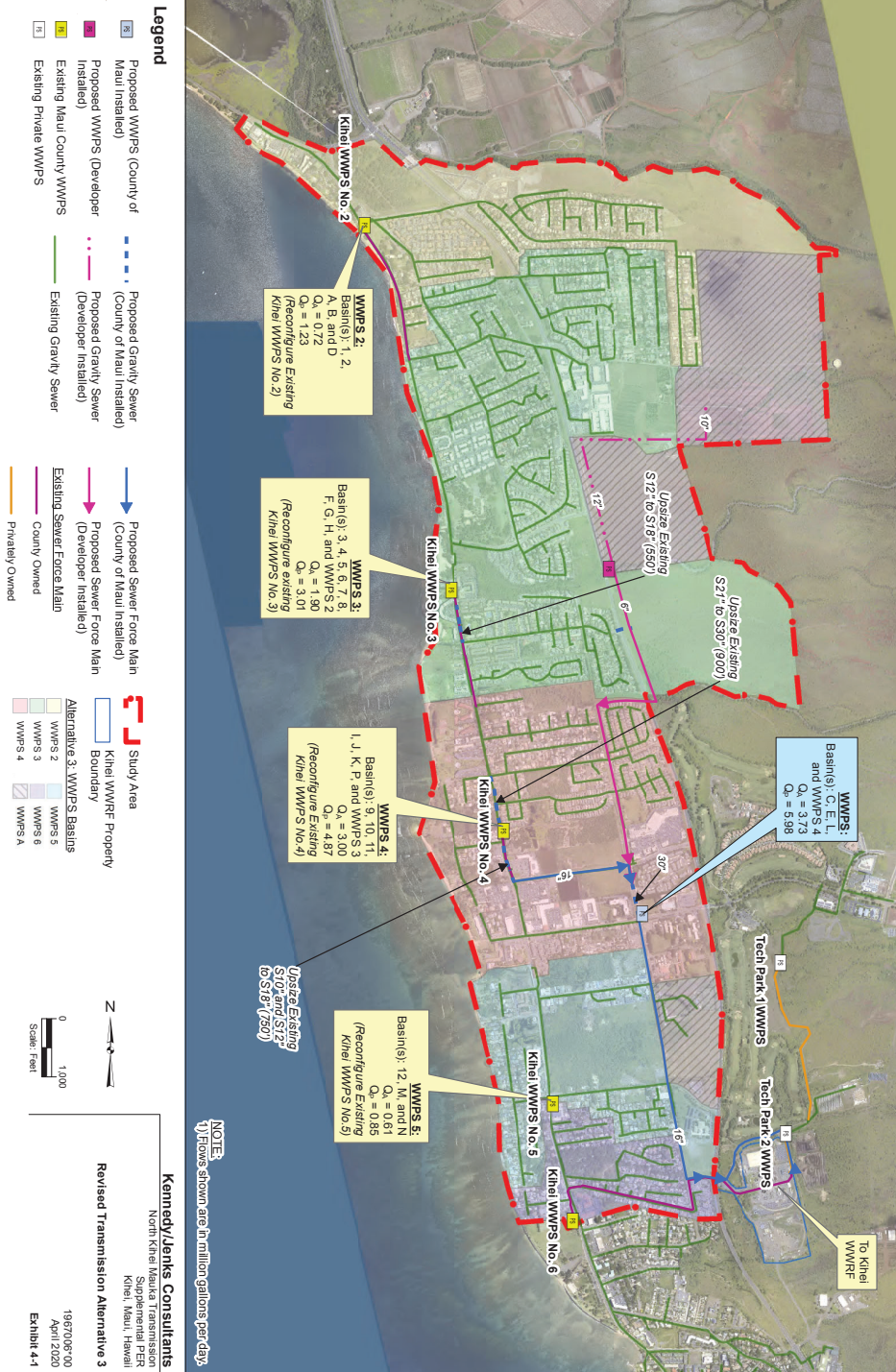
4.1 Conceptual Alternative

Through discussions with WWRD and in order to address the conflicts identified in Section 2, three solutions were considered:

- **Lower the 30-inch diameter transmission line in Liloa Drive to avoid the conflicts.**
This resulted in a very deep gravity line and manholes, adding to the construction cost.
- **Extend the Kihei WWPS 3 12-inch diameter force main south along South Kihei Road to Waipuilani Road.** At Waipuilani Road the force main would turn mauka to Liloa Drive, thereby avoiding the 36-inch diameter potable water line in Liloa Drive. However, this option would require a good deal of work within South Kihei Road which WWRD is trying to avoid.
- **Reroute Kihei WWPS 4 force main instead of WWPS 3 force main up to Liloa Drive.** This option considered rerouting the Kihei WWPS 4 16-inch diameter force main up Piikea Ave, turning south onto Liloa Drive, and extending to the crest of the hill. This option presented minimal construction in South Kihei Road and avoids the conflicts with the 36-inch diameter potable water line.

Based on direction from WWRD, it was determined to proceed with the alternative to reroute Kihei WWPS 4 force main up Piikea Ave to Liloa Drive, shown in Exhibit 4-1. In addition to revising the alignment of the force main up Piikea Ave, the location of the new pump station along Liloa Drive was also revisited. South Maui Community Park is situated higher than the profile of Liloa Drive, resulting in deeper wet wells if the pump station is located at the park site. Another County park, located at the corner of Liloa Drive and Lipoa Street adjacent to the Kihei Aquatic Center, was identified as an alternative pump station location. This revised Alternative 3 concept minimizes construction work in South Kihei Road and construction cost associated with trenching in rock.

Drawbacks associate with this solution were also identified. Reducing the overall length of the gravity transmission line in Liloa Drive may limit opportunities to connect existing development mauka of Liloa Drive and future development in the area that comes online to the gravity transmission line. Future connections may require additional gravity lines parallel to the force mains to connect back to the new pump station at the corner of Liloa Drive and Lipoa Street.



4.2 Revised Alternative 3 Improvements

The revised Alternative 3 concept was evaluated based on the flow data observed during the flow monitoring activities and presented in Section 3. These flows were combined with the future flow projections that were developed for the August 2018 PER to identify upgrades or improvements necessary for the existing gravity lines in the vicinity of Kihei WWPS 3 and 4 as well as preliminary sizing of the pump station and force main improvements. A preliminary conceptual layout of the new proposed pump station location was also developed.

4.2.1 Gravity Line Improvements

Per discussion with WWRD, the capacity of gravity sewer lines was defined to be pipes flowing at 60% full under the average daily flow condition. The revised Alternative 3 option was analyzed to verify existing gravity sewer line capacities in relation to the observed average and peak wastewater flows in conjunction with projected future flows. The segments of gravity line found to be undersized and the required size to maintain average daily flows in the pipe under 60% of capacity are summarized in Table 4-1 and shown on Exhibit 4-1.

Table 4-1: Required Gravity Line Improvements for Revised Alternative 3

Existing Pipeline Diameter (In)	Size Required (In)	Approximate Length (ft)	WWPS Basin
12	18	550	WWPS 3
21	30	900	WWPS 4
10	18	500	WWPS 4
12	18	250	WWPS 4

It should be noted that this analysis was conducted only for the gravity system lines within South Kihei Road that feed directly into Kihei WWPS 3 and 4. Flow monitoring was not conducted on the upstream branch gravity lines or for other WWPS and no additional analysis was done on the other segments of the system.

4.2.2 Sewer Force Mains

The existing 12-inch diameter and 16-inch diameter sewer force mains for Kihei WWPSs 3 and 4, respectively, were found to have adequate capacity, based on the criteria that fluid velocity should be less than 5 feet per second (fps) at average day flows and should not exceed 10 fps during peak flows. No upgrades are required for these force mains.

4.2.3 Kihei WWPS Improvements

Kihei WWPS 3 and 4 were evaluated based on flow being diverted from the South Kihei Road transmission system at Kihei WWPS 4, to determine necessary upgrades for the discharge rates to meet the future wastewater demands. Table 4-2 shows the current flow and capacity of each of the WWPS as well as the future peak flows, for both the calculated and observed flows for the revised Alternative 3.

Table 4-2: Required Pump Station Impacts of Revised Alternative 3

Pump Station ID	Current Flow (MGD)	Existing Pump Capacity (MGD)	Peak Revised Alternative 3 Flow (MGD)
WWPS 2	0.7	1.2	1.23
WWPS 3	2	2.9	3.01
WWPS 4	2.9	4.4	4.76
WWPS 5	3.1	4.7	0.85
New WWPS			5.86

Kihei WWPSs 2 and 3 will require upgrades to meet future projected flows. These improvements should be programed into the budget as future developments are approved for connection to the wastewater system. Kihei WWPS 4 will require reconfiguration to pump up to Liloa Drive as well as upsizing to meet future flow projections. Kihei WWPS 5 will see reduced future flow and may be oversized for future needs. The new WWPS at Liloa Drive will require a pump capacity of 6.0 MGD.

4.3 New WWPS Location

The County park, located at the corner of Liloa Drive and Lipoa Street near the Kihei Aquatic Center, was identified as an alternative location due to the potential high construction costs associated with placing the pump station in the South Maui Community Park. A conceptual layout for the pump station is shown in Exhibit 4-2.

Additional due diligence is required during the design phase of the project to verify the suitability of the site. The proposed location is situated next to an existing drainage detention basin that serves the Aquatic Center and surrounding community. Available as-built plans show an emergency spillway and outlet structures associated with the detention basin. Available drainage reports for the area have been requested from WWRD for review. The pump station design needs to ensure stormwater management is maintained and no adverse impact to the surrounding properties.

Coordination is also required between WWRD and the County Department of Parks and Recreation to secure use of the site and address any requirements of the Parks Department.



Exhibit 4-2: Conceptual Pump Station Layout

4.4 Recommendation and Opinion of Probable Construction Cost

The observed flow rates, collected during flow monitoring activities, were fairly consistent with the calculated flow rates developed in the PER and the WWRD provided capacity evaluations. This correlation helps to verify the flow rates for sizing of pumps and force main design purposes.

The recommended revised Alternative 3 includes rerouting the Kihei WWPS 4 force main up Piikea Ave to Liloa Drive where it will connect to a new 30-inch diameter transmission gravity line. The line will discharge to a new pump station at the corner of Liloa Drive and Lipoa Street where it will be pumped via force main to the WWRF.

A rough order of magnitude opinion of probable construction cost (OPCC) was developed for the revised Alternative 3 and estimated to be approximately \$20.5 million. A detailed breakdown of the OPCC is provided in Appendix C. The cost estimate includes labor, materials, equipment, and construction contingencies. The cost estimate is based on analysis of bid prices for similar projects, and current construction cost averages from cost data references.

Development of project construction costs requires different levels of cost contingencies to account for project scope definition and construction uncertainties from project concept to final design. Contingent costs allow for uncertainties associated with a preliminary construction cost estimate. Factors such as unforeseen conditions, changing conditions, special construction methods, permitting and new regulations are a few of many items which may impact and increase the actual construction cost and for which allowances are made. A contingency factor of 25% has been applied to the basic estimated cost to compensate for the potential impacts of unknowns. Due to the many unknown factors and unpredictability of the future construction climate, the OPCC presented should be used for budgetary purposes only.

Appendix A: Flow Monitoring Report

Scope and Methodology

Introduction

Underground Services, Inc. entered into agreement with Kennedy Jenks to conduct flow monitoring at (7) seven locations on the island of Maui, HI. The study was scheduled for a 14-day period. The objective of this study was to measure depth, velocity, and quantify flows. The flows reported for the area will be used for capacity planning purposes.

Project Scope

The scope of this study involved using flow monitors to quantify wastewater flows at the designated locations. Specifically, the study included the following key components.

- Investigate the proposed flow-monitoring sites for adequate hydraulic conditions.
- Flow monitor installations.
- Flow monitor confirmations and data collections.
- Flow data analysis.

Equipment installation was completed on November 5, 2019. The study period began on November 06, 2019 and was completed on November 19, 2019 .

Flow Monitoring Equipment



The **ADS FlowShark Triton** monitor was selected for this project. This flow monitor is an area velocity flow monitor that uses both the Continuity and Manning's equations to measure flow.

The ADS FlowShark Triton monitor consists of data acquisition sensors and a battery-powered microcomputer. The microcomputer includes a processor unit, data storage, and an on-board clock to control and synchronize the sensor recordings. The monitor was programmed to acquire and store depth of flow and velocity readings at 5-minute intervals.

The FS Triton monitor features cross-checking using multiple technologies in each sensor for continuous running of comparisons and tolerances. The FS Triton monitor can support two (2) sets of sensors. The sensor option used for this project was:

The Peak Combo Sensor installed at the bottom of the pipe includes three types of data acquisition technologies.

The **up looking ultrasonic depth** uses sound waves from two independent transceivers to measure the distance from the sensor upward toward the flow surface; applying the speed of sound in the water and the temperature measured by sensor to calculate depth.

The **pressure depth** is calculated by using a piezo-resistive crystal to determine the difference between hydrostatic and atmospheric pressure. The pressure sensor is temperature compensated and vented to the atmosphere through a desiccant filled breather tube.

To obtain **peak velocity**, the sensor sends an ultrasonic signal at an angle upward through the widest cross-section of

the oncoming flow. The signal is reflected by suspended particles, air bubbles, or organic matter with a frequency shift proportional to the velocity of the reflecting objects. The reflected signal is received by the sensor and processed using digital spectrum analysis to determine the peak flow velocity.

Installation

Installation of flow monitoring equipment typically proceeds in four steps. First, the site is investigated for safety and to determine physical and hydraulic suitability for the flow monitoring equipment. Second, the equipment is physically installed at the selected location. Third, the monitor is tested to assure proper operation of the velocity and depth of flow sensors and verify that the monitor clock is operational and synchronized to the master computer clock. Fourth, the depth and velocity sensors are confirmed and line confirmations are performed.

In pipes up to 42 inches in diameter, the sensors were mounted on expandable stainless steel rings, inserted at least a foot upstream into influent pipes and tightened against the inside walls of the pipes. Influent pipe installations reduce the influences of turbulence and backwater often caused by changes in channel geometry in manholes.



Data Collection, Confirmation, and Quality Assurance

Data collects were done remotely via wireless connect on a weekly basis via ADS Field Representatives. During the

monitoring period, field crews visit each monitoring location to verify proper monitor operation and document field conditions. The following quality assurance steps are taken to assure the integrity of the collected data:

Measure power supplies: monitors were powered by dry cell battery packs. Voltages were recorded and battery packs replaced, as necessary. Separate batteries provided back-up power to memory allowing primary batteries to be replaced without loss of data.

Clock synchronization: Field crews synchronized monitor clocks to master clocks.

Confirm depth and velocity readings: Field crews descended into meter manholes to manually measure depths and velocities and compare them meter readings to confirm that they agreed. An annually calibrated Hach model FH950 point velocity sensor is used to validate the flow monitor velocity readings. They also measured silt levels, if any, in the inverts of the pipes. Silt areas were subtracted from flow areas to compute true areas of flow.

Upload and Review Data: Data collected from the monitors were uploaded and reviewed by a Data Analyst for completeness, outliers and deviations in the flow patterns, which indicate system anomalies or equipment failure.

Flow Quantification Methods

There are two main equations used to measure open channel flow: the **Continuity Equation** and the **Manning Equation**. The Continuity Equation, which is considered the most accurate, can be used if both depth of flow and velocity are available. In cases where velocity measurements are not available or not practical to obtain, the Manning Equation can be used to estimate velocity from the depth data based on certain physical characteristics of the pipe (i.e. the slope and roughness of the pipe being measured). However, the Manning equation assumes uniform, steady flow hydraulic conditions with non-varying roughness, which are typically invalid assumptions in most sanitary sewers. The Continuity Equation was used exclusively for this study.

Continuity Equation

The Continuity Equation states that the flow quantity (Q) is equal to the wetted area (A) multiplied by the average velocity (V) of the flow.

Q = A * V

This equation is applicable in a variety of conditions including backwater, surcharge, and reverse flow.

Data Analysis and Presentation

Data Analysis

A flow monitor is typically programmed to collect data at 5-minute intervals throughout the monitoring period. The monitor stores raw data consisting of (1) the ultrasonic depth, (2) the peak velocity and (3) the pressure depth. The data is imported into ADS's proprietary software and is examined by a data analyst to verify its integrity. The data analyst also reviews the daily field reports and site visit records to identify conditions that would affect the collected data.

The line confirmation data developed by the field personnel are reviewed by the data analyst to identify inconsistencies and verify data integrity. We convert the stable peak velocity readings in the pipe to average values by using a factor of 0.9; a value found to appropriately reflect a typical average to peak ratio in smaller sewers. This ratio is used in converting the peak velocity measured by the sensor to the average velocity used in the Continuity equation. The data analyst selects which depth sensor entity will be used to calculate the final depth information. Silt levels present at each site visit are reviewed and representative silt levels established.

Occasionally the velocity sensor's performance may be compromised resulting in invalid readings sporadically during the monitoring period. This is generally caused by excessive debris (silt) blocking the sensor's crystals, shallow flows (~< 2")

that may drop below the top of the sensor or very clear flows lacking the particles needed to measure rate. In order to use the Continuity equation to quantify the flow during these periods, a Data Analyst and/or Engineer will use the site's historical pipe curve (depth vs. velocity) data along with valid field confirmations to reconstitute and replace the false velocity recordings with expected velocity readings for a given historical depth along the curve.

Selections for the above parameters can be constant or can change during the monitoring period. While the data analysis process is described in a linear manner, it often requires an iterative approach to accurately complete.

Data Presentation

This type of flow monitoring project generates a large volume of data. To facilitate review of the data, results have been provided in graphical and tabular formats. The flow data is presented graphically in the form of scattergraphs and hydrographs. Hydrographs are based on 5 minute averaging. Tables are provided in daily average format. These tables show the flow rate for each day, along with the daily minimum and maximums, the times they were observed, the total daily flow, and total flow for the month (or monitoring period). The following explanation of terms may aid in interpretation of the tables and hydrographs.

DEPTH - Final calculated depth measurement (in inches)

QUANTITY - Final calculated flow rate (in MGD)

VELOCITY - Final calculated flow velocity (in feet per second)

REPORT TOTAL - Total volume of flow recorded for the indicated time period (in MG)

Site Commentary

Site Information

KI12XA0300	
Pipe Dimensions	21 "
Silt Level	0.00"

Overview

Site KI12XA0300 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

This location was installed downstream of sites KI12XA0420 and KI12XA0500. A review of balancing shows a small net flow between the sites.

Observations

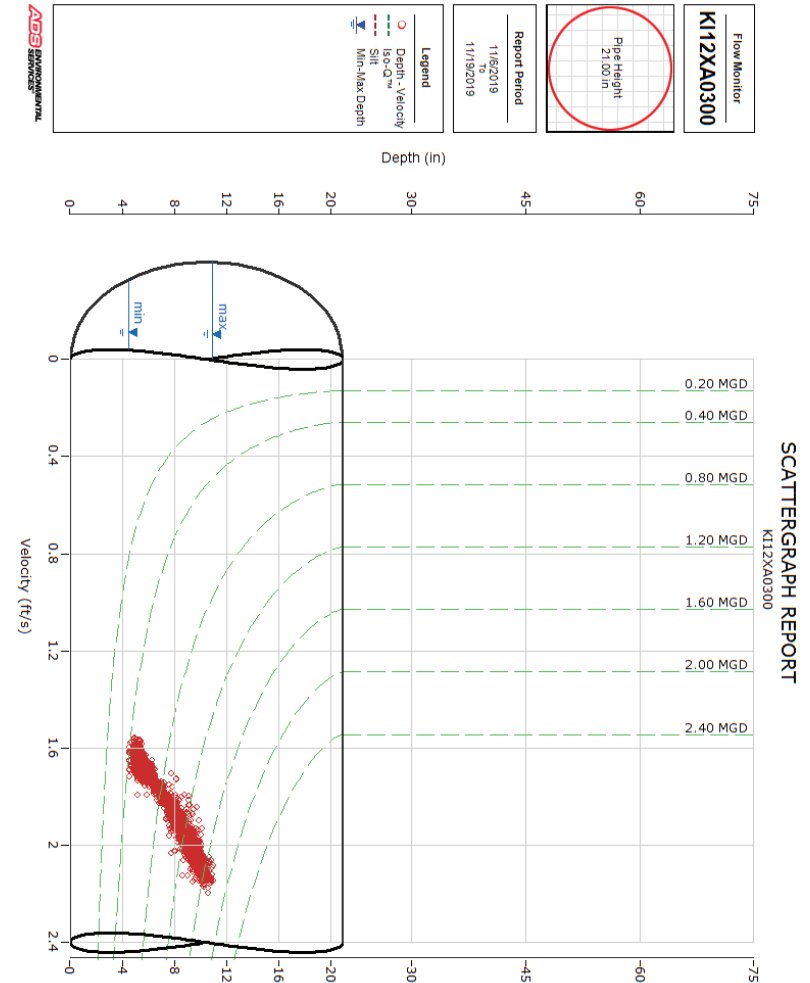
Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 48% full at its recorded hourly peak of 10.09 inches and approximately 38% full during the typical average depth of 7.95 inches.

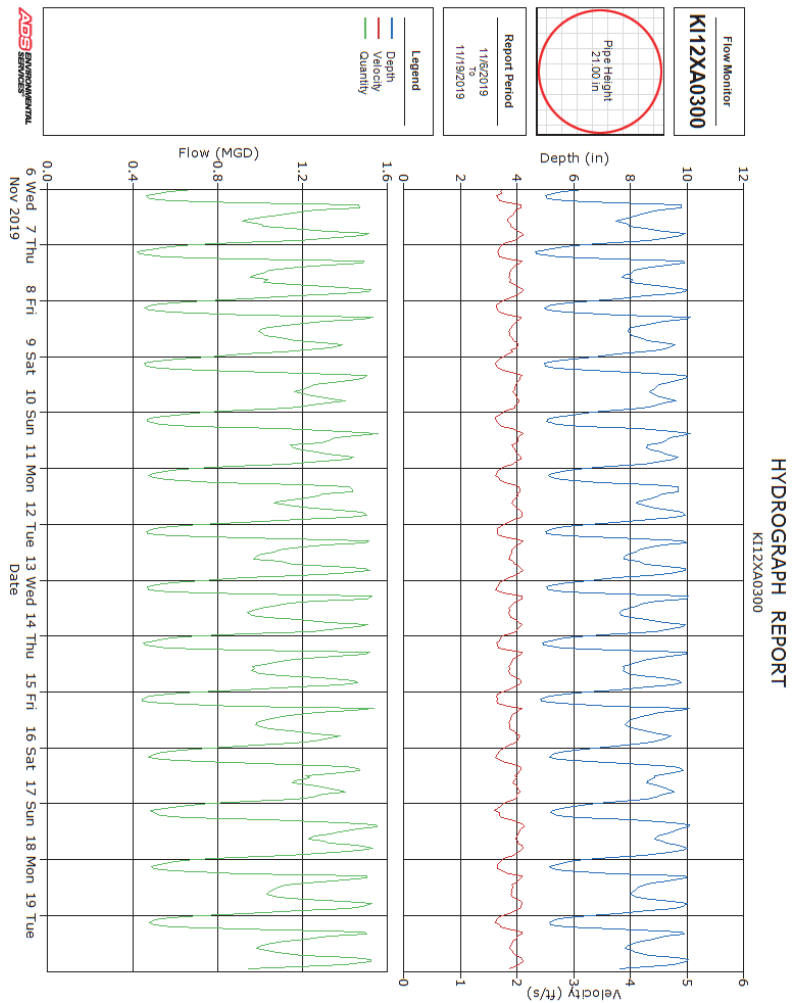
Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	7.95	1.89	1.046
Minimum	4.49	1.56	0.393
Maximum	10.97	2.20	1.762
Time of Minimum	11/7/2019 03:50	11/9/2019 03:35	11/7/2019 04:20
Time of Maximum	11/15/2019 07:50	11/12/2019 07:55	11/15/2019 07:50

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100





Site Commentary

Site Information

KI12XA0420	
Pipe Dimensions	21 "
Silt Level	0.00"

Overview

Site KI12XA0420 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

This location was installed downstream of sites KI13XB0100 and KI13XA0200. A review of balancing shows a slight imbalance between the sites.

Observations

Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 48% full at its recorded hourly peak of 10.09 inches and approximately 38% full during the typical average depth of 7.94 inches.

Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	7.94	1.73	0.956
Minimum	4.88	1.13	0.334
Maximum	10.61	2.25	1.749
Time of Minimum	11/7/2019 03:35	11/10/2019 03:40	11/7/2019 04:05
Time of Maximum	11/13/2019 07:50	11/17/2019 11:10	11/13/2019 07:40

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100

HYDROGRAPH REPORT

KI12XA0420

Flow Monitor

KI12XA0420

Pipe Height
21.00 in

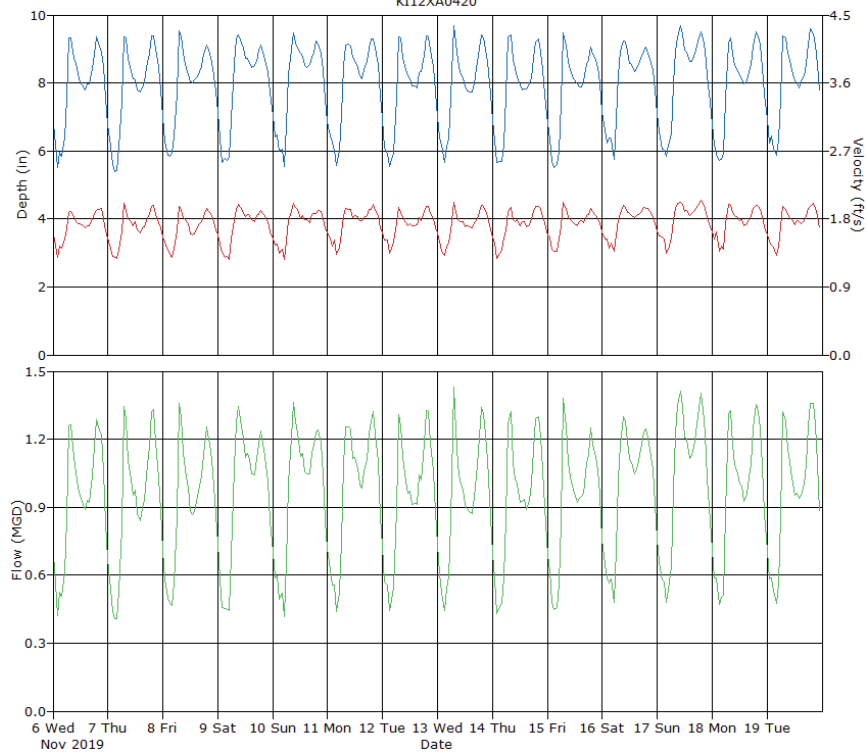
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth
- Velocity
- Quantity

ABS ENVIRONMENTAL SERVICES



SCATTERGRAPH REPORT

KI12XA0420

Flow Monitor

KI12XA0420

Pipe Height
21.00 in

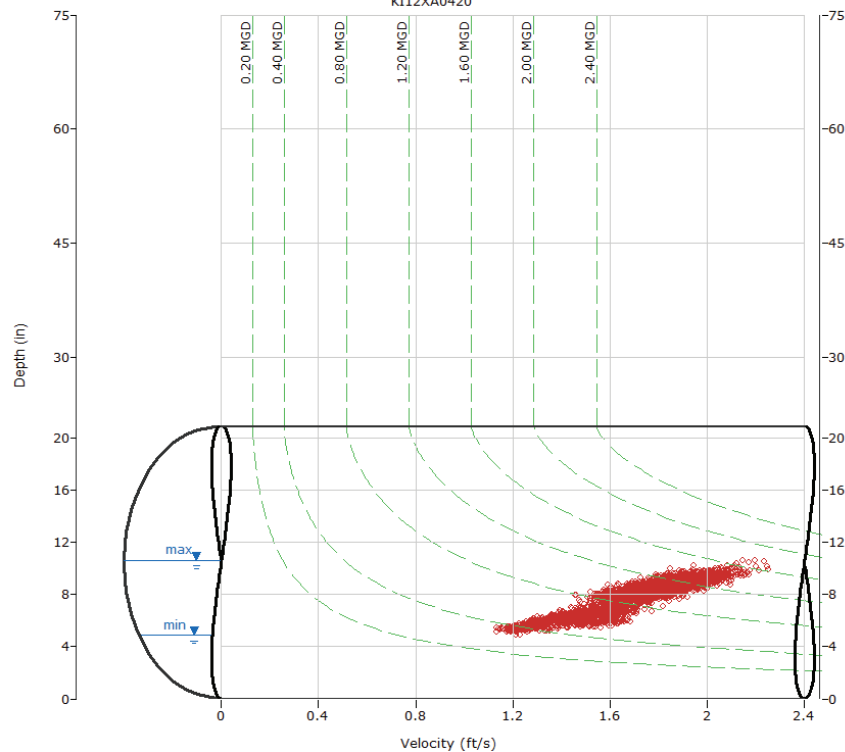
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth - Velocity
- Iso-Q™
- Silt
- Min-Max Depth

ABS ENVIRONMENTAL SERVICES



Site Commentary

Site Information

KI12XA0500	
Pipe Dimensions	18 "
Silt Level	0.00"

Overview

Site KI12XA0500 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

This location was installed upstream of site KI12XA0300 (See KI12XA0300 Site Commentary For More Details).

Observations

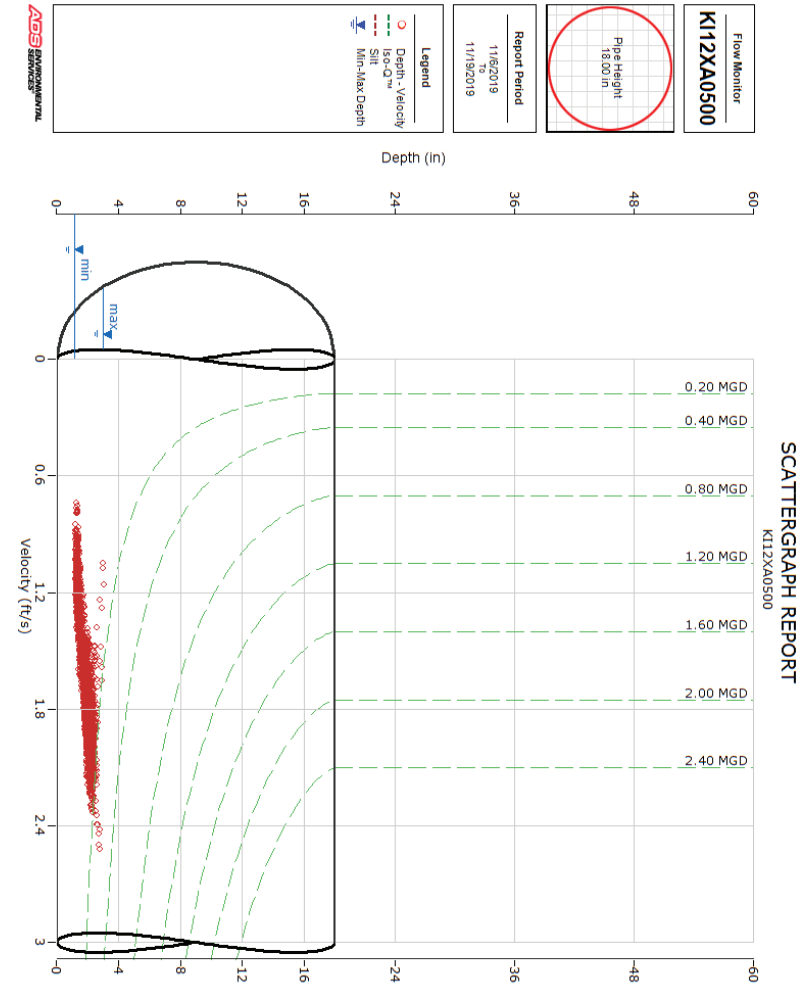
Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 14% full at its recorded hourly peak of 2.56 inches and approximately 10% full during the typical average depth of 1.84 inches.

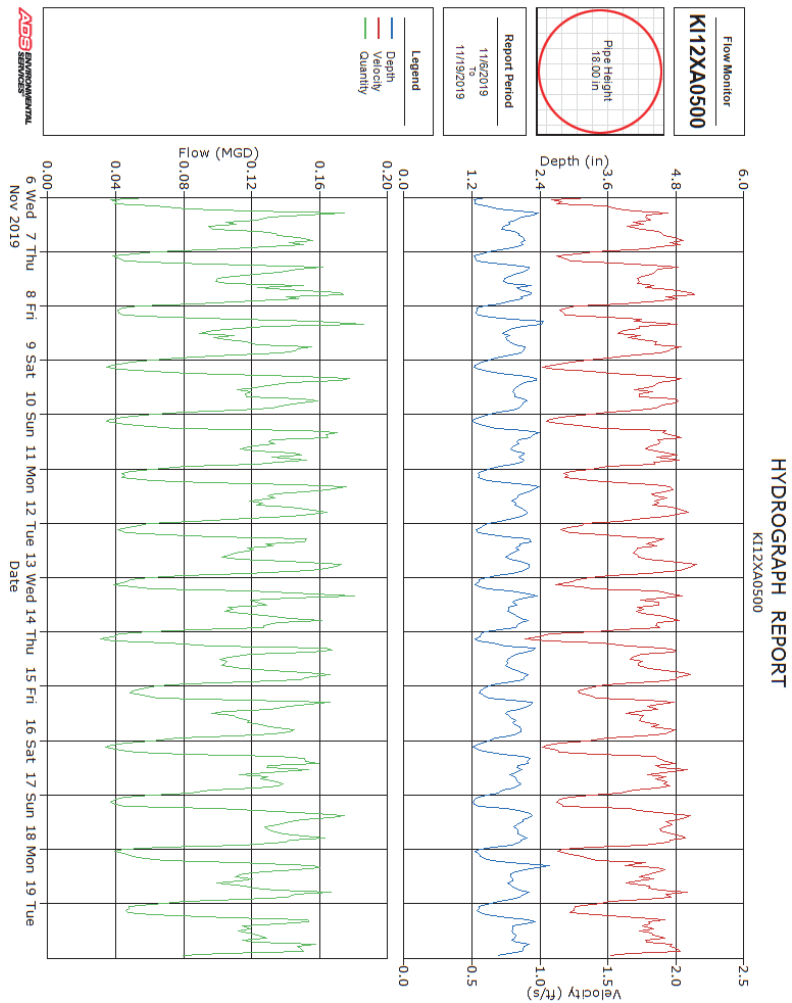
Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	1.84	1.69	0.109
Minimum	1.14	0.74	0.026
Maximum	2.99	2.52	0.279
Time of Minimum	11/17/2019 05:20	11/14/2019 03:45	11/14/2019 03:45
Time of Maximum	11/8/2019 07:45	11/8/2019 08:05	11/8/2019 08:05

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100





Site Commentary

Site Information

K112XB0210	
Pipe Dimensions	8 "
Silt Level	0.00"

Overview

Site K112XB0210 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

Observations

Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 30% full at its recorded hourly peak of 2.40 inches and approximately 24% full during the typical average depth of 1.92 inches.

Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	1.92	1.61	0.070
Minimum	1.30	0.56	0.015
Maximum	2.93	2.31	0.165
Time of Minimum	11/14/2019 09:45	11/14/2019 03:35	11/14/2019 03:35
Time of Maximum	11/7/2019 09:40	11/17/2019 19:45	11/14/2019 09:50

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100

HYDROGRAPH REPORT

KI12XB0210

Flow Monitor

KI12XB0210

Pipe Height
8.00 in

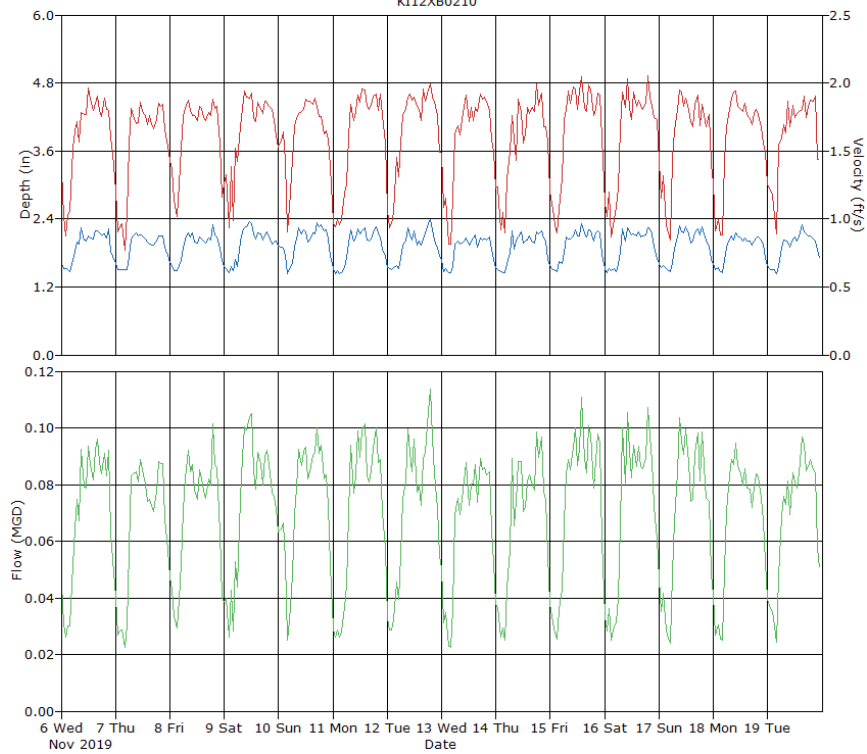
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth
- Velocity
- Quantity

ABS ENVIRONMENTAL SERVICES



SCATTERGRAPH REPORT

KI12XB0210

Flow Monitor

KI12XB0210

Pipe Height
8.00 in

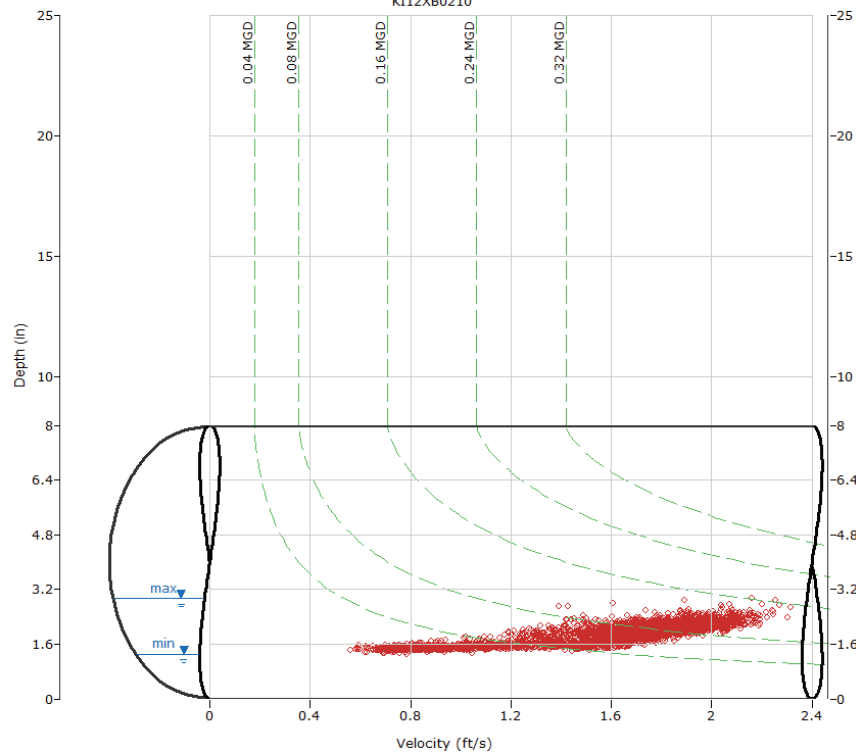
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth - Velocity
- Iso-Q™
- Silt
- Min-Max Depth

ABS ENVIRONMENTAL SERVICES



Site Commentary

Site Information

KI12XB0300	
Pipe Dimensions	10 "
Silt Level	0.00"

Overview

Site KI12XB0300 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

Observations

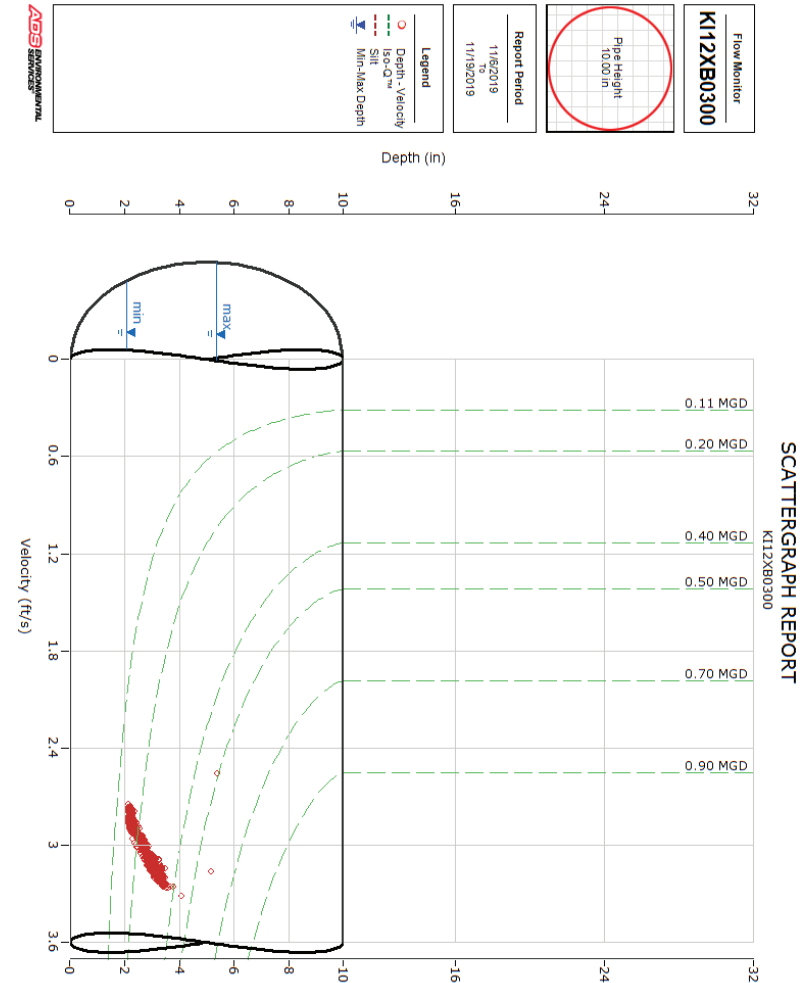
Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 34% full at its recorded hourly peak of 3.44 inches and approximately 28% full during the typical average depth of 2.81 inches.

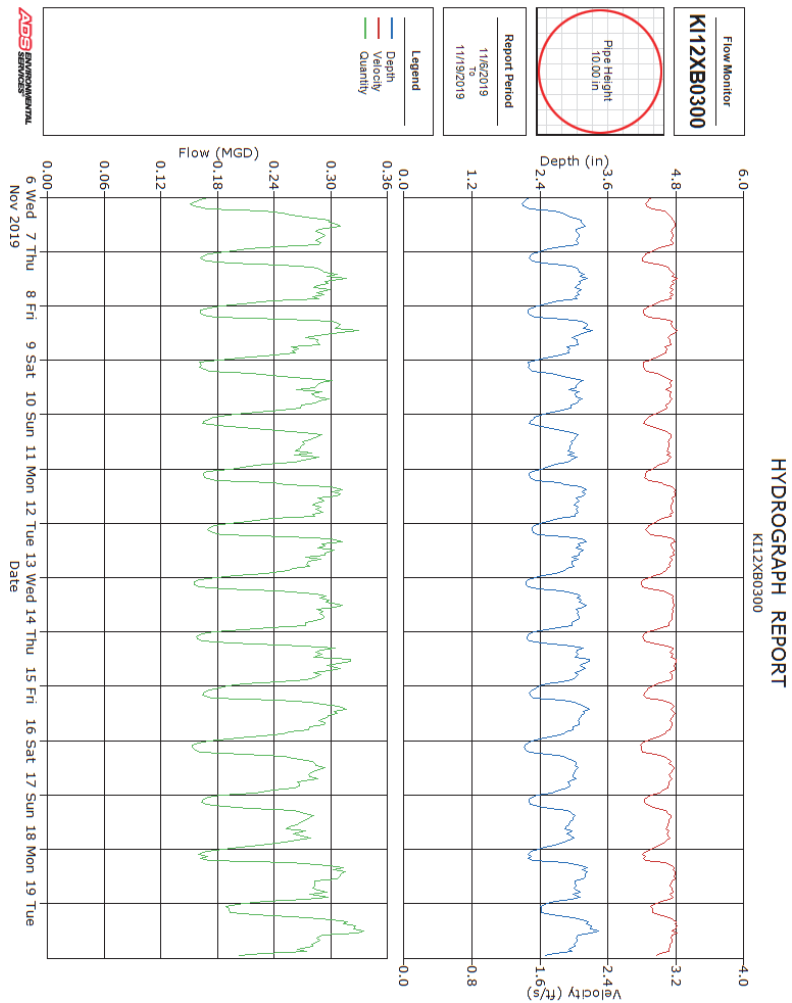
Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	2.81	3.05	0.250
Minimum	2.07	2.56	0.150
Maximum	5.37	3.32	0.577
Time of Minimum	11/6/2019 03:30	11/19/2019 12:00	11/6/2019 03:30
Time of Maximum	11/19/2019 12:00	11/15/2019 10:50	11/15/2019 10:55

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100





Site Commentary

Site Information

KI13XA0200	
Pipe Dimensions	12 "
Silt Level	0.00"

Overview

Site KI13XA0200 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

This location was installed upstream of site KI12XA0420 (See KI12XA0420 Site Commentary For More Details).

Observations

Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 33% full at its recorded hourly peak of 3.98 inches and approximately 26% full during the typical average depth of 3.16 inches.

Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	3.16	1.31	0.145
Minimum	2.19	0.66	0.045
Maximum	4.32	1.79	0.274
Time of Minimum	11/6/2019 02:40	11/6/2019 03:10	11/6/2019 02:50
Time of Maximum	11/14/2019 07:35	11/18/2019 19:35	11/14/2019 07:35

Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100

HYDROGRAPH REPORT

KI13XA0200

Flow Monitor

KI13XA0200

Pipe Height
12.00 in

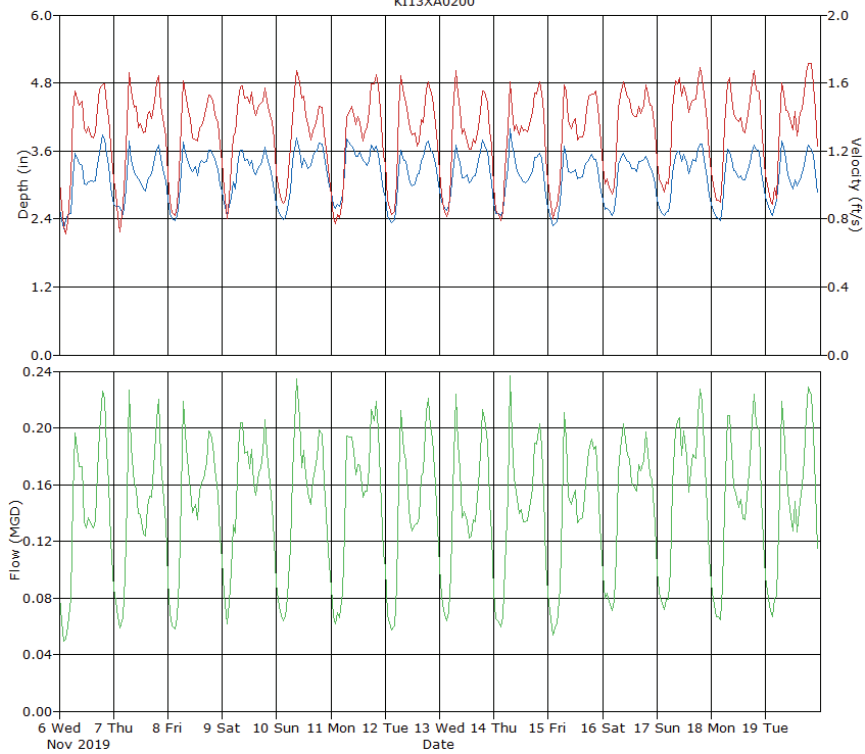
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth
- Velocity
- Quantity

ABS ENVIRONMENTAL SERVICES



SCATTERGRAPH REPORT

KI13XA0200

Flow Monitor

KI13XA0200

Pipe Height
12.00 in

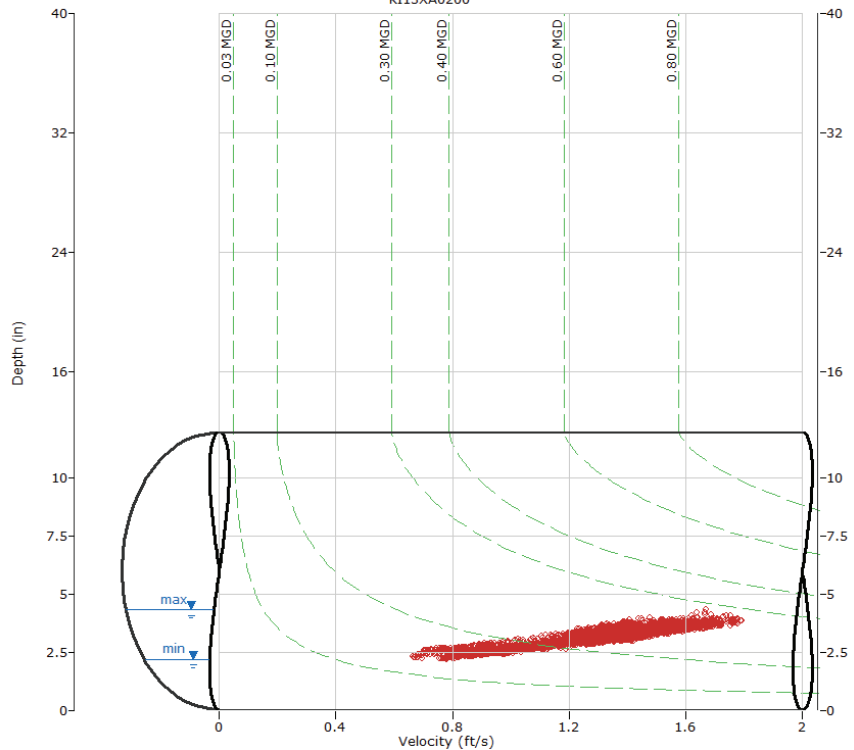
Report Period

11/6/2019
To
11/19/2019

Legend

- Depth - Velocity
- Iso-Q™
- Silt
- Min-Max Depth

ABS ENVIRONMENTAL SERVICES



Site Commentary

Site Information

KI13XB0100	
Pipe Dimensions	27 "
Silt Level	0.00"

Overview

Site KI13XB0100 functioned under normal conditions during the period Wednesday, November 6, 2019 to Tuesday, November 19, 2019. No surcharge conditions were experienced at this location. Review of the scattergraph shows this site remained free-flowing throughout the data period.

Flow depth and velocity measurements recorded by the flow monitor are consistent with field confirmations conducted and support the relative accuracy of the flow monitor at this location.

This location was installed upstream of site KI12XA0420 (See KI12XA0420 Site Commentary For More Details).

Observations

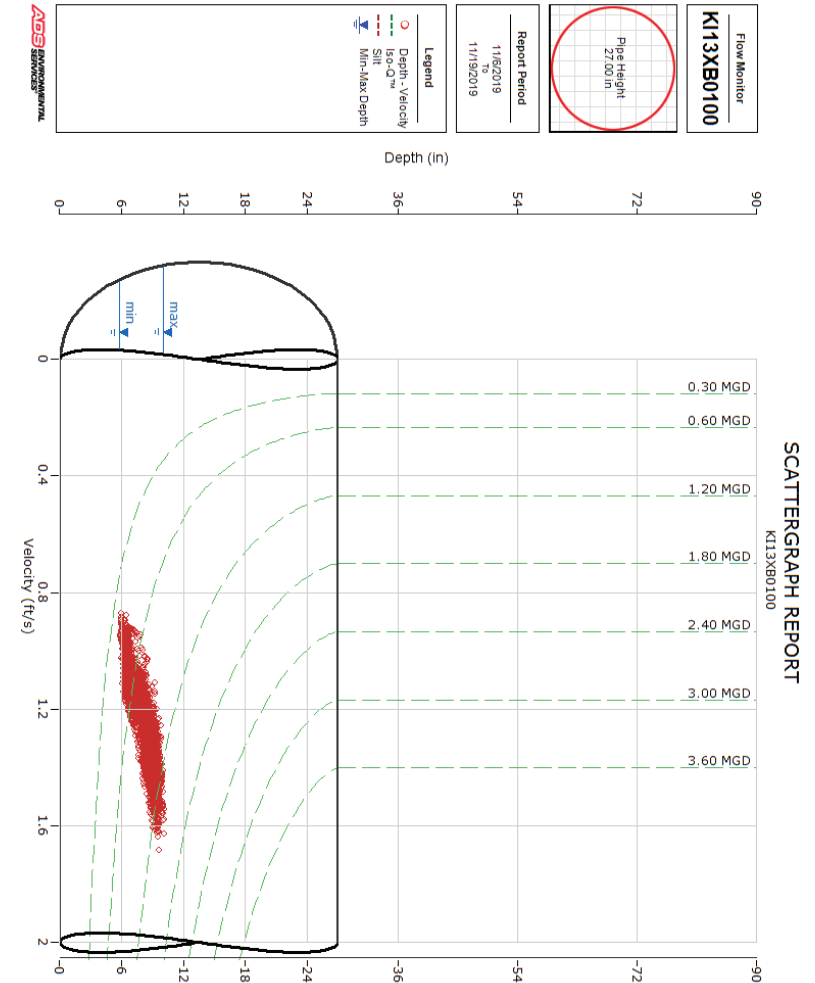
Average flow depth, velocity, and quantity data observed during Wednesday, November 6, 2019 to Tuesday, November 19, 2019, along with observed minimum and maximum data, are provided in the following table. The values presented are based on 5-minute data. In regards to depth, this site flows at approximately 35% full at its recorded hourly peak of 9.49 inches and approximately 30% full during the typical average depth of 8.13 inches.

Observed Flow Conditions			
Item	Depth (in)	Velocity (ft/s)	Quantity (MGD)
Average	8.13	1.26	0.843
Minimum	5.79	0.87	0.363
Maximum	10.06	1.68	1.416
Time of Minimum	11/15/2019 04:15	11/7/2019 03:45	11/7/2019 03:45
Time of Maximum	11/13/2019 07:35	11/17/2019 19:50	11/13/2019 07:40

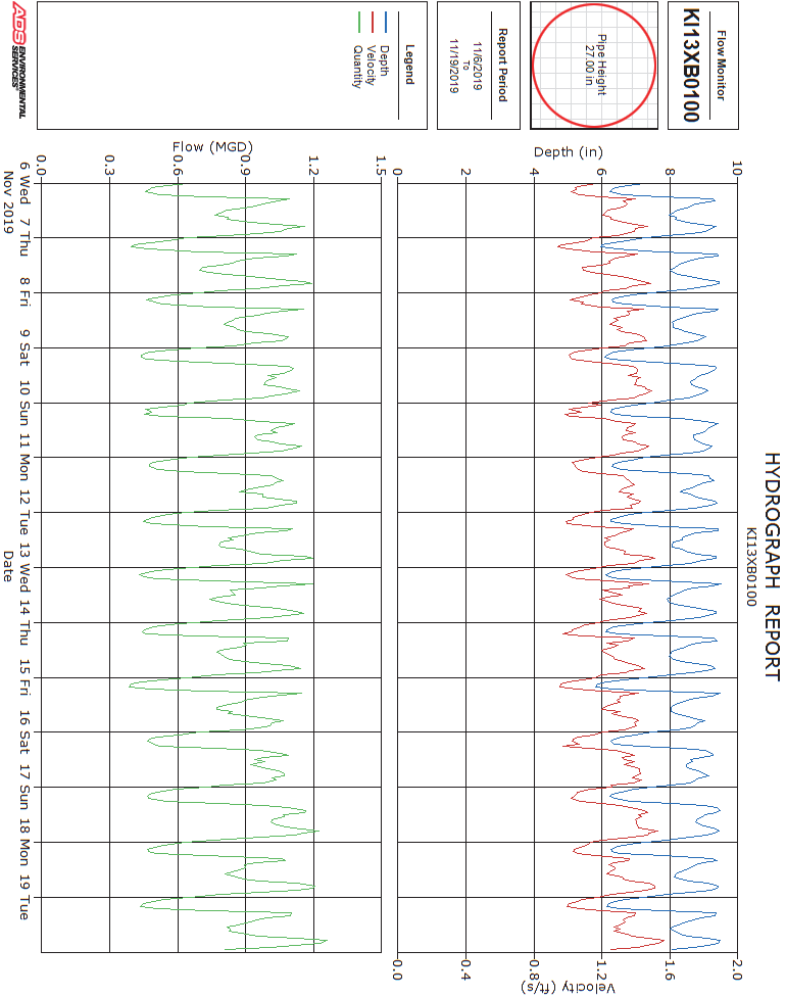
Data Quality

Data uptime observed during the Wednesday, November 6, 2019 to the Tuesday, November 19, 2019 monitoring period is provided in the table below. Based upon the quality and consistency of the observed flow depth and velocity data, the Continuity equation was used to calculate flow rate and quantities during the monitoring period.

Percent Uptime	
Depth (in)	100
Velocity (ft/s)	100
Quantity (MGD)	100



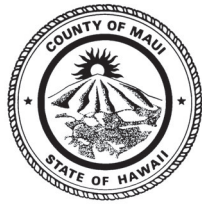
Appendix B: WWRD Capacity Evaluations



**County of Maui
Wastewater Reclamation Division**

**Pump Station Capacity Evaluation
Report**

January, 2019



Contents:

Capacity Assessment Summary Spreadsheet

Pump Stations Data Sheets

Raw data gathered October 2018– January 2019

SUMMARY

County of Maui Pump Station Capacity Assessment January 1, 2018 thru January 31, 2019															
District	Pump Station	Year Constructed or Upgraded	No. of Pumps	Variable or Constant Speed	Motor size	TDH Feet	Capacity per Station GPM	Pump Station Capacity MGD	*PDWF Total Q MGD	% of Total Q PDWF	ADWF Total Q MGD	% of Total Capacity ADWF	Flowmeter Y/N	Method of Flow Calculation	
MauiKukuihuli	Kuhau #1	2011	2	CS	7.5	48	305	0.44	0.074	17%	0.044	10%	Y	Field Test	
	Kuhau #2	2011	2	CS	7.5	35	488	0.67	0.082	12%	0.055	8%	Y	Field Test	
	Kuhau #3	2011	2	CS	10	53	464	0.87	0.080	12%	0.066	10%	Y	Field Test	
	Kuhau #4	2010	2	CS	7.5	42	367	0.53	0.105	20%	0.065	16%	Y	Field Test	
	Pala	1988	2	CS	50	94	520	0.75	0.389	52%	0.245	33%	Y	Field Test	
	Speckleville	2010	2	CS	20	47	1242	1.92	0.443	25%	0.280	16%	Y	Field Test	
	Kaa	2012	2	CS	20	47	1242	1.79	0.413	23%	0.355	20%	Y	Field Test	
	A & B	2011	2	VS	10	32	975	2.39	1.007	43%	0.582	24%	N	Calculation	
	Kahului	2006	3	VS	62	63	2345	6.05	2.884	34%	1.680	24%	Y	Field Test	
	Pala	2000	3	VS	220	110	6544	11.33	5.613	51%	3.653	34%	Y	Field Test	
	Pala	2017	2	CS	25	89	1500	2.51	0.715	20%	0.511	8%	Y	Field Test	
	Waihi	2016	2	VS	11	94	350	0.50	0.074	15%	0.041	8%	Y	Field Test	
	Waihi	2016	2	VS	11	94	350	0.50	0.074	15%	0.041	8%	Y	Field Test	
	Hono Hui Ama	2016	2	CS	7.5	58	145	0.21	0.045	22%	0.023	11%	Y	Field Test	
	Kihei	Kihei 2	1977	2	CS	15	43	850	1.32			0.315	28%	N	Calculation
		Kihei 3	1994	2	VS	40	32	2014	2.90		51%	0.812	34%	Y	Field Test
Kihei 4		1994	2	VS	40	33	3055	4.40	2.209	50%	1.458	34%	Y	Field Test	
Kihei 5		1994	2	VS	40	25	3264	4.70	2.153	45%	1.584	34%	Y	Field Test	
Kihei 6		1994	4	VS	200	184	2917	11.00	4.928	45%	3.597	33%	Y	Field Test	
Kihei 7		1994	3	VS	50	50	2570	7.40	2.567	35%	1.571	21%	Y	Field Test	
Kihei 8		1994	2	VS	60	58	2900	4.18	1.367	33%	1.035	25%	Y	Field Test	
Kihei 9		1973	2	CS	40	85	1000	1.44	0.121	8%	0.073	5%	Y	Field Test	
Kihei 10		2014	3	VS	105	137	2025	5.83	0.989	17%	0.711	12%	Y	Field Test	
Kihei 16		1989	2	CS	25	150	200	0.29			0.026	9%	N	Calculation	
Lihua		Pumama	2015	2	CS	5	28	300	0.43	0.071	16%	0.051	12%	Y	Field Test
		Lihua 1	2010	2	VS	70	40	4722	12.50	3.627	28%	2.944	20%	Y	Field Test
		Lihua 2	2016	4	VS	85	79	3200	7.52	2.270	30%	1.712	23%	Y	Field Test
		Lihua 3	2018	4	VS	70	50	4200	8.00	2.424	18%	1.788	15%	N	Field Test
		Lihua 4	2006	2	CS	18	29	1600	2.59	0.603	23%	0.354	10%	N	Field Test
		Lihua 5	2008	2	CS	30	32	1600	1.73			0.544	2		

County of Maui Pump Station Capacity Assessment January 1, 2018 thru January 31, 2019															
District	Pump Station	Year Constructed or Upgraded	No. of Pumps	Variable or Constant Speed	Motor size	TDH Feet	Capacity per Station GPM	Pump Station Capacity MGD	*PDWF Total Q MGD	% of Total Q PDWF	ADWF Total Q MGD	% of Total Capacity ADWF	Flowmeter Y/N	Method of Flow Calculation	
MauiKukuihuli	Kuhau #1	2011	2	CS	7.5	48	305	0.44	0.074	17%	0.044	10%	Y	Field Test	
	Kuhau #2	2011	2	CS	7.5	35	488	0.67	0.082	12%	0.055	8%	Y	Field Test	
	Kuhau #3	2011	2	CS	10	63	464	0.67	0.080	12%	0.056	10%	Y	Field Test	
	Kuhau #4	2010	2	CS	7.5	42	367	0.53	0.105	20%	0.065	16%	Y	Field Test	
	Pala	1988	2	CS	50	94	520	0.75	0.399	52%	0.245	33%	Y	Field Test	
	Speckleville	2010	2	CS	20	47	1242	1.79	0.443	25%	0.280	16%	Y	Field Test	
	Kaa	2012	2	CS	20	47	1242	1.79	0.443	25%	0.280	16%	Y	Field Test	
	A & B	2011	2	VS	10	32	975	2.39	1.007	43%	0.582	24%	N	Calculation	
	Kanului	2006	3	VS	62	63	2345	6.05	2.084	34%	1.480	24%	Y	Field Test	
	Pala	2000	3	VS	220	110	6544	11.33	6.813	51%	3.853	34%	Y	Field Test	
	Pala	2017	2	CS	25	89	1500	2.51	0.715	20%	0.371	8%	Y	Field Test	
	Waihihi Koa	2016	2	VS	11	94	350	0.50	0.074	15%	0.041	8%	Y	Field Test	
	Waihihi Koa	2016	2	VS	11	94	350	0.50	0.074	15%	0.041	8%	Y	Field Test	
	Hono Hui Ama	2016	2	CS	7.5	58	145	0.21	0.045	22%	0.023	11%	Y	Field Test	
	Kihei	Kihei 2	1977	2	CS	15	43	850	1.32			0.515	28%	N	Calculation
		Kihei 3	1994	2	VS	40	32	2014	2.90		51%	0.812	34%	Y	Field Test
Kihei 4		1994	2	VS	40	33	3055	4.40	2.209	50%	1.458	34%	Y	Field Test	
Kihei 5		1994	2	VS	40	25	3264	4.70	2.153	45%	1.584	34%	Y	Field Test	
Kihei 6		1994	4	VS	200	184	2917	11.00	4.528	45%	3.597	33%	Y	Field Test	
Kihei 7		1994	3	VS	50	50	2570	7.40	2.567	35%	1.571	21%	Y	Field Test	
Kihei 8		1994	2	VS	60	58	2900	4.18	1.367	33%	1.035	25%	Y	Field Test	
Kihei 9		1973	2	CS	40	85	1000	1.44	0.121	8%	0.073	5%	Y	Field Test	
Kihei 10		2014	3	VS	105	137	2025	5.83	0.989	17%	0.711	12%	Y	Field Test	
Kihei 16		1989	2	CS	25	150	200	0.29			0.026	9%	N	Calculation	
Lihua		Puunaha	2015	2	CS	5	28	300	0.43	0.071	16%	0.051	12%	Y	Field Test
		Lihua 1	2010	2	VS	70	40	4722	12.50	3.627	29%	2.944	20%	Y	Field Test
		Lihua 2	2016	4	VS	85	79	3200	7.52	2.270	30%	1.712	23%	Y	Field Test
		Lihua 3	2018	4	VS	70	50	4200	8.00	2.424	18%	1.788	15%	N	Field Test
		Lihua 4	2006	2	CS	18	29	1600	2.59	0.603	23%	0.354	10%	N	Field Test
		Lihua 5	2008	2	CS	30	52	1600	1.73			0.544	20%	N	Calculation
	Lihua 6	2008	2	CS	30	52	1600	1.73			0.544	20%	N	Calculation	
	Lihua 8	1988	2	VS	100	86	3200	8.20			1.823	18%	Y	Field Test	
	Nanuli 2	1988	2	VS	100	86	3200	8.20			1.823	18%	N	Calculation	
	Nanuli 2	1988	2	VS	100	86	3200	8.20			1.823	18%	N	Calculation	
	Nanuli 3	1985	2	VS	75	61	3560	5.26			N/A	N/A	N	Calculation	
	Nanuli 4	1985	2	VS	125	103	3200	4.61			0.637	18%	N	Calculation	
	Nanuli 5	1985	2	VS	30	68	1060	1.53			0.118	8%	N	Calculation	
	Kanaila	1976	3	CS	20	50	1050	3.02	0.486	15%	0.330	4%	N	Calculation	
	Sharon	1967	2	CS	6.5	12	400	0.58			0.098	17%	N	Calculation	
	Kanapali	2017	2	CS	45	77	1340	1.93	1.122	58%	0.636	33%	Y	Field Test	
Hyatt	2015	2	CS	12	27	1110	1.60	0.174	11%	0.222	14%	Y	Calculation		
	Mockai	2012	3	VS	7.4	37	432	1.14	0.551	48%	0.132	16%	Y	Field Test	

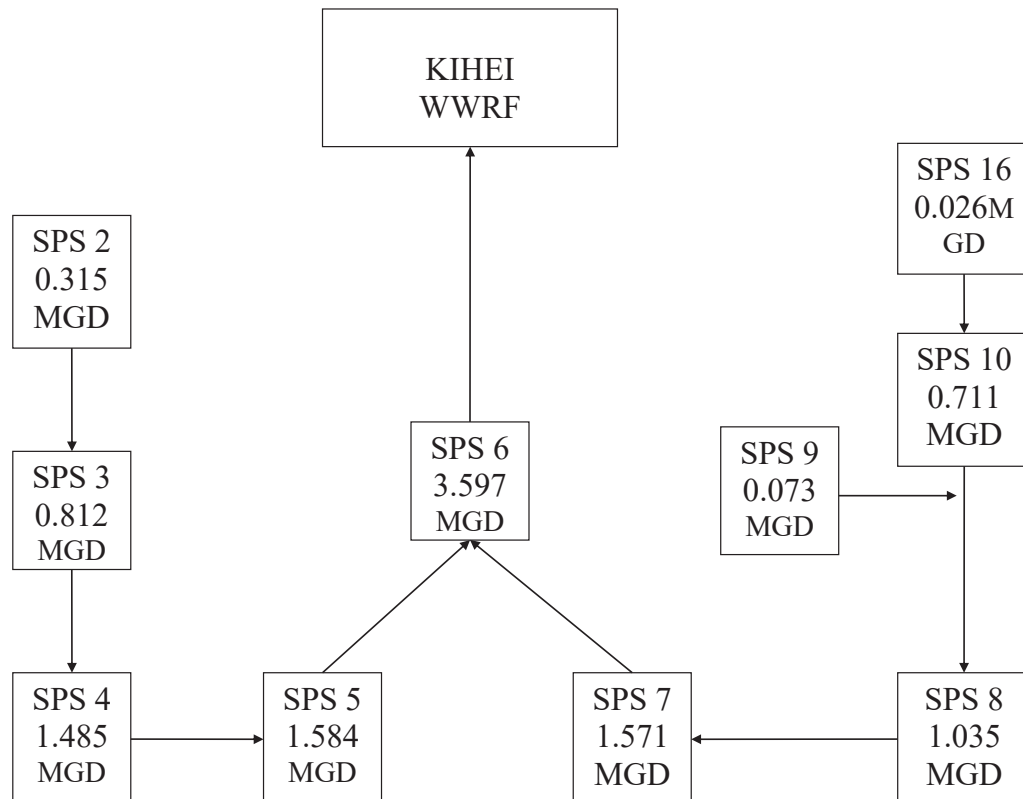
**County of Maui
Wastewater Reclamation Division
Facility Capacity Evaluation**

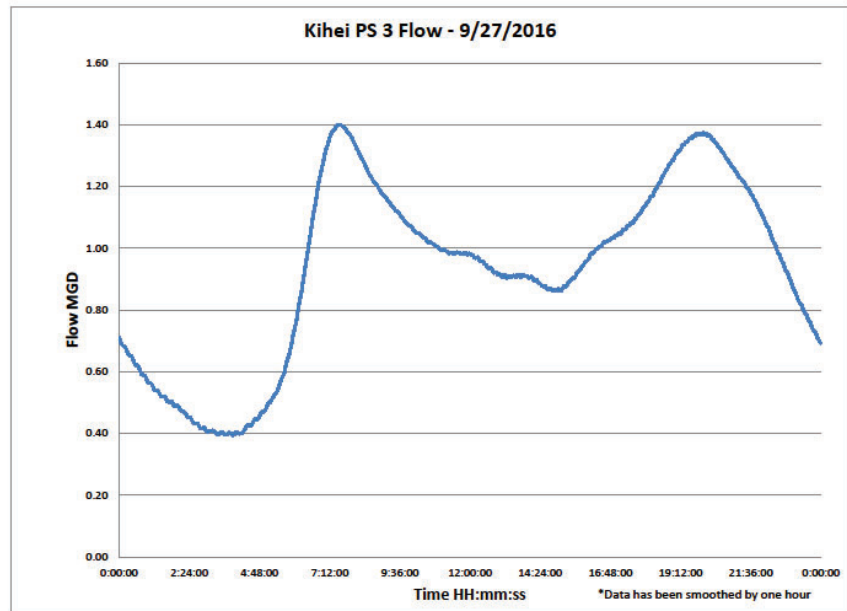
Facility Name & Location

Kihei PS 2 S. Kihei Rd. & Uwapo St.
Kihei, Hi.

Year Evaluated	Capacity per Pump GPM	Pump Station Capacity MGD	ADWF Total Q MGD	% of Capacity ADWF	PWWF Total Q MGD	% of Capacity PWWF	Rise Total Q	Basis of ADWF Flow Calculation	% Yearly Growth Rate	Next Evaluation Date
2001	800	1.152	0.388	34%	0.74	64%		Runtime		2002
2002	800	1.152	0.420	36%	0.80	69%	0.032	Runtime	8%	2003
2003	800	1.152	0.275	24%	0.52	45%	-0.145	Runtime	-35%	2004
2004	800	1.152	0.388	34%	0.74	64%	0.113	Runtime	41%	2005
2005	800	1.152	0.593	51%	1.13	98%	0.205	Flowmeter	53%	2006
*2006	660	0.950	0.260	27%	0.49	52%	-0.333	Flowmeter	-56%	2007
2007	660	0.950	0.324	34%	0.62	65%	0.064	Flowmeter	25%	2008
2008	660	0.950	0.296	31%	0.56	59%	-0.028	Runtime	-9%	2009
2010	660	0.950	0.237	25%	0.45	47%	-0.059	Flowmeter	-20%	2012
+2011	850	1.224	0.219	18%	0.42	34%	-0.018	Flowmeter	-8%	2012
2012	850	1.224	0.230	19%	0.44	36%	-0.007	Flowmeter	5%	2014
2014	850	1.224	0.320	26%	0.61	50%	0.101	Flowmeter	39%	2015
2016	850	1.224	0.256	21%	0.49	40%	0.026	Flowmeter	-20%	2017
2018	850	1.224	0.315	26%	0.60	49%	-0.005	Runtime	23%	2020

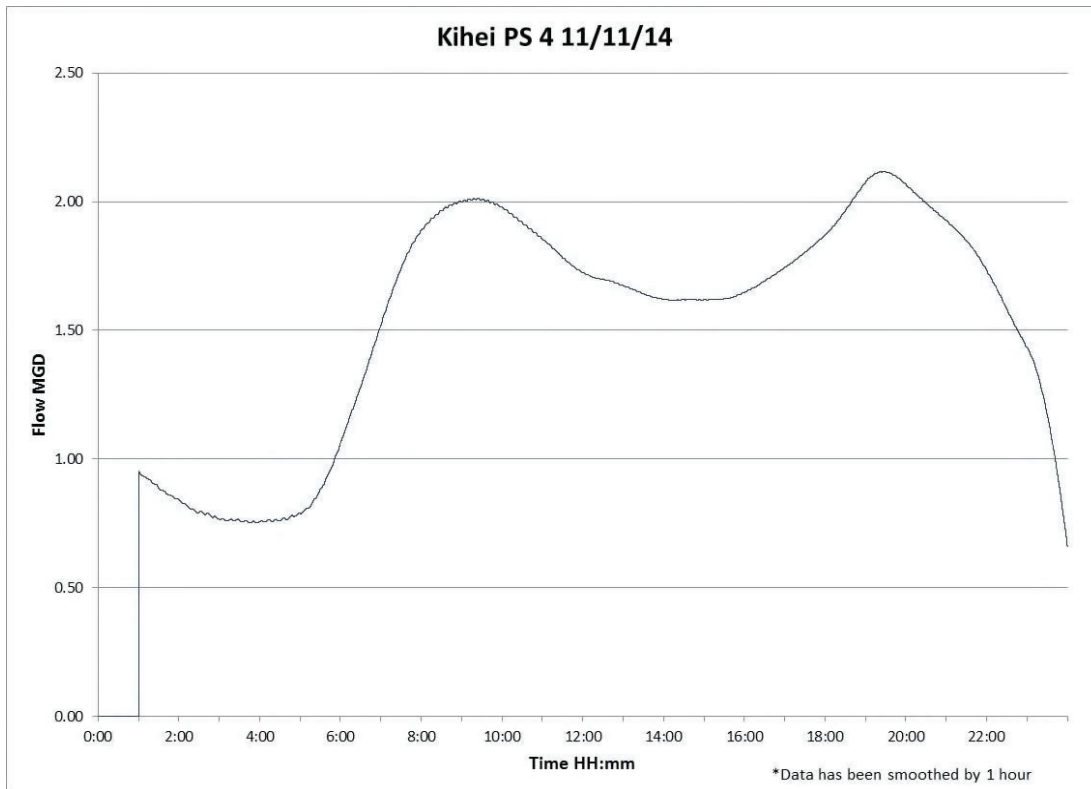
+New forcemain and pumps - Capacity based on flow measurements, but portable flowmeter is not very accurate.
Pressure reading indicates higher flow
*Documentation and measured values indicate pump capacity actually 660 gpm





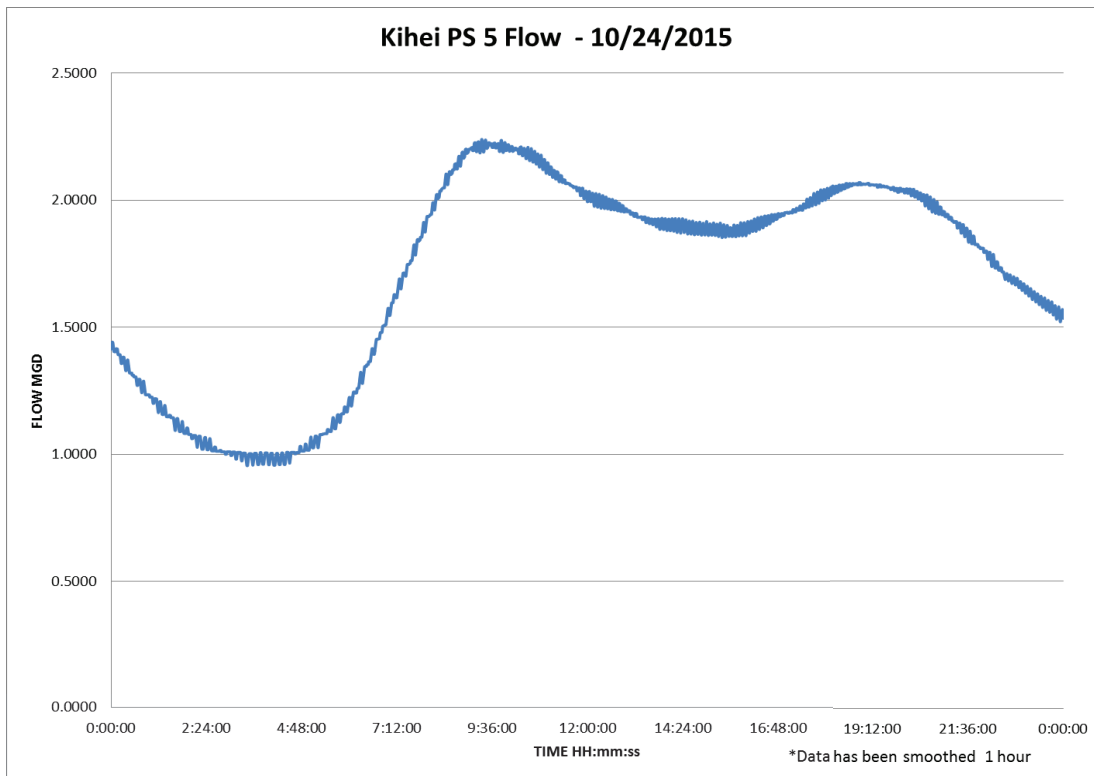
County of Maui Wastewater Reclamation Division Facility Capacity Evaluation												
Facility Name & Location												
Kihei PS 3		S. Kihei Rd. & Kalepolepo Pl. Kihei, Hi.										
Year Evaluated	Capacity per Pump GPM	Pump Station Capacity MGD	ADWF Total Q MGD	% of Capacity ADWF	PDWF Total Q MGD	% of Capacity PDWF	PWWF Total Q MGD	% of Capacity PWWF	Rise Total Q	Basis of ADWF Flow Calculation	% Yearly Growth Rate	Next Evaluation Date
2001	3014	4.34	1.059	24%			2.12	49%		Runtime		2002
2002	3014	4.34	4.111	95%			8.22	189%	3.052	Runtime	288%	2003
2003	3014	4.34	0.933	21%			1.87	43%	-3.178	Runtime	-77%	2004
2004	3014	4.34	1.059	24%			2.12	49%	0.126	Flowmeter	14%	2005
2005	3014	4.34	0.937	22%			1.87	43%	-0.122	Flowmeter	-12%	2006
*2006	2014	2.90	0.617	21%			1.23	43%	-0.320	Flowmeter	-34%	2007
+2007	2014	2.90	1.985	68%			3.97	137%	1.368	Flowmeter	222%	2008
2007	2014	2.90	0.792	27%			1.58	55%	0.175	Flowmeter	28%	2008
2008	2014	2.90	0.617	21%			1.23	43%	-0.175	Runtime	-22%	2009
2010	2014	2.90	0.848	29%			1.70	58%	0.231	Flowmeter	37%	2012
2011	2014	2.90	0.888	31%			1.78	61%	0.040	Flowmeter	5%	2012
2012	2014	2.90	0.849	29%			1.70	59%	0.001	Flowmeter	-4%	2014
2014	2014	2.90	0.971	33%			1.94	67%	0.083	Flowmeter	14%	2015
2015	2014	2.90	0.844	29%			1.69	58%	-0.005	Flowmeter	-13%	2016
2016	2014	2.90	0.946	33%	1.474	51%	1.89	65%	-0.025	Flowmeter	12%	2017
2018	2014	2.90	0.812	28%			1.62	56%	-0.032	Flowmeter	-14%	2020

*Manuals and nameplate indicate pump is 2014 gpm not 3014 gpm
 +Flow measurements taken from 12/5/07 to 12/10/07 - this period included major storm event.



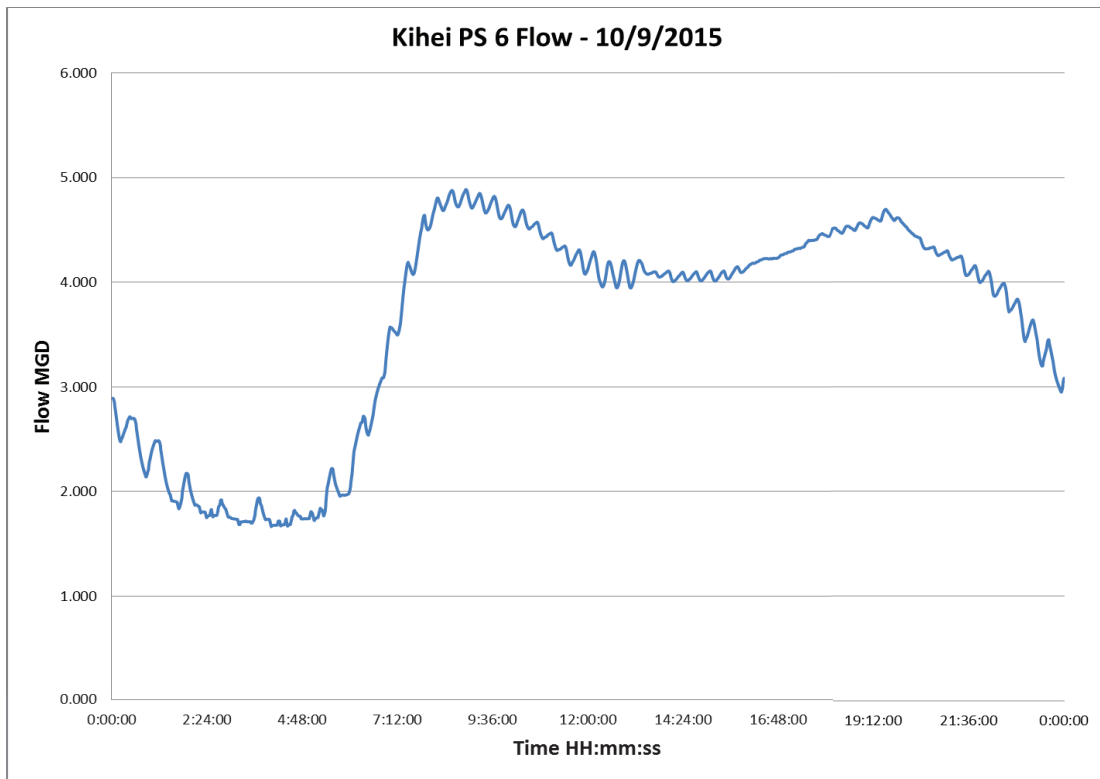
County of Maui Wastewater Reclamation Division Facility Capacity Evaluation												
Facility Name & Location												
Kihei PS 4		S. Kihei Rd. & Nohokai St. Kihei, Hi.										
Year Evaluated	Capacity per Pump GPM	Pump Station Capacity MGD	ADWF Total Q MGD	PDWF Total Q MGD	% of Capacity PDWF	% of Capacity ADWF	PWWF Total Q MGD	% of Capacity PWWF	Rise Total Q	Basis of ADWF Flow Calculation	% Yearly Growth Rate	Next Evaluation Date
2001	3055	4.399	1.493			34%	2.99	68%		Runtime		2002
2002	3055	4.399	4.402			100%	8.80	200%	2.909	Runtime	195%	2003
2003	3055	4.399	1.715			39%	3.43	78%	-2.687	Runtime	-61%	2004
2004	3055	4.399	1.493			34%	2.99	68%	-0.222	Runtime	-13%	2005
2005	3055	4.399	1.480			34%	2.96	67%	-0.013	Flowmeter	-1%	2006
2006	3055	4.399	1.250			28%	2.50	57%	-0.230	Flowmeter	-16%	2007
*2007	3055	4.399	3.184			72%	6.37	145%	1.934	Flowmeter	155%	2008
2007	3055	4.399	1.078			25%	2.16	49%	-0.172	Flowmeter	-14%	2008
2008	3055	4.399	1.595			36%	3.19	73%	0.517	Runtime	48%	2009
2010	3055	4.399	1.585			36%	3.17	72%	-0.010	Flowmeter	-1%	2011
2011	3055	4.399	1.581			36%	3.16	72%	-0.004	Flowmeter	0%	2012
2012	3055	4.399	1.539			35%	3.08	70%	-0.042	Flowmeter	-3%	2013
2014	3055	4.399	1.536	2.209	50%	35%	3.07	70%	-0.003	Flowmeter	0%	2015
2015	3055	4.399	1.596			36%	3.19	73%	0.060	Flowmeter	4%	2016
2016	3055	4.399	1.546			35%	3.09	70%	-0.050	Flowmeter	-3%	2017
2018	3055	4.399	1.485			34%	2.97	68%	-0.061	Flowmeter	-4%	2020

*Flow measurements taken from 12/5/07 to 12/10/07 - this period included major storm event.



County of Maui Wastewater Reclamation Division Facility Capacity Evaluation												
Facility Name & Location												
Kihei PS 5		S. Kihei Rd. & Welakahao Rd. Kihei, Hi.										
Year Evaluated	Capacity per Pump GPM	Pump Station Capacity MGD	ADWF Total Q MGD	% of Capacity ADWF	PDWF Total Q MGD	% of Capacity PDWF	PWWF Total Q MGD	% of Capacity PWWF	Rise Total Q	ADWF Flow Calculation	% Yearly Growth Rate	Next Evaluation Date
2001	3204	4.614	1.956	42%			3.72	81%		Runtime		2002
2002	3204	4.614	3.744	81%			7.11	154%	1.788	Runtime	91%	2003
2003	3204	4.614	1.087	24%			2.07	45%	-2.657	Runtime	-71%	2004
2004	3204	4.614	1.956	42%			3.72	81%	0.869	Runtime	80%	2005
2005	3204	4.614	1.658	36%			3.15	68%	-0.298	Flowmeter	-15%	2006
*2006	3264	4.700	1.611	34%			3.06	65%	-0.047	Flowmeter	-3%	2007
2007	3264	4.700	1.182	25%			2.24	48%	0.429	Runtime	-27%	2008
2008	3264	4.700	1.206	26%			2.29	49%	0.025	Runtime	2%	2009
2010	3264	4.700	1.450	31%			2.76	59%	0.244	Flowmeter	20%	2012
2011	3264	4.700	1.450	31%			2.76	59%	0.000	Flowmeter	0%	2012
2012	3264	4.700	1.400	30%			2.66	57%	-0.050	Flowmeter	-3%	2014
#2015	3264	4.700	1.714	36%	2.153	46%	3.26	69%	0.314	Flowmeter	22%	2016
2016	3264	4.700	1.656	35%			3.15	67%	0.256	Flowmeter	18%	2017
2018	3264	4.700	1.584	34%			3.01	64%	-0.130	Flowmeter	-8%	2020

*Manuals and nameplate indicate pump is 3264 gpm not 3204 gpm.
New Flowmeter Installed. The time of daily peak flow was variable.



County of Maui Wastewater Reclamation Division Facility Capacity Evaluation													
Facility Name & Location													
Kihei PS 6		S. Kihei Rd. & Kalama Park Kihei, Hi.											
Year Evaluated	Capacity per Pump GPM	Pump Station Capacity MGD	ADWF Total Q MGD	% of Capacity ADWF	PDWF Total Q MGD	% of Capacity PDWF	PWWF Total Q MGD	% of Capacity PWWF	Rise Total Q	Basis of ADWF Flow Calculation	% Yearly Growth Rate	Next Evaluation Date	
2001	2917	14.05	5.042	36%			10.89	78%		Runtime		2002	
2002	2917	14.05	6.656	47%			14.38	102%	1.614	Runtime	32%	2003	
2003	2917	14.05	4.634	33%			10.01	71%	-2.022	Runtime	-30%	2004	
2004	2917	14.05	5.042	36%			10.89	78%	0.408	Runtime	9%	2005	
2005	2917	14.05	4.018	29%			8.68	62%	-1.024	Flowmeter	-20%	2006	
*2006	2917	11.28	3.96	35%			8.55	76%	-0.058	Flowmeter	-1%	2007	
2007	2917	11.00	3.98	36%			8.60	78%	0.02	Flowmeter	1%	2008	
2008	2917	11.00	3.89	35%			8.40	76%	-0.09	Flowmeter	-2%	2009	
2010	2917	11.00	3.66	33%			7.91	72%	-0.23	Flowmeter	-6%	2012	
2012	2917	11.00	3.53	32%			7.63	69%	-0.127	Flowmeter	-3%	2014	
2014	2917	11.00	4.065	37%			8.78	80%	0.532	Flowmeter	15%	2015	
2015	2917	11.00	3.631	33%	4.928	45%	7.84	71%	-0.434	Flowmeter	-11%	2016	
2016	2917	11.00	3.652	33%			7.89	72%	0.021	Flowmeter	1%	2017	
2018	2917	11.00	3.597	33%			7.77	71%	-0.055	Flowmeter	-2%	2020	

*Pump station capacity based on flowmeter (recently replaced) with 3 pumps running.



**NATURAL RESOURCES
ASSESSMENT**

APPENDIX

B



A natural resources assessment for the North Kihei Mauka Wastewater Transmission System Project, Kihei, Maui



AECOS Inc.
45-939 Kamehameha Highway
Suite 104
Kāne'ohe, Hawai'i 96744

July 27, 2021

A natural resources assessment for the North Kihei Mauka Wastewater Transmission System Project, Kihei, Maui

July 27, 2021

AECOS No. 1654

Bryson Luke and Susan Burr
AECOS, Inc.
45-939 Kamehameha Highway Suite 104
Kāne'ohe, Hawai'i 96744
Phone: (808) 234-7770 Email: bryson@aecos.com

Introduction

The County of Maui, Department of Environmental Management (DEM) proposes the design and construction of a wastewater collection and transmission system in Kihei, Maui ("Project"; Figure 1). The North Kihei Mauka Wastewater Transmission System Project will improve sewer capacity of the main gravity collection lines and force mains within South Kihei Road, as these systems are near-capacity. Improvements will reduce the potential for sewer spills into the ocean.

As proposed, the Project transmission line will connect Kihei Wastewater Reclamation Facility (WWRF) with Kihei Wastewater Pump Station (WWPS) No. 3. The transmission line will run adjacent to Liloa Drive and cross Kēōkea Gulch within Tax Map Keys (TMKs): 2-2-002:087 and 088, and cross Waimāha'iha'i Gulch within TMK; 2-2-002:072. Portions of parcels immediately up- and downstream of the Project crossings were also investigated in this survey, including TMKs: 2-2-002:042; 3-9-002:125 and 116; and 3-9-033:084. Munekiyo & Hiraga, Inc. tasked AECOS, Inc. with the delineation of federal jurisdictional waters and assessment of aquatic biological resources and water quality¹ of Kēōkea and Waimāha'iha'i gulches within the Project area. This report² details the findings of field efforts conducted on February 17, 2021.

¹ As surface water was not present in Kēōkea and Waimāha'iha'i gulches at the time of the survey, no field measurements of water quality or observations on aquatic biota could be undertaken.

² This report is intended to become part of the public record and incorporated into an EA for the Project.

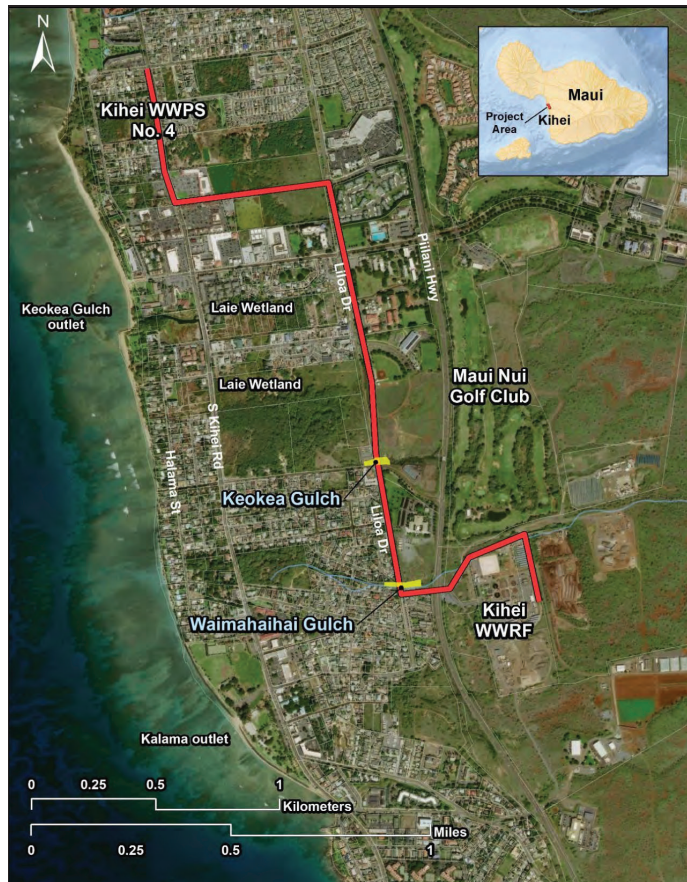


Figure 1. Project transmission line (red line) and survey areas at Kēōkea and Waimāhā'ihā'i gulch crossings (in yellow).

General Site Description

The Project is located in the Hāpapa Watershed of South Maui. Hāpapa Watershed occupies 10,721 ha (26,493 ac) of the western flank of East Maui Mountain and extends from approximately 1,500 m (4,900 ft) above sea level (ASL) to the ocean shore. The localities of Kīhei and Kula-Kēōkea occur within the watershed. No perennial streams are listed as occurring in this watershed (HCPSU, 1990; HIMB, 1997; Parham et al., 2008); in fact, no perennial streams occur in the Kīhei District. Rather, the Hāpapa Watershed comprises four named gulches (Kūlanihāko'i, Waipu'ilani, Kēōkea, and Waimāhā'ihā'i) that discharge into the Pacific Ocean south of Ma'alaea Bay (Figure 2). The *Southwest Maui Watershed Plan* identifies the four gulches of Hāpapa Watershed as being particularly susceptible to flooding (MEC, 2019).

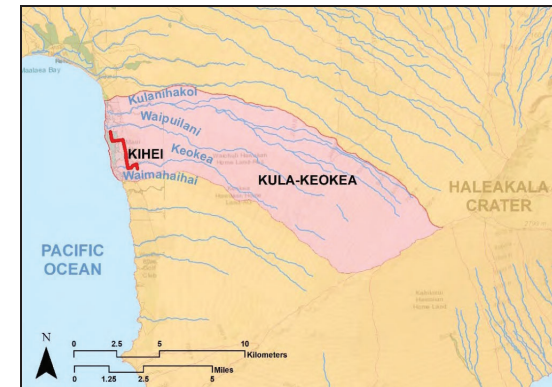


Figure 2. Project transmission line (red line) and Hāpapa "watershed" (in pink) on Maui Island, Hawai'i.

Kīhei sits in the leeward rain shadow of East Maui Mountain, and is thus generally dry. The 1981-2010 U.S. Climate Normals dataset reports average annual rainfall in Kīhei as 307 mm (12.08 in; NOAA-NCEI, 2020b). The *Rainfall Atlas of Hawai'i* (Giambelluca et al., 2013) approximates average annual rainfall at the Project site as 280 mm (11.00 in). Rainfall increases with elevation, and average annual rainfall reaches 1270 mm (50 in) near the top of Hāpapa Watershed. Rainfall is generally greatest in January and least in June (Figure 3).

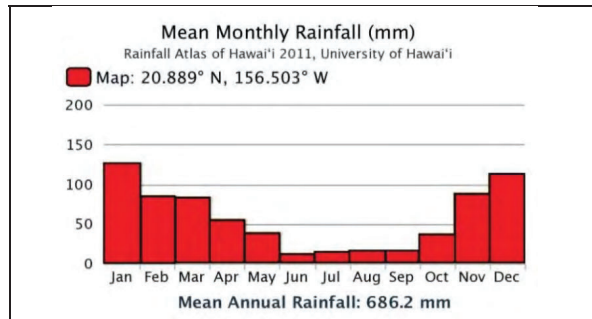


Figure 3. Mean monthly rainfall (mm) at the Project site.

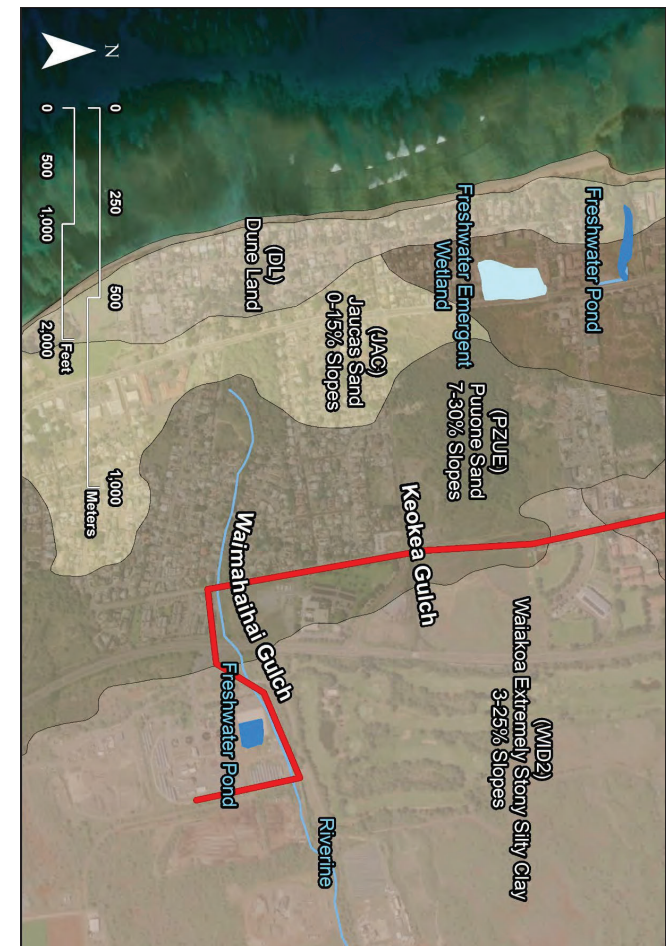
Project Site Description

The Project transmission line will cross Kēōkea and Waimāha'iha'i gulches between approximately 6 m (20 ft) to 12 m (40 ft) elevation ASL, some 940 m (3,000 ft) inland from the ocean shore and downslope of Pi'ilani Highway. In the Project area, the gulches are separated overland by a distance of approximately 500 m (1600 ft) along a segment of Liloa Drive (Fig. 1). The Project transmission line will cross Kēōkea Gulch near the intersection of Liloa Drive and East Welakahao Road, and cross Waimāha'iha'i Gulch near Liloa Drive and East Welakahao Road near Ehiku Loop. Combined, Kēōkea and Waimāha'iha'i gulches drain an area of approximately 2,640 ha (6,530 ac; calculated using USGS *StreamStats* [2017]), or roughly 25% of the Hāpapa Watershed.

The U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) is a nationwide geospatial dataset of wetlands and other surface hydrology features (USFWS, nd-a). Kēōkea Gulch is not depicted in the NWI, but Waimāha'iha'i Gulch is mapped as a riverine feature through the Project area. Per the NWI, Waimāha'iha'i Gulch does not have a surface connection to the ocean; it ends approximately 450 m (1500 ft) short of the ocean (Figure 4).

The U.S. Dept. of Agriculture, Natural Resources Conservation Service (USDA-NRCS) web soil survey shows the dominant soil type at the gulch crossings as Puuone Sand, 7 to 30% slopes (PZUE; USDA-NRCS, 2020). Waiakoa Extremely

Figure 4. Project transmission line (red line) crossing of Kēōkea and Waimāha'iha'i gulches, with NWI (features) and NRCS soils geospatial data overlays (USDA-NRCS, 2020).



The U.S. Dept. of Agriculture, Natural Resources Conservation Service (USDA-NRCS) web soil survey shows the dominant soil type at the gulch crossings as Puuone Sand, 7 to 30% slopes (PZUE; USDA-NRCS, 2020). Waiakoa Extremely Stony Silty Clay, 3 to 25% ("WID2") is upslope of the gulch crossings, and Jaucas Sand, 0 to 15% slopes ("JAC") occurs immediately downslope (Fig. 4). Most of the land *makai* of South Kihei Road is Dune Land ("DL"). None of these soil types are listed as a hydric soil (soils commonly found in wetlands) in the USDA-NRCS Soil Data Access *Hydric Soils List* (USDA-NRCS, nd.). Within the Project area, the 1% annual chance flood zone is confined to the channels of Waimāha'īha'ī and Kēōkea gulches (Figure 5; HDLNR, 2019).

Gulches of the Hāpapa Watershed are among the most frequently flooded in southwest Maui, and sediment loading from storm water runoff is listed as a problematic pollutant for these drainage systems (MEC, 2019; HDOH-CWB, 2020). Data from the NOAA Storm Event Database were reviewed to assess the occurrences of flooding in the Project vicinity. Over the last ten years (2010-2020), at least five flood events resulted in road closures in or adjacent to Kēōkea and Waimāha'īha'ī gulches. These flood events are summarized in Table 1.

Table 1. Storm events in NOAA Storm Event Database near Kēōkea and Waimāha'īha'ī gulches, from 2010 to 2020 (NOAA-NCEI, 2020a).

Date	Event Type	Description
12/26/2010	Flash Flood	Maui police close a portion of South Kihei Road because of flooding. Culverts and ditches were overflowing onto the street.
2/11/2011	Flash Flood	Heavy rain caused flooding along South Kihei Road in Kihei on the island of Maui.
2/11/2017	Flash Flood	South Kihei Road on Maui was closed between Wailana Place and Kaonoulu Street because of two feet of water on the roadway.
3/07/2017	Flash Flood	Portion of S. Kihei Road was closed due to flash flooding. Several homes had to be evacuated as well. Several vehicles and condominiums were damaged, and seven individuals trapped by the flood had to be rescued by fire crews.
4/06/2020	Flash Flood	South Kihei Road was closed near Kulanihakoi Gulch, between Wailana Place and Kulanihakoi Street, in the southern part of Maui's Central Valley because of rising water. The flood rendered a few cars inoperable. More flooding was reported along South Kihei Road between Lipoa and Halekuai streets [near Kēōkea Gulch].

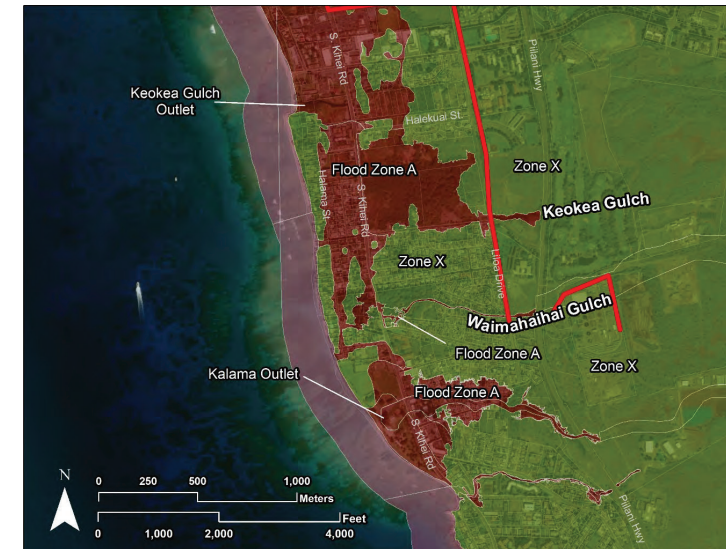


Figure 5. Project transmission line (red line) crossing of Kēōkea and Waimāha'īha'ī gulches, with flood zone overlay (HDLNR, 2019).

Coastal wetlands play a critical function in reducing sediment runoff onto nearshore reefs by slowing and retaining floodwater, allowing suspended sediment to settle naturally, before reaching the ocean. Over half of the original coastal wetlands in Kihei and Hāpapa Watershed have been lost through the filling of wetlands for development over the past century (Erickson and Shade, 2005; MEC, 2019), and many of these coastal developments are now subject to frequent flooding.

Kēōkea Gulch

Kēōkea Gulch attains a maximum elevation of around 2,400 m (8,000 ft) ASL along Haleakalā Ridge and has a direct surface connection to the Pacific Ocean. The upper drainage basin of the gulch encompasses portions of the State Kula Forest Reserve and the Kula-Kēōkea district. The gulch descends the slope of East Maui Mountain, flowing east to west through undeveloped land in a well-defined natural channel down to the Kihei district. The gulch bifurcates at around 105 m

(350 ft) ASL, above Maui Nui Golf Club and Kihei WWRF and *mauka* of Pi'ilani Highway. The southern fork becomes Waimāha'īha'i Gulch. Following the north fork, Kēōkea Gulch passes beneath Pi'ilani Highway (Kēōkea Gulch Bridge), then reaches Lā'ie Wetland on the coastal floodplain, downslope of Liloa Drive (Fig. 5). The path of floodwaters over the coastal floodplain is complex: flow is directed northward beneath Halekuai Street via ten 11 ft x 7 ft arches, then westward beneath South Kihei Road before entering the Pacific Ocean near St. Theresa's Church at the Kēōkea Gulch outlet (sometimes referred to as Lā'ie outlet). Aerial imagery from 1951 generally match the northwesterly path of the gulch across the floodplain to the outlet (Figure 6). Homes built across the coastal floodplain at Halama Street and North Alanui Place are frequently flooded, and a more direct outlet to the Pacific Ocean is proposed in the *Kihei Drainage Master Plan* (R.M. Towill Corp., 2016), but has not been constructed.

Waimāha'īha'i Gulch

Waimāha'īha'i drainage basin arises from around 245 m (800 ft) ASL, in undeveloped land downslope of Pu'u o Kali. Waimāha'īha'i gulch is in actuality the southern fork of Kēōkea Gulch and does not have a direct surface connection to the Pacific Ocean. According to the *Kihei Drainage Master Plan* (R. M. Towill Corp., 2016), Waimāha'īha'i Gulch passes directly between Maui Nui Golf Club and Kihei WWRF, then under Pi'ilani Highway through three 1.5-m (5-ft) culverts. The gulch runs between residences of the Kalama View Subdivision and crosses over Malama Street before losing definition on the Kihei coastal floodplain at an undeveloped parcel *mauka* of South Kihei Road (TMK 3-9-027:001; Fig. 5). The path of flow and coastal outlet(s) for Waimāha'īha'i Gulch are not obvious due to development on the coastal floodplain across the gulch, but flow is presumably directed as sheetflow through Kalama Park into Kalama Channel (R.M. Towill, 2016). A more direct path to the ocean is suggested in the HDLNR-FHAT (Fig. 5), where the flood zone is drawn through homes fronting Halma Street. No channels to facilitate flow around the residences and on to the ocean exist and these homes are often flooded. The *Kihei Drainage Master Plan* proposes construction of a new drainage path for Waimāha'īha'i Gulch to the Pacific Ocean via a connection with Kalama Channel outlet (R.M. Towill Corp, 2016) but this connection has not been constructed.

Jurisdictional Waters

Waters of the U.S. (also called "jurisdictional waters") are surface waters that come under federal jurisdiction as authorized by the Clean Water Act (CWA) and Rivers and Harbors Act (RHA). Authority over these waters is granted to various federal agencies, including the U.S. Environmental Protection Agency (USEPA), the U.S. Army Corps of Engineers (USACE) having permit authority for actions

that impact jurisdictional waters. Jurisdictional waters include all tidal waters and a subset of streams (both perennial and intermittent), lakes, reservoirs, and wetlands.

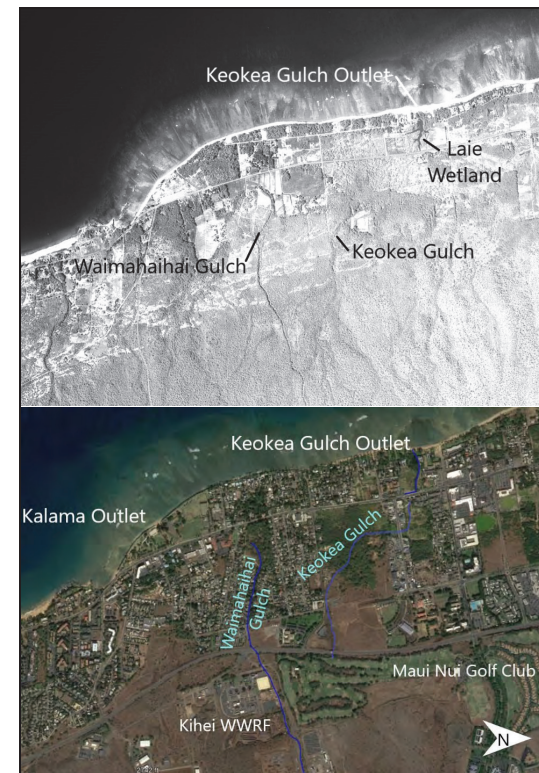


Figure 6. USGS aerial photo (USGS, 1951) compared with SOEST/UHM aerial photo (Google, 2021).

On June 22, 2020, the Navigable Waters Protection Rule (NWPR) came into effect (USACE and USEPA, 2020) and redefined the scope of waters regulated under the CWA. As applicable to the Project, the NWPR specifically identifies intermittent

and perennial stream tributaries as jurisdictional waters but excludes ephemeral tributaries and wetlands without a direct hydrologic surface connection to an otherwise jurisdictional water body.

In the NWPR, a *tributary* is defined as an intermittent or perennial surface water channel (e.g., stream) that contributes surface flow to other waters of the U.S. (e.g., ocean) in a typical year. An *intermittent* stream is one that has surface water flowing continuously during certain times of the year and more than in direct response to precipitation; a *perennial* stream has surface water flowing continuously year-round. An *ephemeral* stream has surface water flowing or pooling only in direct response to precipitation. A tributary does not lose its jurisdictional status if it flows through a non-jurisdictional channel (such as a culvert). A perennial or intermittent ditch is jurisdictional if it is a relocated tributary or is constructed in an adjacent wetland. The jurisdictional boundary of non-tidal streams is the ordinary high water mark (OHWM), and the jurisdictional boundary of adjacent wetlands is the wetland/upland boundary. *Wetlands* are defined as areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

If a wetland is present and adjacent to a jurisdictional water, CWA and RHA jurisdiction extends to the wetland/upland boundary. Adjacent wetlands means wetlands that (i) abut a jurisdictional waterbody, (ii) are inundated by flooding from a jurisdictional waterbody, (iii) are separated from a jurisdictional waterbody only by a natural berm, bank, dune, or similar natural feature; or (iv) are physically separated from a jurisdictional waterbody by an artificial dike, barrier, or similar artificial structure so long as that structure allows for a direct hydrologic connection in a typical year, such as via a culvert, flood or tide gate, pump, or similar artificial feature (USACE and USEPA, 2020).

Methods

Jurisdictional Waters Survey

AECOS, Inc. biologists Susan Burr and Bryson Luke (the authors) conducted a delineation of federal jurisdictional waters of Kēōkea and Waimāha'iha'i gulches in the Project area on February 17, 2021.

Kēōkea and Waimāha'iha'i gulches are above the limit of tidal influence at the Project areas. Federal jurisdiction of non-tidal jurisdictional tributaries extends to the ordinary high water mark (OHWM). OHWM is defined in the NWPR (USACE and USEPA, 2020 p. 22341) as: "...that line on the shore established by the fluctuations of water and indicated by [various] physical characteristics... or other appropriate means that consider the characteristics of the surrounding areas." The following physical characteristics are indicators of the OHWM:

Natural line impressed on the bank	Leaf litter disturbed or washed away
Shelving	Scour
Changes in the character of the soil	Deposition
Destruction of terrestrial vegetation	Multiple observed flow events
Presence of litter and debris	Bed and banks
Wracking	Water staining

We delineated OHWM at the Project sites by marking paired locations along the stream channel (one on each bank) with colored flagging tape and by recording the geospatial position of each flag using a Trimble Geo7X capable of sub-meter accuracy. Photographs from the channel at each paired point were taken to document the OHWM characteristics and to illustrate the environment. A survey team from Warren S. Unemori Engineering, Inc., recorded the locations and elevations of each paired-point flag on the same date, February 17, 2021.

Because neither gulch supports "perennial" streamflow, we applied two streamflow duration assessment methods (SDAMs) to determine whether flow in the gulch reaches at the Project sites are "intermittent" or "ephemeral". The State of Hawai'i does not have a published SDAM, thus, we have been testing (AECOS, 2021a, 2021b) the applicability of the North Carolina Stream Assessment Method (NCSAM), which was developed by a team of federal and North Carolina state agencies over a period of several years (NCDWQ, 2010).

The NCSAM uses stream characteristics and commonly observable geomorphic, hydrologic, and biological processes as streamflow indicators to produce a numeric score. The accumulated score from all the indicators assigns a stream flow type of "ephemeral", "intermittent", or "perennial" to the stream reach under evaluation. Per recommendation by the USACE-Honolulu District, we also apply the Arid West Streamflow Duration Assessment Method (AWS DAM) to aid in this delineation process. A beta version of the AWS DAM is available online for trial use (USEPA, 2021).

Results

Jurisdictional Waters Delineation

Surface water was absent from the Project area in both Kēōkea and Waimāha'iha'i gulches at the time of our delineation. The nearest NOAA rain gage, Kīhei 2 (KHIH1), recorded a total of 76 mm (3.01 in) of rainfall in the three months preceding our jurisdictional waters survey in February 2021 (Table 2; NOAA-NWS, 2021). Total rainfall in that three-month period (December 2020 to February 2021) was 42% of the average rainfall for that period, with the majority of rainfall occurring in January 2021 (74 mm or 2.92 in, 97% of three-month total). Data are compared with monthly averages from the National Climatic Data Center 30-year dataset (1981-2010 series) and the *Rainfall Atlas of Hawai'i* (Giambelluca et. al, 2013). Hydrologic conditions in Kēōkea and Waimāha'iha'i gulches during the survey can be considered below-average, but within parameters of a 'typical year' for a determination of federally jurisdictional waters. A photolog of our delineation at each gulch is provided in Attachment A. Results of the NCSAM and AWS DAM at each gulch are provided in Attachment B.

Table 2. Rainfall preceding fieldwork at Kīhei (KHIH1) rain gage compared to 30-year average.

NOAA rain gage : Kīhei 2 (KHIH1)		
	2020-2021 Monthly Total	Moving 30-year Monthly Average,
	(inches)	(inches)
December	0.00	2.57
January	2.38	2.92
February	0.63	1.70
Cumulative	3.01	7.19

Kēōkea Gulch

Kēōkea Gulch is well defined at the Project area, where the gulch passes between undeveloped land and a Maui Electric Company (MECO) substation on the right bank (TMK 2-3-9-021:016), and East Welakahao Road on the left bank. In the upstream direction, the channel bed is exposed volcanic basalt with signs of scour and wracked drift deposits. Banks are natural earth and support upland vegetation including buffelgrass (*Cenchrus ciliaris*), kiawe (*Prosopis padilla*), and

koa haole (*Leuceanea leucocephala*). Grasses grow across the channel near the intersection of East Welakahao and Liloa Drive near the Project crossing, where soils forming the base-fill for East Welakahao Road edge the left bank and narrow the stream channel. The gulch channel drops over a short head-cut into a cropped-grass swale in the vicinity of the MECO substation. We used changes in vegetation as the primary indicator for OHWM in this segment of channel. In the downstream direction, the gulch passes through two concrete culverts beneath the MECO substation access road, and breaks onto the coastal floodplain roughly 300 m (1,000 ft) down channel. The gulch banks lose definition as they pass into La'ie Wetland beneath Halekuai Street roughly 610 m (2000 ft) to the northwest. In all, we delineated approximately 130 m (420 ft) of the right bank and left bank of Kēōkea Gulch at the Project area using 20 paired points (Table 3 and Figure 7). Kēōkea Gulch has a surface connection to the Pacific Ocean (through La'ie Wetland at the Kēōkea Gulch outlet) and is therefore a tributary to a navigable water.

Table 3. Primary indicators of OHWM at Kēōkea Gulch.

Left Bank		Right Bank	
Flag	Primary OHWM feature	Flag	Primary OHWM feature
01L	Change in vegetation (<i>koa haole</i> stumps at upland boundary).	01R	Change in vegetation – buffelgrass (upland) to Guinea grass (channel).
05L	Change in veg - buffelgrass (upland) to Guinea grass (channel).	05R	Change in veg - buffelgrass (upland) to Guinea grass (channel).
10L	Break in slope, buffel grass (upland) to Guinea grass (channel), wracking/deposits.	10R	Break in slope, buffelgrass (upland) to Guinea grass (channel).
15L	Change in soil character, soil (upland bank) to bedrock (channel).	15R	Change in soil character, soil (upland bank) to bedrock (channel), kiawe trees on upland bank.

To assess stream flow type, we applied two SDAMs at the reach of Kēōkea Gulch at the Project crossing: On the NCSAM, Kēōkea Gulch achieves a score of 11.0 out

of 62 possible points³ and rates as “ephemeral”; on the AWS DAM, Kēōkea Gulch achieves a classification of “ephemeral” (USEPA, 2021). Therefore, we conclude that the reach of Kēōkea Gulch at the Project area is ephemeral and does not qualify as a jurisdictional water of the U.S. under the NWPR.



Figure 7. OHWM delineated at Kēōkea Gulch.

Waimāha’iha’i Gulch

Waimāha’iha’i Gulch is moderately defined at the Project site, with sporadic breaks in the continuity of bed and bank. The gulch passes beneath Pi’ilani Highway and enters the Project area between undeveloped land on the right bank and East Welakahau Road on the left bank. Buffelgrass covers the bed and banks

³ The NCSAM rates streamflow in tributary reaches as follows: Values less than or equal to 19 are rated as “ephemeral”; those greater than 19 are rated as “intermittent”; and those greater than or equal to 30 are rated as “perennial” (NCDWQ, 2010).

of the gulch at the Project area, with the basalt bedrock channel exposed only in the steepest locations. The channel descends several feet from the surrounding landscape into a partly collapsed metal culvert beneath Liloa Drive. From the culvert outlet, the gulch flows between residential properties of the Kalama View Subdivision before breaking onto the coastal floodplain on a (mostly) undeveloped parcel (TMK 3-9-027:001), approximately 350 m (1150 ft) down channel. OHWM indicators were sporadic through the gulch above Liloa Drive, and we used changes in bank slope and rooted upland trees as the primary indicators for the channel boundary. In all, we delineated approximately 70 m (230 ft) of the right bank and left bank of Waimāha’iha’i Gulch at the Project area using 7 paired points (Table 4 and Figure 8).

Table 4. Primary indicators of OHWM at Waimāha’iha’i Gulch.

Left Bank		Right Bank	
Flag	Primary OHWM feature	Flag	Primary OHWM feature
01L	Upland <i>kiawe</i> trees on bank. Change in bank slope. Wracked debris.	01R	Upland <i>kiawe</i> trees on bank. Change in bank slope.
03R	Change in bank slope. Wracked debris, metal culvert outlet.	03R	Change in bank slope. Wracked debris, metal culvert outlet.
05L	Change in slope. Upland <i>koa haole</i> growing on slope, metal culvert inlet.	05R	Change in slope. Upland <i>koa haole</i> growing on slope, metal culvert inlet.
07L	Bedrock exposed in channel. Buffelgrass on bank slope.	07R	Bedrock exposed in channel. Buffelgrass on bank slope. Scour.

Waimāha’iha’i Gulch has no defined surface connection to the Pacific Ocean. No channel or surface connection is visible via modern aerial imagery, or from USGS aerial imagery dating from 1951 (Fig. 6, above). Geospatial hydrology datasets indicate several potential outlets exist for sheetflow during rainfall or flood events, either through beachfront residences on Halama Street (as evidenced by flood zones, HDLNR, 2019), and/or through Kalama Park into Kalama Channel and outlet (HDLNR, 2019; R.M. Towill 2016), and/or a shared outlet with Kēōkea Gulch outlet through La’ie Wetland (USGS, 2017).

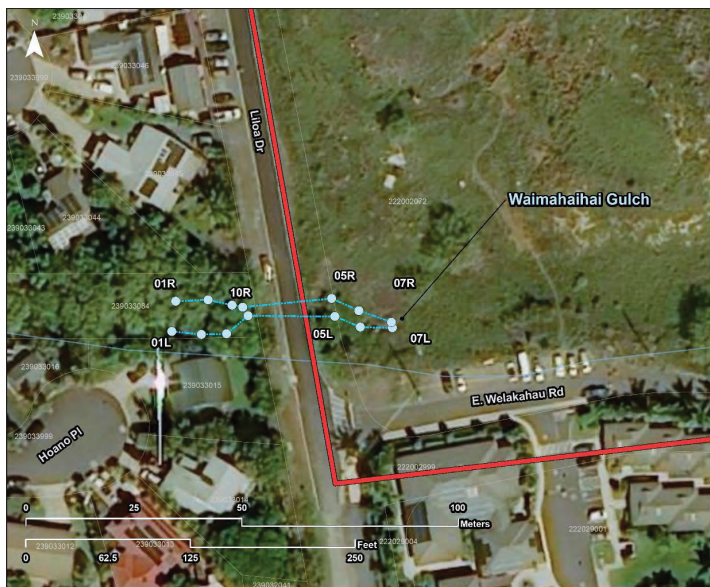


Figure 8. OHWM delineated at Waimāha'iha'i Gulch.

Under the NWPR, a tributary is a river, stream, or similar naturally occurring surface water channel that contributes surface water flow to a jurisdictional water in a typical year (USACE and USEPA, 2020). Under this definition, Waimāha'iha'i Gulch does not qualify as a jurisdictional tributary.

To assess stream flow type, we applied two SDAMs at the reach of Waimāha'iha'i Gulch at the Project crossing: On the NCSAM, Waimāha'iha'i Gulch achieves a score of 7.0 out of 62 possible points and rates as “ephemeral”; on the AWSAM, Waimāha'iha'i Gulch achieves a classification of “ephemeral” (USEPA, 2021). Therefore, we conclude that the reach of Waimāha'iha'i Gulch at the Project area is ephemeral and does not qualify as a jurisdictional water of the U.S. under the NWPR.

Discussion and Recommendations

Jurisdictional Waters

We determined streamflow at Kēōkea and Waimāha'iha'i gulches to be ephemeral, as defined in the 2020 NWPR. Because flow in these features is ephemeral, they do not qualify as federally jurisdictional Waters of the U.S. Further, Waimāha'iha'i Gulch lacks a direct surface connection to a jurisdictional water and does not satisfy the definition of a tributary to a jurisdictional water (the Pacific Ocean).

Federal jurisdiction is solely determined by the USACE and is based upon the USACE accepting our findings. Acceptance may require a field visit by a USACE representative from the Regulatory Branch to inspect all or representative locations surveyed by AECOS. Our delineation is not official until an acceptance letter from the USACE is received by the applicant.

Water Quality and Aquatic Resources

Water was not present in either Kēōkea or Waimāha'iha'i gulches. The gulches did not contain aquatic flora or fauna.

Critical Habitat

No federally designated Critical Habitat for any species occurs within the Project site (USFWS, nd-b). No equivalent designation exists under State of Hawai'i endangered species statutes.

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Waimāha'ihai Gulch 1



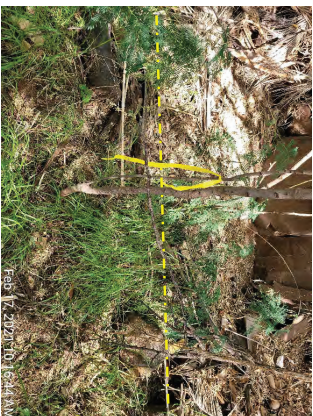
Center of Waimāha'ihai Gulch, facing downchannel.



Center of Waimāha'ihai Gulch, facing upchannel.



Center of Waimāha'ihai Gulch, facing left bank.



Center of Waimāha'ihai Gulch, facing right bank.

ATTACHMENT A

PHOTOGRAPHIC RECORD OF
OHWM FLAG LOCATIONS

Waimāha'iha'i Gulch 3



Center of Waimāha'iha'i Gulch, facing downchannel.



Center of Waimāha'iha'i Gulch, facing upchannel into culvert.



Center of Waimāha'iha'i Gulch, facing left bank.



Center of Waimāha'iha'i Gulch, facing right bank.

Waimāha'iha'i Gulch 2



Center of Waimāha'iha'i Gulch, facing downchannel.



Center of Waimāha'iha'i Gulch, facing upchannel.



Center of Waimāha'iha'i Gulch, facing left bank.



Center of Waimāha'iha'i Gulch, facing right bank.

Waimāha'iha'i Gulch 5



Center of Waimāha'iha'i Gulch, facing downchannel.



Center of Waimāha'iha'i Gulch, facing upchannel.



Center of Waimāha'iha'i Gulch, facing left bank.



Center of Waimāha'iha'i Gulch, facing right bank.

Waimāha'iha'i Gulch 4



Center of Waimāha'iha'i Gulch, facing downchannel into culvert.



Center of Waimāha'iha'i Gulch, facing upchannel.



Center of Waimāha'iha'i Gulch, facing left bank.



Center of Waimāha'iha'i Gulch, facing right bank.

Kēōkea Gulch 1



Center of Kēōkea Gulch, facing downchannel.



Center of Kēōkea Gulch, facing upchannel.



Center of Kēōkea Gulch, facing left bank.



Center of Kēōkea Gulch, facing right bank.

Waimāha'iha'i Gulch 5



Center of Waimāha'iha'i Gulch, facing downchannel.



Center of Waimāha'iha'i Gulch, facing upchannel.

Kēōkea Gulch 3



Center of Kēōkea Gulch, facing downchannel.



Center of Kēōkea Gulch, facing upchannel.



Center of Kēōkea Gulch, facing left bank.



Center of Kēōkea Gulch, facing right bank.

Kēōkea Gulch 2



Center of Kēōkea Gulch, facing downchannel.



Center of Kēōkea Gulch, facing upchannel.



Center of Kēōkea Gulch, facing left bank.



Center of Kēōkea Gulch, facing right bank.

Kēōkea Gulch 5



Center of Kēōkea Gulch, facing downchannel.



Center of Kēōkea Gulch, facing upchannel.



Center of Kēōkea Gulch, facing left bank.



Center of Kēōkea Gulch, facing right bank.

Kēōkea Gulch 4



Center of Kēōkea Gulch, facing downchannel.



Center of Kēōkea Gulch, facing upchannel.



Center of Kēōkea Gulch, facing left bank.



Center of Kēōkea Gulch, facing right bank.

ATTACHMENT B

Streamflow Determination Assessment
Method Datasheets

NC Division of Water Quality –Methodology for Identification of Intermittent and
Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 02/17/2021	Project/Site: N. Kihei Wastewater	Latitude: 20.740641° N
Evaluator: B. Luke, S. Burr	County: Maui	Longitude: -156.448130° W
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> 11.0	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: NAD83 UTM 4N

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

*artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 1)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Channel bottom is vegetated swale at Project site, becoming scoured bedrock at upstream-end.

Sketch: See photolog

Streamflow Duration Assessment Method for the Arid West Classification Report

Online Report Generating Tool Version 1.0

Report generated on: May 25, 2021

Classification:

Ephemeral

General Site Information

Site code or identifier:

Kihei, Maui County, HI

Project name or number:

North Kihei

Assessor(s):

B. Luke, S. Burr

Waterway name:

Keokea Gulch

Visit date:

2/17/2021

Current weather conditions:

Clear/Sunny

Notes on current or recent weather conditions:

42% of average rainfall over 3-mo period

Location:

20.740657 N, -156.448189 W

Datum:

NAD83 UTM 4N

Surrounding land use within 100 m:

Urban/industrial/residential Developed open-space

Description of reach boundaries:

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover > 10%	Classification
None	None	Absent	Absent	Absent	Ephemeral
			Present	Present	At least intermittent
			Absent	Absent	Need more information
	Few (1-19)	Absent	Present	Present	At least intermittent
			Absent	Absent	Need more information
			Present	Present	At least intermittent
		Present	Absent	Absent	Need more information
			Present	Present	At least intermittent
			Absent	Absent	At least intermittent
	Many (20+)	Absent	Absent	Absent	Need more information
			Present	Absent	Need more information
		Present	Absent	Present	At least intermittent
			Present	Present	At least intermittent
Few (1-2)	None	Absent	Absent	Absent	Need more information
			Present	Present	At least intermittent
			Absent	Absent	Intermittent
	Few (1-19)	Absent	Present	Present	At least intermittent
			Present	Present	At least intermittent
	Many (20+)	Absent	Absent	Absent	Intermittent
			Present	Present	At least intermittent
		Present	Absent	Absent	At least intermittent
			Present	Present	Intermittent
Many (3+)	None	Absent	Absent	Absent	Need more information
			Present	Present	At least intermittent
			Absent	Absent	At least intermittent
	Few (1-19)	Absent	Present	Present	At least intermittent
			Present	Present	Perennial
	Many (20+)	Absent	Absent	Absent	At least intermittent
			Present	Present	Perennial
		Present	Absent	Absent	At least intermittent
			Present	Present	Perennial

Figure 1: Indicator presence/absence denoted in green based on input to tool.

Lower stream reach, just above coastal floodplain

Mean channel width (m):

7

Reach length (m):

130

Disturbed or difficult conditions:

Stream modifications (e.g., channelization)

Notes on disturbances or difficult site conditions:

Earth channel modified at MECO enteranceway, bed and bank formed into a grassy swale vs more natural ch

Observed hydrology:

Percent of reach with surface flow:

0%

Percent of reach with surface and sub-surface flows:

05

Number of isolated pools:

None

Comments on observed hydrology:

Channel is dry, no surface hydrology. Sub-surface flow possible.

Site Photos

Top of reach looking downstream:



Middle of reach looking upstream:



Middle of reach looking downstream:

Bottom of reach looking upstream:



Site Sketch

Hydrophytic Vegetation

Hydrophytic species found in or near the channel:

0 species

Notes on hydrophytic vegetation:

Enter text...

Aquatic Invertebrates

Number of individuals observed:

None

Are EPT present?

No

Notes on aquatic invertebrates

Enter text...

Algae Cover

Cover of live or dead algae in the streambed:

Not detected

NA

Notes on algae cover:

Enter text...

Single Indicators

Fish:

No fish observed

Algae cover:

Not detected

Supplemental Information

Enter text...

Additional photo(s)

Additional notes about the assessment:

Enter text...

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

NC DWQ Stream Identification Form Version 4.11

Date: 02/17/2021	Project/Site: N. Kihei Wastewater	Latitude: 20.736146° N
Evaluator: B. Luke, S. Burr	County: Maui County	Longitude: -156.447312° W
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> 7.0	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: NAD83 UTM 4N

A. Geomorphology (Subtotal =3)	Absent	Weak	Moderate	Strong
1 ^a . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^a artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = X)	Absent	Weak	Moderate	Strong
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = X)	Absent	Weak	Moderate	Strong
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Buffel grass (*Cenchrus ciliaris*; FACU) growing in gulch channel.

Sketch: See photolog

Streamflow Duration Assessment Method for the Arid West Classification Report

Online Report Generating Tool Version 1.0

Report generated on: May 21, 2021

Classification:

Ephemeral

General Site Information

Site code or identifier:

Kihei, Maui County, HI

Project name or number:

North Kihei

Assessor(s):

S. Burr, B. Luke

Waterway name:

Waimahaihai Gulch

Visit date:

2/17/2021

Current weather conditions:

Clear/Sunny

Notes on current or recent weather conditions:

42% Average rainfall over 3-mo period

Location:

NA N, NA W

Datum:

NAD83 UTM 4N

Surrounding land use within 100 m:

Urban/industrial/residential Developed open-space

Description of reach boundaries:

1. Hydrophytic plant species	2. Aquatic invertebrates	3. EPT taxa	4. Algae	5. Single indicators • fish present • algae cover > 10%	Classification	
None	None	Absent	Absent	Absent	Ephemeral	
			Present	Present	At least intermittent	
			Absent	Absent	Need more information	
	Few (1-19)	Absent	Present	Present	At least intermittent	
			Absent	Absent	Need more information	
			Present	Absent	Need more information	
	Many (20+)	Absent	Present	Present	At least intermittent	
						At least intermittent
	Many (20+)	Absent	Absent	Absent	Need more information	
			Present	Present	At least intermittent	
			Present	Absent	Need more information	
	Few (1-2)	None	Absent	Absent	Absent	Need more information
Present				Present	At least intermittent	
					At least intermittent	
Few (1-19)		Absent	Absent	Absent	Intermittent	
			Present	Present	At least intermittent	
					At least intermittent	
Many (20+)		Absent	Absent	Absent	Intermittent	
			Present	Present	At least intermittent	
			Present	Absent	At least intermittent	
Many (3+)		None	Absent	Absent	Absent	Need more information
				Present	Present	At least intermittent
						At least intermittent
		Few (1-19)	Absent			At least intermittent
	Present					Perennial
	Many (20+)	Absent			At least intermittent	
			Present			Perennial

Figure 1: Indicator presence/absence denoted in green based on input to tool.

Lower stream reach, just above coastal floodplain.

Mean channel width (m):

2.5

Reach length (m):

150

Disturbed or difficult conditions:

Stream modifications (e.g., channelization)

Notes on disturbances or difficult site conditions:

Earth channel modified between residences.

Observed hydrology:

Percent of reach with surface flow:

0%

Percent of reach with surface and sub-surface flows:

0%

Number of isolated pools:

None

Comments on observed hydrology:

Channel is dry, no surface hydrology. Subsurface flow possible.

Site Photos

Top of reach looking downstream:



Middle of reach looking upstream:



Middle of reach looking downstream:



Bottom of reach looking upstream:



Site Sketch

Hydrophytic Vegetation

Hydrophytic species found in or near the channel:

0 species

Notes on hydrophytic vegetation:

Enter text...

Aquatic Invertebrates

Number of individuals observed:

None

Are EPT present?

No

Notes on aquatic invertebrates

Enter text...

Algae Cover

Cover of live or dead algae in the streambed:

Not detected

NA

Notes on algae cover:

Enter text...

Single Indicators

Fish:

No fish observed

Algae cover:

Not detected

Supplemental Information

Enter text...

Additional photo(s)

Additional notes about the assessment:

Enter text...



**FLORA AND
FAUNA SURVEY**

APPENDIX

C



FLORA AND FAUNA SURVEY
for the
NORTH KIHAI MAUKA
WASTEWATER TRANSMISSION LINE PROJECT
KIHAI, MAUI, HAWAII

by

Robert W. Hobdy
Kokomo, Maui
November 2020

Prepared for:
The County of Maui
Wastewater Reclamation Division

FLORA AND FAUNA SURVEY
NORTH KIHAI MAUKA
WASTEWATER TRANSMISSION LINE PROJECT
KIHAI, MAUI

INTRODUCTION

The North Kihai Mauka Wastewater Transmission Line Project traverses a corridor along portions of South Kihai Road, Pi'ikea Avenue, Liloa Drive, and around the Kihai Wastewater Reclamation Facility (see Figure 1). This flora and fauna survey was initiated by the County of Maui in support of planned improvements to the system in fulfillment of environmental requirements of the planning process.

SITE DESCRIPTION

The project corridor lies on level to gently sloping land along roadways running mostly through an urban residential community in north Kihai. Elevations range from five feet along South Kihai Road up to around eighty feet around the Kihai Wastewater Treatment Facility. Soils consist of the sandy Dune Land (DL) and Jaucas Sand (JcC) series in the lower areas and of Waiakoa Extremely Stony Silty Clay Loam (WID2) series in the upper area (Foote et al, 1972). Annual rainfall averages ten inches with most occurring during the winter months (Armstrong, 1983). Vegetation varies from urban roadside landscaping to dry grasslands with scattered trees in the upper areas.

SURVEY OBJECTIVES

This report summarizes the findings of a flora and fauna survey of the proposed North Kihai Mauka Wastewater Transmission Line project which was conducted during November 2020. The objectives of the survey were to:

1. Document what plant and animal species occur on the property or may likely occur in the existing habitat.
2. Document 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 botanical survey method covering all government portions of this highway corridor was used following routes to ensure complete coverage of the area. Areas most likely to harbor native or rare plants were more intensively examined. Notes were made on plant species distribution and abundance as well as on terrain and substrate.

DESCRIPTION OF THE VEGETATION

The vegetation in the project area was represented by seventy-six plant species. One species was abundant throughout the area, the buffelgrass (*Cenchrus ciliaris*). Two other species were common, Bermuda grass (*Cynodon dactylon*) and scarlet spiderling (*Boerhavia coccinea*). Over half of the species were herbaceous weedy plants that thrive on the margins of the roadways, surviving regular mowing. Twenty-three species were ornamental plants that were purposely placed in the landscape.

Eight native plant species were recorded during the survey. These included the endemic palm, loulou lelo (*Pritchardia hillebrandii*) and seven indigenous species, 'uhaloa (*Waltheria indica*), 'ākulikuli (*Sesuvium portulacastrum*), kou (*Cordia subcordata*), kīpūkai (*Heliotropium curassavicum*), koali kuahulu (*Merremia aegyptia*), mānawanawa (*Vitex rotundifolia*) and naupaka kahakai (*Scaevola taccada*). Four of these eight native species were planted as landscape ornamentals, and four were of natural occurrence. None of these native species are rare.

DISCUSSION AND RECOMMENDATIONS

The vegetation in this urban project corridor is predominantly non-native in character. All of the eight native species recorded during the survey are common throughout Hawaii, though they were rare or uncommon within the project corridor. None of the non-native plant species are of any environmental interest or concern.

No Endangered or Threatened native plant species (USFWS, 2020) were found to occur in the project area. No special native plant habitats were found to occur here either. There is little of botanical concern with regards to the project area. The proposed transmission line improvements project is not expected to have a significant negative impact on the botanical resources in this part of Maui.

PLANT SPECIES LIST

Following is a checklist of all those vascular plant species inventoried during the field studies. Plant families are arranged alphabetically within each of 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 and 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 = those plants brought to the islands by the Hawaiians 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			
ARECACEAE (Palm Family)			
<i>Dypsis lutescens</i> (H. Wendl.) Beentje & J. Dransfield	golden fruited palm	non-native	uncommon
<i>Pritchardia hillebrandii</i> (Kuntze) Beccari	loulu lelo	endemic	rare
<i>Veitchia merrillii</i> (Beccari) H.E. Moore	Manila palm	non-native	uncommon
<i>Washingtonia robusta</i> H. Wendl.	Mexican Washingtonia	non-native	rare
<i>Wodyetia bifurcata</i> A.K. Irvine	foxtail palm	non-native	uncommon
ASPARAGACEAE (Asparagus Family)			
<i>Cordyline fruticosa</i> (L.) A. Chev.	kī	Polynesian	rare
ASPHODELACEAE (Asphodel Family)			
<i>Aloe vera</i> (L.) N.L. Burman	aloe vera	non-native	rare
POACEAE (Grass Family)			
<i>Axonopus compressus</i> (Sw.) F. Beauv.	broad-leaved carpetgrass	non-native	uncommon
<i>Cenchrus ciliaris</i> L.	buffelgrass	non-native	abundant
<i>Cenchrus echinatus</i> L.	common sandbur	non-native	rare
<i>Chloris barbata</i> (L.) Sw.	swollen fingergrass	non-native	uncommon
<i>Cynodon dactylon</i> (L.) Pers.	Bermuda grass	non-native	common
<i>Digitaria ciliaris</i> (Retz.) P. Beauv.	Henry's crabgrass	non-native	uncommon
<i>Eleusine indica</i> (L.) Gaertn.	wiregrass	non-native	uncommon
<i>Eragrostis amabilis</i> (L.) Wight & Arnott	Japanese lovegrass	non-native	uncommon
<i>Eragrostis pectinacea</i> (Michx) Nees	Carolina lovegrass	non-native	rare
<i>Megathyrsus maximus</i> (Jacq.) Simon & Jacobs	Guinea grass	non-native	uncommon
<i>Sporobolus diander</i> (Retz.) P. Beauv.	Indian dropseed	non-native	rare
ZINGIBERACEAE (Ginger Family)			
<i>Alpinia purpurata</i> (Veill.) K. Schumann	red ginger	non-native	rare
DICOTS			
AIZOACEAE (Fig-marigold Family)			
<i>Sesuvium portulacastrum</i> (L.) L.	'ākulikuli	indigenous	rare
AMARANTHACEAE (Amaranth Family)			
<i>Alternanthera pungens</i> Kunth	khaki weed	non-native	uncommon
<i>Amaranthus spinosa</i> L.	spiny amaranth	non-native	rare
<i>Amaranthus viridis</i> L.	smooth amaranth	non-native	rare
ANACARDIACEAE (Mango Family)			
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	non-native	rare
APOCYNACEAE (Dogbane Family)			
<i>Nerium oleander</i> L.	oleander	non-native	uncommon
<i>Thevetia peruviana</i> (Pers.) K. Schumann	be-still tree	non-native	uncommon
ASTERACEAE (Sunflower Family)			
<i>Calypotocarpus vialis</i> Less	straggler daisy	non-native	uncommon
<i>Conyza bonariensis</i> (L.) Cronq.	hairy horseweed	non-native	rare
<i>Eclipta prostrata</i> (L.) L.	false daisy	non-native	uncommon
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	non-native	uncommon

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	non-native	uncommon
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	non-native	uncommon
<i>Tridax procumbens</i> L.	coat buttons	non-native	rare
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook.	golden crown-beard	non-native	rare
BORAGINACEAE (Borage Family)			
<i>Cordia subcordata</i> Lam.	kou	indigenous	rare
<i>Heliotropium curassavicum</i> L.	kīpūkai	indigenous	rare
<i>Heliotropium procumbens</i> Mill.	fourspike heliotrope	non-native	rare
<i>Tournefortia argentea</i> L. fil.	tree heliotrope	non-native	uncommon
CACTACEAE (Cactus Family)			
<i>Hylocereus undatus</i> (Haw.) Britton & Rose	night-bloomin cereus	non-native	rare
<i>Opuntia ficus-indica</i> (L.) Mill.	pānini	non-native	rare
CASUARINACEAE (She-oak Family)			
<i>Casuarina equisetifolia</i> L.	common ironwood	non-native	uncommon
CONVOLVULACEAE (Morning Glory Family)			
<i>Ipomoea triloba</i> L.	little bell	non-native	rare
<i>Merremia aegyptia</i> (L.) Urb.	koali kuahulu	indigenous	rare
CUCURBITACEAE (Gourd Family)			
<i>Momordica charantia</i> L.	bitter melon	non-native	rare
EUPHORBIACEAE (Spurge Family)			
<i>Codiaeum variegatum</i> (L.) Blume	croton	non-native	uncommon
<i>Euphorbia hirta</i> L.	hairy spurge	non-native	uncommon
<i>Euphorbia prostrata</i> Aiton	prostrate spurge	non-native	rare
<i>Ricinus communis</i> L.	Castor bean	non-native	rare
FABACEAE (Pea Family)			
<i>Bauhinia monandra</i> Kurz	St. Thomas tree	non-native	rare
<i>Chamaecrista nictitans</i> (L.) Moench	partridge pea	non-native	rare
<i>Desmanthus pernambucanus</i> (L.) Thellung	slender mimosa	non-native	rare
<i>Indigofera spicata</i> Forssk.	creeping indigo	non-native	uncommon
<i>Leucaena leucocephala</i> (Lam.) de Wit	koa haole	non-native	uncommon
<i>Macroptilium atropurpureum</i> (DC.) Urb.	siratiro	non-native	uncommon
<i>Neonotonia wightii</i> (Wight & Arnott) Lackey	glycine	non-native	rare
<i>Prosopis pallida</i> (Humb. & Bonpl. ex Willd.) Kunth	kiawe	non-native	uncommon
<i>Samanea saman</i> (Jacq.) Merr.	monkeypod	non-native	rare
GOODENIACEAE (Goodenia Family)			
<i>Scaevola taccada</i> (Gaertn.) Roxb.	naupaka kahakai	indigenous	uncommon
LAMIACEAE (Mint Family)			
<i>Leonotis nepetifolia</i> (L.) R. Br.	lion's ear	non-native	rare
MALVACEAE (Mallow Family)			
<i>Hibiscus x rosa-sinensis</i> L.	hybrid hibiscus	non-native	rare
<i>Hibiscus tiliaceus</i> L.	hau	Polynesian	rare
<i>Malva parviflora</i> L.	cheese weed	non-native	rare

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
<i>Malvastrum coromandelianum</i> (L.) Garcke	false mallow	non-native	uncommon
<i>Sida ciliaris</i> L.	bracted fanpetals	non-native	uncommon
<i>Sida rhombifolia</i> L.	arrowleaf sida	non-native	rare
<i>Thespesia populnea</i> (L.) Sol. ex Correa	milo	Polynesian	uncommon
<i>Waltheria indica</i> L.	'uhaloa	indigenous	uncommon
NYCTAGINACEAE (Four-o'clock Family)			
<i>Boerhavia coccinea</i> Mill.	scarlet spiderling	non-native	common
<i>Bougainvillea spectabilis</i> Willd.	bougainvillea	non-native	rare
PLUMBAGINACEAE (Leadwort Family)			
<i>Plumbago auriculata</i> Lam.	plumbago	non-native	uncommon
RUBIACEAE (Coffee Family)			
<i>Spermacoce ascurgens</i> Ruiz & Pav.	buttonweed	non-native	rare
VERBENACEAE (Verbena Family)			
<i>Duranta erecta</i> L.	golden dewdrop	non-native	uncommon
<i>Vitex rotundifolia</i> L. fil.	mānawanawa, pōhinahina	indigenous	uncommon
ZYGOPHYLLACEAE (Lignum Vitae Family)			
<i>Tribulus terrestris</i> L.	puncture vine	non-native	rare

FAUNA SURVEY REPORT

SURVEY METHODS

A walk-through fauna survey method was conducted in conjunction with the botanical survey. All parts of the project area 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

Just one non-native mammal was recorded in the project area during two site visits. Species nomenclature follows Tomich (1986). Tracks and dropping were observed in the upper portion of the project corridor of axis deer (*Axis axis*) which are usually active nocturnally. Other non-native mammals species likely to occur here include dogs (*Canis familiaris*), cats (*Felis catus*), mongoose (*Herpestes auropunctatus*), rats (*Rattus* spp.) and mice (*Mus domesticus*).

A special effort was made to look for any occurrence of the Endangered 'ōpe'ape'a or Hawaiian hoary bat (*Lasiurus cinereus semotus*) by making evening surveys at four locations along the project corridor. A bat detecting device (Batbox IIID) was used, set to the frequency of 27,000 Hertz that these bats are known to emit when echolocating for nocturnal flying insects upon which these bats feed on. No bats were detected with the use of this device.

BIRDS

Birdlife was moderate in numbers within the project area. Eight non-native species were recorded in this urban corridor during two site visits. Species nomenclature follows American Ornithological Society (2020). Two species were common, the zebra dove (*Geopelia striata*) and the common chicken (*Gallus gallus*). Three other species were uncommon, the house sparrow (*Passer domesticus*), the common myna (*Acridotheres tristis*) and the spotted dove (*Streptopelia chinensis*). Of rare occurrence were the house finch (*Haemorhous mexicanus*), the gray francolin (*Francolinus pondicerianus*) and the cattle egret (*Bubulcus ibis*).

No native birds would be expected to occur in this urban habitat.

INSECTS

Insects were mostly uncommon in the project area. A total of seven non-native species were found in the project area. Species nomenclature follows Nishida et al (1992). Three species were uncommon, the honey bee (*Apis mellifera*), the short-horned grasshopper (*Oedaleus abruptus*) and the dung fly (*Musca sorbens*). Four other insects were of rare occurrence. No native insects were seen.

DISCUSSION AND RECOMMENDATIONS

All of the mammal, bird and insect fauna species found in this urban project area are non-native in Hawaii.

The endangered Hawaiian hoary bat was not detected during the survey and is not expected to occur in this densely urban environment.

This urban habitat is also unsuitable for other federally protected native fauna including nēnē, forest birds, water birds and sea birds.

No federally listed endangered or threatened species (USFWS, 2020) occur in the project area and no critical habitat for any such species occur here either. There are no specific environmental concerns with reference to the fauna in this project area. The North Kihei Mauka Wastewater Transmission Line Improvements project is not expected to have any significant negative impacts on the fauna resources in this part of Maui.

FAUNA SPECIES LIST

Following is a checklist of the fauna species inventoried during the field work. Animal species are arranged in descending abundance within three groups: Mammals, 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			
CERVIDAE (Deer Family)			
<i>Axis axis</i> Erxleben	axis deer	non-native	uncommon
BIRDS			
ARDEIDAE (Heron Family)			
<i>Bubulcus ibis</i> L.	cattle egret	non-native	rare
COLUMBIDAE (Dove Family)			
<i>Geopelia striata</i> L.	zebra dove	non-native	common
<i>Streptopelia chinensis</i> Scopoli	spotted dove	non-native	uncommon
FRINGILIDAE (Cardueline Finch Family)			
<i>Haemorhous mexicanus</i> Muller	house finch	non-native	rare
PASSERIDAE (Sparrow Family)			
<i>Passer domesticus</i> L.	house sparrow	non-native	uncommon
PHASIANIDAE (Pheasant Family)			
<i>Francolinus pondicerianus</i> Gmelin	gray francolin	non-native	rare
<i>Gallus gallus</i> L.	common chicken	non-native	common
STURNIDAE (Starling Family)			
<i>Acridotheres tristis</i> L.	common myna	non-native	uncommon

SCIENTIFIC NAME	COMMON NAME	STATUS	ABUNDANCE
INSECTS			
Order DIPTERA - flies			
MUSCIDAE (Housefly Family)			
<i>Musca domestica</i> L.	housefly	non-native	rare
<i>Musca sorbens</i> Wiedemann	dungfly	non-native	uncommon
Order HYMENOPTERA - bees, wasps, ants			
APIDAE (Honeybee Family)			
<i>Apis mellifera</i> L.	honeybee	non-native	rare
VESPIDAE (Vespid Wasp Family)			
<i>Polistes aurifer</i> Saussure	golden paper wasp	non-native	rare
Order LEPIDOPTERA - butterflies, moths			
NYMPHALIDAE (Brush-footed Butterfly Family)			
<i>Danaus plexippus</i> L.	monarch butterfly	non-native	rare
Order ORTHOPTERA - grasshoppers, crickets			
ACRIDIDAE (Grasshopper Family)			
<i>Oedaleus abruptus</i> Thunberg	short-horned grasshopper	non-native	uncommon
<i>Schistocerca nitens</i> Thunberg	gray-bird grasshopper	non-native	rare

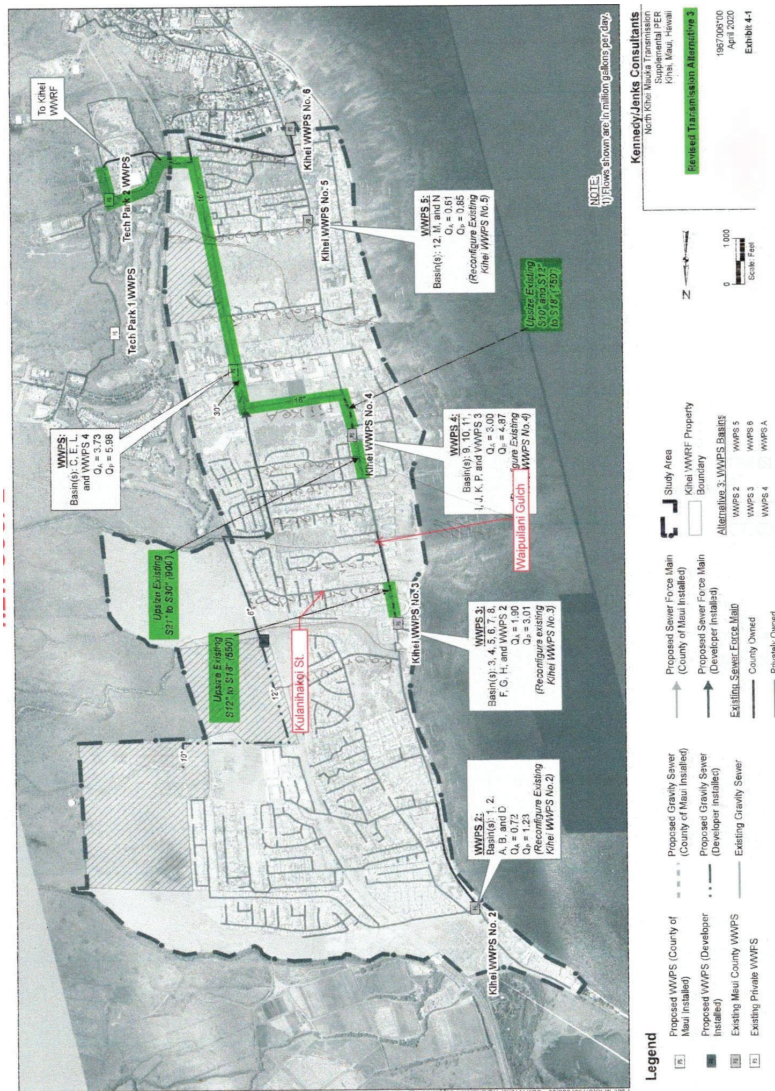


Figure 1. North Kihei Mauka Transmission Line Project

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**SECTION 7
CONSULTATION**

APPENDIX

D



DAVID Y. IGE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
File:

77-29 S7 ltr (initial)

November 29, 2021

Ms. Lindsay Asman, Island Team Manager
U.S. Department of the Interior
U.S. Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, HI 96850
Email: pifwo_admin@fws.gov

Dear Ms. Asman:

Subject: Initiate Informal Consultation and Request Concurrence of Proposed Determination
Under Section 7 of the Endangered Species Act
North Kihei Mauka Transmission System
Clean Water State Revolving Fund Project No. C150077-29

The U.S. Environmental Protection Agency (EPA) has designated the State of Hawai'i Department of Health (DOH) as its non-federal representative pursuant to 50 CFR Section 402.08 for purposes of initiating the consultation process and preparing a biological assessment, if necessary, under Section 7 of the federal Endangered Species Act (ESA) for certain projects funded under the Clean Water State Revolving Fund (CWSRF) program.

The County of Maui Department of Environmental Management (DEM) tried to initiate informal consultation with USFWS on May 5, 2021. Please see *Attachment A*. However, DOH designated as the non-federal representative will be initiating the informal consultation for the County of Maui DEM.

The County of Maui DEM is planning to undertake the "North Kihei Mauka Transmission System" project. This project plans to use CWSRF program funds and is contacting your office to initiate the informal consultation process under Section 7 of the ESA.

We are contacting your office to initiate the informal consultation process and request concurrence of the proposed determination under Section 7 of the ESA, request a list of threatened and endangered plant and animal species and critical habitats within the project and/or action area, and determine whether there are any other service trust resources, which may include, but not limited to the Migratory Bird Treaty Act (MBTA), beyond the species described and discussed in this letter.

Ms. Lindsay Asman, Island Team Manager
November 29, 2021
Page 2

Project Description

The existing North Kihei wastewater collection, transmission system, and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. The proposed project will include replacing the gravity sewerline to wastewater pump station (WWPS) No. 3 with a larger pipe; replacing the gravity sewerlines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft) until it reaches a new proposed WWPS at the corner of Liloa Drive and Lipoa Street, near the Kihei Aquatic Center; and a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility. See *Attachment B*.

In addition, the proposed project will also involve improvements to the WWPS Nos. 2, 3, 4, and 5. Pump station upgrade work will entail switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPS. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas of the parcel.

Biological Evaluation

In the letter and follow-up email from the USFWS, the project notes the potential impacts to ESA Protected Species including those mentioned in the USFWS' correspondences. Please see *Attachment C*. In the same correspondence letter and email, the project notes and will comply with the avoidance and minimization measures for the ESA-listed species provided by the USFWS. See *Attachment C*. Those avoidance and minimization measures are noted below.

Hawaiian Hoary Bat ('Ōpe'ape'a)

To avoid and minimize impacts to the endangered 'Ōpe'ape'a, the following measures will be incorporated into the 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 Seabirds ('Ua'u kani, 'Ua'u, A'o, and 'Ake'ake)

To avoid and minimize impacts to seabirds, the following measures will be incorporated into the 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.

Ms. Lindsay Asman, Island Team Manager
November 29, 2021
Page 3

Hawaiian Waterbirds (Koloa, Ae'o and 'Aiea Ke'oke'o)

To avoid and minimize impacts to Hawaiian waterbirds, the following measures will be incorporated into the 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.
- 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 fledge to ensure that Hawaiian waterbirds and nests are not adversely impacted.

Blackburn's Sphinx Moth

The following survey recommendations will be utilized 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), to the extent possible, 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 moths or the native 'aiea or tree tobacco over 3 feet tall are found during the survey, the USFWS will be contacted for additional guidance to avoid take.
- If no Blackburn's sphinx moth, 'aiea, or tree tobacco are found, measures will be taken to avoid attraction of Blackburn's sphinx moth to the project location and prohibit tree tobacco from entering the site.

Request for USFWS Assistance

Based on the project description along with the proposed avoidance and minimization measures that will be implemented, the project **may affect, but is not likely to adversely affect** these endangered or threatened species in the area as they will not be disturbed.

We are contacting your office to initiate the informal consultation process and request concurrence of the proposed determination under Section 7 of the ESA.

Ms. Lindsay Asman, Island Team Manager
November 29, 2021
Page 4

Your response within thirty (30) calendar days of receipt of this letter is greatly appreciated. Please address your written response to the following email or mailing addresses:
jonathan.nagato@doh.hawaii.gov

Attn: Jon Nagato
Department of Health, Wastewater Branch
2827 Waimano Home Road, Room 207
Pearl City, HI 96782

Should you have any questions, please contact Jon Nagato of our Branch at (808) 586-4294.

Sincerely,



SINA PRUDER, P.E., CHIEF
Wastewater Branch

CH:sp

Attachments

C: Mr. Eric Nakagawa (via email at Eric.Nakagawa@co.mauai.hi.us)
Mr. Juan Rivera (via email at Juan.Rivera@co.mauai.hi.us)
Mr. Derek Takahashi (via email at Derek.Takahashi@co.mauai.hi.us)
Mr. Derek Ono (via email at dono@wsue.com)
Ms. Kari Nunokawa (via email at kari@munekiyohiraga.com)

ATTACHMENT A.

Section 7 Initial Consultation Letter

MICHAEL P. VICTORINO
Mayor

ERIC A. NAKAGAWA, P.E.
Director

SHAYNE R. AGAWA, P.E.
Deputy Director

MICHAEL P. RATTE
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**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

May 5, 2021

Ms. Mary Abrams, Ph.D., Field Supervisor
Pacific Islands Fish and Wildlife Office
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai'i 96850

SUBJECT: **PROPOSED NORTH KĪHEI MAUKA TRANSMISSION SYSTEM PROJECT
KĪHEI, MAUI, HAWAII - REQUEST FOR SPECIES LIST**

Dear Ms. Abrams:

The Clean Water State Revolving Funds (CWSRF) will be used to fund the County of Maui, Department of Environmental Management's proposed North Kihei Mauka Transmission System Project ("Project"). The proposed action is located in an urbanized area of Kihei, Maui, Hawai'i and involves different areas along South Kihei Road, Pi'ikea Avenue, Liloa Drive, Pi'ilani Highway, and the Kihei Wastewater Reclamation Facility. The Project will cross two (2) gulches, Keōkea Gulch and Waimahaihai Gulch. See **Figure 1**.

Pursuant to Section 7 of the Endangered Species Act (ESA) and 50 Code of Federal Regulation (CRF) Part 402.08, County DEM is designated as a non-Federal representative to conduct informal consultations with the USFWS. However, the Environmental Protection Agency (EPA) remains responsible for all findings and determinations charged to the agency during the Section 7 process. All official letters to the USFWS shall be transmitted under the DEM letterhead. All determination letter regarding the findings will be transmitted under the DEM letterhead.

Background and Project Need

The Project proposes to upgrade the existing North Kihei Transmission System. The system is located along South Kihei Road and runs from north to south. This system is made up of four (4) wastewater pump stations (WWPS) and conveys wastewater from its service area to Kihei WWPS No. 6, which then pumps to the Kihei Wastewater Reclamation Facility (WWRF). The transmission system running along South Kihei Road consists of gravity sewerlines ranging in size from 8 to 27 inches in diameter and discharge force mains from the WWPSs ranging from 10 to

Ms. Mary Abrams, Ph.D., Field Supervisor
May 5, 2021
Page 2

16 inches in diameter. Gravity collection mains feed into the trunk transmission system at various points along South Kihei Road.

The existing North Kihei wastewater collection, transmission system, and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. Future development mauka of the Pi'ilani Highway will require major upgrades to the existing system along South Kihei Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills.

Proposed Action

The proposed North Kihei Mauka Transmission System project will include replacing the gravity sewerline to WWPS No. 3 with a larger pipe; replacing the gravity sewerlines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft) until it reaches a new proposed WWPS near the Kihei Aquatic Center; a new WWPS at the Lipoa Street and Liloa Drive intersection; and a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility. Refer to **Figure 1**. As mentioned above, this action will cross two (2) gulches, Keōkea Gulch and Waimahaihai Gulch.

In addition, the proposed project will also involve improvements to WWPS No. 2, 3, 4, and 5. Pump station upgrade work will entail switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPS. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas of the parcel.

Construction is expected to begin in 2022 with a duration of 36 months. Work hours are anticipated to be during the day from 8:00 a.m. to 3:30 p.m. See enclosed **Figure 1** for the Project's location.

Request

To assist us in our assessment, we respectfully ask for USFWS's opinion on the likely impact of the project based on the potential issues of the locations considering the proposed construction activities and schedule.

Ms. Mary Abrams, Ph.D., Field Supervisor
May 5, 2021
Page 3

Should you have any questions, please contact Derek Takahashi at (808) 270-7417 or by email at Derek.Takahashi@co.maui.hi.us. Thank you.

Sincerely,

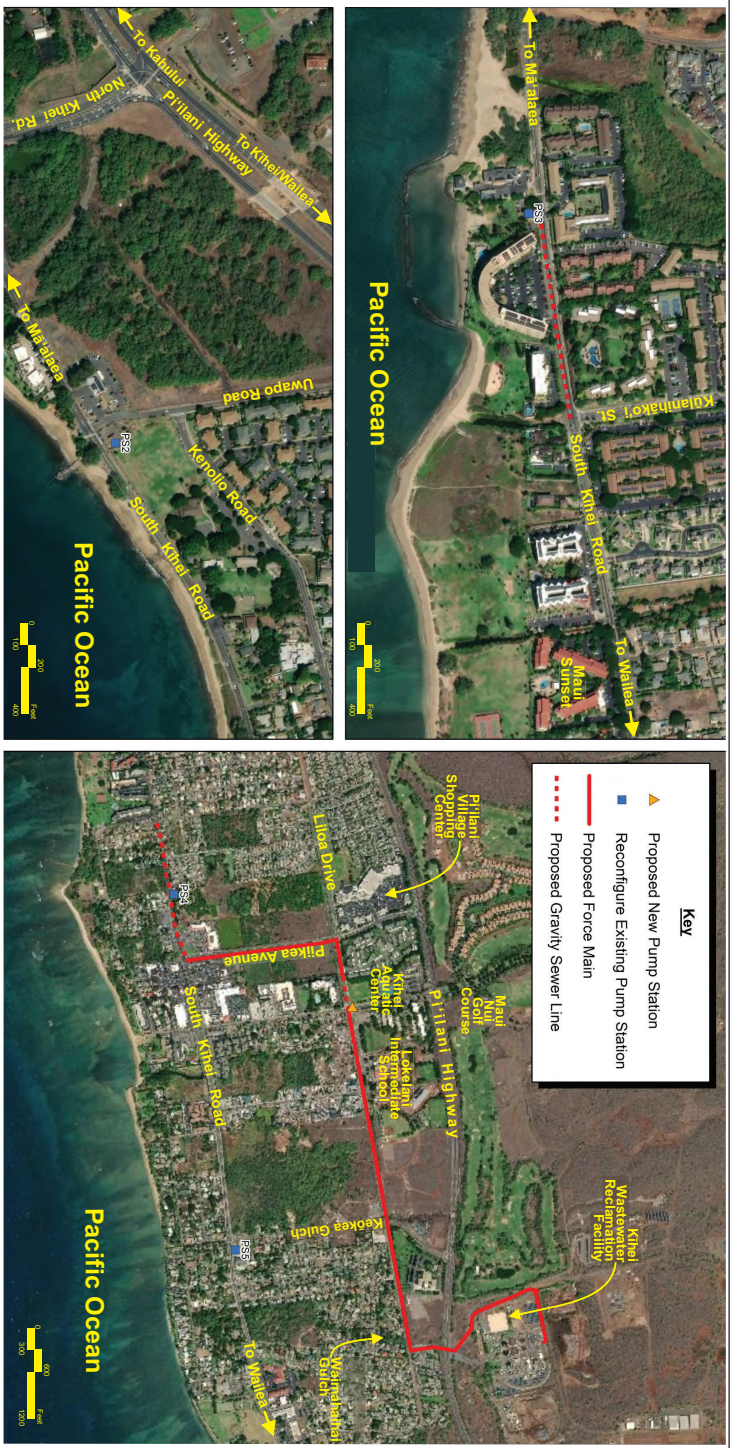

Digitally signed by Eric A. Nakagawa
DN: cn=Eric A. Nakagawa, o=County of Maui,
ou=Department of Planning and Development,
email=eric.nakagawa@co.maui.hi.us,
c=US
Date: 2021.05.08 14:08:33 -1000

for ERIC A. NAKAGAWA, P.E.
Director of Environmental Management

Enclosures

cc: Derek Ono, Warren S. Unemori Engineering (w/enclosures)
Kari Luna Nunokawa, Munekiyo Hiraga, (w/enclosures)
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ATTACHMENT B.
Project Area Map



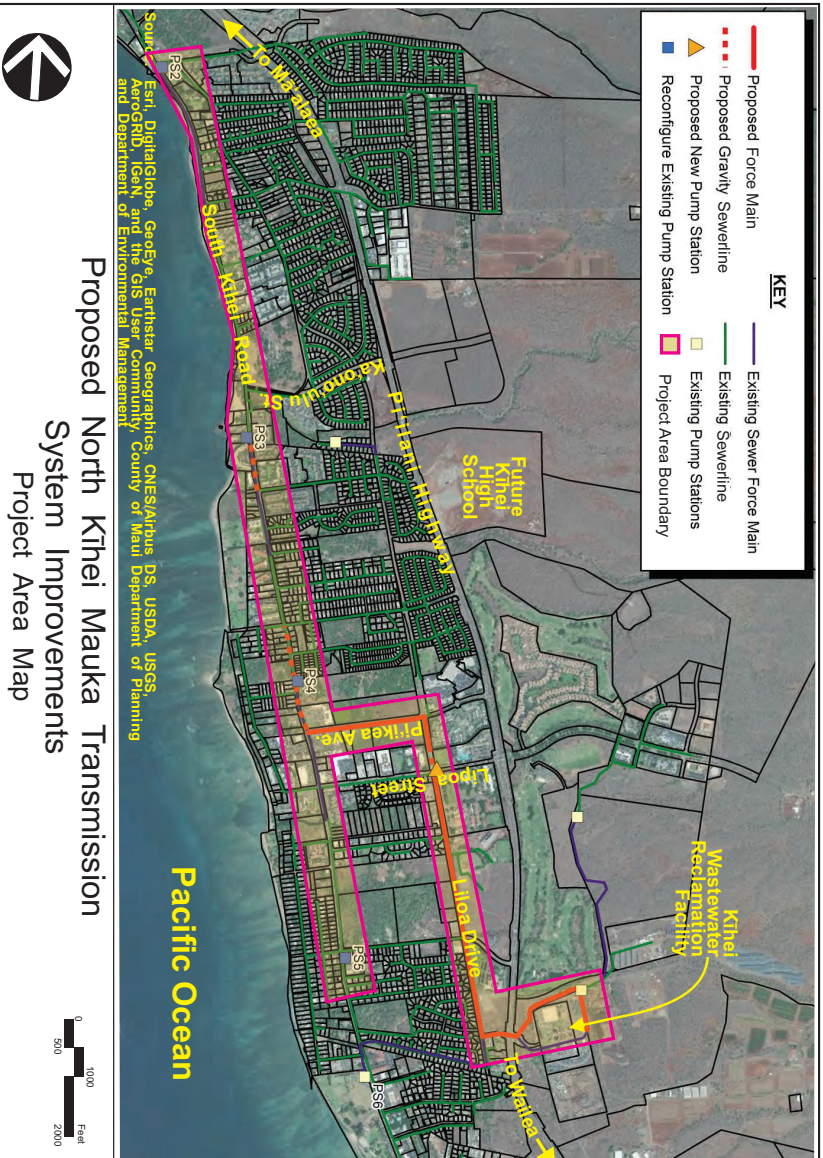
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, Maui County Department of Planning

Figure 1
Proposed North Kihai Mauka Transmission System Improvements
Project Location Map



ATTACHMENT C.

Species List for North Kīhei Mauka Transmission System Project





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-0303

June 1, 2021

Eric A. Nakagawa, P.E.
Department of Environmental Management
County of Maui
2050 Main Street, Suite 2B
Wailuku, Maui, Hawai'i 96793

Subject: Species List for the Proposed North Kihei Mauka Wastewater Transmission System Project in Kihei, Island and County of Maui

Dear Eric A. Nakagawa:

The U.S. Fish and Wildlife Service (Service) received your correspondence on May 5, 2021, requesting a species list for the proposed North Kihei Mauka wastewater transmission system project in Kihei, Maui. The Service offers the following comments to assist you in the 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 project proposes to upgrade the existing North Kihei wastewater transmission system located in an urbanized area of Kihei, and involves different locations along the South Kihei Road, Pi'ikea Avenue, Liloa Drive, Pi'ilani Highway, and the Kihei Wastewater Reclamation Facility. The project will cross two gulches: Keōkea gulch and Waimahaihai gulch. The system is made up of four wastewater pump stations (WWPS) and conveys wastewater from its service area to the Kihei WWPS No. 6, which then pumps to the Kihei Wastewater Reclamation Facility (WWRF).

The proposed action will include replacing the gravity sewerline to WWPS No. 3 with a larger pipe; replacing the gravity sewerlines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet until it reaches a new proposed WWPS near the Kihei Aquatic Center; a new WWPS at the Lipoa Street and Liloa

INTERIOR REGION 9
COLUMBIA-PACIFIC NORTHWEST
IDAHO, MONTANA*, OREGON*, WASHINGTON
*PARTIAL

INTERIOR REGION 12
PACIFIC ISLANDS
AMERICAN SAMOA, GUAM, HAWAII, NORTHERN
MARIANA ISLANDS

Eric A. Nakagawa, P.E.

2

Drive intersections; and a second new force main that heads south on Liloa Drive and continues on to the Kihei WWRF. In addition, the project will also involve improvements to WWPS No. 2, 3, 4, and 5. The pump station upgrade work will entail switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and control will be replaced to match other upgraded County WWPS. The improvements to the WWPSs are a process that the County is working towards to standardize their facilities; depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas.

Based on information you provided and pertinent information in our files, including data compiled by the Hawai'i Biodiversity and Mapping Project, there are five federally listed species in the immediate vicinity of the project area and one protected under the Migratory Bird Treaty Act: the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*) and the endangered Blackburn's sphinx moth (*Manduca blackburni*). Additionally, the endangered Hawaiian petrel (*Pterodroma sandwichensis*), the endangered Hawaii 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. Wedge-tailed shearwaters (*Ardenna pacificus*), a non-listed species that is protected under the Migratory Bird Treaty Act, may also occur in the coastal area adjacent to the project site.

To avoid and minimize adverse effects 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.

Blackburn's sphinx moth: The adult Blackburn's sphinx moth feeds on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), 'ilie'e (*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-to-6 weeks prior to construction.
 - Surveys should include searches for adults, eggs, larvae, and signs of larval feeding (i.e., 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-to-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 petrel, Newell's shearwater, and Hawaii 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 adverse effects 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.

Wedge-tailed shearwater: Unlike other Hawaiian seabird species, wedge-tailed shearwaters nest in littoral vegetation along coastlines. Nesting adults, eggs, and chicks are particularly susceptible to impacts from human disturbance and predators.

To avoid and minimize potential project impacts to wedge-tailed shearwaters we recommend you incorporate the following measures into your project description:

- Conduct surveys throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas.
- If wedge-tailed shearwaters nest within a proposed project area and the project would cause ground disturbance, time project construction outside of the breeding season.
- If outdoor lighting is needed, use light shields that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach;
- 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.

If this 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 nonfederal 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, e-mail: eldridge_naboa@fws.gov. When referring to this project, please include this reference numbers: **01EPIF00-2021-SL-0303**.

Sincerely,

**LINDSY
ASMAN**

Digitally signed by
LINDSY ASMAN
Date: 2021.06.01
15:50:36 -10'00'

Island Team Manager
Maui Nui and Hawai'i Island

Enclosures: Best Management Practices for Work In or Around Aquatic Environments

cc: Derek Takahashi, P.E., County Project Manager

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

The U.S. Fish and Wildlife Service (USFWS) recommends the following measures are 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] 01EPIF00-2021-SL-0303

From: Naboa, Eldridge E [mailto:eldridge_naboa@fws.gov]**Sent:** Monday, June 28, 2021 10:26 AM**To:** Kari Luna Nunokawa <kari@munekiyohiraga.com>**Cc:** Tessa Munekiyo Ng <tessa@munekiyohiraga.com>**Subject:** Re: [EXTERNAL] 01EPIF00-2021-SL-0303

Aloha e Kari! Mahalo for the call! As we discussed, I would like to include waterbirds on the species list letter we submitted in reference to: **01EPIF00-2021-SL-0303**, as ponding or standing may occur that may attract these species. Please let me know and I will file your response to the record.

Mahalo nui,
El

Hawaiian stilt (*Himantopus mexicanus knudseni*), Hawaiian coot (*Fulica alai*), and Hawaiian duck (*Anas wyvilliana*): 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*) lo'i 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:

- o Contact the Service within 48 hours for further guidance.
- o 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.
- o 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.

=====
 Eldridge E. Naboa
 Fish and Wildlife Biologist - Hawai'i Island and Maui Nui
 U.S. Fish and Wildlife Service
 Pacific Islands Fish and Wildlife Office
 154 Waianuenue Avenue, Suite 103
 Hilo, Hawai'i 96720-2452
 Office: 808-933-6964
 Mobile: 808-284-0037
 Website: <http://www.fws.gov/pacificislands>



=====
From: Kari Luna Nunokawa <kari@munekiyohiraga.com>
Sent: Monday, June 28, 2021 8:11 AM
To: Naboa, Eldridge E <eldridge_naboa@fws.gov>
Cc: Tessa Munekiyo Ng <tessa@munekiyohiraga.com>
Subject: RE: [EXTERNAL] 01EPIF00-2021-SL-0303

Thanks so much! I will be in meetings til about 10 so anytime after that. Mahalo nui!!

Kari Luna Nunokawa, Ed.D. Senior Manager
 Email: kari@munekiyohiraga.com



Maui: 305 High Street, Suite 104, Wailuku, Hawaii 96793 **T:** 808.244.2015 **F:** 808.244.8729
Oahu: 735 Bishop Street, Suite 321, Honolulu, Hawaii 96813 **T:** 808.983.1233
Planning. Project Management. Sustainable Solutions. www.munekiyohiraga.com

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Due to the COVID-19 pandemic, if you have a document or package for delivery 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: Naboa, Eldridge E [mailto:eldridge_naboa@fws.gov]
Sent: Sunday, June 27, 2021 3:23 PM
To: Kari Luna Nunokawa <kari@munekiyohiraga.com>
Cc: Tessa Munekiyo Ng <tessa@munekiyohiraga.com>
Subject: Re: [EXTERNAL] 01EPIF00-2021-SL-0303

Aloha Kari! Hope all is well and that you had a good weekend!

Sorry I missed your call too, I was going into the meeting at that time. I'll give you a call tomorrow (Monday) to discuss.

Mahalo nui,
 El

=====
 Eldridge E. Naboa
 Fish and Wildlife Biologist - Hawai'i Island and Maui Nui
 U.S. Fish and Wildlife Service
 Pacific Islands Fish and Wildlife Office
 154 Waianuenue Avenue, Suite 103
 Hilo, Hawai'i 96720-2452
 Office: 808-933-6964
 Mobile: 808-284-0037
 Website: <http://www.fws.gov/pacificislands>



=====
From: Kari Luna Nunokawa <kari@munekiyohiraga.com>
Sent: Friday, June 25, 2021 10:10 AM
To: Naboa, Eldridge E <eldridge_naboa@fws.gov>
Cc: Tessa Munekiyo Ng <tessa@munekiyohiraga.com>
Subject: [EXTERNAL] 01EPIF00-2021-SL-0303

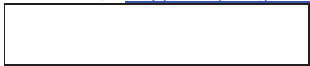
This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Aloha e Eldridge,

Mahalo for your call back, I am sorry I missed you. I am emailing regarding the above-referenced project, the Proposed North Kihei Mauka Transmission System located in Kihei, Maui, Hawai'i. On May 14, 2021, our office emailed, on behalf of the County of Maui Dept. of Environmental Management (DEM), the designated non-Federal agency for this project, a Section 7 Consultation Letter. On June 2, 2021 we received a response letter back from the USFWS addressed to Eric Nakagawa, Director (DEM) identifying five (5) possible endangered species that could be affected by the project. I am confirming that this letter is the USFWS response to the Section 7 consultation request. Mahalo for your time and consideration.

Have a great day,
Kari

Kari Luna Nunokawa, Ed.D. Senior Manager
Email: kari@munekiyohiraga.com



Maui: 305 High Street, Suite 104, Wailuku, Hawaii 96793 **T:** 808.244.2015 **F:** 808.244.8729
Oahu: 735 Bishop Street, Suite 321, Honolulu, Hawaii 96813 **T:** 808.983.1233
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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:
Service Ref. No. 2022-0012337-S7 and 2022-0015885-S7

March 8, 2022

Jon Nagato and Chane Hayashida
Department of Health, Wastewater Branch
2827 Waimano Home Road
Hale Ola Building, Room 207
Pearl City, HI 96782

Subject: Informal Consultation for the Proposed North Kīhei Mauka Wastewater Transmission System Project (Service No. 2022-0012337-S7) and the Kīhei No. 8 Force Main Replacement (Service No. 2022-0015885-S7) in Kīhei, County and Island of Maui

Dear John Nagato:

The U.S. Fish and Wildlife Service (Service) received your correspondence on November 2, 2021, and January 12, 2022, respectively, requesting our concurrence with your determination that the replacement of the North Kīhei Mauka Wastewater Transmission System (Clean Water State Revolving Fund [CWSRFP] No. C150077-29) and the Kīhei No. 8 Force Main (CWSRFP No. C150077-28) may affect, but is not likely to adversely affect the following federally listed species:

- Central North Pacific Distinct Population Segment of the green sea turtle or honu (*Chelonia mydas*) (threatened),
- Hawaiian hoary bat or 'ōpe'ape'a (*Lasiurus cinereus semotus*) (endangered),
- Hawaiian seabirds, including Hawaiian petrel or 'ua'u (*Pterodroma sandwichensis*) (endangered), Hawai'i's Distinct Population Segment of the band-rumped storm-petrel or 'akē'akē (*Oceanodroma castro*) (endangered), and the Newell's shearwater or 'a'o (*Puffinus auricularis newelli*) (threatened), and
- Blackburn's sphinx moth (*Manduca blackburni*) (endangered).

The projects may also affect the wedge-tailed shearwater (*Ardenna pacificus*), a Hawai'i State-listed and Migratory Bird Treaty Act species. We recommend consulting the State of Hawai'i Department of Land and Natural Resources Department of Fish and Wildlife and the Migratory

INTERIOR REGION 9
COLUMBIA-PACIFIC NORTHWEST
IDAHO, MONTANA*, OREGON*, WASHINGTON
*PARTIAL

INTERIOR REGION 12
PACIFIC ISLANDS
AMERICAN SAMOA, GUAM, HAWAII, NORTHERN
MARIANA ISLANDS

Bird Treaty Act to implement their recommendations to protect this species under the applicable statutes and laws. Unlike other Hawaiian seabirds, wedge-tailed shearwaters nest in littoral vegetation along coastlines. Nesting adults, eggs, and chicks are particularly susceptible to impacts from human disturbance and predators. Therefore, the County of Maui will adhere to the following avoidance and minimization measures:

- Surveys will be conducted throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas.
- If wedge-tailed shearwaters nest within a proposed project area and the project would cause ground disturbance, the project construction will occur outside of the breeding season.
- If outdoor lighting is needed, light shields will be used that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach.
- Automatic motion sensor switches and controls will be installed on all outdoor lights or lights will be turned off when human activity is not occurring in the lighted area.

The U.S. Environmental Protection Agency has designated the State of Hawai'i Department of Health as its nonfederal representative pursuant to 50 CFR Section 402.08 for purposes of initiating the consultation process and preparing a biological assessment, if necessary, under Section 7 of the ESA for certain projects funded under the Clean Water State Revolving Fund Program. The Service provided a species list on December 23, 2021, and June 1, 2021 (FWS reference numbers: 01EPIF00-2021-SL-0303 and 01EPIF00-2021-SL-0118, respectively).

The findings and recommendations of this consultation are based on your consultation request, information you provided, and other information available to us. This response is in accordance with section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*).

Project Description

The existing North Kīhei wastewater collection, transmission system, and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. The County of Maui is proposing to replace the gravity sewer line to wastewater pump station (WWPS No. 3) with a larger pipe; replacing the gravity sewer lines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kīhei Road, turns east on Pi'ikea Avenue, turns south on Līloa Drive, and transitions to a gravity sewer line for 500 feet (ft.) until it reaches a new proposed WWPS at the corner of Līloa Drive and Līpoa Street, near the Kīhei Aquatic Centre; and a second new force main that heads south on Līloa Drive and continues on to the Kīhei Wastewater Reclamation Facility. Additionally, pump station upgrade work will entail switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows (Figure 1).

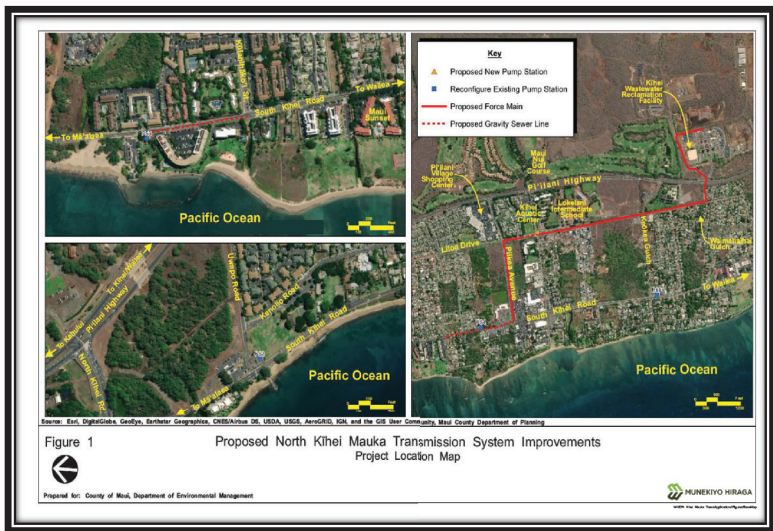


Figure 1. Aerial overview of North Kīhei Mauka Wastewater Transmission System project area.

The Kihei No. 8 upgrade, another County of Maui project, proposes to replace the existing 18-inch (diameter) ductile iron force main (wastewater) with a new 18-inch-diameter PVC force main that will be constructed in parallel along South Kihei Road. The new 18-inch force main extends approximately 2,000 linear feet (ft) along South Kihei Road, from Kihei No. 8 Pump Station near Kilohana Drive and reconnects to the existing sewer system near the Kihei Boat Ramp driveway. The entirety of the project is within the South Kihei Road paved roadway, except a 20-foot portion which is contained within the Kihei No. 8 Pump Station site (Figure 2).



Figure 2. Aerial overview of Kīhei No. 8 Force Main Replacement project area.

Green sea turtle

Suitable habitat for green sea turtles may be present on beaches adjacent to the proposed project area (Figure 1). Green sea turtles may nest on beaches nearby when suitable habitat is present. Optimal sea turtle nesting habitat is a dark beach free of barriers that restrict sea turtle movement. Nesting turtles may be deterred from approaching or laying successful nests on lighted or disturbed beaches. They may become disoriented by artificial lighting, leading to exhaustion and placement of a nest in an inappropriate location (such as at or below the high tide line). Hatchlings that emerge from nests may also be disoriented by artificial lighting. Inland areas visible from the beach should be sufficiently dark to allow for successful navigation by hatchlings to the ocean.

To avoid and minimize project impacts to sea turtles from lighting the following measures will be implemented:

- Avoid nighttime work during the nesting and hatching season (May to December). Turn off lights when human activity is not occurring in the project area.
- Minimize the use of lighting on or near beaches and shield all project-related lights so the light is not visible from any beach.

- If lights can't be fully shielded or if headlights must be used, the light sources will be fully enclosed with light filtering tape or filters.

Because the County of Maui will implement the avoidance and minimization measures described above, effects to the green sea turtle are extremely unlikely to occur and are discountable.

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. There are trees and other vegetation nearby the project area that may provide suitable habitat for the Hawaiian hoary bat. If trees or shrubs 15 ft 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 ft to higher than 500 ft above the ground and can become entangled in barbed wire used for fencing. Hawaiian hoary bats may be present nearby where suitable habitat is present.

To avoid and minimize project impacts to Hawaiian hoary bat the following measures will be implemented:

- Avoid disturbing, removing, and trimming woody plants taller than 15-ft during the bat-birthing and pup-rearing season (June 1 through September 15).
- Avoid using barbed wire for fencing.

The project is entirely within a paved roadway and developed pump station, there will be no barbed-wire fencing, and the County of Maui will adhere to the avoidance and minimization measures above. Due to the developed nature of the area any Hawaiian hoary bats roosting nearby are unlikely to be measurably disturbed by the elevated noise levels and human presence associated with project construction. Therefore, effects to Hawaiian hoary bat are insignificant.

Blackburn's sphinx moth

The adult Blackburn's sphinx moth feeds on nectar from native plants, including beach morning glory (*Ipomoea pes-caprae*), 'ilie'e (*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.

The following measures will be implemented to determine whether the Blackburn's sphinx moth occurs within the project area:

- A biologist familiar with the species will survey the project area for Blackburn's sphinx moth and its larval host plants prior to work initiation.
 - Surveys will occur during the wettest portion of the year (usually November through April or several weeks after a significant rain) and within 4-to-6 weeks prior to construction.
 - Surveys will include searches for adults, eggs, larvae, and signs of larval feeding (i.e., chewed stems, frass, or leaf damage).

- If moths, eggs, larvae, or native 'aiea or tree tobacco over 3-ft tall, are found during the survey, the Service will be contacted 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 establishing on the site. Tree tobacco can grow greater than 3-ft tall in approximately 6 weeks. If it grows over 3 ft, the plants may become a host plant for Blackburn's sphinx moth. Therefore, the County of Maui will also implement the following measures:

- Remove any tree tobacco less than 3-ft tall.
- Monitor the site every 4-to-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.

The project is entirely within a paved roadway and developed pump station. Additionally, the County of Maui will adhere to the avoidance and minimization measures described above. Therefore, it is extremely unlikely that the Blackburn's sphinx moth would be exposed to any project-related effects. Effects to Blackburn's sphinx moth are discountable.

Hawaiian seabirds

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. These 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.

The following measures will be implemented for the protection of Hawaiian seabirds:

- All outdoor lights will be fully shielded so bulbs are only visible from below.
- Automatic motion sensor switches and controls will be installed on all outdoor lights or turned off when human activity ceases within lit areas.
- Nighttime construction will be avoided during the seabird fledging period, from September 15 through December 15.

The County of Maui will adhere to the avoidance and minimization measures described above. Therefore, it is extremely unlikely that Hawaiian seabirds would be exposed to any project-related effects. Effects to Hawaiian seabirds are discountable.

Summary

Based on the information provided and our assessment of potential project impacts, we anticipate that the potential adverse effects to listed species are insignificant and discountable, the Service

concurs with your determination that the proposed action may affect, but is not likely to adversely affect the Central North Pacific Distinct Population Segment of the green sea turtle, the Hawaiian hoary bat, the Hawaiian petrel, Hawai'i's Distinct Population Segment of the band-rumped storm-petrel, Newell's shearwater, and the Blackburn's sphinx moth. Reinitiation of consultation is required and shall be requested by the Federal agency or by the Service where discretionary Federal involvement or control over the action has been retained or is authorized by law and:

1. If new information reveals effects of the action that may affect listed species or critical habitat in a manner or to an extent not previously considered;
2. If the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat that was not considered in the written concurrence; or,
3. If a new species is listed or critical habitat designated that may be affected by the identified action.

Thank you for participating with us in the protection of our endangered species. If you have any questions, please contact Christina Richards at Christina_Richards@fws.gov or by telephone at 808-794-9450 or Lindsay Asman at Lindsay_Asman@fws.gov or by phone at 808-792-9490.

Sincerely,

**LINDSY
ASMAN**

Island Team Manager
Maui Nui and Hawai'i Island

Digitally signed by LINDSY
ASMAN
Date: 2022.03.08 08:06:05
-10'00'



CHAPTER 6E
CONSULTATION

APPENDIX

E-1



MICHAEL P. VICTORINO
Mayor

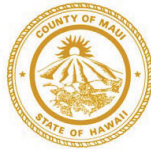
ERIC A. NAKAGAWA, P.E.
Director

SHAYNE R. AGAWA, P.E.
Deputy Director

MICHAEL P. RATTE
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**
2050 MAIN STREET, SUITE 2B
WAILUKU, MAUI, HAWAII 96793

May 5, 2021

Alan Downer, Ph.D., Administrator
State Historic Preservation Division
Department of Land and Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, Hawai'i 96707
(via: SHPD Portal)

SUBJECT: **Request for Concurrence, HRS Chapter 6E-8 Historic Preservation Review for the Proposed North Kihei Mauka Transmission Line Project in Kihei, Keōkea, Waiohuli, and Ka'ono'ulu Ahupua'a, Wailuku (Kula) District, Island of Maui, TMK: Various**

Dear Dr. Downer:

This letter introduces the 6E submittal and relevant illustrations for the above-noted project in Kihei, Maui. This communiqué provides background to the project including its location and sponsorship, as well as a review of any historic properties previously documented within or near the area of potential effect (APE) that are subject to §6E-8, HRS. An effect determination and proposed mitigation are also presented below. Both Federal and County of Maui funding will be appropriated for this project. Anticipated regulatory permits and approvals for this project include a Chapter 343, HRS Environmental Assessment, Special Management Area Use Permit, Coastal Zone Management Consistency Review, Section 106 Consultation, Section 7 Consultation, and the U.S. Department of Army Jurisdictional Determination.

The County of Maui, Department of Environmental Management (DEM) is submitting this §6E-8, HRS review inclusive of the SHPD 6E Submittal Form, Proposed Site Plan, and illustrations of the project area location. The project engineer (Warren S. Unemori Engineering Inc.) and its planner (Munekio Hiraga) has retained Scientific Consultant Services, Inc. (SCS) to conduct the historic property research for this project and to conduct any future mitigation if recommended by the State Historic Preservation Division (SHPD).

Alan Downer, Ph.D., Administrator
May 5, 2021
Page 2

This project is being conducted because the existing North Kihei wastewater collection, transmission system, and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. Future development *mauka* of Pi'ilani Highway (east) will require major upgrades to the existing system along South Kihei Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills.

The proposed North Kihei Mauka Transmission System project will include replacing the gravity sewerline to WWPS No. 3 with a larger pipe; replacing the gravity sewerlines to WWPS No. 4 with larger pipes; a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewerline for 500 feet (ft) until it reaches a new proposed WWPS near the Kihei Aquatic Center; a new WWPS at the Lipoa Street and Liloa Drive intersection; and a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility. Attached are various illustrations depicting the APE. Table 1 below shows all the project TMKs.

In addition, the proposed project will also involve improvements to WWPS No. 2, 3, 4, and 5. Pump station upgrade work will entail switching the existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPS. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas.

Excavation will be needed for this project and be required along the length of the 13,000 ft. linear corridor and the new pump station. Excavation work for the sewer lines will generally be 4 ft. wide by 5 to 15 ft. deep. The entirety of the sewer line trenching work will be within corridors containing existing utilities and thus, previously disturbed/filled contexts. For the new pump station, excavation work will encompass 10,000 sq. ft. with maximum depths of 20 ft below surface, this maximum being at the WWPS well site. The sewer line pipes themselves measure 16 inches, 18 inches, and 30 inches in diameter, with the vast majority of the work involving the 16-inch sewer pipes.

The APE for this project traverses several different environmental zones as it flows from inland reaches through central Kihei. Within the corridor, the natural soil regimes also change, although again, the footprint of this project is within existing utility corridors. From south to north, several soil series are present. Inland, at the Kihei Wastewater Reclamation Facility (see attached illustrations), soils are stone, silty clay. As the corridor runs west then north along Liloa Drive, silty clay and silt loams are common. From Pi'ikea Avenue to the west and near coastal reaches, silt loam is common. As the project proceeds again to the north, to its terminus at WWPS No. 2, silty loam, beach sand, and Jaucus sand are most common.

Alan Downer, Ph.D., Administrator
May 5, 2021
Page 3

Identification and Inventory of Historic Properties

The linear APE for the project encompasses some 13,000 feet, with work proposed along roadways and within WWPS sites. While the APE has not previously undergone an AIS itself, there have been many archaeological projects conducted along and nearby the route. Multiple sites have been documented as well, particularly in the southern portion of the APE (see attached illustrations).

Two sites occur close to the APE: Site 50-50-10-1710 and -1711, both in the southern portion of the project. Site -1710 is a Historic era animal enclosure and Site -1711 consists of the Keōkea agricultural complex. Both sites have been fully documented, occur outside the APE, and will not be affected at all by this undertaking.

There are multiple sites in the general area of the corridor and WWPS locations but as of the current review, no sites have been documented within the current APE (see attached).

Effect Determination

The Department of Environmental Management proposes a no effect for the above noted APE. The project primarily occurs in a built environment where sewer lines will be placed within existing utility corridors and thus, a disturbed/filled area, at least in upper soil levels. WWPS work locations also occur in developed areas.

Mitigation

The Department of Environmental Management is requesting SHPD concurrence with the effect determination of “no effect”.

Should there be any questions or comments regarding this matter, please contact Eric Nakagawa at 270-8230.

Sincerely,


Digitally signed by Shayne R. Agawa
DN: cn=Shayne R. Agawa, o=County of Maui,
email=shayne.agawa@co.maui.hi.us,
c=US
Date: 2021.05.06 14:59:01 -1000

for ERIC A. NAKAGAWA, P.E.
Director of Environmental Management

Alan Downer, Ph.D., Administrator
May 5, 2021
Page 4

Attachments

cc: Susan Lebo, Ph.D., SHPD Archaeology Branch Chief
Andrew McCallister, SHPD Maui Lead Archaeologist
Lehua Soares, SHPD Archaeology Administrative Assistant
Mike Dega, Scientific Consultant Services, Inc.
Derek Ono, Warren S. Unemori Engineering
Kari Luna Nunokawa, Munekiyo Hiraga

Table 1. List of TMK Parcels Affected by the Proposed Project

Project Component	TMK	Landowner
WWPS No. 2	(2)3-8-077:011	County of Maui
WWPS No. 3	(2)3-9-001:147	County of Maui
WWPS No. 4	(2)3-9-052:037	County of Maui
WWPS No. 5	(2)3-9-027:028	County of Maui
Kihei Community Center/Kihei Aquatic Center	(2)2-2-024:023(por.)	County of Maui
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui
Land abutting the Kihei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.
Kihei WWRF	(2)2-2-024:010	County of Maui
Kihei WWRF	(2)2-2-024:011	County of Maui
Proposed underground gravity sewerline – S. Kihei Road ROW	(2)3-9-001 (2)-3-9-007	County of Maui
Proposed underground force main – Pi'ikea Avenue ROW	(2)3-9-002	County of Maui
Proposed underground gravity sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui
Proposed underground force main – Liloa Drive ROW	(2)2-2-002 (2)3-9-040 (2)3-9-033	County of Maui
Proposed underground force main – Old E. Welakahao Road ROW	(2)2-2-029	County of Maui
Proposed underground force main – Pi'ilani Highway ROW	(2)2-2-999	State of Hawai'i

DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER

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

August 5, 2022

Eric A. Nakagawa, Acting Director
County of Maui
Department of Environmental Management
2050 Main Street, Suite 2B
Wailuku, HI 96793
c/o Derek Takahashi
derek.takahashi@co.maui.hi.us

Jon Nagato, Division Administrator
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, HI 96801
Email: jonathan.nagato@doh.hawaii.gov

IN REPLY REFER TO:
Project No.: 2021PR00558
Doc. No.: 2208AM02
Archaeology

Dear Eric A. Nakagawa and Jon Nagato:

SUBJECT: Chapter 6E-8 and Section 106 Historic Preservation Review – County of Maui Department of Environmental Management North Kihei Transmission Line Project State of Hawaii Department of Health Clean Water State Revolving Fund Project No. C150077-29 Request for Information and Concurrence with APE and Effect Determinations Keōkea, Waiohuli, and Ka'ono'ulu Ahupua'a's, Kula District, Island of Maui
TMK: (2) 3-8-077:011, (2) 3-9-001:147 por., (2) 3-9-027:028, (2) 3-9-052:037, (2) 2-2-002:042 por., (2) 2-2-002:087, (2) 2-2-002:088, (2) 2-2-002:084 por., (2) 2-2-024:010, (2) 2-2-024:011, (2) 2-2-024:023 por., (2) 3-9-001:999, (2) 3-9-007:999, (2) 3-9-002:999, (2) 2-2-024:999, (2) 2-2-002:999, (2) 2-2-029:999, and (2) 2-2-999:999 (South Kihei Road, Pi'ikea Avenue, Liloa Drive, and Welakahao Road Street and Pi'ilani Highway ROWs)

This letter provides the State Historic Preservation Division's (SHPD's) review of the County of Maui Department of Environmental Management's (DEM's) North Kihei Transmission Line Project. This County of Maui project is being undertaken in coordination with the State of Hawaii Department of Health (DOH). The project will receive federal funding under the Clean Water State Revolving Fund (Project No. C150077-29) and has been determined to be a federal undertaking as defined by 36 CFR 800.16(y). SHPD received the following submissions for the subject project:

May 19, 2021

SHPD received a map showing the location of the project area/area of potential effect (APE), an HRS 6E Submittal Form, and a letter from the County of Maui DEM initiating the HRS §6E-8 historic preservation review process and requesting SHPD's concurrence with a project effect determination of "no effect" (May 5, 2021, Erick Nakagawa [DEM] to Alan Downer [SHPD]).

September 27, 2021 SHPD received a copy of a County of Maui work on county highway permit application with aerial photographs of the project area/APE.

October 20, 2021 SHPD received an HRS 6E Submittal Form, a map of the project area/APE, aerial photographs of the project area/APE, a list of TMKs for the project area/APE, and a letter from the County of Maui DEM initiating the HRS §6E-8 historic preservation review process (May 5, 2021, Erick Nakagawa [DEM] to Alan Downer [SHPD]).

May 9, 2022 SHPD received a letter from the DOH initiating the National Historic Preservation Act (NHPA) Section 106 Consultation process and requesting information about possible consulting parties that may be interested in the current project and information about previously identified historic properties in the area.

July 12, 2022 SHPD received a letter from the DOH continuing the NHPA Section 106 consultation process and requests the SHPO's concurrent with a project effect determination of "no historic properties affected" for the North Kihei Mauka Transmission System project.

The County of Maui DEM proposes North Kihei Transmission Line Project within a 0.23-acre project area/APE on the subject property. The project will include the replacement of a gravity sewer-line to Wastewater Pump Station (WWPS) No. 3, replacement of the gravity sewer lines to WWPS No. 4, and the installation of a new force main starting at WWPS No. 4. Additionally, the project will include improvements to WWPS Nos. 2, 3, 4, and 5. Pump station upgrades include the replacement of the existing dry well pumps with wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced. The excavation for the sewer lines will be 4 feet by 5 feet by 15 feet deep. The entirety of the sewer-line trenching work will be within corridors containing existing utilities. The new pump station will require 10,000 square feet of excavation work to a depth of 20 feet.

A search of our records indicates an archaeological inventory survey (AIS) has not been previously conducted within the current project area/APE. However, several significant historic properties have been previously identified in the vicinity of the current project area/APE including the SIHP #s 50-50-09-01288 (Kalepolepo Fishpond), 50-50-10-08806 (habitation site), 50-50-09-08871 (burial site), 50-50-09-01710 (enclosure) and 50-50-09-01711 (Keōkea agricultural complex). SIHP # 50-50-09-08871 (burial site) is interpreted as native Hawaiian burial site previously disturbed during the construction along South Kihei Road. No historic properties have been previously identified within the current project area/APE.

The SHPO concurs with the DOH project effect determination of *no historic properties* affected pursuant to 36 CFR 800.4(d)(1), as no historic properties eligible for listing in the National Register of Historic Places have been identified within the APE. However, pursuant to HRS 6E historic preservation review, SHPD has insufficient information to determine the potential for the project to adversely impact significant archaeological historic properties and/or disarticulated human remains within the fill deposits. Therefore, **SHPD requests archaeological monitoring be conducted for identification purposes** in accordance with HAR §13-279 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 requests for review and acceptance an archaeological monitoring plan (AMP) meeting the requirements of HAR §13-279-4 prior to the initiation of the project. Please submit the AMP along with a copy of this letter and the required filing review fee to HICRIS Project No. 2021PR00558 using the Project Supplement option.

SHPD will notify the County of Maui when the required archaeological monitoring plan has been reviewed and accepted, and the project initiation process may proceed.

The DOH and DEM are the offices of record for this project. Please maintain a copy of this letter with your environmental review record for this undertaking.

Please contact Andrew McCallister, Maui Archaeologist IV, at andrew.mccallister@hawaii.gov for any matters regarding archaeological resources in this letter.

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Janet Six, the County of Maui, janet.six@co.maui.hi.us
Kamakana C. Ferreira, OHA, kamakana.f@oha.org
Sina Pruder, DOH, sina.pruder@doh.hawaii.gov
Chane Hayashida, DOH, chane.hayashida@doh.hawaii.gov
Kari Luna, Munekiyo Hiraga, kari@munekiyohiraga.com
Tessa Ng, Munekiyo Hiraga, tessa@munekiyohiraga.com
Derek Ono, Warren S. Unemori Engineering, Inc., dono@wsue.com
Mike Dega, SCS, mike@scshawaii.gov



**SECTION 106
CONSULTATION**

APPENDIX

E-2



DAVID Y. IGE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
File:

March 9, 2022

77-29 S106 ltr (initial).docx

Alan S. Downer, PhD, Administrator
State of Hawai'i, Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Rm. 555
Kapolei, HI 96707
Submitted via: SHPD HICRIS

Dear Dr. Downer:

Subject: National Historic Preservation Act (NHPA)
Request to Initiate Section 106 Consultation
North Kihei Mauka Transmission System
Clean Water State Revolving Fund Project No. C150077-29
Waiohuli Ahupua'a, Wailuku and Makawao (Kula) District, Island of Maui
TMK: (2) 3-8-077:011; (2) 3-9-001:147 (por.); (2) 3-9-052:037; (2) 3-9-027:028; (2) 2-2-024:023 (por.); (2) 2-2-002:042 (por.); (2) 2-2-002:087; (2) 2-2-002:088; (2) 2-2-002:084 (por.); (2) 2-2-024:010; (2) 2-2-024:011; (2) 3-9-001; (2) 3-9-007; (2) 3-9-002; (2) 2-2-024; (2) 2-2-002; (2) 2-2-029; (2) 2-2-999
State Historic Preservation Division (SHPD) Project No. 2021PR00558

On behalf of the Environmental Protection Agency (EPA), the State of Hawai'i Department of Health (DOH) requests to initiate Section 106 consultation with the State Historic Preservation Officer (SHPO) for the proposed North Kihei Mauka Transmission System project located in Waiohuli Ahupua'a, Wailuku and Makawao (Kula) District, Island of Maui.

The proposed project may be eligible to utilize federal funding that is administered by the DOH through the Clean Water State Revolving Fund (CWSRF) and will be considered a federal action and undertaking, as defined by Section 106 of the NHPA of 1966 (as amended 2014), Title 54 of the United States Code (54 USC) Section 306108, and Title 36 of the Code of Federal Regulations (36 CFR) Part 800.

The EPA has authorized the DOH to act on behalf of the EPA regarding NHPA Section 106 notification and consultation. This letter is to request to initiate the Section 106 consultation process with the SHPO and State Historic Preservation Division (SHPD) in accordance with 36 CFR, Section 800.3.

The DOH may provide funding under the CWSRF to the County of Maui, Department of Environmental Management for the North Kihei Mauka Transmission System project.

Alan S. Downer, PhD, Administrator
March 9, 2022
Page 2 of 3

Undertaking Description and Area of Potential Effect

The proposed project will include replacing the gravity sewer line to Wastewater Pump Station (WWPS) No. 3 with a larger pipe; replacing the gravity sewer lines to WWPS No. 4 with larger pipes; installing a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewer line for 500 feet (ft) until it reaches a new proposed WWPS near the Kihei Aquatic Center; constructing a new WWPS at the Lipoa Street and Liloa Drive intersection; and installing a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility.

In addition, the proposed project will also involve improvements to WWPS Nos. 2, 3, 4, and 5. Pump station upgrades work will entail replacing the existing dry well pumps with wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPSs. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas of the parcel. See *Attachment A*.

Environmental, Historical, and Archaeological Background

The area of potential effects (APE) for the project encompasses approximately 32.7 acres, with work proposed along roadways and within WWPS sites. See *Attachment B*. While the APE has not previously undergone an AIS itself, there have been many archaeological projects conducted along and nearby the route. Multiple sites have been documented as well, particularly in the southern portion of the APE.

Two (2) sites occur close to the APE: Site 50-50-10-1710 and -1711, both in the southern portion of the project. Site-1710 is a Historic era animal enclosure and Site-1711 consists of the Keōkea agricultural complex. Both sites have been fully documented, occur outside of the APE, and will not be affected at all by this undertaking.

There are multiple sites in the general area of the corridor and WWPS locations, but it is notable that no sites have been documented within the current APE.

Consultation

Section 106 consultation letters have also been sent to Native Hawaiian organizations, consulting parties, and/or interested persons that might attach significance to this area and have invited them to participate in the process. The mailing list is provided as *Attachment C*.

We welcome any comments that you may have on this project's proposed improvements.

We are particularly interested in any information you may have on the historic and cultural sites that have been recorded in the area. In addition, if you are acquainted with any persons or organizations that are knowledgeable about the proposed project area or any descendants with ancestral, lineal, or cultural ties to, cultural knowledge or concerns for, and/or cultural or religious attachment to the proposed project area, then we would appreciate receiving their names and contact information.

Alan S. Downer, PhD, Administrator
March 9, 2022
Page 3 of 3

We would appreciate a written response within thirty (30) calendar days from receipt of this letter. Please address any written comments to email: jonathan.nagato@doh.hawaii.gov or the following address:

Attn: Jon Nagato
Department of Health, Wastewater Branch
2827 Waimano Home Road, Room 207
Pearl City, HI 96782

Should you have any questions, please call Jon Nagato of our Branch at (808) 586-4294.

Sincerely,



SINA PRUDER, P.E., CHIEF
Wastewater Branch

Attachments

CH:

c: Eric Nakagawa (via email at Eric.Nakagawa@co.maui.hi.us)
Juan Rivera (via email at Juan.Rivera@co.maui.hi.us)
Derek Takahashi (via email at Derek.Takahashi@co.maui.hi.us)
Kari Nunokawa (via email at kari@munekiyohiraga.com)

Attachment A

Attachment B

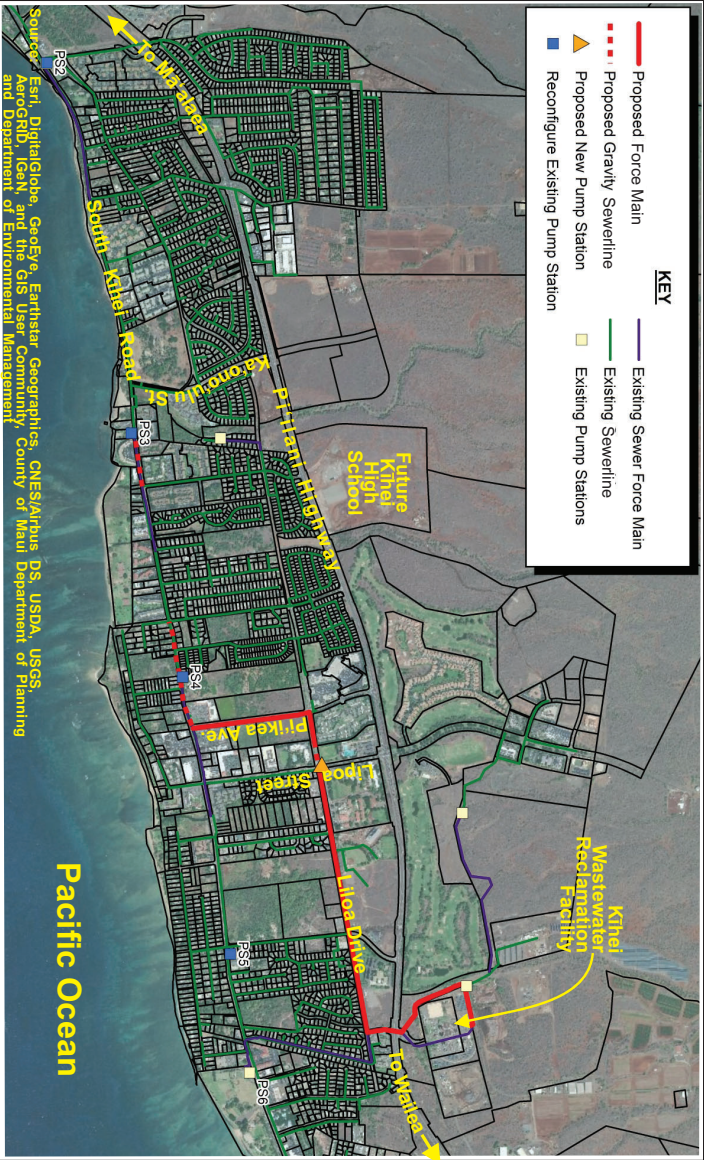
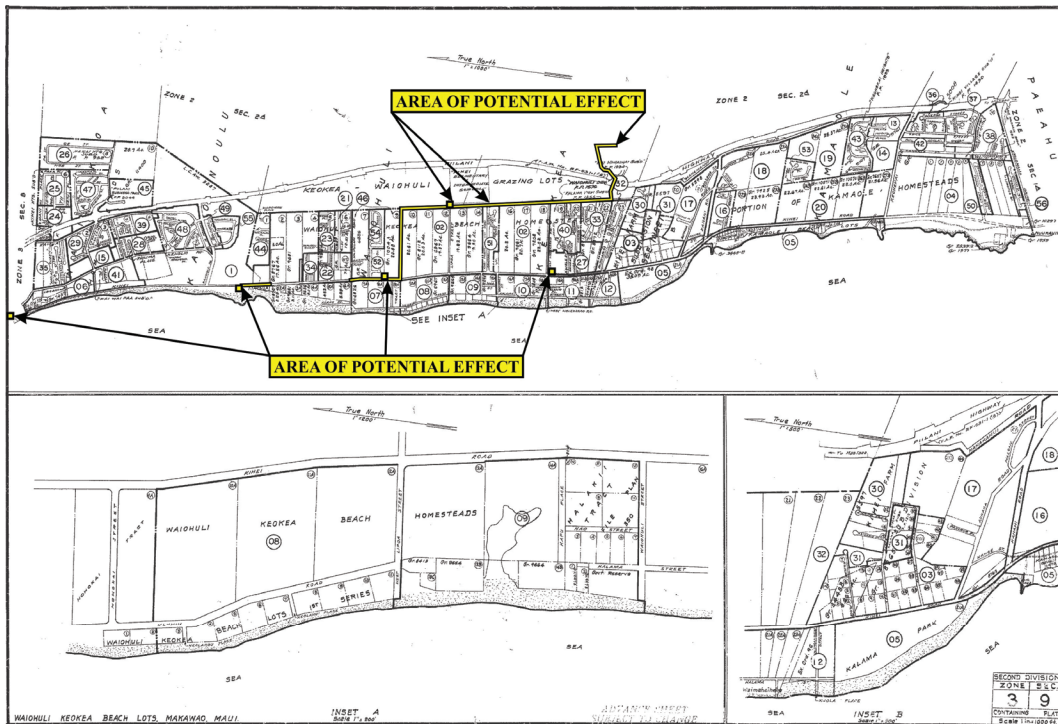
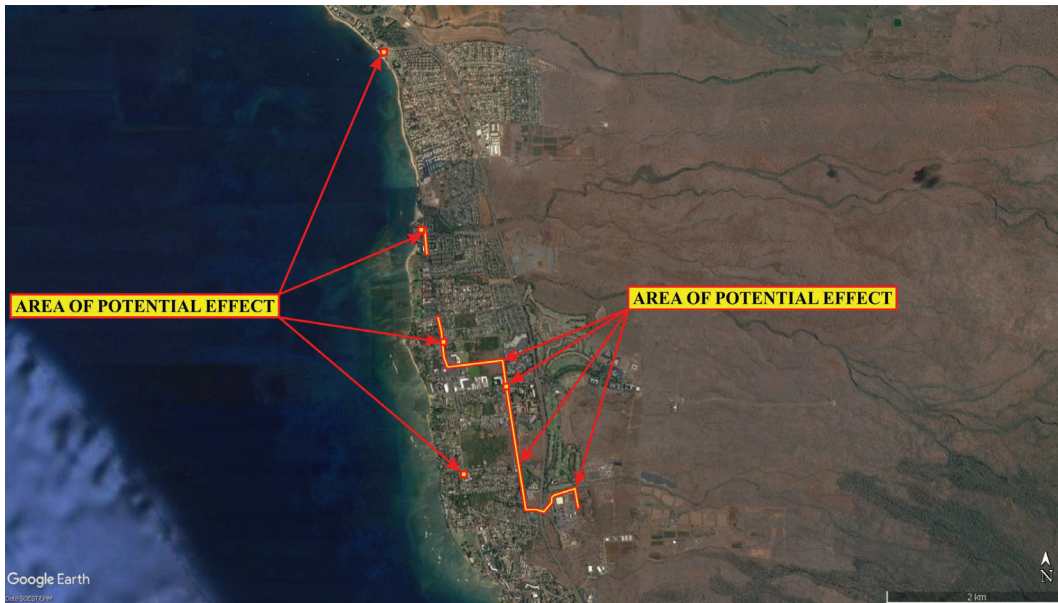


Figure 1 Proposed North Kihei Mauka Transmission System Improvements Project Location Map



Attachment C

NORTH KĪHEI MAUKA TRANSMISSION SYSTEM PROJECT

Native Hawaiian Organization Distribution List

1. Ka'onohi Lee, Representative
Aha Moku o Honua'ula
E-mail Address: kkaonohi66@gmail.com
2. Timothy Bailey, Representative
Aha Moku o Kula
E-mail Address: paulokaleioku@hailiantel.net
3. Vernon Kalanikau, Representative
Aha Moku o Kula
E-mail Address: frikum@hotmail.com
4. Ke'eaumoku Kapu, Chief Executive Officer
Aha Moku o Maui Inc.
P. O. Box 11524
Lahaina, Hawai'i 96761
E-mail Address: kapukapuakea@gmail.com
5. Hailama Farden, President
Association of Hawaiian Civic Clubs
P. O. Box 1135
Honolulu, Hawai'i 96807
E-mail Address: ahcc.nuhou@gmail.com
6. Joseph Kūhiō Lewis, Chief Executive Officer
Council for Native Hawaiian Advancement
91-1270 Kinoiki Street, Building 1
Kapolei, Hawai'i 96707
E-mail Address: info@hawaiiancouncil.org
7. Kiersten Falkner, Executive Director
Historic Hawai'i Foundation
680 Iwilei Road, Suite 690
Honolulu, Hawai'i 96817
8. Mililani Trask, Convenor
Na Koa Ikaika Ka Lahui Hawai'i
P. O. Box 6377
Hilo, Hawai'i 96720
E-mail Address: mililani.trask@icllchawaii.com
9. Leilani Williams-Solomon, President
Native Hawaiian Chamber of Commerce
P. O. Box 597
Honolulu, Hawai'i 96809
E-mail Address: nhccoahu@gmail.com
10. Erika Vincent, Operations Manager
Native Hawaiian Education Council
735 Bishop Street, Suite 224
Honolulu, Hawai'i 96813
E-mail Address: nhec@nhec.org
11. Maraëa K. Nekaifes
Nekaifes Ohana
212 Hi'ipala Loop
Kula, Hawai'i 96790-7273
12. Sylvia M. Hussey, Ed.D.
Ka Pouhana, Chief Executive Officer
Office of Hawaiian Affairs
560 N. Nimitz Hwy., Suite 200
Honolulu, Hawai'i 96817
E-mail Address: sylviah@oha.org
13. Dennis W. Ragsdale, Advocate General
Order of Kamehameha I
1777 Ala Moana Blvd., #142-102
Honolulu, Hawai'i 96815-1603
E-mail Address: order@kamehameha-1.org
14. L. La'akea Sukanuma, President
Royal Hawaiian Academy of Traditional Arts
835 Ahuwale Street
Honolulu, Hawai'i 96821
E-mail Address: laakea1@hawaiiantel.net
15. Robin Puanani Dannern, Chairman
Sovereign Council of Hawaiian Homestead Associations
1481 South King Street, Unit 448
Honolulu, Hawai'i 96814
E-mail Address: robin@hawaiianhomesteads.org
16. Melvin Soong, President
The I Mua Group
422 Iliaina Street
Kailua, Hawai'i 96734
E-mail Address: Soongm001@hawaii.rr.com

17. Eugene O'Connell, Project Coordinator
The Makua Group
87-282 Holocono Street
Wai'anae, Hawai'i 96792
E-mail Address: eugene.oconnell@makuagroup.com
18. L. La'akea Suganuma, President
The Mary Kawena Pūku'i Cultural
Preservation Society
835 Ahuwale Street
Honolulu, Hawai'i 96821
E-mail Address: marykawenapukui@gmail.com

DAVID Y. IGE
GOVERNOR OF HAWAII



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

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

In reply, please refer to:
File:

July 12, 2022

77-29 S106 ltr (prop determ) SHPD.docx

Alan S. Downer, PhD, Administrator
State of Hawai'i, Department of Land and Natural Resources
State Historic Preservation Division
601 Kamokila Boulevard, Rm. 555
Kapolei, HI 96707
Submitted via: SHPD HICRIS

Dear Dr. Downer:

Subject: National Historic Preservation Act (NHPA)
Request for Section 106 Concurrence of Proposed Determination
North Kihei Mauka Transmission System
Clean Water State Revolving Fund Project No. C150077-29
Waiohuli Ahupua'a, Wailuku and Makawao (Kula) District, Island of Maui
TMK: (2) 3-8-077:011; (2) 3-9-001:147 (por.); (2) 3-9-052:037; (2) 3-9-027:028; (2) 2-2-024:023 (por.); (2) 2-2-002:042 (por.); (2) 2-2-002:087; (2) 2-2-002:088; (2) 2-2-002:084 (por.); (2) 2-2-024:010; (2) 2-2-024:011; (2) 3-9-001; (2) 3-9-007; (2) 3-9-002; (2) 2-2-024; (2) 2-2-002; (2) 2-2-029; (2) 2-2-999
State Historic Preservation Division (SHPD) Project No. 2021PR00558

On behalf of the Environmental Protection Agency (EPA), the State of Hawai'i Department of Health (DOH) requests the State Historic Preservation Officer's (SHPO's) concurrence of the proposed effect determination for the proposed North Kihei Mauka Transmission System project located in Waiohuli Ahupua'a, Wailuku and Makawao (Kula) District, Island of Maui.

The proposed project may be eligible to utilize federal funding that is administered by the DOH through the Clean Water State Revolving Fund (CWSRF) and will be considered a federal action and undertaking, as defined by Section 106 of the NHPA of 1966 (as amended 2014), Title 54 of the United States Code (54 USC) Section 306108, and Title 36 of the Code of Federal Regulations (36 CFR) Part 800.

The EPA has authorized the DOH to act on behalf of the EPA regarding NHPA Section 106 notification and consultation. This letter is to request Section 106 concurrence of the proposed effects determination from the SHPO and State Historic Preservation Division (SHPD) in accordance with 36 CFR, Section 800.4.

The DOH may provide funding under the CWSRF to the County of Maui, Department of Environmental Management for the North Kihei Mauka Transmission System project.

A description of the undertaking for this project was provided in the previous correspondence (SHPD Project No. 2021PR00558) and in Enclosure 1: Undertaking Description. The

Alan S. Downer, PhD, Administrator
July 12, 2022
Page 2 of 2

environmental, historical, and archaeological background for the project was described in the previous correspondence and in Enclosure 2: Environmental, Historical, and Archaeological Background. The NHPA Section 106 notice/advertisement and consultations with Native Hawaiian Organizations (NHOs), other historically-focused organizations, community groups, and interested parties are described in Enclosure 3: Consultations.

Based on the information presented in the attachments, including a review and inventory of historic properties in the project vicinity and consultation with NHOs, consulting parties, and/or interested persons, the DOH is proposing a "no historic properties affected" determination for the subject project.

Should the SHPO and SHPD concur with or object to the proposed "no historic properties affected" determination for the North Kihei Mauka Transmission System project, we would appreciate a written response within thirty (30) calendar days of receipt of this letter.

Should the SHPO and SHPD have any comments, we would appreciate a written response within thirty (30) calendar days from receipt of this letter.

Please address your written response via email to jonathan.nagato@doh.hawaii.gov or via mail to the following address:

Attn: Jon Nagato
Department of Health, Wastewater Branch
2827 Waimano Home Road, Rm. 207
Pearl City, HI 96782

Should you have any questions, please contact Jon Nagato of our Branch at (808) 586-4294.

Sincerely,



SINA PRUDER, P.E., CHIEF
Wastewater Branch

Enclosures

CH:

c: Eric Nakagawa (via email at Eric.Nakagawa@co.maui.hi.us)
Juan Rivera (via email at Juan.Rivera@co.maui.hi.us)
Derek Takahashi (via email at Derek.Takahashi@co.maui.hi.us)
Kari Nunokawa (via email at kari@munekiyohiraga.com)

Enclosure 1: Undertaking Description

The proposed project will include replacing the gravity sewer line to Wastewater Pump Station (WWPS) No. 3 with a larger pipe; replacing the gravity sewer lines to WWPS No. 4 with larger pipes; installing a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Pi'ikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewer line for 500 feet (ft) until it reaches a new proposed WWPS near the Kihei Aquatic Center; constructing a new WWPS at the Lipoa Street and Liloa Drive intersection; and installing a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility.

In addition, the proposed project will also involve improvements to WWPS Nos. 2, 3, 4, and 5. Pump station upgrades work will entail replacing the existing dry well pumps with wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County WWPSs. The improvements to the WWPSs are a process the County is working towards to standardize their facilities. Depending upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas of the parcel. See *Figure 1*.

Enclosure 2: Environmental, Historical, and Archaeological Background

The area of potential effects (APE) for the project encompasses approximately 32.7 acres, with work proposed along roadways and within WWPS sites. *See Figures 2-5.* While the APE has not previously undergone an AIS itself, there have been many archaeological projects conducted along and nearby the route. Multiple sites have been documented as well, particularly in the southern portion of the APE.

Two (2) sites occur close to the APE: Site 50-50-10-1710 and -1711, both in the southern portion of the project. Site-1710 is a Historic era animal enclosure and Site-1711 consists of the Keōkea agricultural complex. Both sites have been fully documented, occur outside of the APE, and will not be affected at all by this undertaking.

There are multiple sites in the general area of the corridor and WWPS locations, but it is notable that no sites have been documented within the current APE.

Enclosure 3: Consultations

An NHPA Section 106 notice/advertisement was published in the Environmental Review Program's *The Environmental Notice* on March 23, 2022.

Letters were sent to Native Hawaiian Organizations (NHOs) and other historically focused and community groups that have an interest in and knowledge about the local sites, inviting them to participate in Section 106 consultation. Letters were sent to the NHOs and potentially interested parties listed in Table 1.

Table 1. Letters sent to NHOs and Potentially Interested Parties

	Organization/Affiliation	Addressee
1	Aha Moku o Honua'ula	Ka'onohi Lee
2	Aha Moku o Kula	Timothy Bailey
3	Aha Moku o Kula	Vernon Kalanikau
4	Aha Moku o Maui Inc.	Ke'eaumoku Kapu
5	Association of Hawaiian Civic Clubs	Hailama Farden
6	Council for Native Hawaiian Advancement	Joseph Kūhiō Lewis
7	Historic Hawai'i Foundation	Kiersten Falkner
8	Na Koa Ikaika Ka Lahui Hawai'i	Mililani Trask
9	Native Hawaiian Chamber of Commerce	Leilani Williams-Solomon
10	Native Hawaiian Education Council	Erika Vincent
11	Nekaifes Ohana	Maraea K. Nekaifes
12	Office of Hawaiian Affairs	Sylvia M. Hussey, Ed.D., Ka Pouhana
13	Order of Kamehameha I	Dennis W. Ragsdale
14	Royal Hawaiian Academy of Traditional Arts	L. La'akea Suganuma
15	Sovereign Council of Hawaiian Homestead Associations	Robin Puanani Danner
16	The I Mua Group	Melvin Soong
17	The Makua Group	Eugene O'Connell
18	The Mary Kawena Pūku'i Cultural Preservation Society	L. La'akea Suganuma

As of May 24, 2022, the County of Maui, Department of Environmental Management's Wastewater Reclamation Division (WWRD), and WWRD's consultants have received one (1) response from the NHOs: Office of Hawaiian Affairs (OHA) (*See Attachment A*). The County addressed OHA's comments on June 21, 2022 (*See Attachment B*).



Figure 2. Proposed North Kihei Mauka Transmission System Improvements
Area of Potential Effects Map



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA
WUEIN Kihei Mauka Trans/Applications/figures/areaofpotentialeffects



Figure 1. Proposed North Kihei Mauka Transmission
System Improvements
Project Location Map



Prepared for: County of Maui, Department of Environmental Management

MUNEKIYO HIRAGA

WUEIN Kihei Mauka Trans/Applications/figures/Project Location.sec 7_106

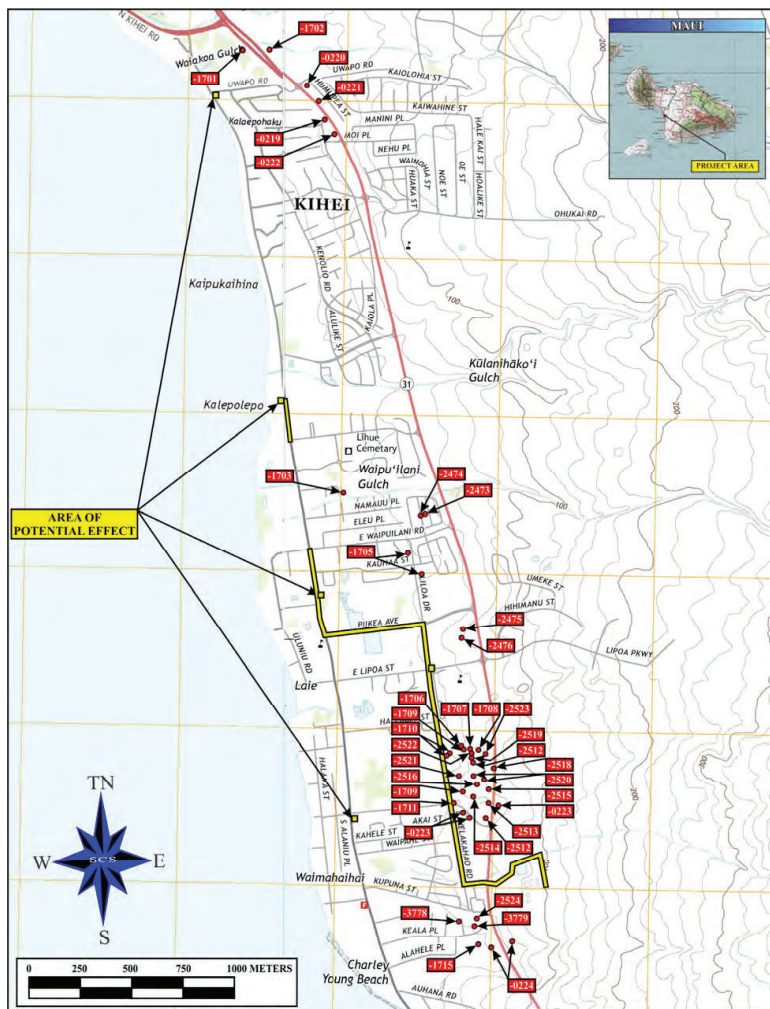


Figure 3. A portion of a 2017 USGS topographic map showing area of potential effects.

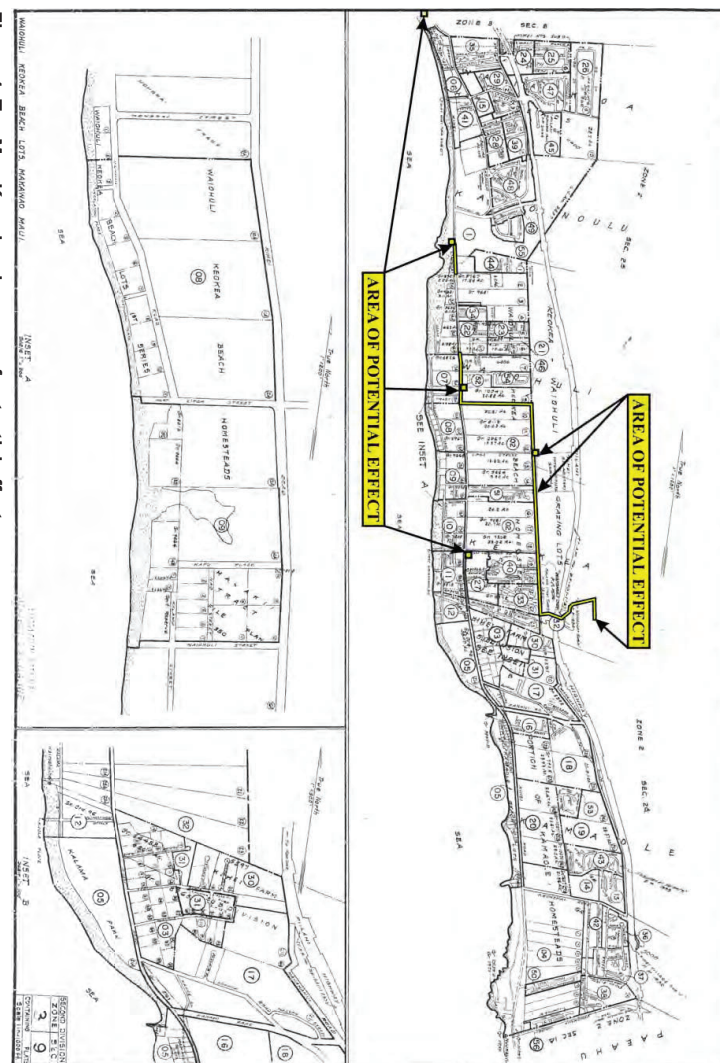
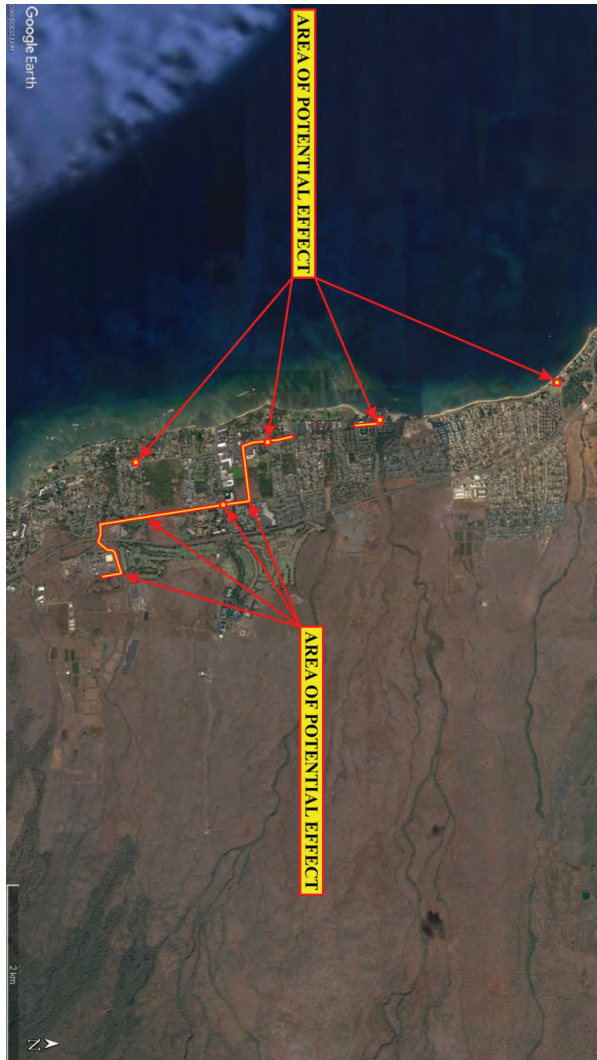


Figure 4. Tax Map Key showing area of potential effect.

Figure 5. Aerial photograph (Google Earth 2020) showing area of potential effects.



Attachment A: Office of Hawaiian Affairs (OHA) Comment

Subject: FW: OHA Comment, Re: NHPA Sec 106 for North Kihei Mauka Transmission Line
Attachments: NHPA Sec 106, North Kihei Mauka Transmission System, Maui.pdf

From: Kamakana Ferreira <kamakanaf@oha.org>
Sent: Friday, April 8, 2022 11:36 AM
To: derek.takahasi@co.maui.hi.us
Cc: Kai Markell <kaim@oha.org>; General eMail <planning@munekivohiraga.com>
Subject: OHA Comment, Re: NHPA Sec 106 for North Kihei Mauka Transmission Line

Aloha,

The Office of Hawaiian Affairs (OHA) is in receipt of your letter dated March 17, 2022, initiating National Historic Preservation Act Section 106 consultation for the proposed North Kihei Mauka Transmission System project in Waihohuli, Maui. The Department of Health (DOH) is requesting the consultation on behalf of the Environmental Protection Agency (EPA). As the project may be utilizing the Clean Water State Revolving Fund, the action will be considered a Federal undertaking. Proposed improvements will include: replacing the gravity sewer line to the wastewater pump station (WWPS) No. 3 with a larger pipe; replacing the gravity sewer lines to WWPS No. 4 with larger pipes; installing a new force main starting at WWPS No. 4 that heads south on South Kihei Road; construction a new WWPS at the Lipoa Street and Liloa Drive intersection; and, installing a second new force main that heads south on Liloa Drive. Additionally, upgrades (i.e., replacing pumps, electrical system work, building repairs) will be made to WWPS Nos. 2, 3, 4, and 5.

The notice indicates that 2 sites occur near the area of potential effect (APE), one historic era animal enclosure and the Keokea Agricultural Complex. However, the notice emphasizes that they are both fully documented and outside the APE. Multiple other sites are mentioned as occurring in the general area of the APE as well, but there is not description of these sites or whether or not any of them contain human burials. Clusters of these sites, especially between the intersections of Akai street and Lipoa street with Welekahao road, are shown in figures included with Attachment B. No determination of effect has been proposed yet as the DOH is still seeking input regarding the project area.

In review of the United States Department of Agriculture (USDA) soil survey for the project area, it appears to be underlain with Jaucas sands – a medium where ancestral Hawaiian burials are commonly found. Any time a project occurs in Jaucas sands, caution should be exerted. Thus, OHA recommends that the applicant consult with the State Historic Preservation Division (SHPD) and minimally prepare an archaeological literature review to prepare for these discussions. An emphasis should be placed on the nature of the multiple sites depicted in Attachment B, the nature of the soils in the project area, prior archaeological studies, and anticipated finds. While not detailed in the noticed, OHA assumes that Hawai'i Revised Statutes (HRS 6E-8) historic preservation review may likely be required for this project if State permits are being sought. In that case, consultation with SHPD would be required anyway and NHPA Section 106 should be coordinated with the HRS 6E-8 process.

Archaeological monitoring will likely be required given the subsurface medium. However, OHA would encourage archaeological testing as a primary mode of identification in instances where burials could be present and no prior surveys exist for the parcel. The recommendation to do archaeological testing would allow any newly discovered human remains during testing work to be classified as previously identified instead of inadvertent. Notably, an inadvertent discovery is primarily under the jurisdiction of SHPD, not the respective Island Burial Council. OHA believes the previously identified designation is of greater value to our beneficiaries as the Hawai'i Administrative Rules (HARs) associated with this classification allows for more time to consult and gives decision authority over whether or not the burials will be preserved in place to the appropriate Island Burial Council.

Mahalo for the opportunity to comment and consult. We look forward to continuing consultation and reviewing an archaeological literature review. Further, we request that any SHPD comments also be provided to OHA. Please let me know if you have any questions at this time.

Mahalo,
Kamakana C. Ferreira, M.A.
Lead Compliance Specialist
Office of Hawaiian Affairs
560 N. Nimitz Hwy
Honolulu, Hi. 96817

(808)594-0227

Attachment B: County of Maui's Response to OHA

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

June 21, 2022

via email: sylviah@oha.org

Sylvia M. Hussey, Ed.D., Ka Pouhana
Chief Executive Officer
Office of Hawaiian Affairs
560 N. Nimitz Highway, Suite 200
Honolulu, Hawai'i 96817

SUBJECT: **NATIONAL HISTORIC PRESERVATION ACT (NHPA)
RESPONSE TO SECTION 106 CONSULTATION COMMENTS
NORTH KIHEI MAUKA TRANSMISSION SYSTEM
CLEAN WATER STATE REVOLVING FUND PROJECT NO. C150077-29
WAIHOLI AHUPUA'A, WAILUKU AND MAKAWAO (KULA) DISTRICT,
ISLAND OF MAUI (TAX MAP KEYS: (2)3-8-077:011; (2)3-9-
001:147(POR.); (2)3-9-052:037; (2)3-9-027:028; (2)2-2-024:023(POR.);
(2)2-2-002:042(POR.); (2)2-2-002:087; (2)2-2-002:088; (2)2-2-002:084
(POR.); (2)2-2-024:010; (2)2-2-024:011; (2)3-9-001; (2)3-9-007; (2)3-9-
002; (2)2-2-024; (2)2-2-002; (2)2-2-029; AND (2)2-2-999)
STATE HISTORIC PRESERVATION DIVISION (SHPD) PROJECT NO.
2021PR00558**

Dear Dr. Hussey:

Thank you for your email dated April 8, 2022, responding to the National Historic Preservation Act Section 106 consultation for the proposed North Kihei Mauka Transmission System project. On behalf of the County of Maui, Department of Environmental Management Wastewater Reclamation Division (DEM) and the Department of Health (DOH), we offer the following responses to the comments noted in your email.

Sylvia M. Hussey, Ed.D., Ka Pouhana
June 21, 2022
Page 2

Comment: The notice indicates that 2 sites occur near the area of potential effect (APE), one historic era animal enclosure and the Keokea Agricultural Complex. However, the notice emphasizes that they are both fully documented and outside the APE. Multiple other sites are mentioned as occurring in the general area of the APE as well, but there is not description of these sites or whether or not any of them contain human burials. Clusters of these sites, especially between the intersections of Akai street and Lipoma street with Welekahao road, are shown in figures included with Attachment B. No determination of effect has been proposed yet as the DOH is still seeking input regarding the project area.

Response: Thank you for the comment. The project team has engaged with the State Historic Preservation Division (SHPD) via the Chapter 6E process as well as the Section 106 consultation. The project team will follow the guidance of the SHPD to ensure any historic properties that may exist within the APE are documented and mitigated, as deemed appropriate by SHPD.

Comment: In review of the United States Department of Agriculture (USDA) soil survey for the project area, it appears to be underlain with Jaucas sands - a medium where ancestral Hawaiian burials are commonly found. Any time a project occurs in Jaucas sands, caution should be exerted. Thus, OHA recommends that the applicant consult with the State Historic Preservation Division (SHPD) and minimally prepare an archeological literature review to prepare for these discussions. An emphasis should be placed on the nature of the multiple sites depicted in Attachment B, the nature of the soils in the project area, prior archaeological studies, and anticipated finds. While not detailed in the notice, OHA assumes that Hawai'i Revised Statutes (HRS 6E-8) historic preservation review may likely be required for this project if State permits are being sought. In that case, consultation with SHPD would be required anyway and NHPA Section 106 should be coordinated with the HRS 6E-8 process.

Response: The project has engaged with and is in consultation with the SHPD via HRS 6E-8 and Section 106 processes. The Applicant will prepare archaeological documentation required by SHPD.

Comment: Archaeological monitoring will likely be required given the subsurface medium. However, OHA would encourage archaeological testing as a primary mode of identification in instances where burials could be present and no prior surveys exist for the parcel. The recommendation to do archaeological testing would allow any newly discovered human remains during testing work to be classified as previously identified instead of inadvertent. Notably, an inadvertent discovery is primarily under the jurisdiction of SHPD, not the respective Island Burial Council. OHA believes the previously identified designation is of greater value to our beneficiaries as the Hawai'i Administrative Rules (HARs) associated with this classification allows for more time to consult and gives decision authority over whether or not the burials will be preserved in place to the appropriate Island Burial Council.

Response: The Applicant will continue to consult with SHPD and will prepare archaeological documentation required through these consultation processes.

Sylvia M. Hussey, Ed.D., Ka Pouhana
June 21, 2022
Page 3

Thank you for your participation in the Section 106 consultation process. In the meantime, if there are any questions or if additional information is needed, please feel free to contact Deborah Aweau at (808) 270-4524.

Sincerely,



Digitally signed by Eric A. Nakagawa
DN: cn=Eric A. Nakagawa, o=Hawaii State, ou=Department of Environmental Management,
email=eric.nakagawa@hawaii.gov, c=US
Date: 2022.06.21 07:26:53 -1000

for ERIC A. NAKAGAWA, P.E.
Director of Environmental Management

EAN
cc: Sina Pruder, Department of Health
Michael Dega, Scientific Consultant Services, Inc.
Derek Ono, Warren S. Unemori Engineering
Kari Luna Nunokawa, Munekiyo Hiraga
K:\DATA\WUE\N Kihei Mauka Trans\Applications\NHPA\IOHA.res.docx



**STATE HISTORIC
PRESERVATION
DIVISION
DETERMINATION
LETTER DATED
AUGUST 5, 2022**

APPENDIX

E-3



DAVID Y. IGE
GOVERNOR OF
HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHewa BUILDING
601 KAMOKILA BLVD., STE 555
KAPOLEI, HI 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

M. KALEO MANUEL
DEPUTY DIRECTOR - WATER
AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOHOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 5, 2022

Eric A. Nakagawa, Acting Director
County of Maui
Department of Environmental Management
2050 Main Street, Suite 2B
Wailuku, HI 96793
c/o Derek Takahashi
derek.takahashi@co.maui.hi.us

Jon Nagato, Division Administrator
State of Hawaii
Department of Health
P.O. Box 3378
Honolulu, HI 96801
Email: jonathan.nagato@doh.hawaii.gov

IN REPLY REFER TO:
Project No.: 2021PR00558
Doc. No.: 2208AM02
Archaeology

Dear Eric A. Nakagawa and Jon Nagato:

SUBJECT: **Chapter 6E-8 and Section 106 Historic Preservation Review –
County of Maui Department of Environmental Management
North Kihei Transmission Line Project
State of Hawaii Department of Health
Clean Water State Revolving Fund Project No. C150077-29
Request for Information and Concurrence with APE and Effect Determinations
Keōkea, Waiohuli, and Ka'ono'ulu Ahupua'a's, Kula District, Island of Maui
TMK: (2) 3-8-077:011, (2) 3-9-001:147 por., (2) 3-9-027:028, (2) 3-9-052:037,
(2) 2-2-002:042 por., (2) 2-2-002:087, (2) 2-2-002:088, (2) 2-2-002:084 por., (2) 2-2-024:010,
(2) 2-2-024:011, (2) 2-2-024:023 por., (2) 3-9-001:999, (2) 3-9-007:999, (2) 3-9-002:999,
(2) 2-2-024:999, (2) 2-2-002:999, (2) 2-2-029:999, and (2) 2-2-999:999 (South Kihei Road,
Pi'ikea Avenue, Liloa Drive, and Welakahao Road Street and Pi'ilani Highway ROWs)**

This letter provides the State Historic Preservation Division's (SHPD's) review of the County of Maui Department of Environmental Management's (DEM's) North Kihei Transmission Line Project. This County of Maui project is being undertaken in coordination with the State of Hawaii Department of Health (DOH). The project will receive federal funding under the Clean Water State Revolving Fund (Project No. C150077-29) and has been determined to be a federal undertaking as defined by 36 CFR 800.16(y). SHPD received the following submissions for the subject project:

May 19, 2021 SHPD received a map showing the location of the project area/area of potential effect (APE), an HRS 6E Submittal Form, and a letter from the County of Maui DEM initiating the HRS §6E-8 historic preservation review process and requesting SHPD's concurrence with a project effect determination of "no effect" (May 5, 2021, Erick Nakagawa [DEM] to Alan Downer [SHPD]).

Eric A. Nakagawa and Jon Nagato
08/05/2022
Page 2

September 27, 2021 SHPD received a copy of a County of Maui work on county highway permit application with aerial photographs of the project area/APE.

October 20, 2021 SHPD received an HRS 6E Submittal Form, a map of the project area/APE, aerial photographs of the project area/APE, a list of TMKs for the project area/APE, and a letter from the County of Maui DEM initiating the HRS §6E-8 historic preservation review process (May 5, 2021, Erick Nakagawa [DEM] to Alan Downer [SHPD]).

May 9, 2022 SHPD received a letter from the DOH initiating the National Historic Preservation Act (NHPA) Section 106 Consultation process and requesting information about possible consulting parties that may be interested in the current project and information about previously identified historic properties in the area.

July 12, 2022 SHPD received a letter from the DOH continuing the NHPA Section 106 consultation process and requests the SHPO's concurrent with a project effect determination of "no historic properties affected" for the North Kihei Mauka Transmission System project.

The County of Maui DEM proposes North Kihei Transmission Line Project within a 0.23-acre project area/APE on the subject property. The project will include the replacement of a gravity sewer-line to Wastewater Pump Station (WWPS) No. 3, replacement of the gravity sewer lines to WWPS No. 4, and the installation of a new force main starting at WWPS No. 4. Additionally, the project will include improvements to WWPS Nos. 2, 3, 4, and 5. Pump station upgrades include the replacement of the existing dry well pumps with wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced. The excavation for the sewer lines will be 4 feet by 5 feet by 15 feet deep. The entirety of the sewer-line trenching work will be within corridors containing existing utilities. The new pump station will require 10,000 square feet of excavation work to a depth of 20 feet.

A search of our records indicates an archaeological inventory survey (AIS) has not been previously conducted within the current project area/APE. However, several significant historic properties have been previously identified in the vicinity of the current project area/APE including the SIHP #s 50-50-09-01288 (Kalepolepo Fishpond), 50-50-10-08806 (habitation site), 50-50-09-08871 (burial site), 50-50-09-01710 (enclosure) and 50-50-09-01711 (Keōkea agricultural complex). SIHP # 50-50-09-08871 (burial site) is interpreted as native Hawaiian burial site previously disturbed during the construction along South Kihei Road. No historic properties have been previously identified within the current project area/APE.

The SHPO concurs with the DOH project effect determination of *no historic properties* affected pursuant to 36 CFR 800.4(d)(1), as no historic properties eligible for listing in the National Register of Historic Places have been identified within the APE. However, pursuant to HRS 6E historic preservation review, SHPD has insufficient information to determine the potential for the project to adversely impact significant archaeological historic properties and/or disarticulated human remains within the fill deposits. Therefore, **SHPD requests archaeological monitoring be conducted for identification purposes** in accordance with HAR §13-279 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 requests for review and acceptance an archaeological monitoring plan (AMP) meeting the requirements of HAR §13-279-4 prior to the initiation of the project. Please submit the AMP along with a copy of this letter and the required filing review fee to HICRIS Project No. 2021PR00558 using the Project Supplement option.

SHPD will notify the County of Maui when the required archaeological monitoring plan has been reviewed and accepted, and the project initiation process may proceed.

The DOH and DEM are the offices of record for this project. Please maintain a copy of this letter with your environmental review record for this undertaking.

Please contact Andrew McCallister, Maui Archaeologist IV, at andrew.mccallister@hawaii.gov for any matters regarding archaeological resources in this letter.

Eric A. Nakagawa and Jon Nagato
08/05/2022
Page 3

Aloha,
Alan Downer

Alan S. Downer, PhD
Administrator, State Historic Preservation Division
Deputy State Historic Preservation Officer

cc: Janet Six, the County of Maui, janet.six@co.maui.hi.us
Kamakana C. Ferreira, OHA, kamakana.f@oha.org
Sina Pruder, DOH, sina.pruder@doh.hawaii.gov
Chane Hayashida, DOH, chane.hayashida@doh.hawaii.gov
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Mike Dega, SCS, mike@scshawaii.gov



**ARCHAEOLOGICAL
MONITORING
PLAN**

APPENDIX

E-4



**ARCHAEOLOGICAL MONITORING PLAN
FOR NORTH KĪHEI MAUKA TRANSMISSION LINE PROJECT
KĪHEI, KĒŌKEA, WAIOHULI, KA'ONO'ULU, AND PŪLEHUNUI AHUPUA'A,
WAILUKU (KULA) DISTRICT
ISLAND OF MAUI, HAWAII
[TMK (2) 3-8-077:011 AND TMK: (2) 3-9 (various)]**

Prepared by
Gloria C. A. Lee, B.A.
and
Michael F. Dega, Ph.D.

September 2021
Draft

Prepared for
Munekiyo & Hiraga, Inc.
305 High Street
Suite 104
Wailuku, HI 96793

On Behalf of
County of Maui
Department of Environmental Management
200 S. High Street
Wailuku, HI 96793

SCIENTIFIC CONSULTANT SERVICES Inc.



1357 Kapiolani Blvd., Suite 850 Honolulu, Hawaii 96814

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INTRODUCTION

At the request of Muneikiyo & Hiraga, Inc. on behalf of the County of Maui Department of Environmental Management, Scientific Consultant Services, Inc. (SCS) has prepared this archaeological monitoring plan (AMP) in advance of ground altering activities associated with the proposed improvement of the North Kihei Mauka Transmission System (Figure 1 through Figure 3). The scope of work for the project includes:

- replacing the gravity sewer line to WWPS No. 3 with a larger pipe,
- replacing the gravity sewer lines to WWPS No. 4 with larger pipes,
- a new force main starting at WWPS No. 4 that heads south on South Kihei Road, turns east on Piʻikea Avenue, turns south on Liloa Drive, and transitions to a gravity sewer line for 500 ft (152.4 m) until it reaches a new proposed WWPS near the Kihei Aquatic Center; a new WWPS at the Lipoa Street and Liloa Drive intersection,
- a second new force main that heads south on Liloa Drive and continues on to the Kihei Wastewater Reclamation Facility, and
- drilling 38 6-inch diameter soil borings to depths of 15 ft below ground surface along South Kihei Road, Piʻikea Avenue, and Liloa Drive.

The proposed project will involve improvements to Wastewater Pump Stations (WWPS) Nos. 2, 3, 4, and 5. Pump station upgrades will entail replacing existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced. Building improvements may be necessary. All improvements at the existing WWPSs will occur within existing developed areas (Appendix A).

Ground disturbance will coincide with the 13,000 ft (3,962.4 m) linear corridor and the new pump stations. Excavation work for the sewer lines will be roughly 4 ft (1.22 m) by 5 ft (1.52 m) with a maximum depth of 15 ft (4.57 m). For the new pump stations, excavation work will encompass 10,000 square feet (0.23 acres) with maximum depths of 20 ft (6.1 m) below ground surface. The maximum depth will occur at the WWPS well site. The sewer pipes measure 16 inches (40.64 cm), 18 inches (45.72 cm), and 30 inches (76.2 cm) in diameter with the majority of the work involving the 16-inch sewer pipes. A total of 38 soil borings measuring 6 inches (15.24 cm) in diameter with a maximum depth of 15 ft will be drilled at various locations. The project takes place within existing transmission line trenches, providing previously disturbed contexts. The exception is the segment along the north boundary of the Kihei Wastewater Reclamation Facility.

The existing North Kihei wastewater collection, transmission system, and certain elements are reaching their capacity limits and lack the capacity necessary to convey planned future wastewater flows from new development in its service area. Future development of the Piʻilani Highway will require upgrades to the existing system along South Kihei Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills.

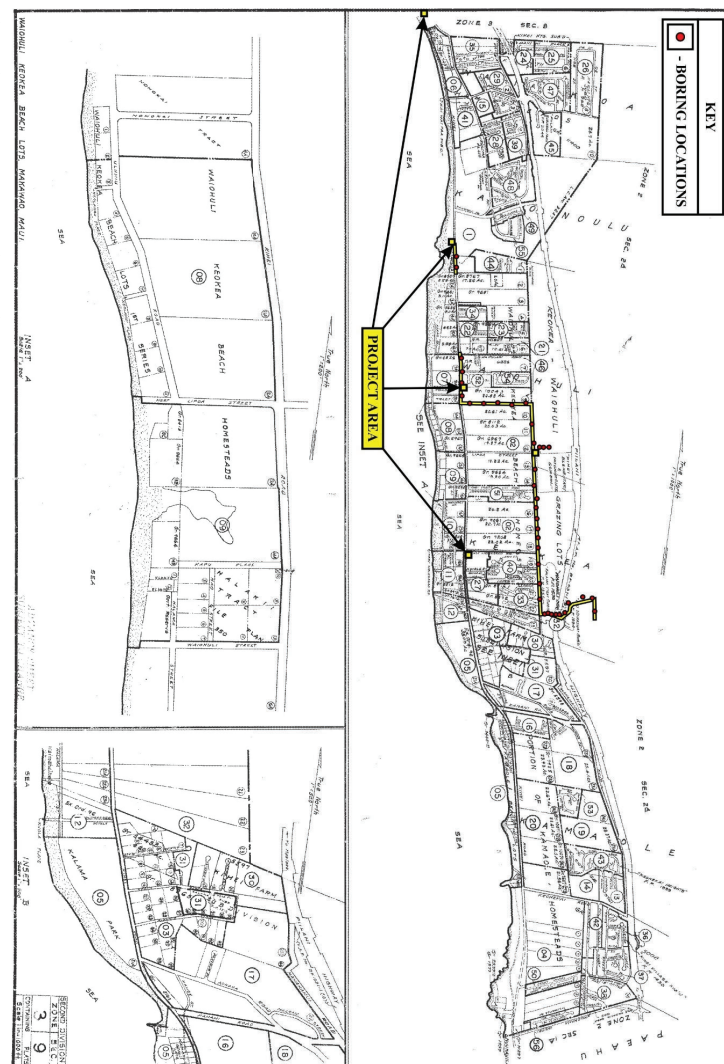
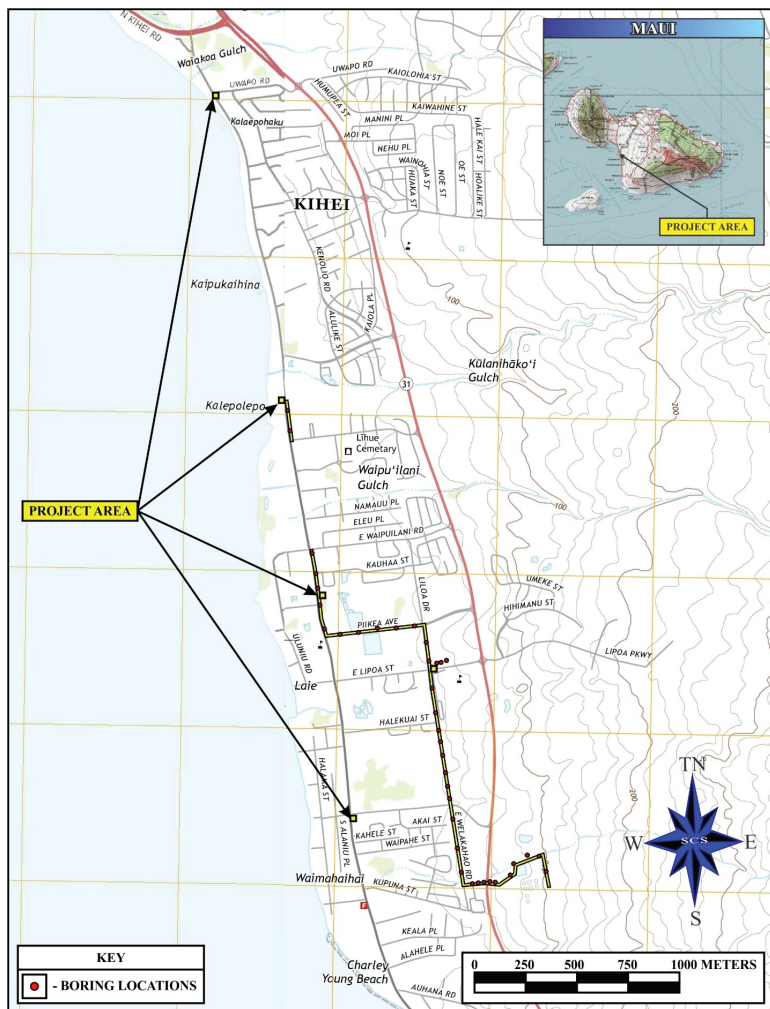
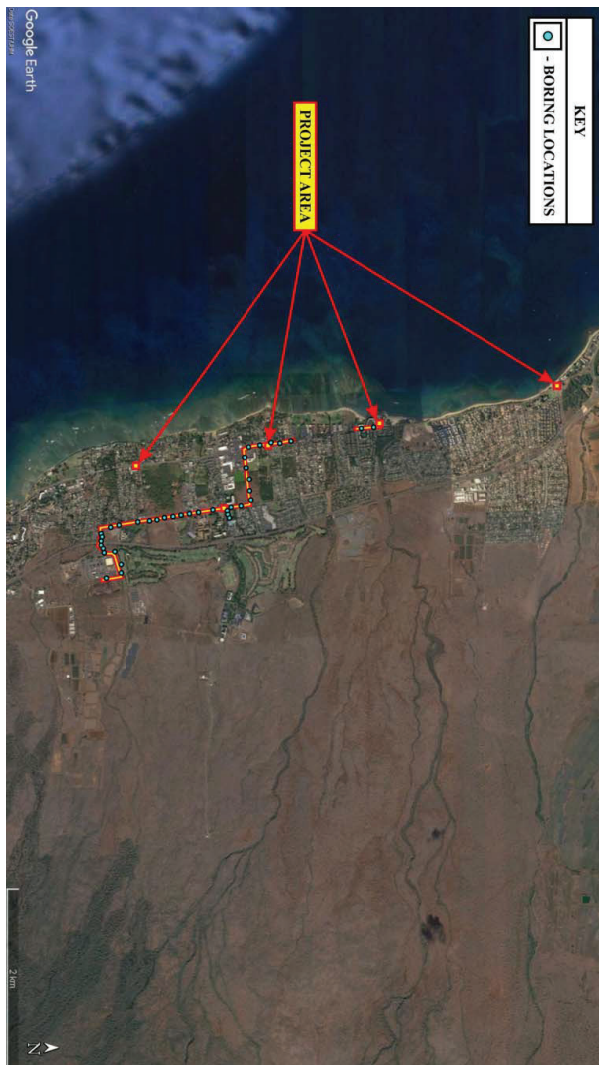


Figure 3: Aerial photograph (Google Earth 2020) showing project area



This AMP has been written in accordance with the rules of the State Historic Preservation Division (SHPD), Department of Land and Natural Resources (DLNR) (§13-279, HAR). It ensures that if human remains are identified during subsurface work, appropriate and lawful protocol concerning the Inadvertent Discovery of Human Remains (pursuant to §13-300-40a, b, c, HAR) is followed. This AMP also ensures that if cultural deposits are identified, the work will satisfy reporting requirements outlined in §13-279-(5) through (6).

The following AMP provides detailed information on the environmental setting, historical background, previous archaeology, potential site types to be encountered during excavation, monitoring conventions, and methodology for field and laboratory work, curation of any finds, and reporting of the data gathered during archaeological monitoring.

ENVIRONMENTAL SETTING

The island of Maui ranks was formed by two volcanoes, Pu'u Kukui and Haleakalā, joined together by an isthmus of dry, open country or *kula* (from Hawaiian, "plain, pasture"). These orographically prominent features split the island of Maui into two parts (western and eastern) and shape the large Mā'alaea Bay. The lands in between the volcanoes were formed by erosional deposits and are noticeably drier than those at higher elevations.

Pu'u Kukui (from Hawaiian, "candle nut peak") dominates the western part of the island, rising to 1,764 m (5,788 ft) above mean sea level (amsl). The West Maui Mountains (Mauna Kahalawai) are surrounded by large, heavily eroded amphitheater valleys that sustain permanent stream systems and fertile agricultural lands extending to the coasts.

Haleakalā soars 2,727 m (10,023 ft) amsl, forming the larger eastern section of the island. The flanks of Haleakalā are distinguished by gentle slopes. Although they receive more rain than their counterparts in the west, the permeable lavas of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. Thus, the few perennial streams found on the windward side of Haleakalā originate from springs located at lower elevations, while valleys and gulches on the leeward side were formed by intermittent water run-off.

PROJECT AREA LOCATION

The project area is managed by the County of Maui, Department of Public Works. It primarily consists of previously disturbed ground along the western coast of East Maui. WWPS No. 3 is located in the southeastern corner of TMK (2) 3-9-001:147 at the edge of Kalepolepo Park, adjacent to South Kihei Road. WWPS No. 2 (TMK (2) 3-8-077:011), No. 4 (TMK (2) 3-9-002:139), and No. 5 (TMK (2) 3-9-027:028) are located *mauka* of South Kihei Road. Also included will be areas along Pi'ikea, Liloa Drive, and Lipoa Street where there will be a new gravity sewerline, the new WWPS at the corner of Liloa Drive and Lipoa Street, and the second new force main that runs to the Kihei Wastewater Reclamation Facility.

SOILS

Characteristic of the coastal area of Kīhei, the topography of the project area is relatively flat or exhibits a slight slope. The project area traverses several different environmental zones, as it flows from inland reaches through central Kīhei. Within the corridor, the natural soil regimes also changes. From north to south, several soil series are present (Figure 4). Inland, at the Kīhei Wastewater Reclamation Facility, soils are stone, silty clay. As the corridor runs west then north along Liloa Drive, silty clay and silt loams are common. From Pi‘ikea Avenue to the west and near coastal reaches, silt loam is common. As the project proceeds again to the north, to its terminus at WWPS No. 2, silty loam, beach sand, and Jaucas sand are most common.

Underlying WWPS No.2 is Pūlehu silt loam, 0-3 percent slope. The PpA silt loam has moderate permeability, slow runoff, and no more than slight erosion hazard (Foote et al. 1972:116).

WWPS No. 3 lies on the Kealia series of soils. This soil type is poorly drained Kealia silt loam (KMW). It has a high salt content, has a brackish water table, and is moderately alkaline. Levels fluctuate with the tides with ponding in low areas after heavy rains.

A small portion of sewer lines extending from WWPS No. 3 lies on Alae soil type (AaB). The Alae sandy loam has a 3 to 7 percent slope with slow runoff and slight erosion hazard. There are no cobbles on the surface and but the surface layer has few to many pebble-size rock fragments (Foote et al. 1972:26).

Jaucas series of soils occur on coastal plains, adjacent to the ocean. The Jaucas series as a whole are “excessively drained, calcareous soils” (Foote et al. 1972:48), which developed on sandy matrices of aeolian and aquatic origin. According to Foote et al. (1972, Sheet 102; Figure 5), Jaucas series underlies WWPS Nos. 4 and 5. Jaucas sand (JcC) soil type is present at WWPS No. 4, and Jaucas (JaC) is under WWPS No. 5. The JaC soils type is more than 60 inches deep and has a 0 to 15 percent slope, and the JcC variety occurs “in areas where the water table is near the surface and salts have accumulated” (Foote et al. 1972:49).

Soil maps from Foote et al. (1972, Sheets 107 and 108) indicate that the new force main straddles the Pūlehu clay loam (PsA) and Pu‘uone sands (PZUE) soil types. PsA soils are developed from alluvium washed on basic igneous rock. with moderate permeability and no more than slight erosion (Foote et al. 1972:115–116). Soils of the Pu‘uone series are formed from once living marine organisms – coral and mollusks (Foote et al. 1972:117). The PZUE soils can be found on sandhills with 3 to 7 percent slopes, near the coast. Both PsA and PZUE soils are well drained, but PZUE exhibits rapid permeability and moderate to severe wind erosion hazard.

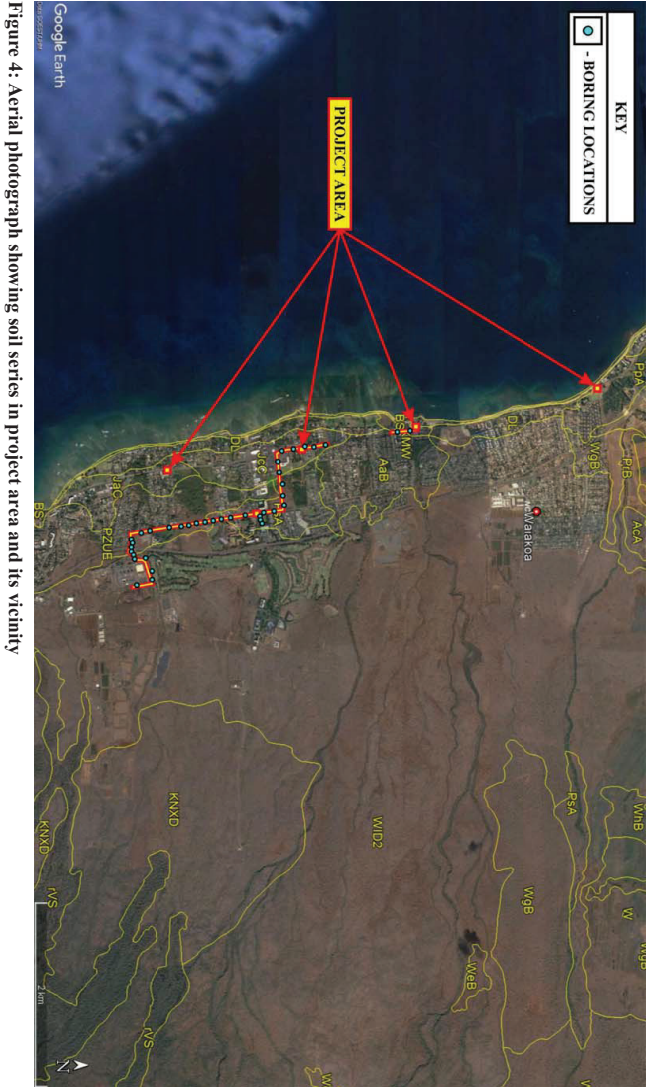


Figure 4: Aerial photograph showing soil series in project area and its vicinity

Foote et al. (1972, Sheet102) notes the Waiakoa Series (specifically WID2) occurs toward the end of the new force main new force main toward the Kīhei Wastewater Reclamation Facility. The soil is an extremely stony silty clay loam with high erosion. This series is typical of the central Maui uplands, extending to the shores around Kīhei. The WID2 variety forms on rolling, low uplands, with stones covering 3 to 15 percent of the surface. In most areas, approximately 50 percent of the topsoil is eroded while the runoff levels are average (Foote et al. 1972:127). Low bedrock outcrops are commonly associated with WID2 soils, and cultivation is usually impractical unless stones are removed. Soil profiles are extremely limited, with typical depth of 20–30 centimeters below the surface, directly adjacent to bedrock. Cultural deposits within such thin soil layers are typically very modest, both quantitatively and qualitatively (Foote et al. 1972:126–127).

CLIMATE AND HYDROLOGY

The coastal area of Kīhei is generally warm and sunny. Temperatures in the project area range from an average of 21.8 °C (71.3 °F) in January and February to an average of 25.8 °C (78.5 °F) in August, with an annual average of 23.9 °C (74.9 °F) (Giambelluca et al. 2014).

According to Giambelluca et al. (2013), the project area receives approximately 287.55 mm (11.32 in) of rainfall annually, with a very unequal distribution. During the winter months of November through March, it receives most of its rainfall from about 25.74 mm (1.01 in) for March to 69.54 mm (2.74 in) for January. The project area receives the least rainfall in the summer with July averaging mere 2.96 mm (0.12 in). Thus, there is a pronounced rain shadow effect as a result of Haleakalā, and the seasonal variation in rainfall amount follows normal orographic patterns for the leeward areas of Maui. No perennial streams run directly through the project area, as is characteristic of the dry coastline around Kīhei.

HISTORICAL CONTEXT

Maui's lands were divided into districts and sub-districts by a *kahuna* ("priest") named Kalaiha'ōhi'a, who lived during the reign of Kaka'alaneo (Beckwith 1940:383); Fornander places Kaka'alaneo at the end of the 15th or the beginning of the 16th century (Fornander 1916/1917, Vol. 6:248). Land was considered to be the property of the king or *ali'i 'ai moku* (from Hawaiian, "the chief who eats the island/district"), which he held in trust for the gods. The title of *ali'i 'ai moku* ensured rights and responsibilities pertaining to the land but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him, and the higher chiefs, in turn, distributed smaller parcels to lesser chiefs. The *maka'āinana* ("commoners") worked the individual plots of land collectively given to them by the chiefs.

The terms *moku*, *ahupua'a*, *'ili* or *'ili'āina*, and *mo'o* were used to delineate various land sections. A district (*moku*) contained smaller land divisions (*ahupua'a*) that incorporated all of the natural resources relevant to traditional subsistence stretching from the ocean to the mountain peaks (Lyons 1875:111). These ancient divisions have remained the same and are still commonly used to locate and refer to geographical features of the islands, even though land tenure has gone through radical changes (Sterling 1998:3). The *'ili* were smaller land divisions administered by the chief who controlled the corresponding *ahupua'a* (Lyons 1875:33; Lucas 1995:40). Finally, the *mo'o* were narrow strips of land within an *'ili*. The land holding of a tenant (in Hawaiian, *hoa'āina*) was called a *kuleana* (from Hawaiian, "right, privilege") (Lucas 1995:61).

PRE-CONTACT PERIOD SETTLEMENT AND ECONOMY

Archaeological data indicate that Polynesian settlers initially inhabited the windward shores of the Hawaiian Islands around the 10th century with populations extending into leeward areas at later periods (Kirch 2011:22). Accordingly, the 10th century would be the earliest date to which human presence could be expected in the project area and its vicinity. More likely, however, it would be traced to the early period of agricultural development, which on Maui began circa 1200–1400 C.E. (Kirch 1985:142).

The project area is located in Kīhei ("cape; cloak"), which has traditionally been associated with a small area adjacent to a landing built in the 1890s (Clark 1980). Presently, "Kīhei" may also refer to a six-mile section along the coast from Waiakoa Gulch in the north to Keawakapu Beach in the south. Kula is the *moku* occupying the central plain of Maui (Figure 5). The word "*kula*" applies to the open country in the center of the island and is also used to distinguish between dry (*kula*) land and wet taro land. Characteristically, *kula* is devoid of permanent streams and has a semiarid climate (Handy and Handy 1972:510–511).

Pre- and Early Post-Contact Hawaiian economy was based on agriculture, marine exploitation, animal husbandry, and collection of wild plants and birds. There were two primary types of agriculture, wetland and dryland (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch, 1985:218–231). Traditional Hawaiian settlements were concentrated in river valleys most amenable to wet *kalo* (taro, *Colocasia esculenta*) cultivation, which incorporated pond fields and irrigation canals. Other important cultigens included *kō* (sugarcane, *Saccharum officinarum*), *mai'a* (banana, *Musa*), and *'uala* (sweet potato, *Ipomoea batatas*). Agricultural development on the leeward side of Maui was likely to have begun early in what is known as the Expansion Period (1200–1400 C.E., Kirch 1985:303–306). In the Kula District, *poi* would have been brought from the wetlands of Waikapū and Wailuku to supplement the usual sweet-potato diet, as Kula "was widely famous for its sweet-potato plantations. '*Uala* was the staple of life here" (Handy and Handy 1972:511).

Fishing and sweet potato cultivation were the dominant forms of traditional subsistence in coastal Kula. As the project area is located in one of the driest areas of Maui, agricultural activities were likely limited. Cordy (1977:23) supports this hypothesis: “The extreme aridity and long distance to inland zones makes the Kihei area one of the least favorable areas for farming on Maui.”

TRADITIONAL MYTHOLOGY

Several historical and legendary sayings regarding the vicinity of the project area have survived and been recorded by researchers. Some of the sayings are derogatory, and some concern natural phenomena. According to surviving traditions, the skills of the people of Kula appear to have been confined to upland environment. Oral stories tell of their ignorance of fishing matters, as evident from the following chant recorded by Sterling:

*He aina o Kula ua kaulana
Mai na ali'i kahiko
He aina i piha ka e'epa
Kau na nahi i ka pikopiko i ka he'e*

Kula is a land that is famous
From the days of the ancient chiefs
A land full of peculiarities
For the scaling of the suckers of the octopus. [Sterling 1998:243]

Handy and Handy report that Haleakalā Crater was a final resting place for the people of Kula and Honua'ula, the “Clan of Pele.” These devotees would travel at night to the edge of the crater to throw the bones of their dead into the volcano (Handy and Handy 1972:336–337). Traditional references to Kula also include a chant from the 1800s with the name of the frosty Nau wind that “descends from the uplands of Kula” (Nakuina 2005:55). Inez Ashdown records that or another wind as “Hau” (Ashdown 1970:47).

PRE-CONTACT POLITICAL HISTORY

Before the unification by the *ali'i* Pi'ilani in the late 1500s, Maui was ruled by two separate kingdoms – one centered in Hāna on the windward coast and one in Wailuku. Fornander claims that the *ali'i* (“chiefs”) of East Maui traced their origins to Kalahuimoku, a Hawai'i Island chief who had emigrated to Hāna, while those in West Maui to an older Maui line (Fornander 1880, Vol. 2:78–79). Along with consolidating power on the island, Wailuku's chief, Pi'ilani, also raised Maui's political status in the archipelago by ruling judiciously and using his connections with the reigning chiefly families of O'ahu and Hawai'i (Fornander 1916/1917, Vol. 2:87).

Pi'ilani's heir was his firstborn son, Lono-a-Pi'ilani. Oral tradition states that, after a rift between Lono-a-pi'ilani and his younger brother, Kiha-a-Pi'ilani (born c. 1626), the latter took

refuge in Ke'eke'e (from Hawaiian, “zigzag”) on the border between the districts of Kula and Honua'ula. According to 19th century historian Samuel Kamakau, Kiha-a-Pi'ilani and his wife “lived with farmers in the remote country” (Kamakau 1992:23). “There was a famine in Kula and Makawao,” Kamakau continues, “and the people subsisted on *laulele* [tropical milkweed, *Asclepias curassavica*], *pualele* [Florida tasselflower, *Emilia fosbergii*], *popolo* [black nightshade, *Solanum nigrum*], and other weeds” (Kamakau 1992:23). People could replenish their supplies only after intensifying the cultivation of 'uala, for which they borrowed seeds from neighboring districts.

Kiha-a-Pi'ilani then traveled to the island of Hawai'i, which was the kingdom of their brother-in-law, 'Umi-a-Liloa. He convinced 'Umi to send an army to Maui to avenge Kiha and dethrone Lono (Fornander 1919, Vol. 5:178–180). The invasion was known as the “expedition of numberless canoes” because, according to legend, the canoes stretched across the Maui channel from Kohala on Hawai'i Island, and 'Umi's army was able to march on them as on a bridge. According to Kamakau (1961:28–30), however, while this invasion represented a massive logistical effort involving a “whole year of the making of canoes and war implements,” multiple landing attempts failed before a successful invasion occurred at Wailua-iki. One version of the story claims Lono was captured and killed by 'Umi's troops in Waihe'e. According to Kamakau (1961:31), however, the Wailuku-based chief died of terror before the invading army reached his residence. In any case, after the successful invasion, Kiha-a-Pi'ilani became the sole ruler of Maui.

Among Kiha-a-Pi'ilani's accomplishments was the establishment of communication lines, connecting the coast to the mountains, linking the two parts of Maui both economically and socially (Beckwith 1970:387). According to Ashdown, the stone-lined *alanui* (“highway”), known as “the King's Trail,” extended along the coast between Lāhainā and Makena (Ashdown 1970:5). The Kekuawaha'ula'ula Trail or “the trail of the red-mouthed god” extended from Kihei inland to upper Kōōkea. The “Kalepolepo Trail” began at the eponymous fishpond and continued to upland Waiohuli (Kolb et al. 1997:61).

The *ali'i* also oversaw the development of aquaculture in coastal Kula. Some of the *loko i'a* (“fishponds”) in the area are considered to be among the most important of those reserved by royalty. Several fishponds in the vicinity of the project area included Kōōkea Kai, Waiohuli Kai, and Kalepolepo, previously known as Kō'e'ie (Kolb et al. 1997; Cordy 2000).

The small village of Kalepolepo (part of the project area) was established specifically to utilize marine resources; it would continue being occupied throughout the Early Post-Contact and Modern periods. Oral tradition recounts how Kalepolepo (from Hawaiian, “the dirt”) earned its

name during the construction of the three fishponds at the time of Umi (early 16th century). The *konohiki* (“manager”) of Kula ordered all people of Maui to build the walls of the fishponds. A man named Kikau protested that the repairs could not be done without the assistance of the *menehune*, the mythical master builders (Wilcox 1921: 66). Furious, the *konohiki* told Kikau that he would be put to death when the repairs were completed. As the first pond, Kēōkea Kai, was completed, the *konohiki* rode proudly on top of the capstone, while it was carried on a litter to be placed in the northeast corner of the pond. Upon completion of Waiohuli Kai, the *konohiki* again rode the capstone to its resting place. Before the third capstone could be put into position at the Ka’ono’ulu Kai fishpond, the litter on which it was carried broke throwing both the rock and the *konohiki* into the dirt (*lepo*). The workers reportedly said, “Ua konohiki Kalepolepo, ua eku i ka lepo” or, “the manager of Kalepolepo, one who roots in the dirt” (Wilcox 1921:67). That night a fierce storm destroyed the walls of the fishponds. Recognizing his mistake, the *konohiki* implored Kikau to help him repair the damage. Kikau called the *menehune* who then rebuilt the walls in one night. From that time forward, ‘Umi depended on Kikau and made him a resident of the court at Waipi’o Valley (Wilcox 1921: 67).

Kalepolepo was rebuilt at least three times: by Kekaulike (c. 1700–1736), Kamehameha I (r. 1782–1819), and finally by Kauikeaouli, who organized prisoners from Kaho’olawe penal colony to repair the complex in the 1840s with stones from Waiohuli Kai (Wilcox 1921: 67).

The 18th century was characterized by frequent warfare and rivalry between the *mō‘ī* (“kings”) of Maui and Hawai‘i Island. Also known as Kalaniku‘ihonoikamoku, The ambitious Maui chief Kekaulike constructed the *luakini heiau* (large *heiau* sometimes used for human sacrifices) Kanemalohemo at Popiwi and the war *heiau*, or *mamala koa*, Loaloa and Pu‘umaka‘a at Kumunui and Poho‘ula (Kamakau 1961:66). He proceeded to invade Hawai‘i from his seat at Kaupō. Fearful of retaliation, Kekaulike withdrew to Wailuku, but he developed an acute and fatal case of what Kamakau (1961:69) classifies as epilepsy (“*ka maka huki lani*” or “eyes drawn heavenward”).

Kekaulike’s heir was Kamehemeha-nui, the son of a half-sister of Hawai‘i Island chief Alapa‘i. With the help of his uncle, Kamehemeha-nui defeated his older half-brother, Ka‘uhi, in 1738 and secured his rule over Maui (Kamakau 1961:74).

Maui enjoyed some time of relative peace and prosperity before the conflict returned with the wars between Kahekili II (c. 1737–1794), who was another son of Kekaulike’s, and Hawai‘i Island chief Kalani‘ōpu‘u. Shortly before the arrival of Captain James Cook, Kalani‘ōpu‘u’s armies from Hawai‘i had landed and plundered the district of Honua‘ula, south of the project area.

He then moved to Ma‘alaea Bay, from where the chief planned to invade Wailuku (Fornander 1916/1917, Vol. 2:147–157). After losing two battles to Kahekili II, Kalani‘ōpu‘u welcomed a truce, concentrating his efforts on the eastern side of Maui, protecting Hāna and Kīpahulu, which were his spoils from an earlier battle in 1759 (Fornander 1916/1917, Vol. 2:147).

Kahekili II’s successful military expansion paved the road for the future unification of the islands under Kamehameha I. At the same time, the people of Kula rose up against the excesses of the constant warfare toward the end of his reign. According to Kamakau:

During this period, there were disturbances among the country people, not only on Oahu but also on Maui. The trouble arose through one of the lesser chiefs (*kaukauuli‘i*) named Ku-keawe, a favorite (*aikāne*) of Kahekili to whom Kahekili had given the privilege of letting his pigs run over the land of Kula and roasting them as he needed them. But he seized also the pigs belonging to the country people of Kula, Honua‘ula, and Kahikinui, as far as Kaupo, and went with a large party to rob them of their wealth even with violence. This was the cause of the uprising of the country people called the “Battle of the pig-eating of Ku-keawe” (*‘Aipua ‘a-o-Ku-keawe*). [Kamakau 1961:142]

EARLY POST-CONTACT PERIOD

The Post-Contact Period in Maui begins on November 26, 1778, with British Explorer Captain James Cook’s passing by the island on his return from the extreme Northern Pacific (Daws 1974:8). However, the internal affairs on the island proceeded independently of any significant Western influence for quite some time. In fact, the height of Maui’s political power in the Hawaiian Islands was reached during the reign of the ambitious Kahekili II five years after the encounter with Captain Cook (Kolb et al. 1997:3). After Kahekili’s death in 1794, his inherently unstable realm succumbed to fratricidal conflicts and the mounting pressure from Hawai‘i’s Kamehameha I (Daws 1974:38). In the following years, the descendants of Pi‘ilani and the chiefly Maui families were for the most part robbed of their possessions unless they surrendered to the Hawai‘i Island conquerors (Fornander 1916/1917, Vol. 6:310).

Written records (e.g., journals from explorers and missionaries) regarding initial contact between Hawaiians and Westerners are the primary resources regarding traditional land use patterns in the archipelago. Along with archaeological investigations and Hawaiian oral tradition (*mo‘olelo*), these documents support our understanding of early Hawaiian history and culture.

Second Lieutenant on H.M.S. *Resolution* during Cook’s third voyage, James King briefly described what he saw from “eight or ten leagues” (approximately 28 to 34 miles) out to sea as his ship departed the islands in 1779. King observed animals, thriving groves of breadfruit, and the excellence of the taro and sugarcane in Pu‘u Ōla‘i, south of Kīhei. The distance and mentioning of

breadfruit suggest that he observed the uplands of Kīpahulu-Kaupo and ‘Ulupalakua (Beaglehole, 1967).

On May 29, 1786, Jean-François de Galaup, comte de Lapérouse, became the first European in recorded history to have set foot on Maui. After his two frigates, *La Boussole* and *L’Astrolabe*, landed at Keone‘ō‘io (La Perouse Bay) in Honua‘ula District to the south, he was greeted by 120 natives offering his crew “hogs, potatoes, bananas...taro, with cloth and some other curiosities” (Lapérouse 1798:345). He also noted that the part of the island in the rain shadow of Haleakalā was hot, dry, and rough with soil “wholly composed of lava and other volcanic matter” (Lapérouse 1798:345). According to Lapérouse, water was scarce, and the villagers drank from a shallow, brackish well. Around the same time but independently from him, former members of Captain Cook’s staff, Nathaniel Portlock, then captain of the ship *King George*, and George Dixon, captain of *Queen Charlotte*, sailed along the western coast of Maui. Unfortunately, they do not provide testimony contributing to our knowledge of the Kīhei coast.

More helpful is Captain George Vancouver’s second visit to the islands in 1793. His expedition was becalmed in Ma‘alaea Bay, close to the project area. A marker commemorating the visit is still located in front of the Maui Bay Villas development in northern Kīhei. Vancouver reported:

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the waterside, and the inhabitants who came off to us, like those seen the day before, had little to dispose of. [Vancouver 1984:852]

Concerning coastal Kula, Archibald Menzies, a naturalist on Vancouver’s HMS *Discovery*, wrote, “we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited” (Menzies 1920:102). According to Kahekili II, who at that time was still the sole ruler of Maui, the extreme poverty in the area was the result of the continuous wars that caused the land to be neglected and human resources to be wasted (Vancouver 1984:856).

THE MĀHELE

In the 1840s, traditional land tenure shifted drastically with the introduction of private land ownership based on Western legal practices. At the time of Kamehameha III, r. 1825–1854), a consequential transition from communal land use to private ownership took place; that change is commonly called the Māhele (“division”). As early as 1841, the legislature allowed island governors to lease lands to foreigners for up to fifty years. These leases were then to be registered “in writing so that there be no misunderstandings about terms and rents” (Daws 1974:125). The question of land reform was set aside in 1843 because of the five-month occupation of the islands by British naval officer George Paulet, but once the kingdom was stable again and Kamehameha III felt secure at its helm it was brought back (Daws 1974:125). By 1844 many chiefs were warming up to the proposal for a formal land division, and in 1845 the Board of Commissioners to Quiet Land Titles (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 land property” (Chinen 1958:8). The Commission had no authority to divide lands or change their tenure, but was created solely for approval of land claims (Kuykendall Vol. I, 1938:280).

The Māhele of 1848 divided Hawaiian lands between the king, the chiefs (*ali‘i*) and *ahupua‘a* managers (*konohiki*), and the government (*aupuni*), introducing the foreign concept of private land ownership and setting the stage for vast changes to land holdings in the islands. Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, initiating legal private land ownership. In January 1846, land was made available to the commoners (*maka‘āinana*). Once lands private ownership was instituted, Hawaiians, including the *maka‘āinana*, were able to claim land plots upon which they had been cultivating and living through the Kuleana Act of 1850. These claims did not include any previously cultivated but presently fallow land, stream fisheries, or many other resources necessary for traditional survival (Kame‘eleihiwa 1992:295). Once Hawaiians established their occupation of property through the testimony of two witnesses, the petitioners were awarded the claimed land, which was called Land Commission Award (LCA), or *kuleana* lands, and issued a Royal Patent (RP), after which they could take possession of the property (Chinen 1961:16).

Foreigners could acquire land through the Alien Landownership Act of 1850. Oftentimes, they were simply given lands by the *ali‘i*. Commoners, however, could make claims only if they had first been made aware of the foreign procedures. Many of them found them unfamiliar, lengthy and costly, and as a result many Hawaiians missed an opportunity to claim for themselves the lands that had been sustaining their ancestors (Daws 1974:127–128; Chinen 1961:16).

Prior to the Māhele, Kekau'ono'hi owned the Kula Moku (Kame'eleihiwa 1992:52). Kamehameha III retained portions of Kula during the Māhele as "government lands." Kēōkea and Waiohuli Ahupua'a were designated Crown Land in 1848 and 1890 respectively, while Pūlehunui Ahupua'a was declared Government Land in 1848. Keaweamahi was awarded Pūlehunui Ahupua'a in 1902 under LCA number 5230 with Patent Grant #8140, except for Kamehameha III's previous land claim. WWPS No. 2 is located in Pūlehunui Ahupua'a.

According to the Office of Hawaiian Affairs' Kipuka Online Database (2020), the LCA number 3237:2, regarding WWPS No. 3, was awarded to H. Hewahewa in 1860 with Patent Grant #7447. The LCA applied to Ka'ono'ulu Ahupua'a, except for *kuleana* claims from Kalepolepo Village. Awarded parcels included settlement (houses, potato patches, taro lands, and pastures (Colin et al. 2000:17).

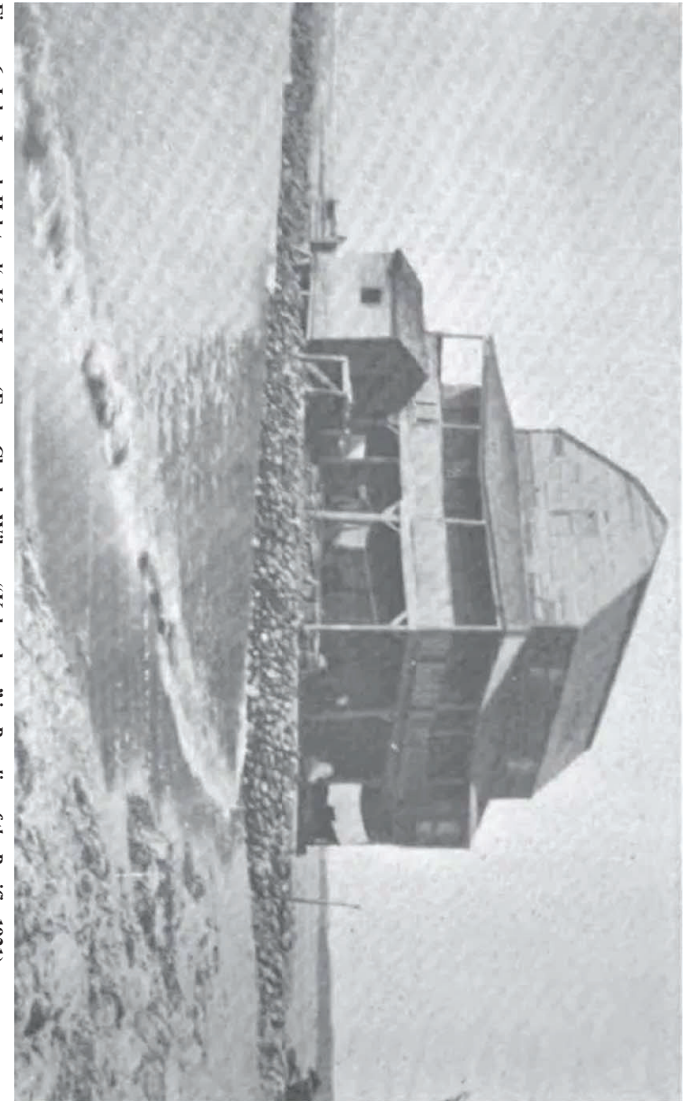
MID-19TH CENTURY TO EARLY 20TH CENTURY

As Western influence grew, the industries that developed in Kula in the Late Post-Contact Period included whaling, Irish potato cultivation, ranching, and sugarcane cultivation. The coastal areas were more impacted by commerce-related activities, such as businesses, hostels, and stores. Kolb et al. (1997:68–69) state that Kīhei was an important provisioning area through the 1850s, when the area became "a hub of activity for all of Kula." Europeans and Americans were living on or frequently visiting the coast, and several churches and missionary stations were established.

According to Clark (1980:47), "from the 1840s to the 1860s a small whaling station was maintained at Kalepolepo," taking advantage of Ma'alaea Bay, a calving location. John Joseph Halstead moved to Hawai'i, married a granddaughter of Isaac Davis, and settled in Kalepolepo on land given to him by Kamehameha III (Kolb et al. 1997). After the start of the California gold rush of 1848, the demand for Irish potatoes and other food supplies increased and provided another economic opportunity for Kula. Halstead's store flourished and provided an accessible port for exported produce. The Pennsylvania Dutch-style structure came to be known as the "Koa House", as it was constructed out of *koa* (*Acacia koa*) logs brought from the uplands (Figure 6). The store was in operation until 1876. By 1887, the winds of fortune had begun to change. Wilcox writes:

The Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo...ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand. [Wilcox 1921:67]

Figure 6: John Joseph Halstead's Koa House (From Charles Wilcox, "Kalepolepo" in *Paradise of the Pacific*, 1921)



By the 1870s, whaling diminished, and the potato industry moved to Ulupalakua (Colin et al. 2000:26). A result of deforestation, by the 1880s, the lower parts of the district consisted primarily of pastureland for ranching, as the semiarid climate and paucity of inhabitants allowed for little else. Though ranching had been present in Kula before the 1840s, the industry took off at the end of the century, when Haleakalā Ranch utilized many coastal areas of Maui (Donham 1990:6). In 1888, Charles Alexander sold ranch lands to Edwin Baily, W.H. Baily, Lorrin Thurston, and Henry Baldwin. The resulting 33,817-acre ranch included up to 500 acres reserved for cornfields

20TH CENTURY AND MODERN LAND USE

With the overthrow of the Hawaiian monarchy (1893) and the subsequent annexation there came not only political, but also economic and demographic changes. The early 20th century marked a rise of large-scale plantations and the arrival of new immigrant workers (Cox 1976). The dominant cultivar in coastal Kula was sugarcane. The cash crop had been grown on Maui as early as 1828 (Speakman 1978:114), and, by the turn of the 20th century, it had been established in Makawao, Northern Maui.

By 1899, the Kīhei Plantation Company (KPC) was growing cane in the plains above Kīhei. In its first few years of existence, KPC dug two ditches to irrigate its 4,873 acres (Gilmore 1936). With the ongoing war between the United States and Spain over Cuba, Puerto Rico, and the Philippines, sugar prices were rising, and the business was profitable. The plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&S) in 1908, and they continued cultivating what had been the KPC fields until 1968. In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973).

At the request of Maui plantation owners and farmers, in 1890 a 200-foot-long wharf was constructed in Kīhei to serve interisland boats for “landing freight and shipping produce” (Clark 1980:49). A 1929 map of Maui shows the vicinity of Kīhei landing as a destination for the HC&S railroad, extending through an underdeveloped terrain.

Along with these economic developments, in the first decades of the 20th century the number of Hawaiians continued to decrease, while new migrants (first of Chinese, and later of Portuguese and Filipino ancestry) arrived or were brought to Maui. These new populations together with more recent settlers from the United States shaped the current demographic of Kīhei. However, in the beginning of the 20th century, the population of Kīhei was barely 350 people (Fredericksen 2009:11), despite the efforts of local government to make the area attractive to new settlers by building a series of roads in the 1930s (Medeiros et al. 2012:23).

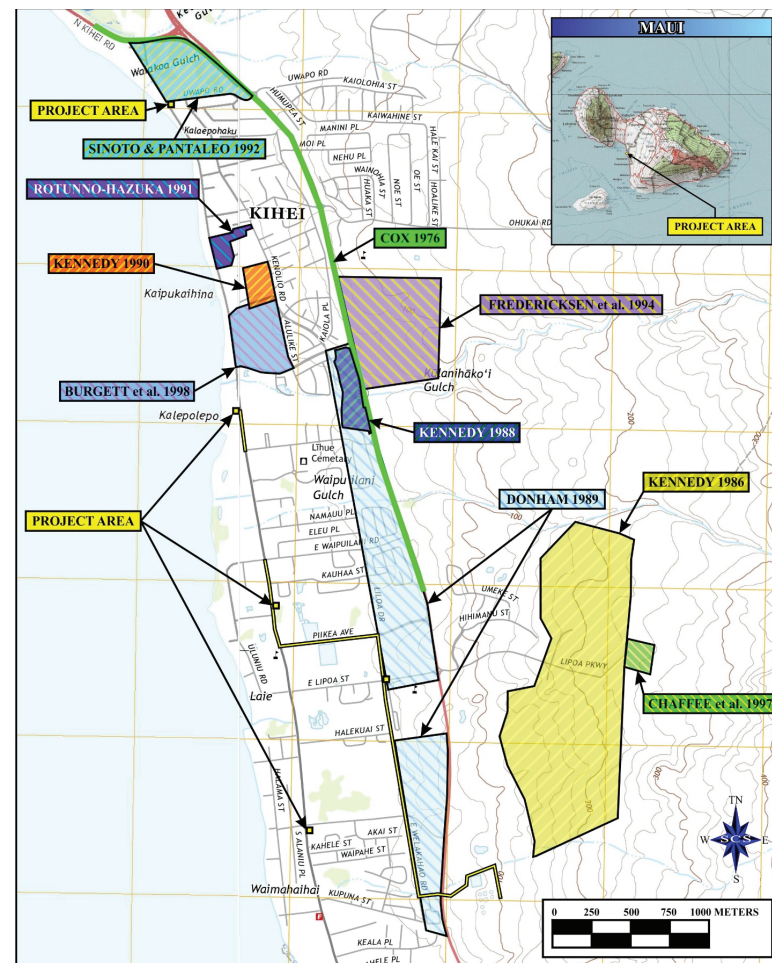
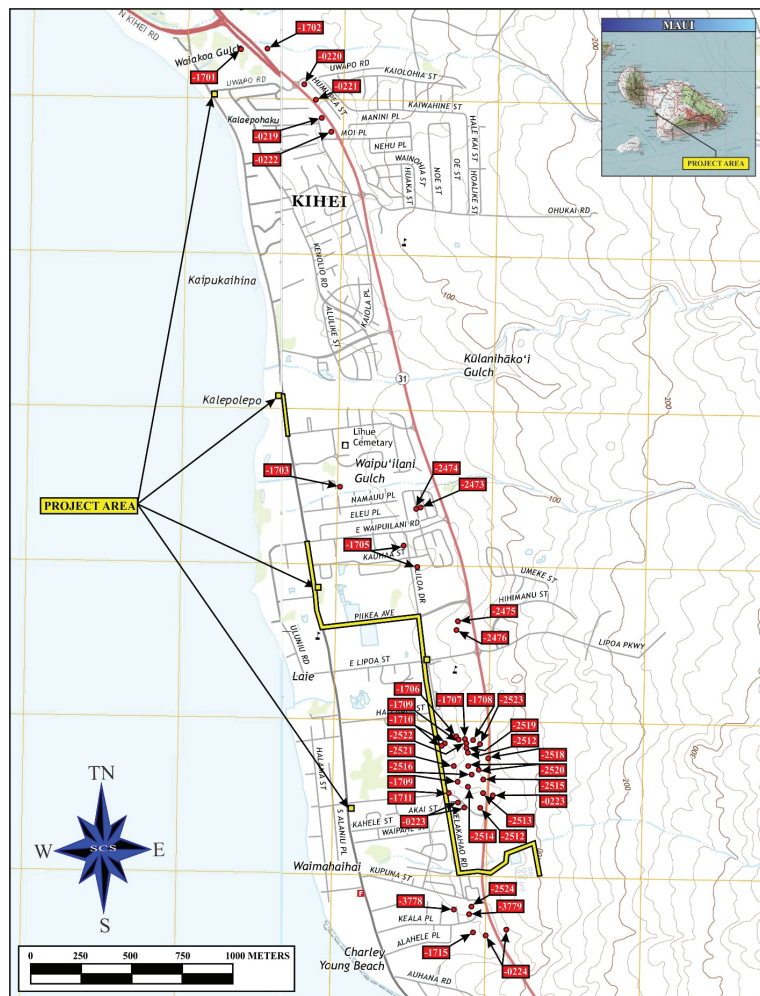
Worldwide political developments also left their mark on the Kīhei coast, as it witnessed a significant World War II military presence along Ma‘alaea Bay (Allen 1950). During the war, coastal Kīhei was also used for amphibious training (Clark 1980: 45). Immediately after the war, in 1946, the century-old and long-abandoned Koa House was “declared a menace to public safety, ... condemned and burned to the ground” (Clark 1980:48). In 1948, the Department of the Navy built a monitoring facility for the nuclear tests conducted in the Pacific; this building now houses the Pacific Whale Foundation at Ma‘alaea Bay (Medeiros et al. 2012:25).

In the 1970s, Ma‘alaea Bay, Kīhei, and the neighboring coastal areas underwent rapid development of residential and commercial projects, many of which were in service of the burgeoning tourism industry. Significant efforts have been made since the 1980s to diversify the economy; as a result, the Maui Tech Park and a Monsanto plant research facility were built at the end of the 20th century.

PREVIOUS ARCHAEOLOGY

Development in coastal Kīhei took place primarily in the 1960s and 1970s, prior to the implementation of SHPD requirements for the protection of significant cultural, historical, and archaeological properties in the early 1990s. Therefore, it is likely that unmonitored development has destroyed substantial traditional and historical cultural features. Since the 1990s, many archaeological projects have been completed in coastal Kīhei. Previous archaeological surveys along the south side of Maui, on the leeward side of Haleakalā, have recorded mostly temporary use sites dating to the Pre-Contact Period. The majority of the current project area has not previously undergone any archaeological surveys, multiple sites have been identified in the vicinity of the corridor and the WWPS locations (Figure 7).

Several archaeological investigations have been conducted in adjacent areas (Figure 8 through Figure 10). The Bernice Pauahi Bishop Museum sponsored T. Thrum (1909), J. Stokes (1909–1916), and W.M. Walker (1931) to conduct surveys of leeward Maui and inventory both coastal and upland sites of the Kula District. Most findings consist of upcountry *heiau* locations, the presence of which indicates dense settlements. These inland *heiau* suggest that much of the population was centered far from the coast. If this pattern is true for the Kula District, then “a large number of upcountry *heiau* suggest that almost all settlement was concentrated there” (Kolb et al. 1997:28). Thus, traditional population sizes along the Kula coastline were likely more modest than those in upcountry areas.



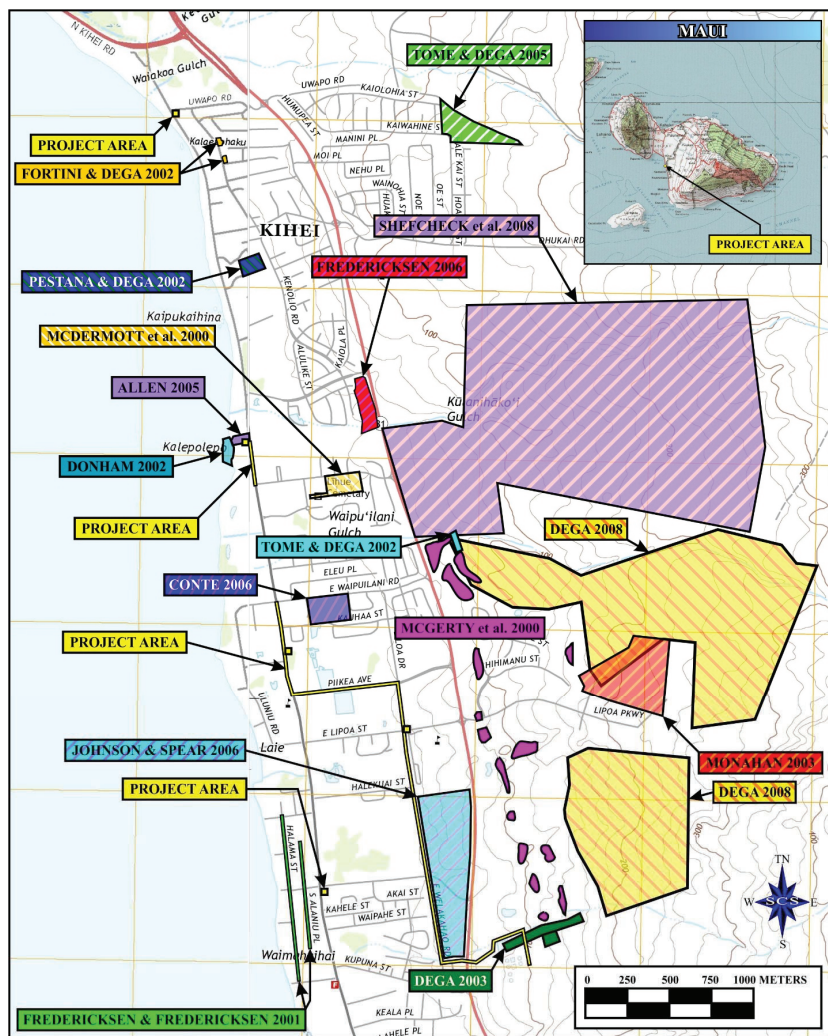


Figure 9: A portion of a 2017 USGS topographic map showing previous archaeology in the vicinity of project area from 2000–2009

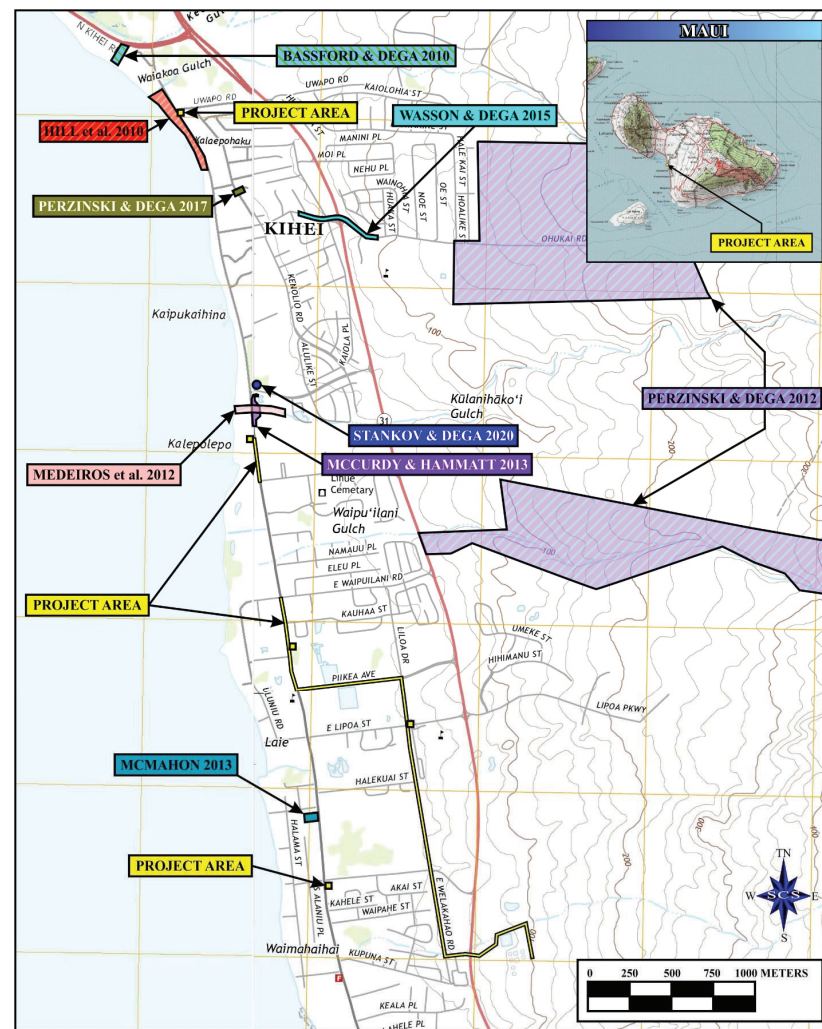


Figure 10: A portion of a 2017 USGS topographic map showing previous archaeology in the vicinity of project area since 2010

Cordy divided the Kula into three environmental zones – inland, coastal, and transitional or “barren.” The most population is expected to be highest in the inland zone, followed by the coastal one, and, lastly, the barren zone. The latter is viewed as relatively inhospitable to permanent habitation because of its dryness, rocky soils, and dearth of natural resources (Cordy 1977). Previous studies failed to find evidence of traditional Hawaiian activities in that zone. For example, Cox surveyed the proposed Pi‘ilani Highway in 1976 and found only small, temporary habitation features, an *ahu* (from Hawaiian, “pile”), and two Post-Contact houses (Cox 1976). Kennedy confirmed this settlement pattern probably continued from ancient times through the Early Post-Contact Period, as LCAs were issued for land situated in the far upland reaches (Kennedy 1986).

Several archaeological studies have been completed in the Maui Research and Technology Park (MRTP). An archaeological reconnaissance survey involving no subsurface testing was completed on the 150.032-acre MRTP [TMK: (2) 2-2-002, currently TMK: (2) 2-2-024] by Archaeological Consultants of Hawai‘i (ACH) in 1986. No historic properties were identified (Kennedy 1986).

In 1997, SCS completed an archaeological inventory survey (AIS) accompanied by subsurface testing in a portion of the MRTP. Three sites were identified with ten archaeological features, including remnant terraces, stone alignments, a mound, and a modified outcrop. All of the sites were interpreted as agricultural in function, with the exception of a rock mound that may have functioned as a religious feature (Chaffee et al. 1997).

Monahan conducted an AIS, including subsurface testing, of a 28.737-acre portion of the MRTP within the area previously investigated by Kennedy in 1986 (Figure 8). Other than one small arrangement of stacked boulders interpreted as a “push pile”, this survey yielded no evidence of Pre- or Post-Contact significance (Monahan 2003).

SCS returned in 2008 for an AIS on 338 acres of undeveloped land primarily owned by the MRTP and partially overlapping with previously studied areas (Figure 9). The survey reported good ground visibility and some contemporary landscape and resulted in the identification of State Inventory of Historic Places (SIHP) Site No. 50-50-10-06239, -06240, -06241, -06587, and -06588. Three of the five sites have been interpreted as related to WWII training exercises, one as a boundary wall meant to prevent cattle from approaching the slope of Waipulani Gulch, and another as a Pre-Contact location and direction marker. The survey recommended the informal preservation only of the boundary wall but no further archaeological monitoring. No traditional structures, surface architecture or midden/artifact scatters, deposits, or areas thought to potentially yield cultural materials were identified (Dega 2008).

In 1988, ACH conducted a foot survey *mauka* of the project area [TMK:(2) 3-9-001:148, 149, and 157] in the Ka‘ono‘ulu Ahupua‘a. No surface features were found (Kennedy 1988). Donham conducted the first phase of an archaeological inventory survey of Pi‘ilani Residential Community on a tract of land stretching along the border of the “barren” zone and including the entirety of the Kennedy (1988) project area. Donham’s area of study also includes a small portion of one of the current project area locations. The survey identified two ranching-era structures and a Pre-Contact agricultural terrace (SIHP Site No. 50-50-10-02475) (Donham 1989). In 2006, Xamanek Researches conducted an archaeological field inspection of 8.274 acres of land [TMK: (2) 3-9-001:157 and 158] in land surveyed by previous archaeological studies (Kennedy 1988 and Donham 1989; Figure 8). Because of extensive ground disturbance, no historic properties were identified. No further work was recommended (Fredericksen 2006).

ACH surveyed a parcel [TMK (2) 3-9-001:64, 99] between WWPS No. 2 and WWPS No. 3 in 1990. There was no surface indication of cultural artifacts (Kennedy 1990). SCS led a survey just south of and slightly overlapping with Kennedy’s 1998 study area. Occupied by the former Maui Lu Resort for proposed Maui Bay Villas, sixteen stratigraphic trenches were excavated, yielding only layers of soil or sand fill. No historic properties were identified, and no further work was recommended (Burgett et al. 1998). SCS returned to the Maui Bay Villas in 2020 and recovered 12 Pre-Contact features north of Kalepolepo [TMK: (2) 3-9-001:086]. They included a fishpond wall, a burned post, a hearth, a living floor, an L-shaped wall, post molds, canine remains, and a porcine jaw. Ten fragmented human remains belonging to two individuals were recovered, though there were no pit or subsurface burial features (Stankov and Dega 2020).

Rotunno-Hazuka conducted an AIS for the Kai Makani project, north of Kīhei Road. The survey and subsurface testing, including backhoe trenching, identified no historic properties or subsurface deposits in the extensively disturbed project area (Rotunno-Hazuka 1991).

A 1992 AIS of the proposed location for the Kīhei Gateway Complex led to the identification of a remnant, historic concrete bridge (SIHP Site 50-50-09-00031) crossing Waiakoa Stream. It was suggested that the bridge was probably related to a narrow-gauge cane railroad that operated through the area and may have serviced Kīhei Camp 1 (Sinoto and Pantaleo 1992).

Xamanek Researches conducted an AIS on an 88-acre parcel located mauka of Pi‘ilani Highway [TMK: (2) 3-9-01-16 and 2-22-02: por. 15] on a portion of the former Ka‘ono‘ulu Ranch. A total of 21 features were discovered, of which five were stone piles possibly indicating Pre-Contact agricultural activity and five were surface scatters suggesting Pre-Contact Period temporary habitation. A petroglyph was also discovered and was subsequently designated as SIHP Site No. 50-50-10-03746 (Fredericksen et al. 1994).

Multiple archaeological examinations of the Elleair Maui Golf Club have been completed. McGerty et al. surveyed 15 selected areas within the Elleair Maui Golf Club [TMK: (2) 2-2-024: por. 012 and 013] and identified five archaeological sites (SIHP Sites 50-50-10-05043, -05044, -05045, -05046, and -05047) containing a total of seven surface features. The surface features were interpreted as agricultural terraces, perhaps dating from the Pre-Contact Period, and C-shaped rock formations (fighting positions) built during World War II training. Ten excavation units placed within these features yielded no cultural material (McGerty et al. 2000).

SCS conducted an AIS along the northeastern flank on a small parcel of the Elleair Maui Golf Club property [TMK: (2) 2-2-024:012] in 2002. A historical ranching corral and a short agricultural wall were collectively designated as SIHP Site No. 50-50-10-5233. No other structures or subsurface deposits were identified, and no traditional Hawaiian sites or features were encountered (Tome and Dega 2002). The following year, SCS returned to the Elleair Maui Golf Course to complete an inventory survey along the southern flank. The area investigated includes a small section of one of the locations of the current project area. The survey did not yield any archaeological or historical sites or features (Dega 2003).

CSH conducted an AIS of a 7.4-acre area of the Kiawe Mauka Parcel Development, located along Kūlanihāko‘i Road in Waiohuli Ahupua‘a [TMK: (2) 3-9-001:155]. During this 2000 survey, one historic property – a pond situated in the southwest portion of the project area – was identified and subsequently designated SIHP Site 50-50-09-04981 (McDermott et al. 2000).

Fredericksen and Fredericksen conducted monitoring of a waterline replacement project along both Halama and Alanui Streets for the Board of Water Supply for the County of Maui. Two site remnants were recorded along Halama Street. SIHP Site No. 50-50-09-05003 appears to be an extension of a Pre-Contact occupation layer previously identified during an inventory survey and was noted near the northern end of Halama Street. A previously unidentified site remnant was seen near the southern extent of the Halama Street waterline installation trench and was assigned SIHP Site No. 50-50-09-05060. Sites -05003 and -05060 were interpreted to be probable habitation areas. Cultural material observed at Site -05060 included fire cracked rocks, scattered coral, trace amounts of charcoal flecking, and some shell midden. One urchin spine abrader tip was recovered from the site (Fredericksen and Fredericksen 2001).

Donham conducted an underwater AIS of Kō‘ie‘ie Fishpond (SIHP Site No. 50-50-09-01288) in 2002. The systematic underwater survey of a 7.5-acre area, which included the fishpond and surrounding area outside the fishpond wall, identified boulders, suggesting Kō‘ie‘ie Fishpond may once have been larger than it is currently (Donham 2002).

SCS completed an archaeological inventory survey in 2002 on two parcels [TMK (2) 3-9-35:1 and 3-9-35:2] totaling 15.6 acres. Following a complete pedestrian survey and representative subsurface testing, two historic features were identified, (1) a cobble and boulder-faced wall, and (2) a low wall alignment. Both were associated with the Post-Contact Period and were not deemed historically significant. No subsurface cultural deposits were identified (Fortini and Dega 2002).

Also, in 2002, SCS completed an AIS on a 2.5-acre parcel [TMK (2) 3-9-041:027] in previous marshlands. In the excavation of nine stratigraphic trenches, no significant cultural features or deposits were encountered (Pestana and Dega 2002).

In 2005, SCS prepared an AIS of an approximately 9.3-acre property in North Kīhei. Two historically significant sites were identified: one associated with World War II (SIHP Site No. 50-50-09-05801) and a terrace and an enclosure associated with the Pre-Contact Period (SIHP Site No. -05802). Both sites were deemed significant under Criterion D for their informational value. No further archaeological work was recommended (Tome and Dega 2005).

International Archaeological Research Institute investigated a 0.457-hectare parcel near Kalepolepo Fishpond in 2005 [TMK: (2) 3-09-001:87]. The study area includes WWPS No. 3, which is one of the locations of the project area. The excavation of 21 trenches into the dune system on the *makai* (“seaward”) side of South Kīhei Road identified a cobble paving and a firepit associated with a thin cultural layer. Both were dated to the late 1800s/early 1900s. Charcoal was identified in several of the trenches but was classified as secondary deposition from inland sources. Most of the dune areas represented recent (approximately 70 years old) sand deposits, common in similar wind-swept regions, where aeolian deposits are common (Allen 2005).

CRM Solutions, Hawaii, conducted an AIS of 7.217 acres in Waiohuli Ahupua‘a, Wailuku District, Maui [TMK: (2) 3-9-046:013]. No archaeological sites were identified (Conte 2006).

Johnson and Spear of SCS conducted archaeological data recovery for the Pi‘ilani I and II Kīhei Community Park Project in Kēōkea Ahupua‘a, Makawao District, Maui Island. This data recovery phase followed an archaeological data recovery plan (Donham 1990) that recommended investigation of six archaeological sites. Five of them were relocated (SIHP Sites 50-50-10-01710, -02512, -02514, -02516, -02522), while one (-02519, a stepped terrace system) was deemed “impacted beyond recognition by post-1999 fire suppression activities” (Johnson and Spear 2006). Through radiocarbon dating and the few cultural materials present, it was determined that the site complex was utilized in the Late Pre-Contact to Early Post-Contact Periods. Discussion of these sites suggests that they are take advantage of ephemeral drainage basins, conducive to agricultural pursuits near permanent coastal settlements. In addition to agriculture, site functions included temporary habitation, ceremonial, and permanent habitation (Johnson and Spear 2006).

SCS conducted an archaeological inventory survey in 2008 of a 516-acre parcel mauka of Pi'ilani Highway. A number of features were uncovered, including previously undocumented Pre-Contact habitation sites and rock shelters along Kūlanihāko'i Gulch. The survey also recorded two historic roads (SIHP Sites -06387 and -06401) and eight features associated with military activity during WWII (Shefcheck et al. 2008).

In 2010, Cultural Surveys Hawai'i (CSH) completed an archaeological mitigation program of the beach in Sand Dune deposits [TMK (2)-3-9001:25 and (2)-3-8-004:007]. No traditional cultural deposits were found (Hill et al. 2010).

SCS completed an archaeological inventory survey consisting of full pedestrian survey and representative subsurface testing in coastal north Kihei in 2010. Eight stratigraphic trenches yielded negative findings for cultural materials. However, there remains the potential that historic cultural properties may yet be encountered in the project area (Bassford and Dega 2010).

CSH conducted a literature review and field inspection in 2012 for the Kūlanihāko'i Bridge Replacement Project, identifying no other historic features (Medeiros et al. 2012). Following their report, McCurdy and Hammatt did not recommend the preservation of the century old bridge (SIHP Site -07606) (McCurdy and Hammatt 2013).

In 2012, SCS conducted an archaeological inventory survey on a total of 427 acres [TMK: (2) 2-2-02:16 and 54 por.]. They documented 15 archaeological sites, among which five (SIHP Sites -06784, -06785, -06786, -06792 and -07051) were associated with Pre-Contact activities. Of these, Site -06792 was dated to c. 1480–1660 C.E., and Site -06786 is a *heiau* dated to c. 1450–1650 C.E. Three features were recommended for preservation: Sites -06786 (ceremonial), -06792 (Pre-Contact workshop), and -07051 (rock art) (Perzinski and Dega 2012).

Exploration Associates Ltd. conducted an archaeological inventory survey on TMK (2) 3-9-010:77 in 2013. No evidence of historic properties was identified, and no further archaeological work was recommended (McMahon 2013).

SCS monitored the intersection of Ohukai Road and Pi'ilani Highway at TMKs (2) 3-9-02-9999, 3-9999999, and 3-9-045-999 in 2015. No cultural materials or historic properties were recovered, which is likely because of prior development (Wasson and Dega 2015).

In 2017, SCS conducted an archaeological monitoring program at 265 Kenolio Road. Monitoring of ground disturbing activities yielded no evidence of archaeological sites, cultural layers, or cultural artifacts. According to the researchers, it is more likely that cultural activity be found on the *makai* side of the road in the sand dune deposits (Perzinski and Dega 2017).

POTENTIAL SITE TYPES TO BE ENCOUNTERED

A number of archaeological surveys have been completed in coastal Kihei, and some notable Pre- and Post-Contact culturally significant properties have been documented. These findings mostly consist of subsurface features and materials associated with temporary habitation and marine resource procurement with a few human burials on sandy soil matrices, which are also characteristic to the project area and its vicinity. Two sites, SIHP Sites 50-50-10-01710 and -01711, also occur in close proximity to the current project area. Site -01710 is a Post-Contact animal enclosure, and Site -01711 consists of the Kēōkea agricultural complex.

The project primarily occurs in a built environment where sewer lines will be placed within existing utility corridors. The majority of the current project area has been previously cleared and graded to establish subsurface pipes and above-ground pump stations. However, the project may involve ground disturbance over 6 mbs (meters below surface). The excavation depth and the presence of known burials in the vicinity of the project area increase the probability for inadvertent discovery of cultural deposits, such as subterranean cultural strata, subsurface pit features, midden, artifacts, and human burials, as have been present in previous archaeological investigations. subsurface contexts.

MONITORING CONVENTIONS AND METHODOLOGY

MONITORING GUIDELINES

Archaeological monitors will adhere to the following guidelines outlined in HAR §13-279-4:

1. On-site, full time archaeological monitoring will be conducted for all ground-disturbing activities during the sitework improvements.
2. If significant deposits or features are identified and additional field personnel are required, the archaeological consultants conducting the archaeological monitor will notify the contractor or representatives before additional personnel are brought to the site.
3. One archaeological monitor will be present per each piece of machinery conducting ground-altering activities within the project area.
4. If non-burial cultural deposits and/or features are identified during monitoring, the on-site archaeologist will have the authority to temporarily suspend construction activities at the find location so the deposits or features may be identified, documented, and assessed for significance. The SHPD History and Culture Branch and the Archaeology Branch will both be consulted regarding appropriate documentation and assessment. Documentation will include collecting geospatial data via global positioning system (GPS) to plot the find location, recording the GPS location on site map. Geospatial data will be collected utilizing a Trimble Geo7x for sub-meter accuracy to record identified significant historic and cultural properties. Documentation will also include (1) photography with scale and north arrow illustrating the deposits or features in planview and/or profile view (depending on nature of exposure), (2) record of stratigraphy using USDA soil survey manual terminology and attributes and Munsell soil colors, and (3) plotting and collection of artifacts and soil samples. Stratigraphic profiles will measure a minimum of 2 m across. Construction work and/or back-filling of excavation pits or trenches will occur in the location of find only after all archaeological documentation has been completed. Former A-horizons will be sampled if archeological or historical cultural materials are observed.
5. Stratigraphy will also be recorded and photographed with north arrow and scale at selected locations to provide representative stratigraphic data across the project area. These locations will also be recorded and represented on a current USGS topographic quadrangle map. The profiles will measure a minimum of 2 m across. Both vertical and horizontal scales will be recorded.
6. In the event that human remains (*in situ* burial or isolated, displaced skeletal elements) are inadvertently encountered, all work in the immediate area of the find will cease, the area and human remains will be secured, and the archaeologist will immediately notify the police, SHPD (archaeologist and burial sites specialist staff), and the island burial council. Treatment of the human remains (including archaeological documentation) shall be in accordance with Hawaii Revised Statutes §6E-43.6, Hawaii Administrative Rules §13-300-40, and SHPD directives. Work will resume in the area of the inadvertent find only following SHPD approval.

7. To ensure that contractors and the construction crew are aware of this Archaeological Monitoring Plan and possible site types to be encountered on the parcel, a brief coordination meeting will be held between the construction team and monitoring archaeologist prior to initiation of the project. The construction crew will also be informed as to the possibility that human burials and/or cultural deposits or features could be encountered and how protection and mitigation should proceed if they observe such remains.
8. The archaeologist will provide all coordination with the contractor, SHPD, and any other groups involved in the project. The archaeologist will coordinate all monitoring and sampling activities with the safety officers for the contractors to ensure that proper safety regulations and protective measures meet compliance. Close coordination will also be maintained with construction representatives in order to adequately inform personnel of the possibility that open archaeological units or trenches may occur in the project area.
9. As necessary, verbal and/or written reports will be made to SHPD and any other agencies as requested.

LABORATORY ANALYSIS

All non-burial artifacts and samples collected during the project will undergo analysis at the SCS Maui laboratory in Pukalani, Maui. Photographs, illustrations, and all paper and electronic documents accumulated during the project will be curated at the laboratory of the archaeological consultants conducting the monitoring. All collected artifacts and midden samples will be cleaned, sorted, counted, weighed (metric), and analyzed (both qualitative and quantitative data), with all data recorded on standard laboratory forms. Midden samples will be minimally identified to major class (e.g., bivalve, gastropod mollusk, echinoderm, fish, bird, and mammal). Digital photographs with scales will be taken of a representative sample of the diagnostic artifacts. Tables and text discussing the artifact and sample results will be provided in the report, along with appropriate digital photographs.

Samples (wood charcoal, shell, non-human bone, *kukui* nut) identified as potentially suitable for dating from an undisturbed context (e.g., cultural layer, pit feature) shall be considered for radiocarbon dating in consultation with SHPD and the landowner. Prior to submittal, potential wood charcoal samples shall first be submitted to International Archaeological Research Institute, Inc. (IARII) for wood taxa identification. Only samples identified as short-lived endemic or Polynesian-introduced species will be selected for dating purposes.

All stratigraphic profiles and plan view maps of identified historic properties (e.g., sites, cultural layers, features) shall be drafted for presentation in the final report. Photographs of project work, including overviews, and of individual profiles, cultural layers, and features shall also be included in the final report.

CURATION

If requested by the landowner, all collected non-burial materials will be curated in the SCS laboratory until a final disposition repository location is determined in consultation with the landowner and the SHPD.

REPORTING

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 §13-284-6 [13-275-6 for government projects], Criteria *a* through *e*. This information shall be included in the final report along with an appropriate recommendation for future mitigation. An archaeological monitoring report (AMR) meeting the requirements of HAR §13-279-5 shall be submitted within 60 days of the completion of fieldwork. The final SHPD-accepted AMR shall be distributed to SHPD and the landowner.

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**APPENDIX A: PROJECT LOCATION MAP DETAILING
PROPOSED NORTH KĪHEI MAUKA TRANSMISSION SYSTEM
IMPROVEMENTS**


**APPENDIX B: SOIL BORING LOCATIONS IN SUPPORT OF
PROPOSED NORTH KĪHEI MAUKA TRANSMISSION SYSTEM
IMPROVEMENTS**

B



COUNTY OF MAUI
DEPARTMENT OF PUBLIC WORKS
DEVELOPMENT SERVICES ADMINISTRATION
250 SOUTH HIGH STREET
WAILUKU, HAWAII 96793
Ph: (808) 270-7242 Fax: (808) 270-7972

**WORK ON COUNTY
HIGHWAY PERMIT
APPLICATION**

PROJECT/PROPERTY INFORMATION		UTILITY CLEARANCES	
PROJECT NAME	North Kihei Mauka Transmission System	Dept. of Water Supply	Date
ADDRESS	South Kihei Rd, Piikea Ave & Liloa Dr	Wastewater Reclamation Div.	Date
TAX MAP KEY	3-9-01 to 3-9-32	MECO	Date
APPLICANT (Contact information for person who is processing permit application)		Gas Company	Date
NAME	Geolabs Inc. Nick Mitchell	HawaiianTel	Date
ADDRESS	780 Alua St. Wailuku HI 96793	Cable Company	Date
PHONE	808-244-4435		
EMAIL	maui@geolabs.net		
CONTRACTOR (PERMIT HOLDER)		CONTRACTOR (PERMIT HOLDER) DECLARATION	
		The undersigned accepts the permit subject to conditions described in the General Provisions, construction plans, Section 12.04 MCC and any other document associated with the permit.	
CONTRACTOR INFORMATION CAN BE PROVIDED AT A LATER DATE, WHEN PERMIT READY TO BE ISSUED.			
CONTRACTOR NAME Geolabs Inc			
LICENSE NUMBER			
ADDRESS 780 Alua St Wailuku HI 96793			
PHONE 808-244-4435		EMAIL maui@geolabs.net	
SIGNATURE 		PRINT NAME Nick Mitchell	
PERMIT INFORMATION			
STREET NAME(S) Various locations along South Kihei Road, Piikea Ave & Liloa Drive.			
LINEAL FEET OF WORK 19.0			
WORK TO BE DONE			
Drilling of 38 soil borings to depths of 15 feet below the pavement surface at 6 inches in diameter.			
ESTIMATED DATES		COMPLETION	
START 2/28/2021		2/28/22	
PERMIT APPROVAL (For county use only)		APPLICATION NUMBER:	
Fee \$			
Bond \$		PAYER: CK #:	
Type: <input type="checkbox"/> CASH <input type="checkbox"/> SURETY NO. <input type="checkbox"/> EXEMPT			
SPECIAL CONDITIONS			
APPROVED BY:		PERMIT NUMBER:	
For: Department of Public Works Date		DATE OF ISSUANCE:	
GENERAL PROVISIONS are considered a part of this permit and are included herein by reference. Hard copy is available at DSA can be viewed/downloaded online at County website: https://www.mauicounty.gov/DocumentCenter/View/111191			
**Note: Call DSA Construction Inspectors prior to starting work at (808) 270-7366.			

(Rev. 4/15)

B2



B4



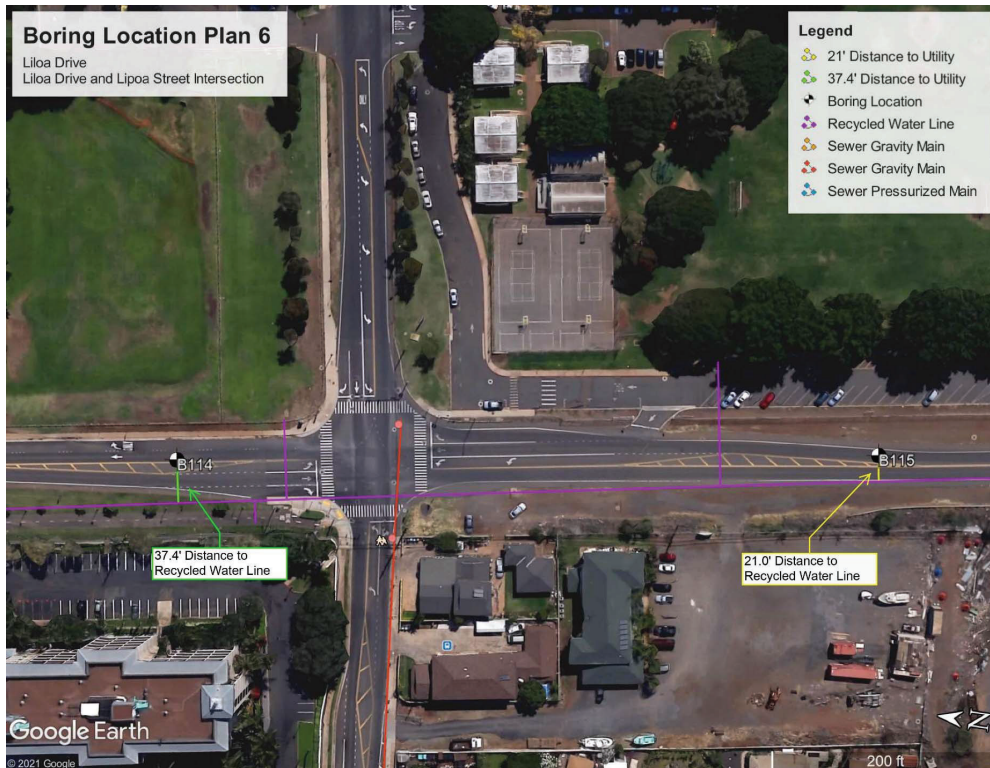
B3



B6



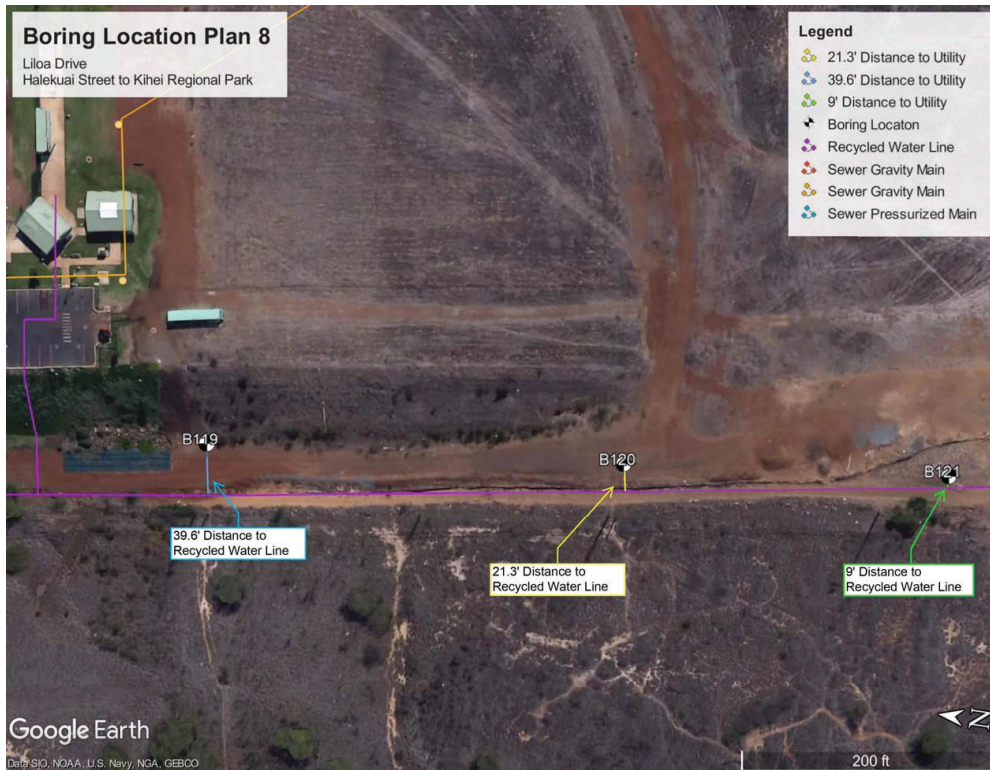
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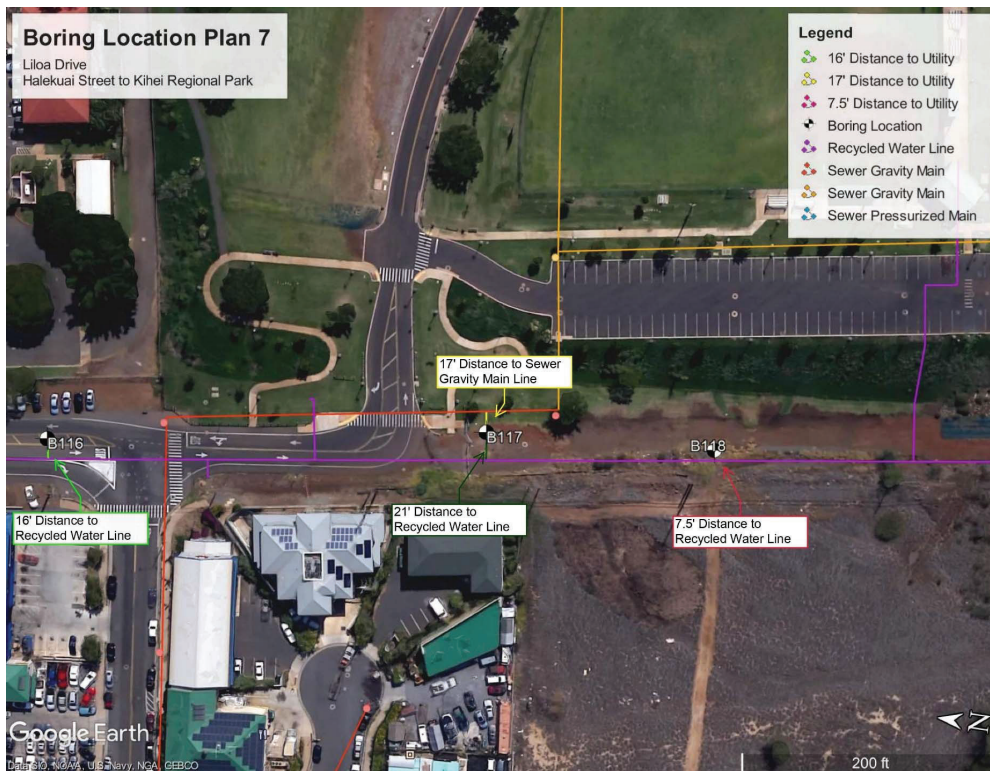
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B10



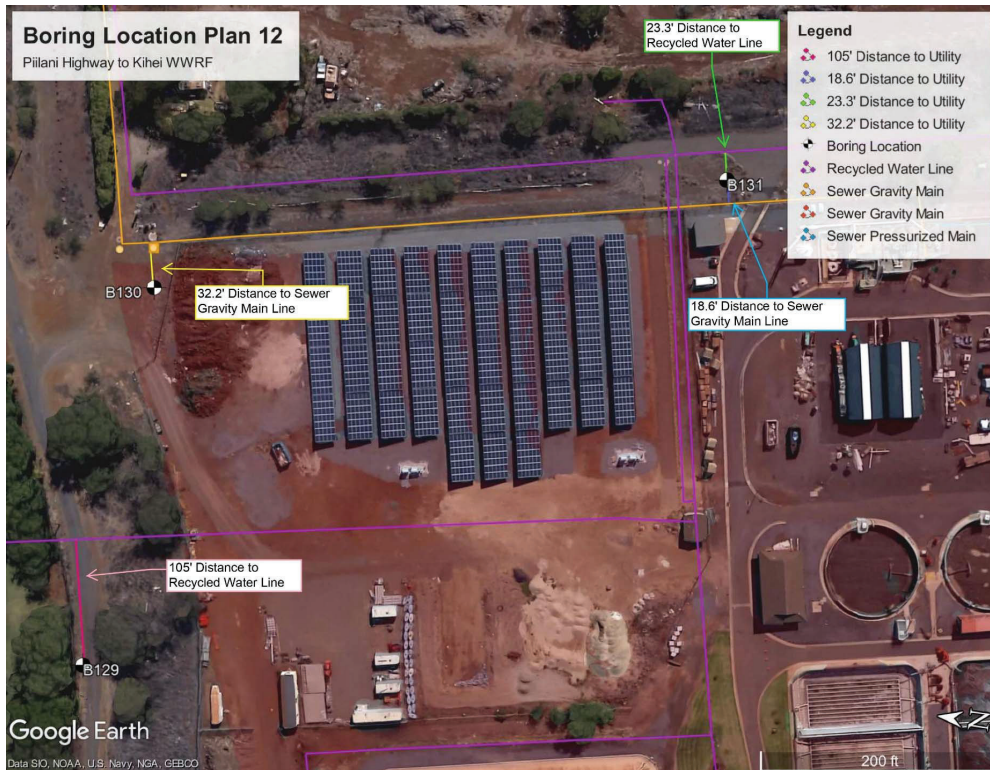
B9



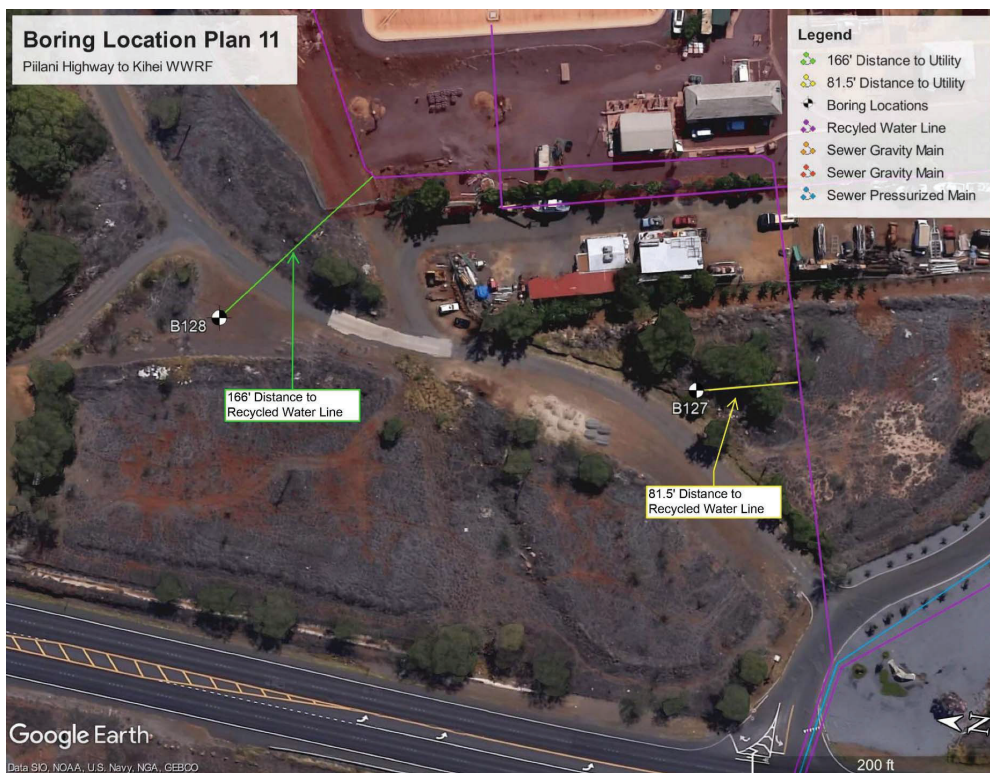
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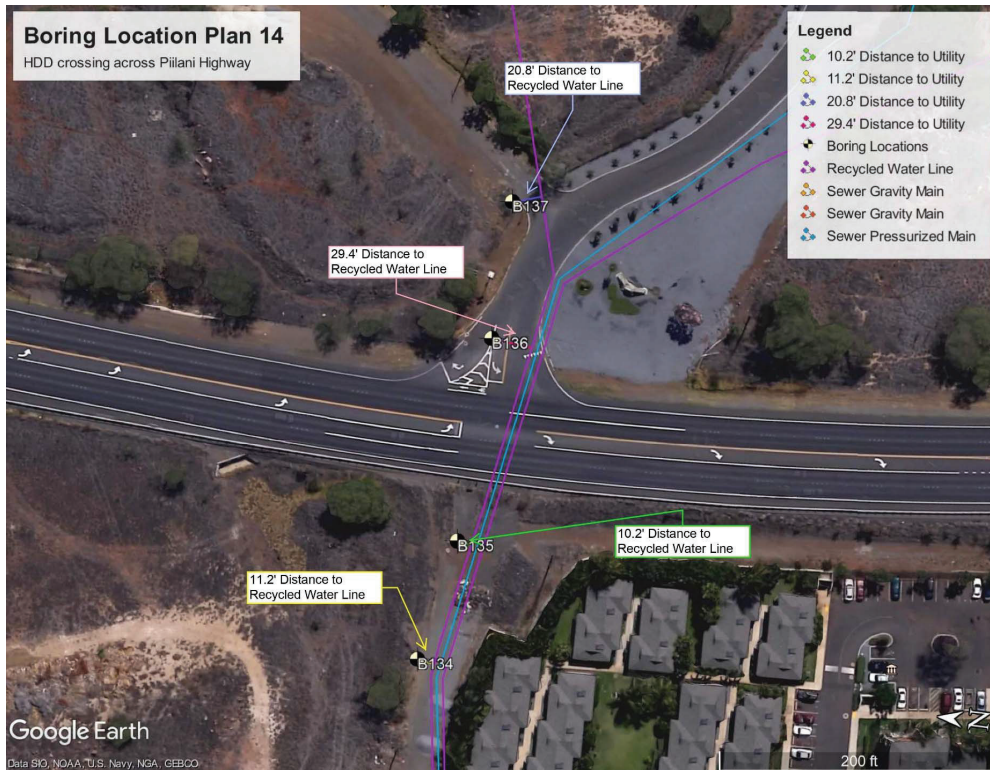
B11



B14



B13



B16



B15



**CULTURAL IMPACT
ASSESSMENT REPORT**

APPENDIX

F



SCS PROJECT NO. 2575-4 CIA

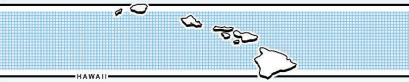
**A CULTURAL IMPACT ASSESSMENT REPORT IN ADVANCE OF THE
PROPOSED NORTH KĪHEI MAUKA TRANSMISSION LINE PROJECT
PŪLEHUNUI, KA‘ONO‘ULU, WAIQHULI, AND KĒŌKEA AHUPUA‘A,
WAILUKU AND MAKAWAO (KULA) DISTRICTS
ISLAND OF MAUI, HAWAI‘I
[TMK (2) 2-2 (various), 3-8, and 3-9 (various)]**

Prepared by:
Cathleen A. Dagher, B.A.
February 2022

Draft

Prepared for:
Munekiyo Hiraga
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Wailuku, Hawai‘i 96793

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INTRODUCTION

At the request of Munekiyo Hiraga, Scientific Consultant Services, Inc. (SCS) has prepared a Cultural Impact Assessment (CIA) in advance of the proposed North Kihei Mauka Transmission System Project. The project area is located in the village of Kihei, within the Ahupua'a of Pūlehunui , Ka'ono'ulu, Waiohuli, and Kēōkea, in the Districts of Wailuku and Makawao (Kula), Island of Maui [TMK: (2) 2-2, 3-8, and 3-9] (Figures 1 through 3). The Tax Map Keys (TMKs) of the properties which will be affected by the proposed project, and the associated landowners, are presented in Table 1.

Table 1: TMKs Affected by the Proposed North Kihei Mauka Wastewater Transmission System Project.

Project Component	TMK	Landowner	Lot Area
WWPS No. 2	(2)3-8-077:011	County of Maui	0.234 acres
WWPS No. 3	(2)3-9-001:147	County of Maui	2.606 acres
WWPS No. 4	(2)3-9-052:037	County of Maui	0.237 acres
WWPS No. 5	(2)3-9-027:028	County of Maui	0.230 sq.ft.
Kihei Community Center/Kihei Aquatic Center	(2)2-2-024:023(por.)	County of Maui	9 acres
South Maui Community Park expansion	(2)2-2-002:042 (por.)	County of Maui	42.126 acres
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui	1.932 acers
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:088	County of Maui	0.775 acres
Land abutting the Kihei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.	2,175.38 acres
Kihei WWRF	(2)2-2-024:010	County of Maui	12.931 acres
Kihei WWRF	(2)2-2-024:011	County of Maui	10.512 acres
Proposed underground gravity sewerline – S. Kihei Road ROW	(2)3-9-001 (2)-3-9-007	County of Maui	Roadway
Proposed underground force main – Pi'ikea Avenue ROW	(2)3-9-002	County of Maui	Roadway
Proposed underground gravity sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui	Roadway
Proposed underground force main – Liloa Drive ROW	(2)2-2-002 (2)3-9-040 (2)3-9-033	County of Maui	Roadway
Proposed underground force main – Old/E. Welakahao Road ROW	(2)2-2-029	County of Maui	Roadway
Proposed underground force main – Pi'ilani Highway ROW	(2)2-2-999	State of Hawai'i	Roadway

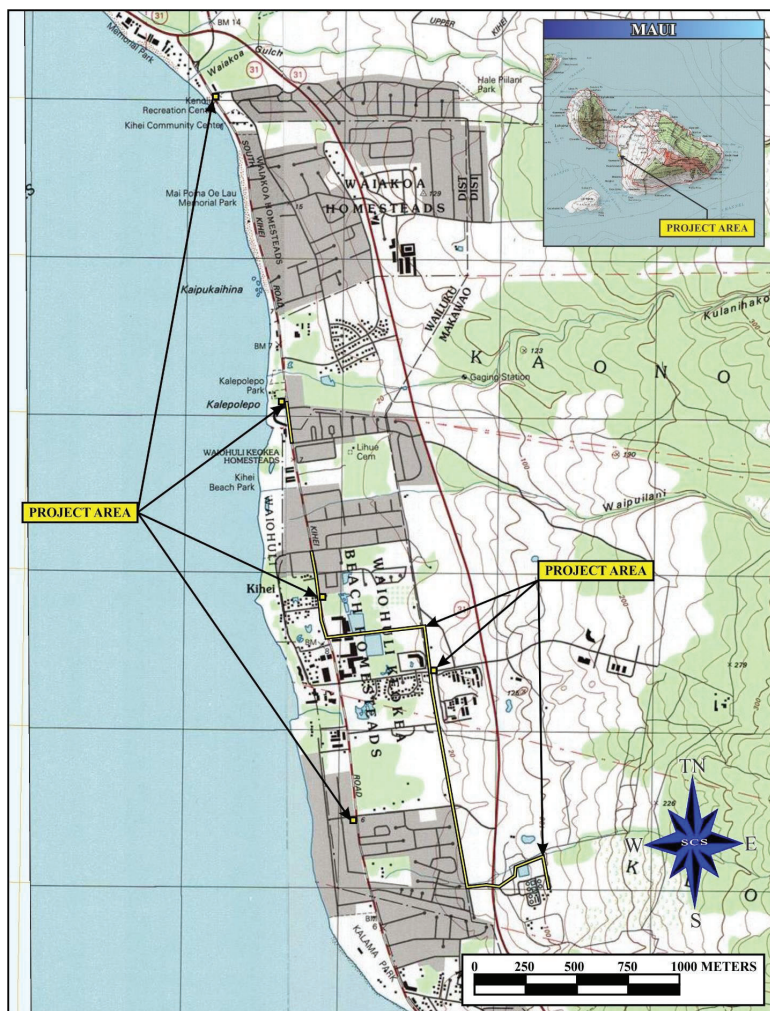


Figure 1: USGS Quadrangle (Puu O Kali, HI 201; 1:24,000 and Maalaea, HI 1917; 1:24,000) Showing Project Area Locations.

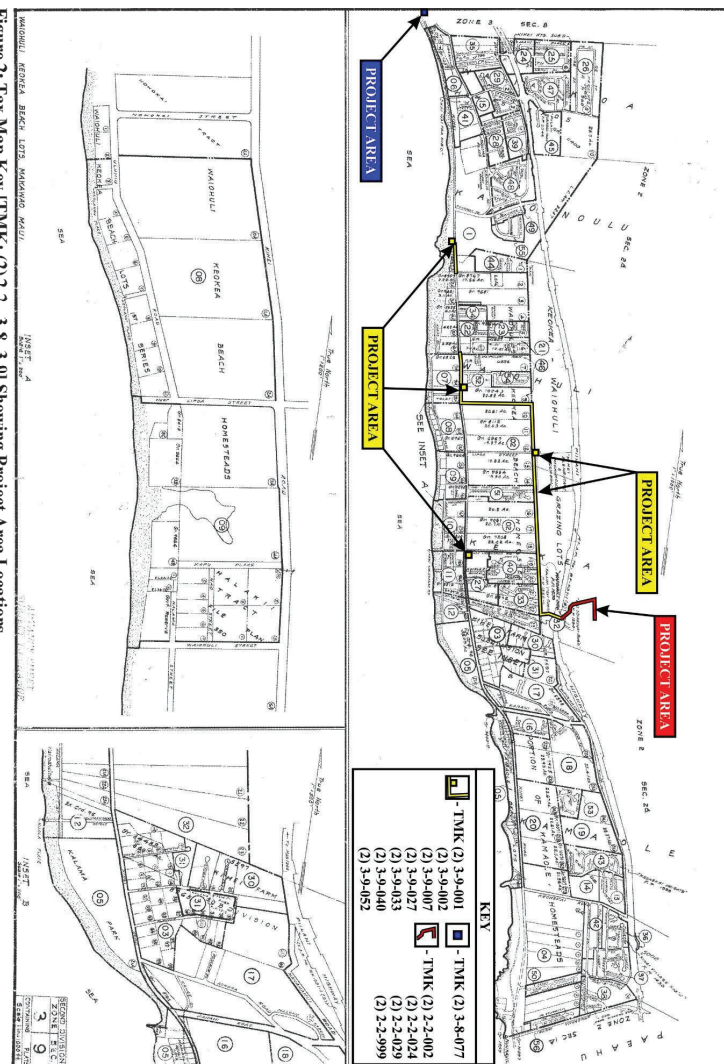


Figure 2: Tax Map Key [TMK: (2) 2-2, 3-8, 3-9] Showing Project Area Locations.

Figure 3: Satellite Image (Google 2018; Imagery Date 7/20/2016) Showing Project Area Location.



The scope of work for the project includes:

- replacing the gravity sewer lines to WWPS No. 3 and No. 4 with larger pipes,
- installing a new force main starting at WWPS No. 4 heading south on South Kihei Road, turning east on Pi'ikea Avenue, south on Liloa Drive, and transitioning to a gravity sewer line for 500 feet (152.4 m) until reaching a new proposed WWPS near the Kihei Aquatic Center,
- installing a new WWPS at the Lipoa Street and Liloa Drive intersection, and
- installing a second new force main heading south on Liloa Drive and continuing on to the Kihei Wastewater Reclamation Facility.

In addition, the proposed project will involve improvements to Wastewater Pump Stations (WWPS) Nos. 2, 3, 4, and 5. Pump station upgrade work will entail switching existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County of Maui WWPS. Dependent upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing wastewater pump stations will occur within existing developed areas.

The Environmental Review Program (ERP) of the Hawaii State Office of Environmental Quality Control (OEQC 1997:11) states that “an environmental assessment of cultural impacts” gathers information about cultural practices and cultural features that may be affected by significant environmental effects:

Cultural impacts differ from other types of impacts assessed in environmental assessments or environmental impact statements. A cultural impact assessment includes information relating to the practices and beliefs of a particular cultural or ethnic group or groups.

The purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assess the potential for impacts on these cultural resources. The CIA is not intended to be a document of in depth archival-historical land research, or a record of oral family histories, unless these records contain information about specific cultural resources that might be impacted by a proposed project.

CULTURAL IMPACT ASSESSMENT METHODOLOGY

The Constitution of the State of Hawai‘i clearly states the duty of the State and its agencies is to preserve, protect, and prevent interference with the traditional and customary rights of native Hawaiians. Article XII, Section 7 (2000) requires the State to “protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by *ahupua‘a* tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778.” Additionally, Article IX and XII, of the state constitution, other state laws, and the courts of the State, impose on government agencies a duty to promote and protect cultural beliefs and practices, and resources of native Hawaiians as well as other ethnic groups.

Kamehameha III (Kauikeaouli) preserved the peoples traditional right to subsistence. As a result, in 1850, the Hawaiian Government confirmed the traditional access rights to native Hawaiian *ahupua‘a* tenants to gather specific natural resources for customary uses from undeveloped private property and waterways under the Hawaiian Revised Statutes (HRS) 7-1. In 1992, the State of Hawai‘i Supreme Court, reaffirmed HRS 7-1 and expanded it to include, “native Hawaiian rights...may extend beyond the *ahupua‘a* in which a native Hawaiian resides where such rights have been customarily and traditionally exercised in this manner” [*Pele Defense Fund v. Paty*, 73 Haw.578, 620, 837 P.2d 1247, 1272 (1992)].

Act 50, enacted by the Legislature of the State of Hawai‘i (2000) with House Bill (HB) 2895, relating to Environmental Impact Statements, proposes that:

there is a need to clarify that the preparation of environmental assessments or environmental impact statements should identify and address effects on Hawai‘i’s culture, and traditional and customary rights... [H.B. NO. 2895].

Act 50 also requires state agencies and other developers to assess the effects of proposed land use or shoreline developments on the “cultural practices of the community and State” as part of the HRS Chapter 343 (2001) environmental review process. It also re-defined the definition of “significant effect” to include “the sum of effects on the quality of the environment including actions that impact a natural resource, limit the range of beneficial uses of the environment, that are contrary to the State’s environmental policies, or adversely affect the economic welfare, social welfare or cultural practices of the community and State.” Cultural resources can include a broad range of often overlapping categories, including places, behaviors, values, beliefs, objects, records, stories, etc. (H.B. 2895, Act 50, 2000).

GEOGRAPHICAL EXTENT

As defined by the Hawaii State Office of Environmental Quality Control (OEQC 2012:11), the geographical extent should be greater than the area over which the proposed project will take place in order to ensure that cultural practices that occur outside of the project area, but which may still be affected, are included in the assessment. For example, a project that may not itself physically impact traditional gathering practices but may block access to those locations would be included within the assessment. The concept of geographical expansion is recognized by using, as an example, “the broad geographical area, e.g. district or *ahupua‘a*.” In some cases, the geographical extent could extend beyond the *ahupua‘a* if cultural practices do so as well.

ENVIRONMENTAL REVIEW PROGRAM GUIDELINES FOR ASSESSING CULTURAL IMPACTS

According to the Guidelines for the ERP (OEQC 2012:12):

The types of cultural practices and beliefs subject to assessment may include subsistence, commercial, residential, agricultural, access-related, recreational, and religions and spiritual customs. The types of cultural resources subject to assessment may include traditional cultural properties or other types of historic sites, both man made and natural, which support such cultural beliefs.

The meaning of “traditional” was explained by in *National Register Bulletin 38*:

“Traditional” in this context refers to those beliefs, customs, and practices of a living community of people that have been passed down through the generations’, usually orally or through practice. The traditional cultural significance of a historic property then is significance derived from the role the property plays in a community’s historically rooted beliefs, customs, and practices. . . [Parker and King 1998:1]

This CIA was prepared as much as possible in accordance with the suggested methodology and content protocol in the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). In outlining the “Cultural Impact Assessment Methodology,” the OEQC (2012:11) states that:

information may be obtained through scoping community meetings, ethnographic interviews and oral histories

This Cultural Impact Assessment was prepared in accordance with the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). The Guidelines recommend that preparers of assessments analyzing cultural impacts adopt the following protocol:

- Identify and consult with individuals and organizations with expertise concerning the types of cultural resources, practices and beliefs found within the broad geographical area, e.g., district or *ahupua‘a*;

- Identify and consult with individuals and organizations with knowledge of the area potentially affected by the proposed action;
- Receive information from or conduct ethnographic interviews and oral histories with persons having knowledge of the potentially affected area;
- Conduct ethnographic, historical, anthropological, sociological, and other culturally related documentary research;
- Identify and describe the cultural resources, practices and beliefs located within the potentially affected area; and
- Assess the impact of the proposed action, alternatives to the proposed action, and mitigation measures, on the cultural resources, practices and beliefs identified.

CULTURAL IMPACT ASSESSMENT CONTENTS

The ERP Guidelines state that an assessment of cultural impacts should address, but not be limited to the following:

- Discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.
- Description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.
- Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.
- Biographical information concerning the individuals and organizations consulted their particular expertise and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.
- Discussion concerning historical and cultural source materials consulted, the institutions and repositories searched and the level of effort undertaken. This discussion should include, if appropriate, the particular perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.
- Discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.
- Discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.

- Explanation of confidential information that has been withheld from public disclosure in the assessment.
- Discussion concerning any conflicting information in regard to identified cultural resources, practices and beliefs.
- Analysis of the potential effect of any proposed physical alteration on cultural resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.
- A bibliography of references and attached records of interviews which were allowed to be disclosed.

If on-going cultural activities and/or resources are identified within the project area, assessments of the potential effects on the cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

PROJECT METHODOLOGY

This report contains archival and documentary research, as well as communication with organizations and individuals having knowledge of the project area, its cultural resources, and its practices and beliefs. An example of the initial letter of inquiry is presented in Appendix A, which briefly describes the purpose of the CIA, the consultation process, and the proposed project, is presented in Appendix A and an example of the follow up letter is presented in Appendix B. A copy of the posted CIA newspaper notice is presented in Appendix C. This Cultural Impact Assessment was prepared in accordance with the suggested methodology and content protocol provided in the Guidelines for Assessing Cultural Impacts (OEQC 2012:13), whenever possible. The assessment concerning cultural impacts may include, but not be limited to the following items discussed below.

ARCHIVAL RESEARCH

Archival research focused on a historical documentary study involving both published and unpublished sources. These included legendary accounts of native and early foreign writers; early historical journals and narratives; historic maps, land records, such as Land Commission Awards, Royal Patent Grants, and Boundary Commission records; historic accounts, and previous archaeological reports.

Historical and cultural source materials were extensively used and can be found listed in the References Cited portion of this report. Such scholars as Samuel Kamakau, Martha Beckwith, Jon J. Chinen, Lilikalā Kame‘eleihiwa, R. S. Kuykendall, Marion Kelly, E. S. C. Handy and E.G. Handy, John Papa ‘Ī‘i, Gavin Daws, A. Grove Day, and Elspeth P. Sterling, and Mary Kawena Puku‘i and Samuel H. Elbert continue to contribute to our knowledge and understanding of Hawai‘i, past and present.

The works of these and other authors were consulted and incorporated in this report where appropriate. Historic land use document research was supplied by the Waihona ‘Aina (2021) Database, the Office of Hawaiian Affairs Kipuka Database (2021), and the County of Maui County Real Property Assessment Division Database (2021).

INTERVIEWS

In general, interviews are conducted in accordance with Federal and State laws and guidelines when knowledgeable individuals are able to identify traditional cultural practices and/or resources procured in the project area or in the environs. If they have knowledge of traditional stories, practices and beliefs, and resources associated with a project area or if they know of historical properties within the project area, they are sought out for additional consultation and interviews. Individuals who have particular knowledge of traditions passed down from preceding generations and a personal familiarity with the project area are invited to share their relevant information concerning particular cultural resources. Often people are recommended for their expertise, and indeed, organizations, such as Hawaiian Civic Clubs, the Island Branch of Office of Hawaiian Affairs (OHA), historical societies, Island Trail clubs, and Planning Commissions are depended upon for their recommendations of suitable informants. These groups are invited to contribute their input and suggest further avenues of inquiry, as well as specific individuals to interview. It should be stressed again that this process does not include formal or in-depth ethnographic interviews or oral histories as described in the ERP’s *Guidelines for Assessing Cultural Impacts* (2012). The assessments are intended to identify potential impacts to ongoing cultural practices, or resources, within a project area or in its close vicinity.

If knowledgeable individuals are identified, personal interviews are sometimes taped and then summarized. These draft summaries are returned to each of the participants for their review and comments. After corrections are made, each individual is to sign an information release form, making the interview available for this study. When telephone interviews occur, a summary of the information is also sent for correction and approval or dictated by the informant and then incorporated into the document. If no cultural resource information is forthcoming and no knowledgeable informants are suggested for further inquiry, interviews are not conducted.

KA PA‘A KAI O KA‘AINA V. LAND USE COMM’N, STATE OF HAWAII

The Land Use Commission (LUC) is also required to apply the analytical framework set forth by the Hawaii Supreme Court in *Ka Pa‘akai O Ka‘Aina v. Land Use Comm’n, State of Hawai‘i*, 94 Hawai‘i 31, 7 P.3d 1068 (2000) (hereinafter, “*Ka Pa‘akai*”). In this case, a coalition of native Hawaiian community organizations challenged an administrative decision by the Land Use Commission (the “LUC”) to reclassify nearly 1,010 acres of land from conservation to urban use, to allow for the development of a luxury project including upscale homes, a golf course, and other amenities. The native Hawaiian community organizations appealed, arguing that their native Hawaiian members would be adversely affected by the LUC’s decision because the proposed development would infringe upon the exercise of their traditional and customary rights. Noting that “[a]rticle XII, section 7 of the Hawaii Constitution obligates the LUC to protect the reasonable exercise of customarily and traditionally exercised rights of native Hawaiians to the extent feasible when granting a petition for reclassification of district boundaries,” the Hawai‘i Supreme Court held that the LUC did not provide a sufficient basis to determine “whether [the agency] fulfilled its obligation to preserve and protect customary and traditional rights of native Hawaiians” and, therefore, the LUC “failed to satisfy its statutory and constitutional obligations.” *Ka Pa‘akai*, 94 Hawai‘i at 46, 53, 7 P.3d at 1083, 1090.

The Hawai‘i Supreme Court in *Ka Pa‘akai* provided an analytical framework in an effort to effectuate the State’s obligation to protect native Hawaiian customary and traditional practices while reasonably accommodating competing private interests. In order to fulfill its duty to preserve and protect customary and traditional native Hawaiian rights to the extent feasible, the LUC must—at a minimum—make specific findings and conclusions as to the following:

- A. the identity and scope of “valued cultural, historical, or natural resources” in the petition area, including the extent to which traditional and customary native Hawaiian rights are exercised in the petition area;
- B. the extent to which those resources—including traditional and customary native Hawaiian rights—will be affected or impaired by the proposed action; and
- C. the feasible action, if any, to be taken by the LUC to reasonably protect native Hawaiian rights if they are found to exist.

See *Ka Pa‘akai*, 94 Hawai‘i at 47, 7 P.3d at 1084.

To fulfill these purposes outlined by Ka Pa'akai, the Cultural Impact Assessment has reviewed historical research and suggestions from contacts knowledgeable about traditional cultural practices which were conducted within the project area corridor and in the surrounding environs. The potential effect of the proposed project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place has been analyzed, as required by the ERP (2012).

ENVIRONMENTAL SETTING

The Island of Maui ranks second in size of the eight main islands in the Hawaiian Archipelago (Stearns 1966:155, Handy and Handy 1972:485). Maui Island was formed by two volcanoes, Pu'u Kukui in the west and Haleakalā in the east. Pu'u Kukui stands 1,215 meters (m.) above mean sea level (amsl.) is composed of large, heavily eroded amphitheater valleys that contain well-developed permanent stream systems that watered fertile agricultural lands extending to the coast. The isthmus between the two volcanoes is primarily composed of alluvial fans made of out-washed silts and gravels overlain by coralline sands blown inland from the coast. Lower sand strata have become firmly lithified, forming a soft rock known as eolianite (Stearns 1966:10).

Pu'u Kukui (from Hawaiian, "candlenut peak") dominates the western part of the island, rising to 1,764 m (5,788 ft) above mean sea level (amsl). The West Maui Mountains (Mauna Kahaiawai) are surrounded by large, heavily eroded amphitheater valleys that sustain permanent stream systems and fertile agricultural lands extending to the coasts.

Haleakalā soars 2,727 m (10,023 ft) amsl, forming the larger eastern section of the island. The flanks of Haleakalā are distinguished by gentle slopes. Although they receive more rain than their counterparts in the west, the permeable lavas of the Honomanū and Kula Volcanic Series prevent the formation of rain-fed perennial streams. Thus, the few perennial streams found on the windward side of Haleakalā originate from springs located at lower elevations, while valleys and gulches on the leeward side were formed by intermittent water run-off.

PROJECT AREA

The proposed project area is located in the village of Kīhei, along the western coast of South Maui. Wastewater Pump Station 2 (WWP2), located on the southeast side of the Uwapo Road and South Kīhei Road intersection is the northern terminus of the project area. The Kīhei Wastewater Reclamation Facility is the southern terminus of the project area. Elevation in the project area ranges from approximately 19 ft (6 m) amsl at WWP2 to approximately 121 ft (37 m) amsl at the Kīhei Wastewater Reclamation Facility. Distance from the coast ranges from approximately 199 ft (0.60 km), at its closest point to the Pacific Ocean to approximately 4,342 ft. (1.32 km.), at its farthest distance from the coastline, at the Kīhei Wastewater Reclamation Facility.

The project area corridor is managed by the County of Maui, Department of Public Works. It primarily consists of previously disturbed ground along the western coast of East Maui. WWPS No. 3 is located in the southeastern corner of TMK: (2) 3-9-001:147 at the edge of Kalepolepo Park, adjacent to South Kīhei Road. WWPS No. 2 is located within TMK (2) 3-8-077:011. WWPS No. 4 is located in (TMK (2) 3-9-002:139, and No. 5 is located in TMK (2) 3-9-027:028, and beneath existing County ROWs).

TOPOGRAPHY AND SOILS

Characteristic of the coastal area of Kīhei, the topography of the project area is relatively flat or slightly sloped. The project area traverses several different environmental zones, extending south from the Kēalia Pond area through central and South Kīhei. Natural soil regimes in the corridor change and several series are present. At the Kīhei Wastewater Reclamation Facility, located inland at the southern project area terminus, soils are stony and silty clay is predominant. As the corridor runs west and north along Liloa Drive, silty clay and silt loams are more common. From Pi'ikea Avenue to the west and near coastal reaches, silty loam is common, and as the project extends to its terminus at WWPS No. 2, the northern project terminus, silty loam, beach sand, and Jaucas sand become the most common varieties.

Foote et al. (1972, Sheets 107 and 108) identify six types of Soil Series within the project area: Pulehu, Kealia, Alae, Waiakoa, Jaucas, and Puuone sands (Figure 4). WWPS No. 2 is located within soils of the Pulehu Series, specifically, Pulehu silt loam, 0-3 percent slope (PpA). The eastern (mauka) segment of the project corridor located in the southern half of the project area is located in Pulehu clay loam, 0-3 percent slope (PsA). Soils of the Pulehu Series are well-drained, level to moderately sloping soils of volcanic origin. They occur on alluvial fans, stream terraces, and in basins between seal level and 300 ft. amsl on areas receiving 10 to 35 inches rainfall annually. In general, these soils are used to cultivate sugarcane, vegetables and fruit and as ranchlands, residential areas, and are wildlife habitats (Foote et al. 1972:115). Both the PsA and

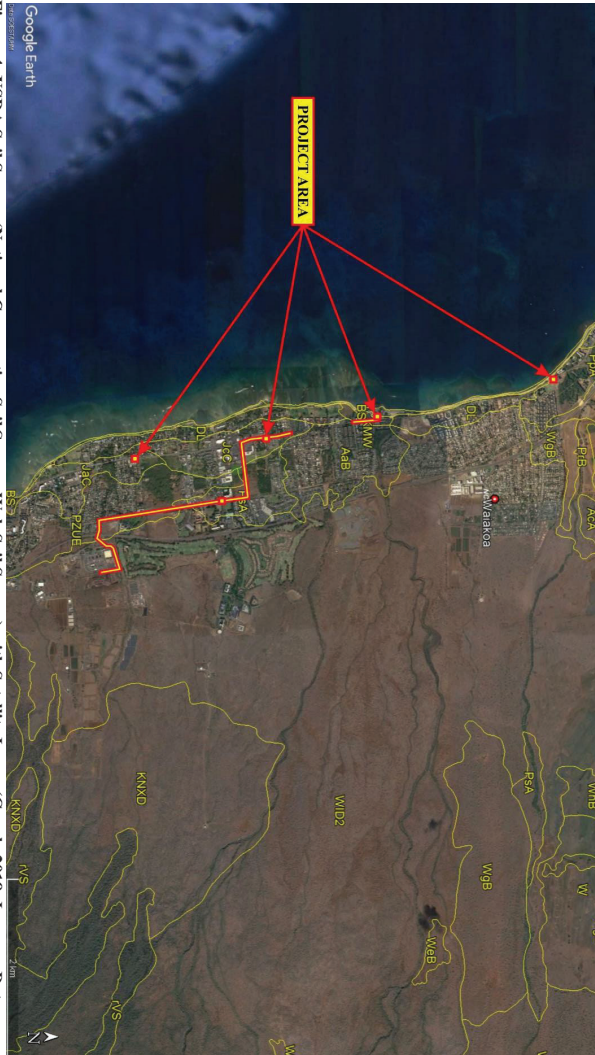


Figure 4: USDA Soil Survey (National Cooperative Soil Survey, Web Soil Survey) with Satellite Image (Google 2018; Imagery Date 7/20/2016) Overlay Showing Soil Types within the Project Area and Surrounding Environs.

PpA soils exhibit moderate permeability, slow runoff, and no more than slight erosion hazard (Foote et al. 1972: 116).

WWPS No. 3 is located in soils of the Kealia Series, specifically in the poorly drained variety Kealia silt loam (KMW). The soils of the Kealia Series occur between sea level and 10 ft. amsl in areas receiving 10 to 25 inches of annual rainfall. These low-lying coastal soils exhibit high salt content, brackish water table, and are moderately alkaline. The water table fluctuate with the tides, and low-lying areas experience ponding after heavy rains. Areas containing these soils are usually developed into urban areas, ranchlands, and are wildlife habitats (Foote et al. 1972:67). A short segment of sewer lines extending from WWPS No. 3 is located in soils of the Alae Series, specifically Alae sandy loam, 3 to 7 percent slope (AaB). The AaB soils are similar to the Alae cobbly sandy loam, 0 to 3 percent slope soils. However, there are no cobblestones on the surface, but the surface layer has few to many pebble-size rock fragments (Foote et al. 1972: 26). The AaB soils exhibit slow runoff and slight erosion hazard. Soils of the Alae Series can be found between 50 to 600 ft. amsl in area receiving 12 to 20 inches of rainfall annually. These soils are generally used in sugarcane cultivation and as ranchlands (Foote et al. 1972:14).

Soils of the Jaucas Series underlies WWPS Nos. 4 and 5 are located in soils of the Jaucas Series. WWPS No. 4 is located in Jaucas sand, saline, 0 to 12 percent slopes (JcC), and WWPS No. 5 is located in Jaucas sand, 0 to 15 percent slopes (JaC). The Jaucas Soils are excessively drained, calcareous soils of aeolian and aquatic origin that can be found as narrow on coastal plains (Foote et al. 1972:48, 49). Soils of the Jaucas Series are used for the cultivation of sugarcane, fruits and vegetables, alfalfa, and as ranchlands, recreational areas, wildlife habitats, and residential development (Foote et al. 1972:48).

The eastern (mauka) portion area in the vicinity of the Kīhei Wastewater Reclamation Facility is in located in soils of the Waiakoa Series, specifically Waiakoa extremely stony silty clay loam, 3 to 25 percent slopes, eroded (WID2). In general, soils of the Waiakoa Series are well-drained soils of volcanic origin. They can be found in upcountry Maui between 100 to 1,000 ft. amsl. in areas receiving 12 to 20 inches of annual rainfall. Areas containing soils of the Waiakoa Series are utilized for the cultivation of sugarcane, ranchlands, residential areas, and as wildlife habitat (Foote et al. 1972:126).

The western (makai) portion of the southern-most part of the project area is located in Puuone sands, specifically Puuone sand, 7 to 30 percent slopes (PZUE). Soils of the Puuone series are formed from marine organisms – coral and mollusks and occur between 50 and 350 ft. amsl in areas receiving 20 to 30 inches of rainfall annually (Foote et al. 1972: 117). The PZUE soils are well drained, exhibit rapid permeability, and are subject to moderate to severe wind erosion hazard. In general, areas located in Puuone Sand are most often used for residential developments and as ranchlands.

CLIMATE AND HYDROLOGY

The coastal area of Kihei is generally warm and sunny. Temperatures in the project area range from an average of 21.8°C (71.3°F) in January and February to an average of 25.8°C (78.5°F) in August, with an annual average of 23.9°C (74.9°F) (Giambelluca et al. 2014).

According to Giambelluca et al. (2013), the project area receives approximately 287.55 mm (11.32 in) of rainfall annually. Distribution is unequal. During the winter months of November through March, the project area receives most of its rainfall ranging from about 25.74 mm (1.01 in) for March to 69.54 mm (2.74 in) for January. Kihei receives the least rainfall in the summer with July averaging mere 2.96 mm (0.12 in) in the project area. Thus, there is a pronounced rain shadow effect as a result of Haleakalā, while the seasonal variation in rainfall amount follows normal orographic patterns for the leeward areas of Maui.

TRADITIONAL AND HISTORICAL CULTURAL CONTEXT

Traditionally, the Hawaiian economy was based on agricultural production and marine exploitation, as well as raising livestock and collecting wild plants and birds. Extended household groups settled in various ahupua'a. During the pre-Contact Period, there were primarily two types of agriculture, wetland and dry land, both of which were dependent upon geography and physiography. River valleys provided ideal conditions for wetland *kalo* (*Colocasia esculenta*) agriculture that incorporated pond fields and irrigation canals. Other cultigens, such as *kō* (sugar cane, *Saccharum officinarum*) and *mai'a* (banana, *Musa* sp.), were also grown and, where appropriate, such crops as 'uala (sweet potato, *Ipomoea batatas*) were produced. This was the typical agricultural pattern seen during the pre-Contact Period on all the Hawaiian Islands (Kirch and Sahlins 1992, Vol. 1:5, 119; Kirch 1985).

PAST POLITICAL BOUNDARIES

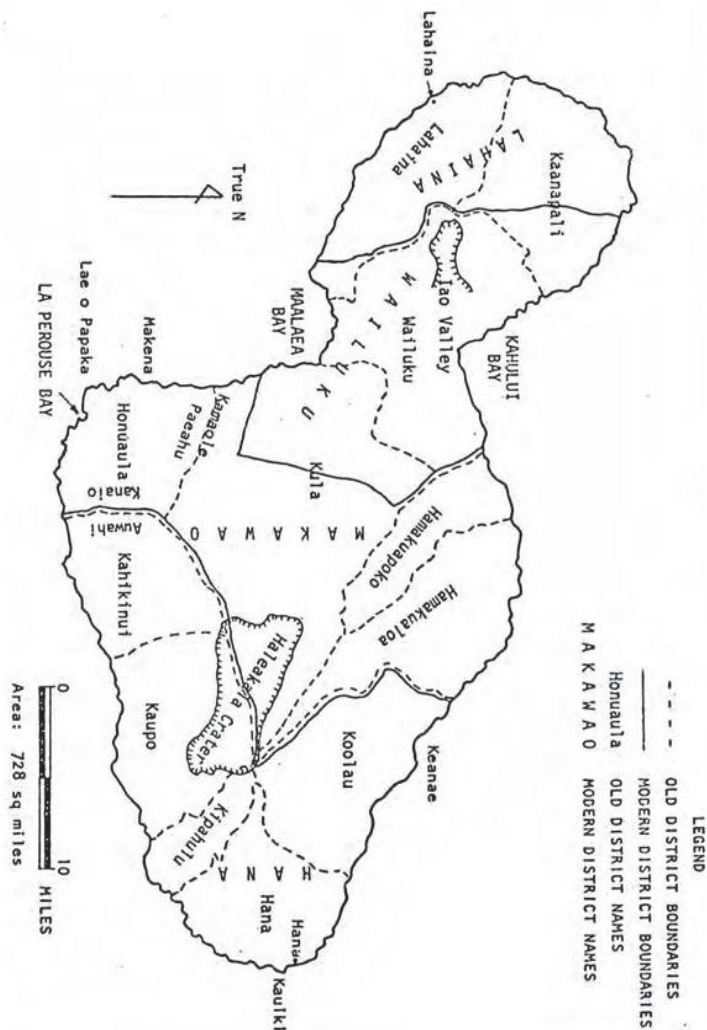
Traditionally, several general terms, such as moku, ahupua'a, 'ili or 'ili 'āina were used to delineate various land sections. A moku contained smaller land divisions (ahupua'a), which customarily continued inland from the ocean and upland into the mountains. Extended household groups living within the ahupua'a were therefore, able to harvest from both the land and the sea. Ideally, this situation allowed each ahupua'a to be self-sufficient by supplying needed resources from different environmental zones (Lyons 1875:111). The 'ili 'āina or 'ili were smaller land divisions next to importance to the ahupua'a and were administered by the chief who controlled the ahupua'a in which it was located (Lyons 1875: 33; Lucas 1995:40). The mo'o'āina were narrow strips of land within an 'ili. The land holding of a tenant or hoa 'āina residing in an ahupua'a was called a kuleana (Lucas 1995:61).

Approximately 600 years ago, the Island of Maui was divided into twelve districts: Lāhainā, Kula, Honua'ula, Kahikinui, Kaupō, Kīpahulu, Hāna, Ko'olau, Hāmākualoa, Hāmākuapoko, Wailuku, and Kā'anapali (Sterling 1998:3; Figure 5). The division of Maui Island lands into districts and sub-districts was performed by Kalaiha'ōhia, a kahuna (priest, expert), during the time of the ali'i (chief) Kaka'alaneo (Beckwith 1979:383; Fornander [1919-20, Vol. 6:248] places Kaka'alaneo at the end of the 15th century or the beginning of the 16th century). Land was considered the property of the king or ali'i 'ai moku (literal translates as "the ali'i who eats the island/district"), which he held in trust for the gods. The title of ali'i 'ai moku ensured rights and responsibilities to the land but did not confer absolute ownership. The king kept the parcels he wanted, his higher chiefs received large parcels from him and, in turn, distributed smaller parcels to lesser chiefs. The maka'āinana (commoners) worked the individual plots of land.

Following the Civil Code of 1859, the twelve districts were consolidated into four districts: Lāhainā, Wailuku, Makawao, and Hāna (Sterling 1998:3), which form the modern districts in place today. According to Sterling 1998:3):

In the Maui group, the twelve ancient districts of the island of Maui were reduced to four by combining Kaanapali with Lahaina, adding to it at the same time the island of Kahoolawe; by retaining in the Wailuku district the *ahupuaas* of Waihee, Waichu, Wailuku and Waikapu but for some reason adding to it the ancient district of Honuaula though separated from Wailuku by the intervening district of Kula; by consolidating the districts of East Maui into one and the districts of central East Maui into another.

Figure 5: Traditional and Modern Districts of Maui (c. 1875; from Barrère 1975:31).



Thus, the North Kihei Mauka Transmission System project area encompasses two districts. The norther portion of the project area, the location of WWPS No. 2 is located in the Ahupua'a of Pūlehunui, in the traditional and modern District of Wailuku, while the remainder of the project area is located in the traditional District of Kula, which is now referred to as the District of Makawao.

TRADITIONAL SETTLEMENT PATTERNS

Archaeological settlement pattern data suggests that initial colonization and occupation of the Hawaiian Islands first occurred on the windward shoreline areas of the main islands between A. D. 850 and 1100, with populations eventually settling in drier leeward areas during later periods (Kirch 2011). Although coastal settlement was dominant, native Hawaiians began cultivating and living in the upland kula (plains) zones. Greater population expansion to inland areas began around the 14th century and continued through the 16th century. Large scale or intensive agriculture was implemented in association with habitation, religious, and ceremonial activities.

In Hawai'i, much of the coastal lands were preferred for chiefly residence. Easily accessible resources such as offshore and onshore fishponds, the sea with its fishing and surfing—known as the sports of kings, and some of the most extensive and fertile wet taro lands were located in the coastal areas (Kirch and Sahlins, 1992 Vol. 1:19). Inland resources necessary for subsistence could easily be brought to the ali'i residences on the coast from nearby inland plantations. The majority of farming was situated in the lower portions of stream valleys where there were broader alluvial flat lands or on bends in the streams where alluvial terraces could be modified to take advantage of the stream flow. Dry land cultivation occurred in colluvial areas at the base of gulch walls or on flat slopes (Kirch 1985; Kirch and Sahlins 1992, Vol. 2:59).

PRE-CONTACT PERIOD (PRE-1778)

The period of time from the initial colonization and occupation of the Hawaiian Islands between A. D. 850 and 1100 (Kirch 2011) to the 1778 arrival of Captain James Cook in the Hawaiian Islands is referred to as the pre-Contact Period.

Before the unification of the Island of Maui by the ali'i Pi'ilani in the late 1500s, Maui was ruled by two separate kingdoms—one centered in Hāna on the windward coast and one in Wailuku. Fornander claims that the ali'i (chiefs) of East Maui traced their origins to Kalahuimoku, a Hawai'i Island chief who had emigrated to Hāna, while those in West Maui to an older Maui line (Fornander 1880, Vol. 2: 78–79). Along with consolidating power on the island, Wailuku's chief, Pi'ilani, also raised Maui's political status in the archipelago by ruling judiciously and using his connections with the reigning chiefly families of O'ahu and Hawai'i (Fornander 1916/1917, Vol. 2: 87).

The 18th century was characterized by frequent warfare and rivalry between the mō'i (ruling chief) of Maui and Hawai'i Island. Kekaulikenui, the mō'i of Maui constructed the luakini heiau (human sacrifice), Kanemalohemo, at Popoiwi and the war heiau, or mamala koa, Loaloa and Pu'umaka'a at Kumunui and Poho'ula (Kamakau 1961: 66). According to Kamakau (1961:66):

Upon Ke-kau-like's return to Maui from his raid upon Kohala he made his home at Kaupo, intending to return to Hawaii and ravage Waipi'o and the Hamakua district, But God ordered it otherwise, for he was seized with a violent illness or epilepsy, called "Eyes drawn heaven-ward" (ka-maka-huki -lani), which defied the skill of doctors. Hence the succession to the land was settled at Mokulau in Kaupo, and Kamehameha-nui, the old brother of Ka-hekili, was made ruler over the land of Maui.

Maui experienced a period of relative peace and prosperity before the conflict returned with the wars between Kahekili (c. 1737–1794), who was another son of Kekaulike's, and Hawai'i Island chief Kalani'ōpu'u. Shortly before the arrival of Captain James Cook, Kalani'ōpu'u's armies from Hawai'i Island had landed and plundered the district of Honua'ula, south of the project area. He then moved to Ma'alaea Bay, from where the chief planned to invade Wailuku (Fornander 1916/1917, Vol. 2: 147-157). After losing two battles to Kahekili, Kalani'ōpu'u welcomed a truce, concentrating his efforts on the eastern side of Maui, protecting Hāna and Kīpahulu, which were his spoils from an earlier battle in 1759 (Fornander 1916/1917, Vol. 2: 147).

Kahekili's successful military expansion paved the road for the future unification of the islands under Kamehameha I. At the same time, it exhausted the population and strained its resources. The people of Kula in particular rose up against the excesses of constant warfare toward the end of Kahekili's reign. According to Kamakau (1961:42):

During this period, there were disturbances among the country people, not only on Oahu but also on Maui. The trouble arose through one of the lesser chiefs (*kaukauali'i*) named Ku-keawe, a favorite (*ai kāne*) of Kahekili to whom Kahekili had given the privilege of letting his pigs run over the land of Kula and roasting them as he needed them. But he seized also the pigs belonging to the country people of Kula, Honua'ula, and Kahikinui, as far as Kaupo, and went with a large party to rob them of their wealth even with violence. This was the cause of the uprising of the country people called the "Battle of the pig-eating of Ku-keawe" (*'Aipua'a-o-Ku-keawe*).

WAILUKU DISTRICT

The District of Wailuku inhabits the eastern side of the West Maui Mountains (Mauna Kahaiawai) and occupies the isthmus through the center of the island to the coastal reaches in Kahului, on the north, and Mā'alaea, on the south. Wailuku District is frequently mentioned in historical texts and oral traditional accounts as being politically, ceremonially, and geographically important areas during the pre-Contact Period (Cordy 1981, 1996; Kirch 1985). The number of heiau constructed in the Wailuku area point to its ceremonial and religious importance during the pre-Contact Period (pre-1778).

The history of the ahupua'a of Waikapū, Waihe'e, Waiehu, and Wailuku are quite intertwined. These four ahupua'a are collectively known as the Nā Wai 'Ehā, or "the four waters" (Handy and Handy 1972:497, Kame'elehiwa 1992; Pukui and Elbert 1986; and Creed 1993). This area is ...comprised the four great valleys [Waihe'e, Waiehu, Wailuku, and Waikapū] which cut far back into the slopes of West Maui and drain the eastward watershed of Pu'u Kukui and the ridges radiating northeastward, eastward, and southeastward from it" (Handy and Handy 1972:496). This area was the second of the traditional five major population centers on the Island of Maui (Handy and Handy 1972:272).

No discussion of Wailuku District is complete without mentioning the important heiau complex above 'Īao Valley near its seaward terminus. During the mid to late 18th century, the Halekii-Pihana heiau complex was supposedly designed by a Hawaiian named Kiha (Sterling 1998:89). These monuments designated as State Site 50-50-04-522 are described as very important heiau within Hawaiian history. Yent (1983:7) notes the life cycle of the ali'i was represented here. It was the place where Kamehameha I's wife (Keōpuolani) was born, Kahekili lived, and Kekaulike died. Thrum (1909:46) reported that Kamehameha I evoked his war god at Pihana Heiau after his warriors defeated Kalanikupuli's forces during the Battle of 'Īao in 1790. The two heiau are primarily associated with Kahekili, who is connected with the Halekii-Pihana complex between c. A.D. 1765 and 1790, and Kamehameha, during his conquering of Maui in 1792 (Yent 1983:18).

PŪLEHU NUI AHUPUA'A

The WWPS No. 2 is located in the ahupua'a of "Pūlehu Nui." Since "pūlehu" translates as "to broil" and "nui" means "large" (Pukui et al.:1974: 353), the name might refer to the intensity of the sun in this area. The ahupua'a extends across the Kula plain up through Makawao, to the edge of Haleakalā and would have included agriculturally productive areas, and not just the semiarid plains. Of note is that historically the "ancient and true" western boundary of Pūlehu Nui Ahupua'a was disputed by the owners of the adjacent land of Waikapū, and was settled in court by the Commissioner of Boundaries in 1897 (J. McCully cited in Sterling 1998: 254-257). The point of contention was the western boundary line claimed by the owners of Waikapū Ahupua'a

which cut Pūlehu Nui Ahupua'a "off from the sea." After listening to the testimonies of many witnesses, the Boundary Commissioner determined that the western boundary of Pūlehu Nui "includes about 2,000 feet along the sea coast from a sand spit known as Kīhei to a point of rocks called Kalaepohaku" (J. McCully cited in Sterling 1998: 254-257).

"Fishpond systems were a vital component of Hawai'i's pre-contact native Hawaiian communities" (Watson 2012). Keālia Pond National Wildlife Refuge is a coastal salt marsh located along the southern coast of central Maui, near the border between Wailuku District and Kula. At one time Keālia was a large fishpond fed by the water of Kolaloa Gulch located on the southern border of the project area. According to Ashdown (1970:69), a legend states that:

Kealia was the huge fishpond attributed to King Umi-a-Loa after the death of Piilani in Lahaina. The reason it was called the pond of Ka-lepo-lepo was, in one story, that Umi made his people carry him atop the huge *akua-stone* which was to be placed at one part of the pond. The load was so heavy that the workmen dropped it and the king fell into the dust (lepo-lepo). Others have insisted that the great chief never did suffer such an indignity, like a commoner, but that the name should be Kalepa, meaning the fluttering of the flags of canoes there when the area was a port of call since ancient times. The Kalepolepo name has remained in use because it is such a windblown and dusty area since the plowing of that whole central valley of Maui

TRADITIONAL DISTRICT OF KULA

Taken literally, "kula" means "pasture" and refers to open land or plains (Pukui and Elbert 1992:70). The height of Haleakalā to the east prevents moisture from reaching its southern and western flanks, causing the semiarid conditions of leeward Maui, including the project area. Kula is most often described in the literature as a dry environment. According to Handy and Handy (1972:10):

This is an essential characteristic of Kula, the central plain of Maui which is practically devoid of streams.

Kula was always an arid region, throughout its long, low seashore, vast stony *kula* lands, and broad uplands.

Kula is characterized by its dry, semiarid lands that are vacant of perennial streams. In fact, the word kula is also used in general to describe lands that are dry and inaccessible to water other than rainfall (Malo 1951). According to Handy and Handy (1972:510), the word was often used to differentiate between dry land and wet-taro land. Handy (1940:105) also stated that, "the bounds of cultivation ... were strictly drawn by limitation of water for irrigation."

Of note, H. Korte, former Maui District Forester for the Department of Land and Natural Resources (cited in Sterling 1998:245), presents a much different description of the Kula environment prior to 1850:

...before 1850 Kula was supplied with moisture naturally through the existence of a large forest. "That forest was cut down when land was cleared in Kula to open farm plots in 1850. This was in answer to the demand for food in California during the gold rush," Korte explained.

He said the explanation can be found in old records, which he has seen. "The destruction of the forest in Kula was completed by the ranchers clearing for pasture," Korte said.

Before the forests were cut down, he said, it was possible to fill a sizable tank with water from cloud drip in Kula during one night.

A secondary result of the clearing of the Kula forests, he said, was the destruction of extensive fresh water ponds in Kīhei, on the Maalaea Bay coast below Kula.

When the forest was cleared, water was free to rush down the mountain, carrying soil from Kula to the coast and filling with mud the ponds for which Kīhei was once famous.

According to Kolb et al. (1997), the key component of the economy in the district of Kula was dryland agriculture in and near the upland forests. Dryland agriculture typically utilized extensive stone and earthen embankments and was characterized by the regular rotation of crops and the heavy dependence on rainfall for irrigation (Kolb et al. 1997: 6). These traditional practices have been adapted to the semiarid conditions and the lack of perennial streams. In fact, kula is generally used to describe lands that are dry and inaccessible to water other than rainfall (Malo 1951). The inland settlers of Kula engaged in various agricultural activities, dominant among which was 'uala cultivation, supplemented by fishing.

Agricultural fields, habitation sites, and at least two heiau (shrines) identified as Kaumeheuiwa and Kaimupe'elua, were located in the vicinity of the proposed project area (Sterling 1998). In *The Hawaiian Planter*, Handy (1950:159) recorded:

On the south side of western Maui the flat coastal plain all the way from Kīhei and Ma'alaea to Honokahua, in old Hawaiian times, must have supported many fishing settlements and isolated fishermen's houses, where sweet potatoes were grown in the sandy soil or red lepo [soil] near the shore. For fishing, this coast is the most favorable on Maui, and, although a considerable amount of taro was grown, I think it is reasonable to suppose that the large fishing population, which presumably inhabited this leeward coast, ate more sweet potatoes than taro with their fish.

After revisiting the area several decades later, Handy and Handy (1972:510-511) stated:

Both on the coast, where fishing was good, and on the lower westward slopes of Haleakala a considerable population existed. So far as we could learn Kula supported no Hawaiian taro, and the fishermen in this section must have depended for vegetable food mainly on *poi* brought from the wet lands of Waikapu and Wailuku to westward across the plain to supplement their usual sweet-potato diet....Kula was widely famous for its sweet-potato plantations. ‘*Uala*’ was the staple of life here.

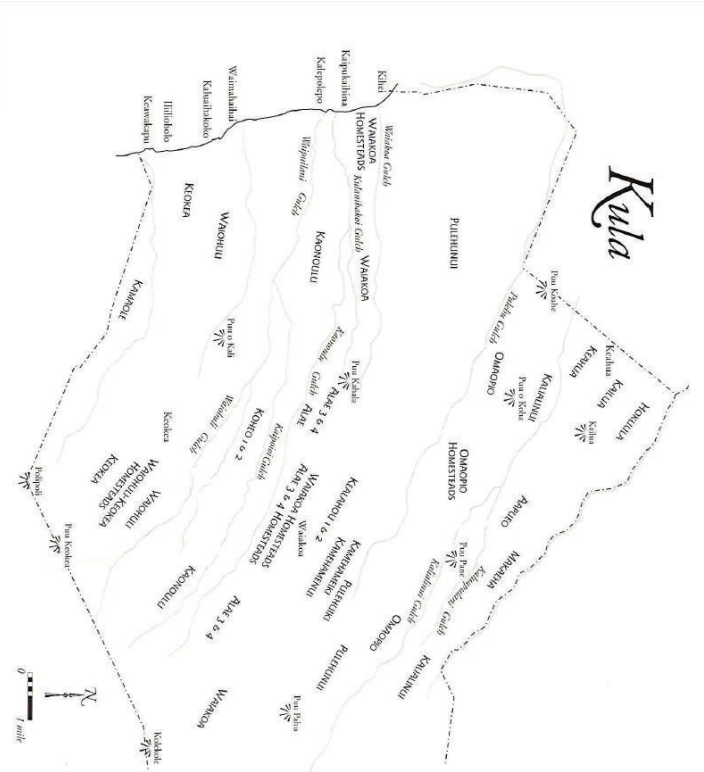
WAHI PANA (LEGENDARY PLACES)

“Wahi Pana” can be defined as celebrated or noted places or locations (Pukui and Elbert 1986:313, 376), and refers to legendary places or landmarks of historical significance. These places of note have distinctive features (i.e., mountain peaks, streams, wind, rain, etc.) that are given specific names through which the history of an area is passed down from generation to generation through chants, legends, and songs.

The project area is located in Kīhei (“cape, cloak”), which has traditionally been associated with a small area adjacent to a landing built in the 1890s (Clark 1980). Currently, “Kīhei” refers to a six-mile section along the coast from Waiakoa Gulch in the north to Keawakapu Beach in the south. There is little specific information pertaining directly to Kīhei, which was originally a small area adjacent to a landing built in the 1890s (Clark 1980). Scattered amongst the agricultural and habitation sites were places of cultural significance to the kama’āina of the district including two heiau, Kaumeheia and Kaimupeelua (Sterling 1998:250), initially identified by Walker:1930:278, 279).

During the pre-Contact Period, there was a small village at Kalepolepo (Figure 6) whose inhabitants subsisted primarily on marine resources (Pepalis and Kolb 2002:34). There were, also, several important fishponds in the Kīhei area; Waiohuli, Kēōkea-kai, and Kalepolepo Pond (also known by the ancient name of Kō’ie’ie Pond; Kolb et al. 1997). Constructed on the boundary between Ka’ono’ulu and Waiohuli Ahupua’a, these three ponds were some of the most important royal fishponds on Maui. The builder of Kalepolepo and two other ponds (Waiohuli and Kēōkea-kai) has been lost in antiquity, but they were reportedly rebuilt several times through history, beginning during the reign of Pi’ilani (1500s; Kolb et al. 1997; Cordy 2000).

Figure 6: Map of the Tradition District of Kula Showing Location of Kalepolepo Village (From Sterling 1978: 242).



Oral tradition recounts the repairing of the fishponds during the reign of Kiha-Pi'ilani, the son of the great ali'i Pi'ilani, who had bequeathed the ponds to Umi, ruler of Hawai'i Island. Umi's konohiki (land manager) ordered all the people from Maui to help repair the walls of Kalepolepo's fishponds. A man named Kikau protested that the repairs could not be done without the assistance of the menehune who were master builders (Wilcox 1921:66-67). The konohiki was furious and Kikau was told he would die once the repairs had been made. Kēōkea-kai was the first to be repaired. When the capstone was carried on a litter to the site, the konohiki rode proudly on top of the rock as it was being placed in the northeast corner of the pond. When it was time for repairs on Waiohuli-kai, the konohiki did the same. As the last pond, then known as Ka'ono'ulu-kai, was completed, the konohiki once again rode the capstone to its resting place. Before it could be put into position, the capstone broke throwing both the rock and konohiki into the dirt. The workers reportedly said "Ua konohiki Kalepolepo, ua eku i ka lepo" (the manager of Kalepolepo, one who roots in the dirt)" (Wilcox 1921:66). That night a tremendous storm threw down the walls of the fishponds. The konohiki implored Kikau to help him repair the damage. Kikau called the menehune who rebuilt the walls in one night. Umi sent for Kikau who lived in the court of Waipi'o valley from then on. The region of Kēōkea-kai and Ka'ono'ulu-kai Fishpond became known as Kalepolepo Fishpond (Wilcox 1921:66).

The Kalepolepo Fishponds were rebuilt by Kekaulike, chief of Maui in the 1700s. During that period of time, the Kalepolepo fishponds supplied 'ama'ama (mullet) to Kahekili. Kamehameha I subsequently restored Kalepolepo fishponds when he ruled as governing chief over Maui. The fishponds were restored for the final time in the 1840s, when prisoners from the Kaho'olawe penal colony were sent to do repairs (Kamakau 1961; Wilcox 1921). At this time, stones were taken from Waiohuli-kai pond for the reconstruction of Kalepolepo. It was here at Kalepolepo that Kamehameha I reportedly beached his victorious canoes after subduing the Maui chiefs. The stream draining into Keālia Pond (north of the project area) became sacred to royalty and kapu to commoners (Stoddard 1894).

Kalepolepo Pond was also associated with the mo'o (lizard) goddess Kihawahine Mokuhinia Kalama'ula Kalā'aiheana. Kihawahine, also called Mokuhinia, was once a living chiefess who was deified, shortly after her death, and "transfigured into... a goddess with the body of a mo'o. ...She was deified by the chiefs of Maui and Hawaii" (Kamakau 1964:85). Kihawahine was primarily associated with Mokuhinia, the pond at Moku'ula in Lahaina. However, she was one of the few mo'o who were able to travel and was often seen at Kalepolepo:

The mo'o Mokuhinia has been seen on Maui at Kapunakea, in Lahaina, and at Paukukalo and Kanaha in Wailuku; and she showed herself at Kalepolepo at the time that Kamehameha Kapuaiwa died. She has appeared before hundreds of thousands of people.

The ancient village of Kaluaihākōkō was located south of the village of Kalepolepo and involves Aihakoko, the son of the renowned ali'i Umi-a-loa, of the Island of Hawai'i. According to Forlander (1916-17:232):

When peace reigned in the government of Maui Umi-a-Liloa went back to Hawaii. And when he became very old the people of Hawaii hewed stones for a tomb for his body, for he had ordered his sons and his daughters, and the chiefs and people all over Hawaii and Maui, to hew oblong squared stones a fathom or more in length, a yard wide, and a half a yard deep... On account of this heavy tribute required by Hawaii the attendant of Aihakoko [son of Umi and Piikea] was killed by Kihapiilani.

Kamakau (1961:230) provides a slightly more descriptive account:

Kiha-Pi'i-lani despised 'Ai-hakoko and Ku-malae, the child ren of his sister Pi' i-kea-a-Pi'ilani, because they were born to 'Umi. 'Ai-hakoko was brought to Maui, but Kiha treated him with contempt and killed his favorite kahu; and 'Ai-hakoko died of grief for him and was buried at Kapa'ahu where is the burial cave of 'Ai-hakoko. The young people are mistaken in giving the Ka-lua-'Ai-hakoko to the coconut grove at Koa-kanu on the seacoast of Kama-'ole in Kula.

Handy and Handy (1972:336-337) report that, traditionally, Haleakalā Crater was a final resting place for the people of Kula and Honua'ula, the "Clan of Pele." These devotees would travel at night to the edge of the crater to throw the bones of their dead into the volcano. Traditional references to Kula also include a chant from the 1800s with the name of the frosty Nau wind that "descends from the uplands of Kula" (Nakuina 2005: 55). Inez Ashdown (1940:47) records that or another wind as "Hau."

Trails extended from the coast to the mountains, linking the two for both economic and social reasons. A trail known as the alanui or "long road" built by Kihapi'ilani, extended along the coast passing through all the major communities between Lāhainā and Mākena, including Kīhei. One trail, named "Kekuwaha'ula'ula" or the "red-mouthed god", extended from Kīhei inland to Kēōkea. Another, the Kalepolepo trail, began at the Kalepolepo Fishpond and continued to upland Waiohuli. These trails were not only used in the prior to 1778 and the introduction of westerners to the Hawaiian Islands, but were expanded to accommodate wagons bringing produce to the coast in the 1850s (Kolb et al. 1997:61).

POST-CONTACT PERIOD (POST-1778)

The Post-Contact Period in Maui begins in 1778 with British Explorer Captain James Cook's arrival in the Hawaiian Islands on his return from the extreme Northern Pacific (Daws 1974: 8). Written records (e.g., journals from explorers and missionaries) of the initial contacts between Hawaiians and Westerners are among the primary resources regarding traditional land use in the archipelago. Along with archaeological investigations and the Hawaiian oral tradition (mo'olelo), these documents provide invaluable information on early Hawaiian history and culture.

Following the 1778 arrival of Captain Cook, the internal affairs on the Island of Maui proceeded independently of any significant Western influence for some time. In fact, the height of Maui's political power in the Hawaiian Islands was reached during the reign of the ambitious Kahekili five years after the encounter with Captain Cook (Kolb et al. 1997: 3). After Kahekili's death in 1794, his realm succumbed to conflicts and the mounting pressure from Hawai'i's young chief Kamehameha I (Daws 1974: 38). In the following years, the descendants of Pi'ilani and the chiefly Maui families were, for the most part, robbed of their possessions, unless they surrendered to the Hawai'i Island conquerors (Fornander 1916/1917, Vol. 6: 310).

Among the first accounts is provided by Second Lieutenant on H.M.S. *Resolution* during Cook's third voyage James King. He briefly described what he saw from "eight or ten leagues" (approximately 28 to 34 miles) out to sea as his ship departed the islands in 1779. King observed animals, thriving groves of breadfruit, and the excellence of the taro and sugarcane in Pu'u Ōla'i, south of Kīhei. The distance and mentioning of breadfruit suggest that he observed the uplands of Kīpahulu-Kaupo and 'Ulupalakua (Beaglehole, 1967).

On May 29, 1786, J.F.G. Lapérouse became the first European in recorded history to set foot on Maui. After his two frigates, *La Boussole* and *L'Astrolabe*, landed at Keone'ō'io (La Perouse Bay) in Honua'ula District to the south, he was greeted by 120 natives offering his crew "hogs, potatoes, bananas...taro, with cloth and some other curiosities" (Lapérouse, 1798: 345). He also noted that the part of the island in the rain shadow of Haleakalā was hot, dry, and rough with soil "wholly composed of lava and other volcanic matter" (Lapérouse, 1798: 345). According to Lapérouse, water was scarce, and the villagers drank from a shallow, brackish well. Around the same time, but independently from him, former members of Captain Cook's staff Nathaniel Portlock, then captain of the ship *King George*, and George Dixon, captain of *Queen Charlotte*, sailed along the western coast of Maui. Unfortunately, they do not provide testimony contributing to our knowledge of the Kīhei coast.

An early witness to the lack of significant agricultural productivity on leeward Maui was Captain George Vancouver. During his second visit to Hawai'i in 1793 he anchored in Mā'alaea Bay, which he describes as follows (Vancouver 1984:852):

The appearance of this side of Mowee was scarcely less forbidding than that of its southern parts, which we had passed the preceding day. The shores, however, were not so steep and rocky, and were mostly composed of a sandy beach; the land did not rise so very abruptly from the sea towards the mountains, nor was its surface so much broken with hills and deep chasms; yet the soil had little appearance of fertility, and no cultivation was to be seen. A few habitations were promiscuously scattered near the water side, and the inhabitants who came off to us, like those seen the day before, had little to dispose of.

Not much had changed twenty-four years later (1817) when Peter Corney sailed this way bound for O'ahu. Corney (Corney 1965:70-71) made special reference to Keālia Pond (now part of the Keālia Pond and Wildlife Refuge), located a short distance southwest of the project area:

Next morning we passed Morokenee (Molokini), and made sail up Mackerey (Maalaea) bay.... This bay is very deep and wide, and nearly divides the island, there being but a narrow neck of land and very low, keeping the two parts of the island together.... On this neck of land are their principal salt-pans, where they make most excellent salt.

Archibald Menzies, a naturalist on Vancouver's HMS *Discovery*, wrote, "we had some canoes off from the latter island [Maui], but they brought no refreshments. Indeed, this part of the island appeared to be very barren and thinly inhabited" (Menzies 1920: 102). According to Kahekili, who at that time was still the sole ruler of Maui, the extreme poverty in the area was the result of the continuous wars that caused the land to be neglected and human resources to be wasted (Vancouver 1984: 856).

THE MĀHELE

During the mid-1800s, extreme modification to traditional land tenure occurred throughout all of the Hawaiian Islands. The transition from traditional Hawaiian communal land use to private ownership and division was commonly referred to as the Māhele (Division). The Māhele of 1848 set the stage for vast changes to land holdings within the islands as it introduced the foreign (western) concept of land ownership to the Islands. Although it remains a complex issue, many scholars believe that in order to protect Hawaiian sovereignty from foreign powers, Kamehameha III (Kamehameha III) established laws changing the traditional Hawaiian system of land tenure, which were intended to keep lands in the hands of the Hawaiians, but resulted in providing an opportunity for foreigners to obtain land (Kuykendall Vol. I, 1938:145 footnote 47, 152, 165–166, 170; Daws 1974:111; Kelly 1983:45; Kame'eleihiwa 1992:169–170, 176).

The Māhele of 1848 divided Hawaiian lands between the king, the chiefs, the government, and began the process of private ownership of lands. In January 1846, land was made available for eventual ownership to the commoners (maka'āinana). The subsequently awarded parcels were called Land Commission Awards (LCAs). Once lands were made available and private ownership was instituted, native Hawaiians, including the maka'āinana (commoners), were able to claim land plots upon which they had been cultivating and living, through the Kuleana Act of 1850. However, these process were lengthy and costly for the native Hawaiians that had been cultivating and living on the lands that had been entrusted to them, sometimes for generations, by the ali'i.

The process for foreigners to acquire land was through the Alien Landownership Act of 1850. These claims did not include any previously cultivated fallow land, stream fisheries, or many

other resources necessary for traditional survival (Kelly 1983; Kame‘eleihiwa 1992:295; Kirch and Sahlins 1992). If occupation could be established through the testimony of two witnesses, the petitioners were awarded the claimed LCA and issued a Royal Patent after which they could take possession of the property (Chinen 1961:16).

Once Article IV of the Board of Commissioners to Quiet Land Titles was passed in December 1845, the legal process of private land ownership was begun. The land division, called the Māhele, began in 1848. As stated above, the lands of the kingdom of Hawai‘i were divided among the king (crown lands), the ali‘i and konohiki, and the government.

Following the Māhele, ali‘i Keohokālole, the “principal heir of the Kona Uncles” was awarded numerous lands, most of which were located in the traditional District of Kula (Kame‘eleihiwa 1992: 245). Kamehameha III retained portions of Kula during the Māhele as “government lands;” Kēōkea and Waiohuli Ahupua‘a were designated Crown Land in 1848 and 1890 respectively, while Pūlehunui Ahupua‘a was relinquished as ceded in 1848 (Office of Hawaiian Affairs Kipuka Database 2021). Subsequently, Keaweamahele was awarded Pūlehunui Ahupua‘a in 1902 under LCA 5230 /Land Patent 8140. WWPS No. 2 is located in Pūlehunui Ahupua‘a.

According to the Waihona Aina 92021) and Office of Hawaiian Affairs’ Kipuka Online Database (2021), LCA 3237/Land Grant 7447, containing WWPS No. 3 and its vicinity, was awarded to H. Hewahewa in 1860. The LCA applied to the entire Ka‘ono‘ulu Ahupua‘a, except for kuleana claims (Office of Hawaiian Affairs Kipuka Database 2021). Awarded parcels included settlement (houses, potato patches, taro lands, and pastures (Colin et al. 2000: 17).

LAND GRANTS

In some cases, the Hawaiian government sold lands to generate income for the Kingdom. These lands were referred to as land grants. According to the Waihona Aina Online Database (2021):

At the time of the Mahele, some of the land was the King’s own land which later became known as Ceded Lands. Other lands in the possession of ali‘i were returned to the King in exchange for Commutation of property the ali‘i kept. Some of these returned lands became Government lands and were sold by the government to generate income for the Kingdom, since the King gave up his traditional right to collect taxes and goods following the Mahele.

The project area does not appear to be located within any Land Grants.

MID 19TH TO EARLY 20TH CENTURY

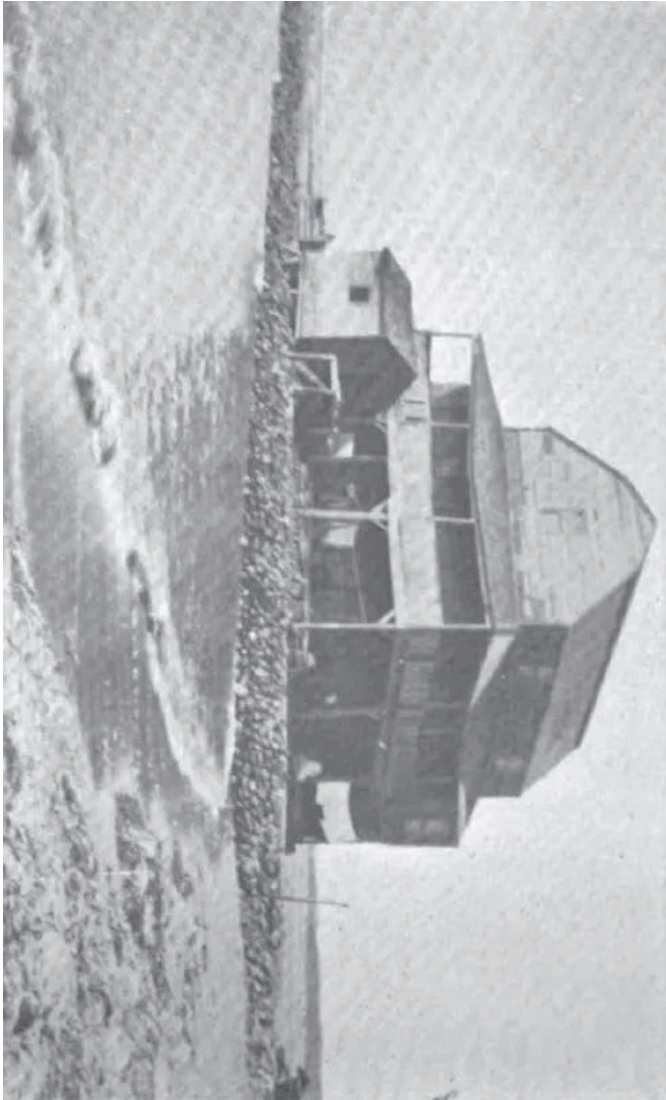
As Western influence grew in the late post-Contact Period, Kula developed new industries including whaling, Irish potato cultivation, ranching, and sugarcane cultivation. The coastal areas were impacted by commerce-related activities, such as businesses, hostels, and stores. Kolb et al. (1997:68-69) state that Kīhei was an important provisioning area through the 1850s, when the area became “a hub of activity for all of Kula.” Europeans and Americans were living on or frequently visiting the coast, and several churches and missionary stations were established.

According to Clark (1980:47), “from the 1840s to the 1860s a small whaling station was maintained at Kalepolepo,” taking advantage of the calving location of Ma‘alaea Bay. One Mr. John Joseph Halstead left medical school on the U.S. East Coast to become a whaler, moved to Hawai‘i, and, after marrying a granddaughter of Isaac Davis, settled in Kalepolepo on land given him by Kamehameha III (Kolb et al. 1997). After the start of the California gold rush of 1848, the demand for Irish potatoes and other food supplies increased and provided another economic opportunity for Kula. Halstead’s store flourished and provided an accessible port for exported produce. The Pennsylvania Dutch-style structure came to be known as the “Koa House,” as it was constructed out of koa (*Acacia koa*) logs brought from the uplands (Figure 7). The store was in operation until 1876. By 1887, however, the winds of fortune had begun to change. Wilcox (1921:67) writes:

The Kula mountains had become denuded of their forests, torrential winter rains were washing down earth from the uplands, filling with silt the ponds at Kalepolepo...ruins of grass huts [were] partly covered by drifting sand, and a few weather-beaten houses perched on the broad top of the old fish pond wall at the edge of the sea, with the Halstead house looming over them dim and shadowy in the daily swirl of dust and flying sand.

By the 1870s, whaling diminished, and the potato industry moved to Ulupalakua (Colin et al. 2000: 26). A result of deforestation, by the 1880s the lower parts of the district consisted primarily of pastureland, as the semiarid climate and paucity of inhabitants allowed for little else. Though ranching had been present in Kula before the 1840s, the industry took off at the end of the 19th century, when Haleakalā Ranch began utilizing many coastal areas (Donham 1990: 6). In 1888, Charles Alexander sold ranch lands to Edwin Bailey, W.H. Bailey, Lorrin Thurston, and Henry Baldwin. The resulting 33,817-acre ranch also included up to 500 acres reserved for cornfields.

Figure 7: John Joseph Halstead's Koa House (From Charles Wilcox, "Kalepolepo" in *Paradise of the Pacific*, 1921).



20TH CENTURY AND MODERN LAND USE

With the 1893 overthrow of the Hawaiian monarchy and the subsequent annexation there came not only political, but also economic and demographic changes. The early 20th century marked a rise of large-scale plantations and the arrival of new immigrant workers (Cox 1976). The dominant cultivar in coastal Kula at that time was sugarcane. The cash crop had been grown on Maui as early as 1828 (Speakman 1978: 114), and, by the turn of the 20th century, it had been established in Makawao in Northern Maui.

By 1899, the Kīhei Plantation Company (KPC) was growing sugarcane in the plains above Kīhei. In its first few years of its existence, KPC dug two ditches to irrigate its 4,873 acres (Gilmore 1936). With the ongoing war between the United States and Spain over Cuba, Puerto Rico, and the Philippines, sugar prices were rising, and the business was profitable. The plantation was absorbed by the Hawaiian Commercial and Sugar Company (HC&S) in 1908, and it continued cultivating the KPC fields until 1968. In 1927, Alexander and Baldwin became the agents for the plantation (Condé and Best 1973).

A 200-foot-long wharf was constructed in Kīhei at the request of Maui plantation owners and farmers and served inter-island boats for landing freight and shipping produce to Honolulu (Clark 1980). A landing was built at Kīhei around 1890, and by 1929 it had become a final destination for the HC&S railroad.

Along with these economic developments, in the first decades of the 20th century the number of Hawaiians continued to decrease, while new migrants (first of Chinese, and later of Portuguese and Filipino ancestry) arrived or were brought to Maui. These new populations together with more recent settlers from the United States shaped the current demographics of Kīhei. However, in the beginning of the 20th century, the population of Kīhei was barely 350 people (Fredericksen 2009: 11), despite the efforts of local government to make the area attractive to new settlers by building a series of roads in the 1930s (Medeiros et al. 2012: 23).

Worldwide political developments also left their mark on the Kīhei coast, as it witnessed a significant World War II military presence along Ma'alaea Bay (Allen 1950). During the war, coastal Kīhei was also used for amphibious training (Clark 1980: 45). In 1946, the century-old and long-abandoned Koa House was "declared a menace to public safety, ... condemned and burned to the ground" (Clark 1980: 48). In 1948, the Department of the Navy built a monitoring facility for the nuclear tests conducted in the Pacific; this building now houses the Pacific Whale Foundation at Ma'alaea Bay (Medeiros et al. 2012: 25).

In the 1970s, Ma'alaea Bay, Kīhei, and the neighboring coastal areas underwent rapid development consisting of residential and commercial projects, many of which were in service of the burgeoning tourism industry. Significant efforts have been made since the 1980s to diversify the economy; as a result, the Maui Tech Park and a Monsanto plant research facility were built further inland from the project area.

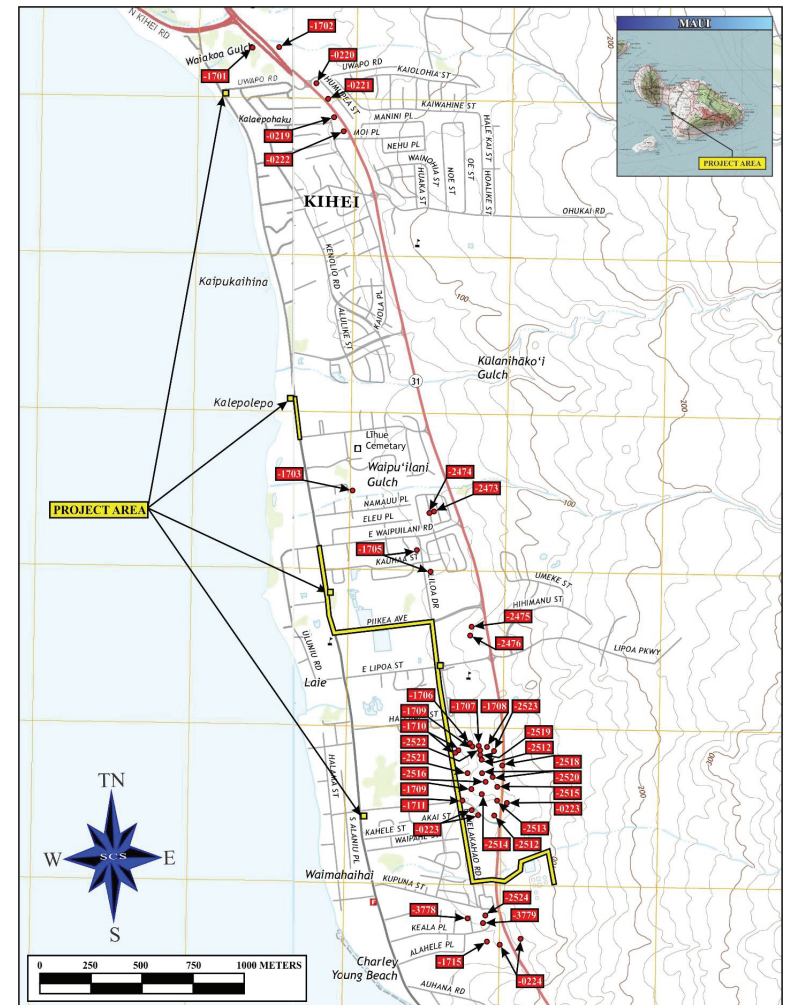
PREVIOUS ARCHAEOLOGY

Archaeological studies in the greater area began in the early 20th Century by T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1930), under the auspice of the Bernice Pauahi Bishop Museum. More recent archaeological work conducted in the vicinity of the project area are summarized below.

Since the 1990s, many archaeological projects have been conducted in coastal Kīhei. Previous archaeological surveys along the leeward coast of Maui have recorded mostly temporary use sites dating to the Pre-Contact Period. Although the majority of the project area has not previously undergone any archaeological surveys, numerous historic properties have been identified in the vicinity of the project corridor and the WWPS locations (Figure 8 through Figure 11).

Several archaeological investigations have been conducted in adjacent areas starting as early as the beginning of the 20th century. The Bernice Pauahi Bishop Museum sponsored T. Thrum (1909), J. Stokes (1909–1916), and W. M. Walker (1931) to conduct surveys of leeward Maui and to inventory both coastal and upland sites of Kula District. Most findings consist of upcountry heiau locations, whose presence may suggest that much of the population was located far from the coast, if this pattern is true for Kula (Kolb et al. 1997: 28). Traditionally, the coastal Kīhei, where the project area is located, appears to have supported a smaller population than the upcountry areas.

Ross Cordy (1977) divided Kula into three environmental zones – inland, coastal, and transitional or “barren.” The greatest population density is expected in the inland zone, followed by the coastal one, and, lastly, the intermediate “barren zone.” The latter is viewed as relatively inhospitable to permanent habitation because of its dryness, rocky soils, and dearth of natural resources. Previous works in the area provided limited evidence of traditional Hawaiian activities in the “barren” zone. For example, Cox (1976) surveyed the proposed Pi'ilani Highway and identified small, temporary habitation features, an ahu (shrine or marker), and two historic houses. The Kennedy (1986) archaeological reconnaissance survey of the proposed Maui Research and



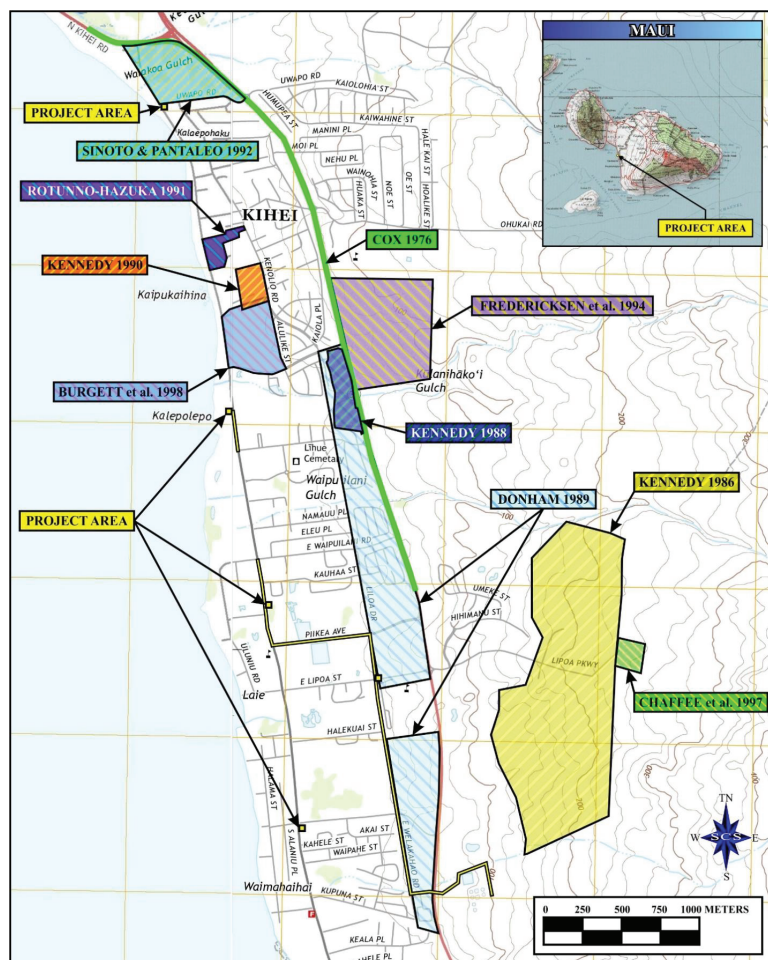


Figure 9: Quadrangle (Puu O Kali, HI 201; 1:24,000 and Maalaea, HI 107; 1:24,000) showing previous archaeology in the vicinity of project area conducted before 2000.

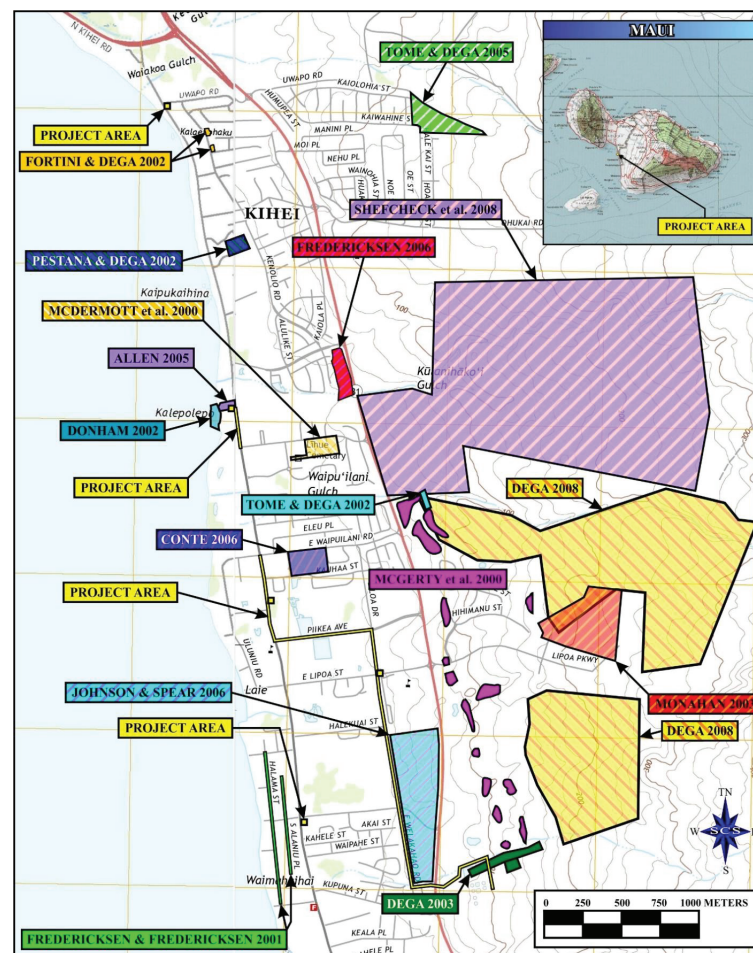


Figure 10: USGS Quadrangle (Puu O Kali, HI 201; 1:24,000 and Maalaea, HI 1917; 1:24,000) showing previous archaeology in the vicinity of project area conducted from 2000 to 2010.

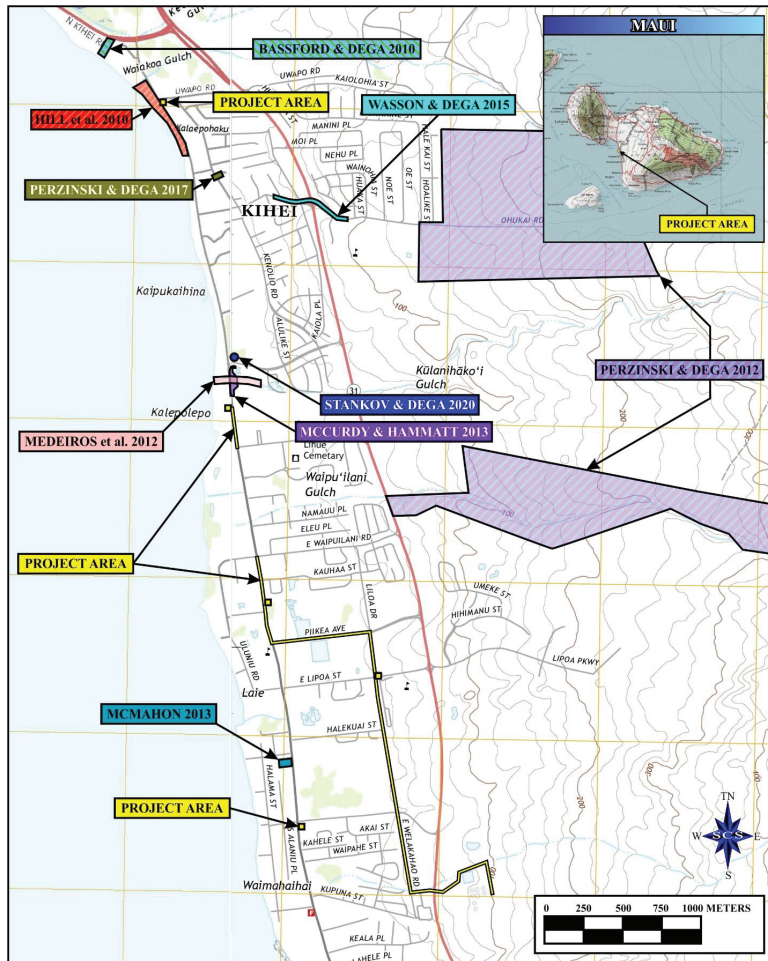


Figure 11: USGS Quadrangle (Puu O Kali, HI 201; 1:24,000 and Maalaea, HI 2017; 1:24,000) showing previous archaeology in the vicinity of project area conducted after 2010.

Technology Park suggested that Cordy's (1977) suggested settlement pattern was likely to have continued through the Early Post-Contact Period, as most of the LCAs were claimed for lands situated in the upland area.

Several archaeological studies have been done for the 150.032-acre Maui Research and Technology Park (MRTP). The first was an archaeological reconnaissance survey completed by Archaeological Consultants of Hawai'i (Kennedy 1986). No historic properties were identified. In 1997, SCS (Chaffee 1997) completed an archaeological inventory survey with subsurface testing in a portion of the MRTP. Ten archaeological features were (including remnant terraces, stone alignments, a mound, and a modified outcrop) were consolidated into three sites. All of the sites were interpreted as agricultural in function, with the exception of a rock mound which may have functioned as a ceremonial feature (Chaffee et al. 1997).

Archaeological Consultants of Hawai'i (Kennedy 1988) conducted an archaeological reconnaissance survey over TMKs (2) 3-9-001:148, 149, and 157 in Ka'ono'ulu Ahupua'a. No surface features were found. Paul H. Rosendahl, Inc. (Donham 1989) conducted the first phase of an archaeological inventory survey of Pi'ilani Residential Community on a tract of land stretching along the border of the "barren" zone and including the entirety of the Kennedy (1988) project area. Donham (1989) identified two structures which were interpreted as associated with the ranching-era structures and a terrace interpreted as having an agricultural function and originating in the Pre-Contact Period (SIHP Site # 50-50-10-2475).

Archaeological Consultants of Hawai'i (Kennedy 1990) conducted an archaeological survey of a parcel [TMK (2) 3-9-001:64, 99] between WWPS No. 2 and WWPS No. 3, which yielded negative findings. In 1998, SCS (Burgett et al. 1998) conducted an archaeological inventory survey of Lots A and B of the Maui Lu Resort in Kīhei, Ka'ono'ulu Ahupua'a, Wailuku District, Maui, Hawai'i. The survey, which included subsurface testing, yielded negative findings.

The Bernice Pauahi Bishop Museum (Rotunno-Hazuka 1991) conducted an archaeological inventory survey for the Kai Makani project east of South Kīhei Road. The survey, which included subsurface testing, yielded negative findings.

Aki Sinoto Consulting (Sinoto and Pantaleo 1992) conducted an archaeological inventory survey of the proposed location for the Kīhei Gateway Complex. During the survey a remnant of a historical concrete bridge crossing Waiakoa Stream was identified and subsequently designated (SIHP Site # 50-50-09-31), which was interpreted as possibly associated with a narrow-gauge sugarcane railroad operating in the area and servicing Kīhei Camp 1.

Xamanek Researchers (Fredericksen et al. 1994) conducted an archaeological inventory survey of an 88-acre parcel located above Pi'ilani Highway, within TMK: (2) 3-9-001:016 and 2-22-002:015 por., on lands formerly owned by Kaono'ulu Ranch. During the survey, twenty-one (21) features, including a petroglyph, were identified and subsequently designated as SIHP Site 50-50-10-3746. The features were interpreted as associated with pre-Contact agriculture and temporary habitation.

Multiple archaeological examinations of Elleair Maui Golf Club have also been completed. Scientific Consultant Services, Inc. (McGerty et al. 2000) conducted an archaeological inventory survey of fifteen (15) selected areas within TMK: (2) 2-2-024: 012 por. and 013. The survey identified seven surface structures which were consolidated into five archaeological sites (SIHP Site #s 50-50-10-5043, -5044, -5045, -5046, and -5047). The features were interpreted as agricultural terraces, possibly dating from the Pre-Contact Period, and C-shaped rock enclosures interpreted as associated with World War II training.

Cultural Surveys Hawai'i, Inc. (McDermott et al. 2000) conducted an archaeological inventory survey of the 7.4-acre Kiawe Mauka Parcel Development, located along Kūlanihāko'i Road in Waiohuli Ahupua'a [TMK: (2) 3-9-001:155]. The survey identified a pond situated in the southwest portion of the project area, which was subsequently designated SIHP Site #50-50-09-4981.

Xamanek Researchers (Fredericksen and Fredericksen 2001) conducted archaeological monitoring during a waterline replacement project along Halama and Alanui Streets located in Waiohuli and Kēōkea Homesteads, Kīhei, Maui, Kēōkea Ahupua'a, Wailuku District, Maui Island [TMK: (2) 3-9-010:075 and 078]. Two subsurface site remnants were identified along Halama Street: SIHP Site # 50-50-09-5003 was interpreted to be an extension of a Pre-Contact occupation layer previously identified during an inventory survey and was noted near the northern end of Halama Street; SIHP Site #50-50-09-5060 consisted of a newly identified habitation area located near the southern part of the Halama Street waterline installation trench.

Donham (2002) conducted an underwater archaeological inventory survey of Kō'ie'ie Fishpond (SIHP Site # 50-50-09-1288) in 2002). The systematic survey of the 7.5-acre area, which included the fishpond and surrounding areas outside its wall, identified boulders which suggest that Kō'ie'ie may once have been larger than it is now (Donham 2002).

Scientific Consultant Services, Inc. (Fortini and Dega 2002) conducted an archaeological inventory survey on 15.6 acres in Kīhei Town, Waiakoa Ahupua'a, Kula District, Maui Island, Hawai'i [TMK (2) 3-9-035:0001 and 3-9-035:002]. Following a complete pedestrian survey and representative subsurface testing, two features were identified, (1) a cobble and boulder-faced wall, and (2) a low wall alignment. Both features were interpreted as associated with the Post-Contact Period. .

Also in 2002, SCS (Pestana and Dega 2002) conducted an archaeological inventory survey on a 2.5-acre property for the Proposed Kai Makani Condominium Project, Waiakoa Ahupua'a, Kula District, Maui Island, Hawai'i [TMK (2) 3-9-041:027], which is located in previous marshlands. No historic properties were identified.

Scientific Consultant Services, Inc. (Tome and Dega 2002) conducted an archaeological inventory survey along the northeastern flank on a small parcel of the Elleair Maui Golf Club property [TMK: (2) 2-2-024:012]. A historical ranching corral and a short agricultural wall were collectively designated as SIHP Site #50-50-10-5233. The following year, SCS (Dega 2003) conducted an inventory survey along the southern flank of the Elleair Maui Golf Club, which yielded negative findings.

Scientific Consultant Services, Inc. (Monahan 2003) conducted an archaeological inventory survey, including subsurface testing, of a 28.737-acre portion of the MRTP within the area previous Kennedy (1986) project area. No historic properties were identified.

Scientific Consultant Services, Inc. (Tome and Dega 2005) conducted an archaeological inventory survey of an approximately 9.3-acre property in North Kīhei. The survey resulted in the identification of two sites: SIHP Site #50-50-09-5801 was interpreted as associated with World War II; and a terrace and an enclosure were interpreted as associated with the Pre-Contact Period.

International Archaeological Research Institute, Inc. (Allen 2005) conducted an archaeological survey and testing, at the National Oceanic and Atmospheric Administration (NOAA) National Ocean Service Facility, in Ka'ono'ulu Ahupua'a, Kīhei, Kula District, Maui, Hawai'i [TMK (2) 3-09-001:087 Lot 2-2]. The study area partially overlaps with WWPS No. 3, one of the locations of the current project area. The excavation of 21 stratigraphic trenches into the existing dune system below South Kīhei Road resulted in the identified two subsurface features: a cobble paving and a firepit "associated with a thin cultural layer." Both of these features were dated to the late 1800s/early 1900s. Charcoal was identified in several of the trenches, but was classified as secondary deposition from inland sources. Most of the excavated dune areas represented recent (approximately 70 years old) sand deposits, common in similar wind-swept regions, where aeolian deposits are common.

Xamanek Researchers (Fredericksen 2006) conducted an archaeological field inspection of 8.274 acres of land [TMK: (2) 3-9-001:157 and 158] previously surveyed by Kennedy (1988) and Donham (1989). No historic properties were identified.

CRM Solutions Hawai'i (Conte 2006) conducted an archaeological inventory survey on 7.217 acres located in Waiohuli Ahupua'a [TMK: (2) 3-9-046:013]. No historic properties were identified.

Scientific Consultant Services, Inc. (Johnson and Spear 2006) conducted an archaeological data recovery program at six archaeological sites located at the Pi'ilani I and II Kihei Community Park Project in Kihei, Kēōkea Ahupua'a. The data recovery phase followed an archaeological inventory survey (Donham in 1989), which identified the six sites SIHP Sites #50-50-10-1710, -2512, -2514, -2516, -2522, and -2512) located in the "barren zone" immediately east of the coastal zone. Five of the six original sites were relocated (SIHP Sites #50-50-10-1710, -2512, -2514, -2516, -2522). State Inventory of Historic Properties Site #50-50-09-2519, a stepped terrace system, was destroyed during post-1999 fire suppression activities. Radiocarbon analysis indicated the site complex was utilized during the Late Pre-Contact to Early Post-Contact Periods. Discussion of these sites suggests that people have taken advantage of temporary drainage basins conducive to agricultural pursuits near permanent coastal settlements. In addition to agriculture, site functions were interpreted to be associated with temporary habitation, ceremonial, and permanent habitation.

Scientific Consultant Services, Inc. (Shefcheck et al. 2008) conducted an archaeological inventory survey on a 516-acre parcel above of Pi'ilani Highway, which newly identified forty (40) historic properties. These sites represented Pre-Contact, Post-Contact agricultural, and military features. Pre-Contact features predominantly consisted of temporary use and habitation sites in the northeast corner of the project area, clustered in the upper reaches of Kulanihakai Gulch. Military and Post-Contact agricultural sites are dispersed throughout the project area. These include roads, walls, military C-shapes (used in training exercises), and many rock mounds associated with clearing and/or military activities.

Scientific Consultant Services, Inc. (Dega 2008) conducted an archaeological inventory survey on 338 acres within the Maui Research and Technology Park, Ahupua'a of Waiohuli and Kēōkea, Wailuku (Kula) District, Maui Island, Hawai'i [TMK: 2-2-024: 012 por., 014 por., 016 por. 017, and por. 054]. The survey resulted in the identification SIHP Site #s 50-50-10-6239, -6240, -6241, -6587, and -6588. Site functions were interpreted as associated with WWI training activities, a boundary wall/cattle wall, and a pre-Contact marker.

Scientific Consultant Services, Inc. (Bassford and Dega 2010) conducted an archaeological inventory survey along the coast by North Kihei Road. No historic properties were identified.

In 2012, SCS conducted an archaeological inventory survey on a total of 427 acres [TMK: (2) 2-2-02:16 and 54 por.]. A total of 15 archaeological sites were documented, among which five (-6784, -6785, -6786, -6792 and -7051) were associated with Pre-Contact activities. Of these, Site -6792 was dated to c. 1480–1660 C.E., and Site -6786 was identified as a *heiau* and dated to c. 1450–1650 C.E. Three features were recommended for preservation: Sites -6786 (ceremonial), -6792 (Pre-Contact workshop), and -7051 (rock art) (Perzinski and Dega 2012).

Exploration Associates Ltd. (McMahon 2013) conducted an archaeological inventory survey on TMK: (2) 3-9-010:077. No historic properties were identified.

Scientific Consultant Services, Inc. conducted a program of archaeological monitoring during the Pi'ilani Highway Traffic Operation Improvements Project at Ohukai Road in the Ahupua'a of Waiakoa, Makawao District, Maui Island, Hawai'i. No historic properties were identified.

Scientific Consultant Services, Inc. (Perzinski and Dega 2017) conducted a program of archaeological monitoring during a water lateral installation at the Frye Property, Kihei, Ka'ono'ulu Ahupua'a, Makawao District, Maui Island, Hawai'i [TMK: (2) 3-9-015:020 por.]. No historic properties were identified.

CONSULTATION

The consultation process was conducted via telephone, e-mail, and the U.S. Postal Service. For everyone's health and safety, due to the COVID-19 pandemic, no in-person interviews were conducted. Interviews were conducted via ZOOM and by telephone. The initial letters of inquiry, an example of which is presented in Appendix A, were mailed between July 7, 2021 and July 21, 2021. Follow-up letters, an example of which is presented in Appendix B, were mailed between July 22, 2021, and September 3, 2021. Information pertaining to cultural resources and traditional cultural practices conducted within the project area, in the Ahupua'a of Waiakoa, Ka'ono'ulu, Waiohuli, and Kēōkea, in the District of Makawao (Kula), and the greater Kīhei area, was sought from the following thirty-one (31) knowledgeable individuals and native Hawaiian organizations:

- Kai Markell, Compliance Officer, Office of Hawaiian Affairs
- Thelma Shimaoka, Community Outreach Coordinator III, Office of Hawaiian Affairs
- Roy Newton, Office of Hawaiian Affairs
- Chris "Ikaika" Nakahashi, Cultural Historian, State Historic Preservation Division
- Andrew "Kealana" Phillips, Burial Sites Specialist, State Historic Preservation Division
- Ke'eaumoku Kapu, Chair, Na Hono A'o Pi'ilani, Aha Moku Advisory Council; CEO, Aha Moku o Maui; and Chair, Native Hawaiian Historic Preservation Council
- Blossom Feiteira, Maui Mokupuni Council
- Leimana DaMate, Executive Director, Aha Moku Advisory Committee State of Hawai'i, Department of Land and Natural Resources
- Albert Perez, Executive Director, Maui Tomorrow Foundation
- Lucienne de Naie, Vice President, Maui Tomorrow Foundation
- Maui Sierra Club
- Dane Maxwell, Chair, Maui/ Lāna'i Island Burial Council
- Annella Amaral, President, Association of Hawaiian Civic Clubs
- Kyle Nakanelua, Maui/ Lāna'i Island Burial Council Member and Na Hono A'o Pi'ilani Member
- Vernon Kalanikau, Direct Lineal Descendant, Cultural traditionalist, former Kula Kai District Representative, 'Aha Moku O Maui, and a long-time Kīhei resident and community member
- Timothy Bailey, Kula Mauka Po'o, 'Aha Moku O Maui and Kula District Representative, Na Hono A'o Pi'ilani
- Carol 'Ka'onohi' Lee, Honua'ula District Representative, Na Hono A'o Pi'ilani

- Dr. Scott Fisher, Chief Conservation Officer, Hawai'i Land Trust; Maui/Lāna'i Hawaiian Islands Land Trust
- Basil Oshiro, Former Kula Kai District Representative, 'Aha Moku O Maui, and a long-time Kīhei resident and community member
- Cody Nemet, Kula Kai District Representative, 'Aha Moku O Maui, and a life-long Kīhei resident and community member
- Kimokeo Kapahulehua, President, Kimokeo Foundation, Cultural Practitioner, and a long-time Kīhei resident and community member
- Foster Ampong, Cultural Practitioner, and a long-time community member
- Joylynn Paman, Executive Director, 'Ao'ao O Na Loko I'a O Maui
- Kahele Dukelow, Maui/Lāna'i Burial Council Representative
- Iris Peelua, Maui/Lāna'i Burial Council Representative
- Johanna Kamaunu, Maui/Lāna'i Burial Council Representative
- Everett Dowling, Maui/Lāna'i Burial Council Representative

A Cultural Impact Assessment Notice was published in the August 2021 issue of the OHA newsletter, *Ka Wai Ola* (see Appendix C). This notice stated that Scientific Consultant Services, Inc. is seeking information on cultural resources and traditional cultural activities in the area of the proposed project and the surrounding ahupua'a, and provided locational information (i.e., the ahupua'a, traditional and modern names of the District, Island, State, and property Tax Map Key designations).

RESULTS

The current consultation process for the proposed North Kīhei Mauka Transmission System Project, located in the village of Kīhei, within the Ahupua'a of Pūlehunui, Ka'ono'ulu, Waiohuli, and Kēōkea, in the Districts of Wailuku and Makawao (Kula), Island of Maui [TMK: (2) 2-2, 3-8, and 3-9] resulted with SCS receiving seven (7) written (email) responses. In addition, SCS conducted two phone interviews and two virtual (ZOOM) interviews. The written responses and interview summaries are presented below. Based on these responses and interviews, assessment of the potential effects on cultural resources in the project area and recommendations for mitigation of these effects can be proposed.

WRITTEN RESPONSES

CHRIS (IKAİKA) NAKAHASHI, CULTURAL HISTORIAN, STATE HISTORIC PRESERVATION DIVISION
Mr. Nakahashi responded via an e-mail dated July 23, 2021:

Aloha Cathy,

Mahalo for contacting me regarding the Cultural Impact Assessment for the proposed North Kīhei Mauka Transmission System Project in the ahupuaʻa of Waiakoa, Kaʻonoʻulu, Waiohuli, and Kēōkea, on Maui.

I recommend SCS to utilize the media (e.x. OHA's Ka Wai Ola, Maui News, etc.) to solicit additional information for this CIA.

I recommend SCS consult with:

- Ke'eumoku Kapu – 'Aha Moku o Maui Inc

I recommend SCS minimally to meet with any native tenants and people that currently live or previously lived in the ahupuaʻa listed above on Maui for information about the cultural resources and cultural practices for this CIA.

A hui hou,

Christopher "Ikaika" Nakahashi, M.S.
Cultural Historian
Department of Land & Natural Resources
State Historic Preservation Division

Concerns: Mr. Nakahashi did not express any concerns in his email.

Note: Scientific Consultant Services, Inc. included Ke'eumoku Kapu in the consultation process for this CIA in his capacities as Chair, Na Hono A'o Pi'ilani, Aha Moku Advisory Council; CEO, Aha Moku o Maui; and Chair, Native Hawaiian Historic Preservation Council. Mr. Kapu response, as CEO, Aha Moku o Maui, is presented below.

Ke'eumoku Kapu CEO, Aha Moku o Maui

Ke'eumoku Kapu provided his response via an email dated July 8, 2021:

Aloha Kathy,

The contact rep for Kīhei is Cody Nemet. He will be able to assist you. I added him to this attachment.

Cheers,

Ke'eumoku Kapu

Concerns: Mr. Kapu did not express any concerns during the CIA consultation process.

Note: Scientific Consultant Services, Inc. included Cody Nemet, Kula Makai Po'o, 'Aha Moku o Maui, and Life-long Community member, in the consultation process for the current CIA. Mr. Nemet's responses are presented below.

Cody Nemet, Kula Makai Po'o, 'Aha Moku O Maui and Life-long Community member

Cody Nemet stated in an email dated July 9, 2021, "Yes i am interested" in participating in the consultation process and in being interviewed for this CIA. In a subsequent email, dated July 12, 2021, Mr. Nemet indicated he would prefer to be interviewed individually, rather than with a group of cultural contacts.

Concerns: Mr. Nemet did not express any concerns in either of his emails.

Note: Mr. Nemet's interview summary is presented in the Interview section of this report.

ANDREW "KEALANA" PHILLIPS, BURIAL SITES SPECIALIST, STATE HISTORIC PRESERVATION DIVISION

Mr. Phillips responded via an email dated July 22, 2021, indicating he had forwarded SCS's initial letter of inquiry and associated maps showing the location of the proposed project area corridor to the seven (7) members of the Maui/Lāna'i Islands Burial Council: Dane Maxwell, Chair, Maui/Lāna'i Island Burial Council; Kahele Dukelow; Dr. Scott Fisher; Iris Peelua; Kyle Nakanelua; Johanna Kamaunu; and Everett Dowling.

Concerns: Mr. Phillips did not express any concerns during the CIA consultation process.

Basil Oshiro, Former, Kula Makai Po'o, 'Aha Moku O Maui, and Long-time Community member

Basil Oshiro, Former, Kula Makai Po'o, 'Aha Moku O Maui, and Long-time Community member responded via an email dated July 8, 2021:

Aloha Cathy;

Got to find who the lineals (older generation) are before moving forward. I feel they would have more knowledge on family iwi and the culture / paths in the project area. Maybe got to go on a site visit on the area.

Malama Pono

Bko

Concerns: Mr. Oshiro did not express any concerns in his email.

Note: Mr. Oshiro's interview summary is presented in the Interview section of this report.

Dr. Scott Fisher, Chief Conservation Officer, Hawai'i Land Trust; Maui/Lāna'i Burial Council Representative; and Former Associate Director of Conservation, Hawaiian Islands Land Trust

Dr. Scott Fisher responded via two emails indicating he would like to participate in the consultation process for this Cultural Impact Assessment:

On June 4, 2021, Dr. Fisher stated:

Yes, absolutely! Please keep me updated. I'm very familiar with Kīhei (Kula Kai).

CIA: In a subsequent email dated July 8, 2021, Dr. Fisher graciously agreed to be interviewed for this

Aloha Cathy,

Yes, I'm happy to help. I was just in that area last week, so I'm familiar with the area. Just let me know when you'd like to meet.

Mahalo

Scott

Concerns: Dr. Fisher did not express any concerns in either of his emails.

Note: Dr. Fisher's interview summary is presented in the Interview section of this report.

Joylynn Paman, Executive Director, 'Ao'ao O Na Loko I'a O Maui

In an email dated September 2, 2021, Joylynn Paman graciously provided SCS with a copy of the Kalepolepo Fishpond National Register Application Background Information Section (Appendix D) "which covers a wealth of information."

Concerns: Ms. Paman did not express any concerns in her email.

INTERVIEWS

The consultation process resulted in SCS interviewing four individuals who are familiar with the proposed project area. These individuals are knowledgeable about the history, traditional cultural practices, and cultural resources associated with the greater Kīhei area. Under normal circumstances these interviews would have been conducted in person. However, due to the on-going COVID-19 pandemic, the interviews were conducted by telephone or virtually, via ZOOM. None of the interviews were conducted in-person. Please note that Mr. Cody "Koko" Nemet, Kula Kai District Representative, 'Aha Moku O Maui, and a life-long Kīhei resident and community member, was interviewed as part of the consultation process for this Cultural Impact Assessment. Unfortunately, Mr. Nemet could not be reached to provide his permission to include the summary of his interview in this report but SCS will continue attempts to contact him.

DR. SCOTT FISHER

Dr. Fisher is the Chief Conservation Officer of the Hawai'i Land Trust (HILT), a state-wide organization focusing on sustainability in an effort to protect the lands for current and future generations. He is, also, serving a second term as a representative on the Maui/Lāna'i Islands Burial Council (MLIBC). Although Dr. Fisher was born on O'ahu, his family is from Maui and he grew up in Kula, where he and his family currently live. Dr. Fisher shared his knowledge of the Kīhei area via a virtual (ZOOM) interview conducted by Cathleen Dagher, B.A., on July 13, 2021.

Dr. Fisher's information about the Kīhei area is based on academic reports and personal experiences. He recounted a recent article by Stephanie Pau, Ph.D., who conducted palynological research at Keālia Pond. The article provides information on the native vegetation common to both Central Valley of Maui and the Kīhei area. While a number of plant species were present, Ms. Pau identified the dominant species in the palynological record as koai'a (*Acaia koaia*), olopua (*Olea* spp.), 'ohia (*Metrosideros polymorpha*), and wiliwili (*Erythrina sandwicensis*).

Prior to human arrival, there were a series of wetlands along the coast of South Maui and around those wetlands were large gallery forests of loulou palm tree (*Pritchardia* spp.), 'āweoweo (*Chenopodium oahuense*), kāwelu grass (*Eragrostis variabilis*), naupaka (*Scaevola taccada*), and pohinahina (*Vitex rotundifolia*). The large number of wetlands that extended along the Kula Kai/ South Kīhei coastline would have supported forest diversity and aviary diversity, including a large number of waterbirds. Most of these wetlands have been lost as a result of modern development of the area.

The findings of recent archaeological research suggests that people started moving into the Kīhei area, as they did across the Hawaiian Islands, during the Expansion Period (1400 to 1500s A.D.). This movement correlates to the arrival of the sweet potato (*Ipomoea batatas*) in the Hawaiian Islands; within 100 to 150 years following the arrival of the sweet potato, the coastal areas of the Island were populated.

Dr. Fisher notes that "We call this area Kīhei, but traditionally, it would have been known as Kula Kai." "Kīhei" is actually the name of a point located near the center of Keālia Pond, called Kīhei Pūko'a Point. This is likely to be how the area came to be known as Kīhei. "Pūko'a," which means the flat reef, is the name of the reef that surrounds the area. According to Sam Ka'ai, the area came to be called Kīhei because the South Maui coastline appears to wrap around the island in the same way as a cloud taking the shape of a "kīhei" or cape.

The inhabitants of the Kīhei area, during the 1400 to 1500s A.D., would have relied on sweet potato (*Ipomoea batatas*) as a main dietary staple, along with coconut (*Cocos nucifera*), ‘ulu (breadfruit), and an abundance of marine resources. A number of very large fishponds line the coastline of South Maui. It is likely the traditional fishponds were built soon after people settled the area. There are two names for the main fishpond in Kīhei: Kō‘ie‘ie and Kalepolepo. The actual name of the fishpond is Kō‘ie‘ie. However, as the geographic name for the area is Kalepolepo, the name of the region became synonymous with the fishpond and they both were referred to as Kalepolepo. Kō‘ie‘ie is actually comprised of two fishponds, i.e., a smaller fishpond constructed within a larger fishpond. There is a massive loko kuapa [fishpond created by building a wall on a reef], which likely covers several hundred acres, surrounding Kō‘ie‘ie Fishpond. If you look out towards the horizon from Kō‘ie‘ie Fishpond at low tide, the waves can be seen breaking over the walls of the outer fishpond. It is not known if both fishponds were traditionally called Kō‘ie‘ie, or if the larger pond was known as Kalepolepo or by a completely different name. It should be noted that Maui’s fishponds were located in South Maui because the shallow reef flat was necessary for their construction. There are very few places on Maui where that type of topography occurs.

Due to the sloping terrain, terraces were primarily utilized in upland farming practices where farming would have been conducted from October to March. During a recent trip upcountry, Dr. Fisher, accompanied by archaeologist Trevor Yucha, of Cultural Surveys Hawai‘i, observed some interesting agricultural and animal husbandry features. Draws, the low terrain formed by two parallel ridges or spurs, also appear to have been farmed with check dams constructed at the entrance of the draw in an effort to slow the flow the sediment and the flow of the water. Dr. Fisher also observed enclosures which appeared to have functioned as animal pens and suggested the likelihood that some form of transhumance, the mauka/makai movement of people and animals, may have been practiced.

The collecting of marine resources was and continues to be a traditional cultural practice conducted in the area. When Dr. Fisher was growing up, his family would collect limu, manaua (*Gracilaria coronopifolia*) or ogo, from the coastal Kīhei area by Kalepolepo. He and his family would also fish in the area. He and his friends would also fish for moi (*Polydactylus*) in the inland gulches in this area.

Dr. Fisher has been told that during the American Civil War, free African Americans, traveled to Hawai‘i and tried to get a cotton industry going in South Maui. During this time, the area was farmed for cotton. This is why you still see a lot of cotton growing in the Kalepolepo (i.e., South Maui and Kula Kai) area. It should be noted that this was not the native Hawaiian cotton, but was cotton brought from the mainland USA, as the Hawaiian cotton has a very low fiber content. However, it was the observance of the native Hawaiian cotton that inspired the commercial cultivation of cotton in South Maui. This practice continued through World War I, ca. 1918.

Major changes occurred in the Kīhei area around the time of World War II (WWII). For example, the precursors to the Navy Seals were founded in South Maui. While the effects of WWII were felt in the Kīhei area, the area was primarily used for training exercises, i.e., US. Marines conducted invasion exercises for the Battle of Saipan and Iwo Jima; the underwater demolition teams (UDT), who were called the frogmen, practiced in the area. They did tremendous damage to the shoreline and to the coral reef system. We are still paying for it today. When Dr. Fisher was around 10 years old, a Japanese sea mine was found at Mākena Beach Park. The sea mine had been laid out in the area by a Japanese submarine during WWII that broke free in the early 1980s. Fortunately, it didn’t do any damage.

In 1980, there was a tropical depression that was the most intense storm in the last eighty (80) years. The storm sat off the coast of Maui for three or four days and was responsible for a tremendous amount of shoreline erosion. The storm occurred only about 35 years after the end of WWII, and the extent of the damage caused by the military was so intense that the reef system had not recovered during the intervening period. So, the amount of erosion and damage to the Kīhei coastal ecosystem caused by the storm was amplified by the previous impacts to the reef resulting from the WWII training exercises.

In 1968 the population of Kīhei was only about 300 people. So, there were very few houses in the area at that time. Starting around 1975, the commercial development of Kīhei started with the extensive construction of hotels the along the coastline of South Maui. During the 1990s, the intensive commercial development of the area resumed.

Concerns: Dr. Fisher did not voice any concerns pertaining to the proposed project impacting traditional cultural practices or cultural resources.

Note: Dr. Fisher has reviewed this interview summary and granted permission for its inclusion in this document via an email dated December 7, 2021.

BASIL OSHIRO

Mr. Oshiro is a former Kula Kai District Representative for the native Hawaiian organization ‘Aha Moku O Maui, a fisherman, and a long-time resident and member of the Kīhei community. He shared his knowledge of the proposed North Kīhei Transmission Line project area in a telephone interview conducted by Cathleen Dagher, B.A., on July 26, 2021.

Mr. Oshiro began the interview by wondering if this project was a “back door” to future development in Kīhei. He suggests that the new plan for South Kīhei is to start off with the installation and improvements of the infrastructure to make way for new developments. Mr. Oshiro brings up the issue of insufficient drinking water for the current Kīhei residents and mentions that Maui has been in a draught for at least the past twenty or twenty-five years.

There has been a shortage of water on Maui ever since they cut down the forest in Waikamoi, about 50 years ago. That was when EMI (East Maui Irrigation) diverted the water – EMI took 90 percent of the water and gave the farmers, who need the water to grow taro and other food crops, 5 percent. The farmers are still fighting that and still losing. Mr. Oshiro wonders where the drinking water will be coming from. Many of the wells have been intentionally contaminated; like the well at Hāmākuapoko that was poisoned some years ago and caused the plantation camp to be closed down. Currently, there are only two good wells – Kāheka and Pā‘ia. The farms are what feed us; if we don’t have the water, we can’t feed the people.

Concerns: Mr. Oshiro did not express direct concerns pertaining to the proposed North Kīhei Transmission Line project. However, he did express concern that responsible development is practiced, especially in the greater Kīhei area. He is very concerned that water will continue to be taken away from the existing Kīhei residents and farmers to provide sufficient water for the residents of the new residential and commercial developments.

Note: Mr. Oshiro has reviewed this interview summary. He granted permission for its inclusion in this document via an email to SCS, dated December 20, 2021, which stated in part, “You have my permission to release the information. It is straight forward what we discussed on our interview.”

VERNON KALANIKAU

Vernon Kalanikau is recognized by SHPD as both lineal and cultural descendant of Kula Moku, a cultural traditionalist, and a former Kula Kai District Representative of ‘Aha Moku O Maui. He was born in Wailuku, but has lived most of his life as a Kīhei resident and community member. Mr. Kalanikau shared his knowledge of the Kīhei area in a virtual (ZOOM) interview conducted by Cathleen Dagher, B.A., on August 7, 2021.

To Mr. Kalanikau’s knowledge, the existing Kīhei sewer system was put in by Reddsamm in the 1970s and has always been problematic. Mr. Kalanikau is familiar with the existing Kīhei sewer system and the locations of the wastewater pumping stations: Wastewater Pumping Station 3 is located by the Menchune Shores and Kō‘ie‘ie Fishpond, Wastewater Pumping Station 4 is by Yee’s Orchard and Fruit Stand, and Wastewater Pumping Station 5 is by Kīhei Baptist Church. The sewer system always backs up especially during the time of heavy rains and high tide because the sewer system and pump stations are in wetland areas. The entire project area corridor is in wetlands which have been filled in for infrastructure improvements and development.

The old sewer lines are probably damaged and need to be replaced, but Mr. Kalanikau wonders how much this will impact the underground spring and cross contaminate the spring water. When the sewer system was initially installed, the thinking was different. People thought this was the safe thing to do and didn’t consider how the location of the sewer lines could affect the environment. Mr. Kalanikau re-iterated the proposed sewer line improvements could impact the spring waters below and the kai.

Mr. Kalanikau’s ohana direct connection and continuous relationship to Kihawahine (mo‘o of our ohana) in synchronicity with Mr. Kalanikau, their ohana kuleana is to protect and preserve the waterways below and above (i.e., the muliwai, the springs, and the pathways to the ocean) by keeping them clear and healthy. Mr. Kalanikau wondered who would be on-site to monitor the water quality while the proposed improvements are underway because the freshwater springs extend throughout the length of the project area corridor. He has never seen monitoring for water quality or contamination being conducted during previous repairs to the sewer line.

It is likely that iwi kupuna (Hawaiian burials) may be present throughout the project area corridor, which extends through sand deposit areas. Many burials have been encountered in the area during construction projects in the area over the years. Mr. Kalanikau recalls a number of Kīhei projects where native Hawaiian burials or iwi were encountered. Back in the day, there were no laws protecting the iwi and no archaeological monitors, so the iwi often were just pushed to the side. So, it is likely that disarticulated human skeletal remains may be encountered during this project. In fact, today there is more information of the “likelihood” iwi could possibly be uncovered. Mr. Kalanikau recommends an arch monitor for this project.

While the proposed sewer line improvements and upgrades are necessary, they are probably being done to accommodate new commercial and residential developments. Kīhei is already over-developed. Right now, it is so dry that Maui County is considering initiating water use restrictions for South Maui residents. This has never happened in Kīhei before.

Concerns: Mr. Kalanikau expressed several concerns about the proposed project. He is concerned about over-development in South Maui due to the limited water supply. He is very concerned that the freshwater springs may be contaminated while the proposed improvements are being conducted and that the drinking water may be contaminated, as well. In addition, the waterways of South Maui have spiritual connections to Kihawahine, the mo‘o goddess, and it is of concern that they be protected and kept open. Mr. Kalanikau recommends that a program of water quality management be conducted throughout the duration of the proposed project. He further suggested the project planners consult with a qualified water quality consultant, people who have conducted a number of studies on watersheds, and water management and water quality in South Maui. He is also concerned that intact or previously disturbed and disarticulated traditional native Hawaiian burials may be encountered during excavation and recommends a full-time program of archaeological monitoring be conducted throughout the duration of the proposed project.

Note: Mr. Kalanikau provided the above interview summary via an email received by SCS on December 21, 2021.

IDENTIFIED CULTURAL RESOURCES AND TRADITIONAL PRACTICES

The purpose of a CIA is to identify the possibility of on-going cultural activities and resources within a project area, or its vicinity, and then assessing the potential for impacts on these cultural resources. As stated elsewhere in this report, the Environmental Review Program (OEQC 2012:11) states the geographical extent of the CIA study area should be greater than the area over which the proposed project extends to ensure that cultural practices that occur outside of the project area, but which may still be affected, are included in the assessment. Thus, for the purpose of this CIA study, the entire ahupua‘a is the project area, which extends from the highest peak to the inside of the inner-most reef into the Pacific Ocean.

Traditional cultural practices identified during the consultation process occur outside the project area and immediate environs and are related to the interment of the dead and the procurement of marine and near-coastal marine resources through fishing, gathering, and aquaculture (i.e., fishponds), and the cultivation of food crops. Fresh water was identified as an important cultural resource and is also associated with spiritual beliefs and practices.

One of the most common traditional ways native Hawaiian treated their dead was to inter the remains in sand dunes (Kirch 1985:237, 240). The archaeological record has identified numerous sand burials in coastal Kīhei and along the coast of South Maui, in general.

Fishing, including aquaculture, and gathering were the primary methods of procuring of marine and near-coastal marine resources for food and medicines traditionally conducted by native Hawaiians. These traditional activities continue to be conducted by native Hawaiians throughout Kīhei and South Maui today. As pointed out by Kirch (1985:30), the ocean and its resources were of equal importance to native Hawaiians as the land and its resources. Marine resources (i.e., shellfish, seaweed, and reef and deep sea fish) continue to play an important role in the Hawaiian diet and for medicinal use today. Marine resources harvested for subsistence from the ocean waters along coastal South Kīhei include marine invertebrates [i.e., ‘opihi makaliauli (*Cellana excarata*), and pipipi (*Nerita picea*), reef and ocean fish, and limu (seaweed).

‘Opihi, which can be found clinging to rocks along the coastline, were traditionally eaten raw with salt or limu added for additional flavoring, or boiled in a bowl with hot stones. Pipipi can be found on rocks in tide pools and was a traditional food that, was eaten raw. Traditionally, pipi was also boiled or wrapped in leaves and broiled. Limu is described by Pukui and Ebert (1986: 207) as “a general name for all kinds of plants living under water, both fresh and salt.” According to Buck (1957:73), there were many varieties of limu that were eaten, traditionally. One particular type of limu, limu kohu, can be prepared, and used in small quantities, as a relish.

Kirch (1985:199) states, “[t]he sea and its resources were vital to the lives of the Pacific Islanders, and the Hawaiians were no exception...Fish and shellfish provided the mains source of protein in the Hawaiian diet.” Limu (seaweed), on the other hand, has multiple purposes. It was, and continues to be, used as a food resource, in food preparation, and as a condiment, or as a medicine to treat particular illnesses.

Fresh water is the source of life and an essential cultural resource traditionally used daily in meal preparation, in cultivating food crops and for managing aquacultural systems, and was intertwined with spiritual beliefs. For the native Hawaiian (Maly and Maly 2003:ii):

nature and culture are one and the same, there is no division between the two. The wealth and limitations of the land and ocean resources gave birth to, and shaped the Hawaiian world view. The ‘āina (land), wai (water), kai (ocean), and lewa (sky) were the foundation of life and the source of the spiritual relationship between people and their environs.

Maly and Maly (2003:v) further state:

the people who worked the land, water, and marine resources, and who, through a system of religious-based fisheries management protocols, were sustained by the wealth—and who lived within the limitations—of the natural landscape from sea to mountains. Such traditions document the cultural-historical importance of fisheries and land in the lives of the native Hawaiians, and are the foundation of the on-going cultural attachment expressed by many Hawaiians and *kama ‘āina* fisher-people in the present day.

CULTURAL IMPACT ASSESSMENT SUMMARY

This Cultural Impact Assessment was prepared in accordance with the Guidelines for Assessing Cultural Impacts (OEQC 2012:11-13). The Guidelines recommend that a CIA consult relevant individuals/organizations, conduct ethnographic interviews and archival and historical research, identify cultural resources and practices located within the project area or in proximity, and finally, assess the impact of the proposed action and its mitigation measures on the cultural practices or resources identified.

Letters of inquiry were sent to thirty-one (31) individuals and organizations who have knowledge or information pertaining to cultural resources and/or practices currently, or previously, conducted in the vicinity of the proposed project area. The consultation process resulted in SCS receiving responses from seven (7) individuals via e-mail and SCS conducting two telephone interviews and two virtual (ZOOM) interviews.

It was expressed in several of the responses that SCS contact additional individuals (i.e., Ke‘eaumoku Kapu, CEO of Aha Moku O Maui, and Cody Nemet, Kula Kai District Representative, ‘Aha Moku O Maui, and a life-long Kīhei resident and community member). Scientific Consultant Services, Inc. has contacted all of these individuals in an effort to include them in the consultation process and to include their mana‘o in this report. Their responses are included in the responses of those who responded to our queries in the Written Response section above. Mr. Nemet did participate in a telephone interview for this project, but SCS was unable to reach him to obtain his permission to include the summary of his interview in this document.

The information obtained during the consultation process reflects that the proposed project area is located in an area rich with traditional and customary practices conducted during the pre-Contact and early Historic Period. Based on historical research and the above interviews, it is reasonable to conclude that there is evidence of on-going cultural practices related native Hawaiian procurement of marine and near-coastal marine resources, the procurement of fresh groundwater, and the spiritual beliefs which are intertwined with the cultural resources in the vicinity of the proposed project area.

Based on the information obtained during the consultation process of the current CIA, ground altering activities associated with the proposed North Kīhei Transmission Line project will not impact currently conducted traditional native Hawaiian activities within the project area or immediate vicinity of the project area.

Two of the cultural contacts assumed that the purpose of the proposed transmission line project was to install infrastructure to accommodate potential future permanent and temporary inhabitants of South Kīhei. These two individuals expressed concern that over-development and the associated increase in population would further stress the existing cultural resources and impact the practice of traditional activities.

CONCLUSION AND RECOMMENDATIONS

The Cultural Impact Assessment has reviewed historical research and information received from community members. This information has been analyzed for the potential effect of the project on cultural resources, practices or beliefs, its potential to isolate cultural resources, practices or beliefs from their setting, and the potential of the project to introduce elements which may alter the setting in which cultural practices take place, as recommended by the ERP Guidelines (1997).

The findings of the current CIA did not identify any traditional cultural practices previously or currently conducted within the proposed North Kihei Transmission Line project area and immediate vicinity. As stated elsewhere in this document, for the purpose of this CIA study, the entire ahupua'a, which extends into the Pacific Ocean to the inside of the inner-most reef, is considered to be the project area. Thus, valued cultural and natural resources (i.e., marine and near-coastal marine resources, fresh groundwater and springs, and the associated spiritual beliefs and practices) and the on-going cultural activities associated with the procurement and protection of these resources within the broader shoreline and coastal areas of South Kihei have been identified through the consultation process. This CIA has no recommendations, given the absence of traditional cultural practices occurring within the project area.

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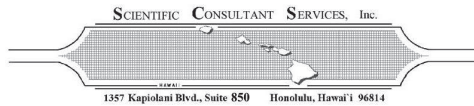
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APPENDIX A: EXAMPLE LETTER OF INQUIRY



Aloha kāua:

At the request of Munekiyo Hiraga, on behalf of the County of Maui, Department of Environmental Management, Scientific Consulting Services (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed North Kihei Mauka Transmission System Project. The project area is located in the village of Kihei, within the Ahupua'a of Waiakoa, Ka'ono'u, Waiohuli, and Kēōkea, the Districts of Makawao (Kula), Island of Maui [TMK: (2) 2-2, 3-8, and 3-9] (Enclosures). The Tax Map Keys (TMKs) of the properties affected by the proposed project and the associated landowners are presented in Table 1.

Table 1: TMKS Affected by the Proposed North Kihei Mauka Wastewater Transmission System Project

Project Component	TMK	Landowner
WWPS No. 2	(2)3-8-077:011	County of Maui
WWPS No. 3	(2)3-9-001:147	County of Maui
WWPS No. 4	(2)3-9-052:037	County of Maui
WWPS No. 5	(2)3-9-027:028	County of Maui
Kihei Community Center/Kihei Aquatic Center	(2)2-2-024:023(por.)	County of Maui
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui
Land abutting the Kihei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.
Kihei WWRF	(2)2-2-024:010	County of Maui
Kihei WWRF	(2)2-2-024:011	County of Maui
Proposed underground sewerline – S. Kihei Road ROW	(2)3-9-001 (2)3-9-007	County of Maui
Proposed underground sewerline – Pi'ikea Avenue ROW	(2)3-9-002	County of Maui
Proposed underground sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui
Proposed underground sewerline – Liloa Drive ROW	(2)2-2-002 (2)3-9-040 (2)3-9-033	County of Maui

Proposed underground sewerline – Old/E. Welakahao Road ROW	(2)2-2-029	County of Maui
Proposed underground sewerline – Pi'ilani Highway ROW	(2)2-2-999	State of Hawai'i

The scope of work for the project includes:

- replacing the gravity sewer lines to WWPS No. 3 and No. 4 with larger pipes,
- installing a new force main starting at WWPS No. 4 heading south on South Kihei Road, turning east on Pi'ikea Avenue, south on Liloa Drive, and transitioning to a gravity sewer line for 500 feet (152.4 m) until reaching a new proposed WWPS near the Kihei Aquatic Center,
- installing a new WWPS at the Lipoa Street and Liloa Drive intersection, and
- installing a second new force main heading south on Liloa Drive and continuing on to the Kihei Wastewater Reclamation Facility.

In addition, the proposed project will involve improvements to Wastewater Pump Stations (WWPS) Nos. 2, 3, 4, and 5. Pump station upgrade work will entail switching existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County of Maui WWPS. Dependent upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing wastewater pump stations will occur within existing developed areas.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the adjacent ahupua'a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices and beliefs identified as a result of the proposed Project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area
- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kūpuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a

- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana'o regarding nā iwi kūpuna will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

Enclosed are several maps showing the location of the proposed project area. Please contact me via email at cathy@scshawaii.com with any information or recommendations concerning this Cultural Impact Assessment. We would greatly appreciate hearing from you!

Mahalo nui for your time and attention to this matter.

Aloha ā hui hou,



Cathleen Dagher
Senior Archaeologist

Enclosures (3)

APPENDIX B: CIA NOTICE PUBLISHED IN KA WAI OLA, AUGUST 2021

**CULTURAL IMPACT
ASSESSMENT FOR ROUGHLY
17.2-ACRE PARCEL IN PIHA
AHUPUA'A, NORTH HILO
DISTRICT, ISLAND OF
HAWAII**

ASM Affiliates is preparing a Cultural Impact Assessment (CIA) for a single-family residence being proposed on a portion of a roughly 17.2-acre parcel (TMK: (3) 3-2-004:037 located in Piha Ahupua'a, North Hilo District, Island of Hawaii). Please contact ASM Affiliates if you would like to participate or contribute to this study by sharing your mana'o about any cultural or historical resources or other information you believe may be relevant. This includes, but not limited to, knowledge of past land use, history, traditional cultural uses of the proposed project area; or those who are involved in any ongoing cultural practices that may be occurring on or in the general vicinity of the subject property. If you have and can share any such information please contact Lokelani Brandt (lbrandt@asmaffiliates.com); phone (808) 969-6066, mailing address ASM Affiliates 507-A E. Lanikaula Street, Hilo, HI 96720. Mahalo.

Project 2509

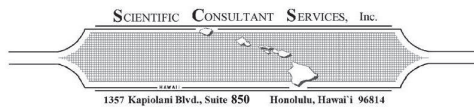
Scientific Consulting Services (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed Keokea Kai a 100% Workforce Housing project. SCS is seeking information on cultural resources and traditional, previously or on-going, cultural practices within or near the proposed project area. The project area is located in the village of Kihai, Kama'ole Ahupua'a, Wailuku District, Island of Maui [TMK: (2) 3-9-017:034]. The development will consist of a total of 112 units with 76 multi-family units with a build-

ing mixture containing 6 or 8 units in 2-story buildings. There will be 18 townhome units with a building mixture of 3 and 4 units in two-story buildings. There will also be 18 units in 2-story duplex buildings. Associated improvements include paved parking areas, underground utilities, shared common area and landscaping. A segment of the proposed North-South Collector Road will traverse through the project site. The project applicant will be dedicating the entire 60-foot wide right of way to Maui County. If you have information to share about this area, please email Cathleen Dagher (cathy@scshawaii.com) within 30 days.

Project 2575

Scientific Consultant Services, Inc. (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed North Kihai Mauka Transmission System Project. The project area is located in the village of Kihai, within the Ahupua'a of Waiakoa, Ka'ono'ulu, Waiohuli, and Keokea, the Districts of Makawao(Kula), Island of Maui [TMK: (2) 2-2, 3-8, and 3-9]. The existing North Kihai wastewater collection and transmission system and its supplementary elements are reaching their limits and lack the capacity necessary to convey planned future wastewater flows from new development in the service area. Future development mauka (east) of the Piilani Highway will require major upgrades to the existing system along South Kihai Road or a new separate transmission system to address the capacity issues and mitigate the potential for wastewater spills. SCS is seeking information on cultural resources and traditional, previously or on-going, cultural practices within or near the proposed project area. Please email Cathleen Dagher (cathy@scshawaii.com) within 30 days. ■

APPENDIX C: EXAMPLE FOLLOW-UP LETTER



Aloha kāua:

We are following up on our July 7, 2021, letter which was in compliance with the statutory requirements of the State of Hawai'i Revised Statute (HRS) Chapter 343 Environmental Impact Statements Law, and in accordance with the State of Hawai'i Department of Health's Office of Environmental Quality Control (OEQC) Guidelines for Assessing Cultural Impacts as adopted by the Environmental Council, State of Hawai'i, on November 19, 1997.

At the request of Munekiyo Hiraga, on behalf of the County of Maui, Department of Environmental Management, Scientific Consulting Services (SCS) is preparing a Cultural Impact Assessment (CIA) in advance of the proposed North Kihei Mauka Transmission System Project. The project area is located in the village of Kihei, within the Ahupua'a of Waiakoa, Ka'ono'u, Waiohuli, and Kōōkea, the District of Makawao (Kula Kai), Island of Maui [TMK: (2) 2-2, 3-8, and 3-9]. The Tax Map Keys (TMKs) of the properties affected by the proposed project and the associated landowners are presented in Table 1.

Table 1: TMKS Affected by the Proposed North Kihei Mauka Wastewater Transmission System Project

Project Component	TMK	Landowner
WWPS No. 2	(2)3-8-077:011	County of Maui
WWPS No. 3	(2)3-9-001:147	County of Maui
WWPS No. 4	(2)3-9-052:037	County of Maui
WWPS No. 5	(2)3-9-027:028	County of Maui
Kihei Community Center/Kihei Aquatic Center	(2)2-2-024:023(por.)	County of Maui
Future Liloa Drive extension corridor below South Maui Community Park	(2)2-2-002:087	County of Maui
Land abutting the Kihei WWRF to the west, north, and east	(2)2-2-002:084(por.)	Haleakalā Ranch Co.
Kihei WWRF	(2)2-2-024:010	County of Maui
Kihei WWRF	(2)2-2-024:011	County of Maui
Proposed underground sewerline – S. Kihei Road ROW	(2)3-9-001 (2)-3-9-007	County of Maui

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Proposed underground sewerline – Pi'ikea Avenue ROW	(2)3-9-002	County of Maui
Proposed underground sewerline – Liloa Drive ROW	(2)2-2-024	County of Maui
Proposed underground sewerline – Liloa Drive ROW	(2)2-2-002 (2)3-9-040 (2)3-9-033	County of Maui
Proposed underground sewerline – Old/E. Welakahao Road ROW	(2)2-2-029	County of Maui
Proposed underground sewerline – Pi'ilani Highway ROW	(2)2-2-999	State of Hawai'i

The scope of work for the project includes:

- replacing the gravity sewer lines to WWPS No. 3 and No. 4 with larger pipes,
- installing a new force main starting at WWPS No. 4 heading south on South Kihei Road, turning east on Pi'ikea Avenue, south on Liloa Drive, and transitioning to a gravity sewer line for 500 feet (152.4 m) until reaching a new proposed WWPS near the Kihei Aquatic Center,
- installing a new WWPS at the Lipoa Street and Liloa Drive intersection, and
- installing a second new force main heading south on Liloa Drive and continuing on to the Kihei Wastewater Reclamation Facility.

In addition, the proposed project will involve improvements to Wastewater Pump Stations (WWPS) Nos. 2, 3, 4, and 5. Pump station upgrade work will entail switching existing drywell pumps for wet well submersible pumps and resizing them to accommodate anticipated future flows. The electrical systems and controls will also be replaced to match other upgraded County of Maui WWPS. Dependent upon the existing conditions of each WWPS, building improvements may be necessary. All improvements at the existing wastewater pump stations will occur within existing developed areas.

The purpose of this Cultural Impact Assessment (CIA) is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources or traditional cultural practices associated with the adjacent ahupua'a. In an effort to promote responsible decision-making, the CIA will gather information about the project area and its surroundings through research and interviews with individuals that are knowledgeable about the area in order to assess potential impacts to the cultural resources, cultural practices and beliefs identified as a result of the proposed Project. We are seeking your kōkua and guidance regarding the following aspects of our study:

- General history as well as present and past land use of the project area

- Knowledge of cultural resources which may be impacted by future development of the project area (i.e. historic and archaeological sites, as well as burials)
- Knowledge of traditional gathering practices in the project area, both past and ongoing
- Cultural associations of the project area, such as legends, traditional uses and beliefs
- Referrals of kūpuna or elders and kama'āina who might be willing to share their cultural knowledge of the project area and the surrounding ahupua'a
- Due to the sensitive nature regarding iwi kūpuna or ancestral remains discovered, mana'o regarding nā iwi kūpuna will be greatly appreciated
- Any other cultural concerns the community has related to Hawaiian cultural practices within or in the vicinity of the project area.

Please contact me via email at cathy@schawaii.com with any information or recommendations concerning this Cultural Impact Assessment. I am looking forward to hearing from you!

Mahalo nui for your time and attention to this matter.

Aloha ā hui hou,



Cathleen Dagher
Senior Archaeologist

APPENDIX D: KALEPOLEPO FISHPOND NATIONAL REGISTER **APPLICATION BACKGROUND INFORMATION SECTION**

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Kalepolepo Fishpond

Description

Setting - Kalepolepo Fishpond (also named Ka'ono'uulu Kai and Ko'ie'ie) is located along the shoreline of Ka'ono'uulu Ahupua'a, within the traditional district of Kula, Island of Maui. The *ahupua'a* of Ka'ono'uulu is one of six major Kula land divisions which extend from the Ocean to the upper reaches of Haleakala. Ka'ono'uulu is situated near the center of the Kula District, with Pulehunui and Waiahoa to the north and Waiohuli, Keokea and Kama'ole to the south. Ka'ono'uulu is approximately .4 mile wide at the shoreline, and .7 mile wide at Kalepamoa (9,000 ft AMSL). The *ahupua'a* has a maximum width of one mile, which occurs at 800 ft AMSL. Kalepolepo Pond is at the southern boundary of the *ahupua'a*.

The fishpond is situated on a fringing coral reef, with the main portion of the wall following along the outer perimeter of the reef. This type of setting was selected most frequently for the construction of *loko kuapa* (walled ponds), due to wave protection provided by the reef and the presence of a shallow shoal area (Kikuchi 1973: 37).

The presence of fringing reefs along the shoreline of the Kihei area was one factor which permitted the construction of three, and possibly four, fishponds along the shoreline of the Kula District (Kula Kai). Kalepolepo is the smallest and northernmost of three documented ponds that were present in Kula Kai. Immediately south of Kalepolepo (Ka'ono'uulu Kai), is Waiohuli Kai Pond (SIHP Site 50-50-09-1704). To the south of Waiohuli Kai is Keokea Kai (50-50-09-1738). A fourth possible unnamed pond is located to the south of Keokea Kai (Kolb 1995). The presence of these fishponds would have significantly increased the economic potential of the coastal Kula area, which received relatively little rainfall (average of 12 inches annually; Stearns and Macdonald 1942:37). In general, the Kihei area was not particularly well suited for intensive traditional agricultural. It was, however, well suited for aquaculture, and with proper maintenance, the fishponds would have provided quantities of fish species such as *'ama'ama* (mullet), and *awa* (milkfish) (Kikuchi 1973:113).

One of the characteristics of the Hawaiian fishponds of the *loko kuapa* type is that they contain a mixture of fresh and salt water (Kikuchi 1973: 44). It is therefore likely that a fresh water source was present at Kalepolepo, in the form of a stream, underground springs, or fresh water outlets offshore.

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Kalepolepo Fishpond

Description (continued)

Kalepolepo Pond is located 450 feet south from the present channel of Kulanihako'i Stream, which flows seasonally within a relatively broad, shallow gulch. Wetlands were once present in the lower reaches of the gulch, and near the mouth of the stream in the low flat behind the coastal sand dunes. These wetland features are clearly visible in the 1970 aerial photograph of the pond area (attached). It is not known whether this stream and wetland area was ever connected with Kalepolepo Pond.

Period of Construction/Use - The date of the original construction of Kalepolepo Pond is not known. Historic translations and transcriptions of traditional *mo'olelo* (oral history) for the area provide a general framework for a relatively continued use beginning in the middle to late 1500's and continuing through the late nineteenth century. Available radiocarbon dates from archaeological sites in the Kihei area tend to support a date of around AD 1400-1500 for the intensification of settlement in the area (Cordy 1977; Fredericksen et al. 1993; Fredericksen et al. 1995). The archaeological data are discussed following a summary of the historic and archival data.

The only known reference to a fishpond actually being built along the coast in south Maui is found in Fornander's collection of Hawaiian *mo'olelo* (Fornander 1969:70-71). This story credits the fishpond at Keone'o'io to the Hawai'i Island Chief Kahulanuimahu.

Kahulanuimahu is believed to have reigned during the late 1400's to early 1500's (Kamakau 1992: 324). A number of major construction projects, such as the Alanui trail, major expansions at Pihana and Pi'ilanihale *Heiau*, and construction or repair of large fishponds such as Kanaha are documented for Maui during the middle 1500's when Pi'ilani was the *Mo'i* (High Chief) of a unified Maui kingdom. No reference has been found in the oral history sources that associates the ponds at Kula Kai with Pi'ilani. It is, however, possible that they were constructed during his reign.

Hawaiian *mo'olelo* reported locally by Wilcox (1921) contains the earliest reference to repair work at Kalepolepo, which occurred during the time of 'Umi a Liloa, High Chief of Hawai'i Island. Shortly after the victory of Kihapi'ilani over his brother and his ascendancy as *Ali'i Nui* (High Chief) of Maui (c. late 1500's). According to the local tradition, 'Umi was designated District Chief of Kula, in return for his military assistance to Kihapi'ilani. 'Umi ordered the repair of the three fishponds at Kula Kai, as well as the pond at Kealia.

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Kalepolepo Fishpond

Description (continued)

The name "Kalepolepo" is said to have originated during this period of repair work, when large numbers of people were stationed in long lines to pass the stones from the hillsides to the ocean. The activities caused great clouds of dust to rise up and hang in the air, lending the name "the dirt" to the place (Pukui, Elbert & Mookini 1974:77). The name Kalepolepo was used to refer to the general coastal area where all three ponds were located. Prior to this time, the area was referred to as Ko'ie'ie (Fornander 1974: 5:235-236).

According to Maui historian Inez Ashdown, as interviewed by Johnson (1965), repair work was conducted at the Kalepolepo ponds by Kekaulike, the *mo'i* (island chief) of Maui during the early to middle 1700's. Kahekili II, also a *mo'i* of Maui, utilized the ponds as a source of mullet during the late 1700's. Repair work at the pond was initiated by Kamehameha I during the early 1800's (Kamakau 1976: 47).

The latest recorded repair project at Kalepolepo Pond was conducted in the 1840's, under the direction of Governor Ho'apili. Labor for this undertaking was obtained from the Maui penal colony, which had been recently moved from Kaho'olawe (Wilcox 1921:67). The pond was still producing mullet well into the nineteenth century, when Kalepolepo was an established settlement with two churches, numerous homes, and a trading center for whalers and upcountry farmers (Wilcox 1921:67). This settlement is further discussed in the following section.

To date, there has been no archaeological testing within the pond or immediate shoreline area. Test trenching was conducted a short distance inland, within the wetland area next to Kulanihako'i Stream. No cultural deposits or datable materials were recovered during this testing project (Spear 1992).

Excavations were recently conducted at two rock shelters (50-50-10-3139 and 3529) located c. .4 km inland of the coast in Waiohuli. These sites contain the nearest available dated deposits that have been reported to date. A radiocarbon date obtained from Site 50-50-10-3139 has a calendric range of AD 1560-1800 (Fredericksen et al. 1993). Dates obtained from two fire hearths at Site 50-50-10-3529 indicate a period of use between AD 1400 and 1700 (Fredericksen et al. 1995). These ranges correlate with previously published dates for the Kihei/Makena area (Cordy 1977:8-10), and are consistent with the available oral history information pertaining to an intensification of activities in the coastal area beginning in the late fifteenth to early sixteenth centuries.

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Kalepolepo Fishpond

Description (continued)

Associated Persons, Cultures, and Ethnic Groups - Like many other Hawaiian fishponds and *heiau*, the construction and first use of Kalepolepo Pond is associated in oral tradition with the *menehune*, a mythical race of people who were the first occupants of the Hawaiian Islands (Beckwith 1970:321-336). Wilcox's story of the sixteenth century pond repairs indicates that the *menehune* had considerable power over Kalepolepo Pond at that time. The *konohiki* in charge of the work had disregarded a warning by Kikau, a *kilokilo* (divining) priest who was skilled in communicating with the *menehune*. Kikau insisted that the *menehune* should be consulted regarding the repair work on the ponds. The *konohiki* refused to listen to the priest and threatened to have him thrown in an *imu* (earth oven) as soon as the work was completed. The night after the last of the three ponds was restored, a great storm arose and the ponds were destroyed. Again, the *konohiki* put the people to work on the ponds, only to have them destroyed a second time. In desperation, the *konohiki* admitted his error and asked the priest to summon the *menehune*. The walls were then properly restored by the *menehune*. Kikau the priest was spared from the *imu*, and was sent instead to Waipio Valley, to attend to the matters of 'Umi (Wilcox 1921:67).

According to Kamakau, the Mo'o deity (water spirit), Mokuhinia, showed herself at Kalepolepo at the time that a son of Kamehameha died (Kamakau 1964:83). Mokuhinia also resided in the fishpond which bares her name at Moku'ula, Lahaina.

Kekuiawa was the child of Kamehameha I by Kaheiheimalie. He was taken to Maui in 1812 to help govern the island (Ii 1959: 106), and died three years later at Kalepolepo. His death here might suggest that he resided at Kalepolepo.

A prominent figure who had local control at Kalepolepo was Hapakuka Hewahewa, who lived at Kalepolepo between 1837 and 1848. He died at Kalepolepo in 1848. Hewahewa's family was from Makukona, Kohala, and was allied with Kamehameha during his struggle for power on the Big Island. Hewahewa's parents received lands in Kona and Kohala from Kamehameha after the decisive battle of Mokuohai. At the time of the *Mahele*, Hewahewa relinquished his control of six *ahupua'a*, including four on Hawai'i Island, two on O'ahu. He received an 'ili in Kalihi, and the *ahupua'a* of Ka'ono'ulu. In his Native Register claim (48.6, Dec. 30, 1847), Hewahewa states that Kalepolepo was his permanent place of residence.

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Kalepolepo Fishpond

Description (continued)

The actual titles to the lands conveyed to H. Hewahewa were awarded by the Land Commission between 1850 and 1855, and were completed by his wife and other heirs. Kalepolepo was transferred to H. Hewahewa as Land Commission Award 3108; the 5,715 acre ahupua'a was granted to H. Hewahewa as Land Commission Award 3237 (Indices of Awards 1929).

Hewahewa awarded eleven separate land claims and fishing rights to claimants in Kalepolepo. These awards were clustered along the shoreline of the Kalepolepo Fishpond, and around the Kilolani Church (Kolb 1995; see attached map). Ten of the claims were for houselots.

An important historic figure associated with Kalepolepo is David Malo, who arrived at Kalepolepo in 1843 from Lahainaluna to establish a christian Congregationalist Church. According to Faris (1939), David Malo expended considerable energy in improving the local community, including the landscaping (Faris 1939). During this time, the pond was still being maintained and was a source of good quality mullet (Wilcox 1921:66). Malo was either living at Kalepolepo, or frequently visiting from Keokea during a ten year period (1843-1853). He died in 1853 and his body was returned to Lahainaluna for burial.

While Malo was stationed at Kalepolepo, a school was also established near the church. A second church was built by the Church of the Latter Day Saints, and a whaling station was set up by two Americans, Fern and Fredenbury (Wilcox 1921:66). A trading post was also established immediately inland of Kalepolepo Pond by an American *haole*, Captain John Halstead. Halstead arrived in Lahaina from New York in 1838 and married the chiefess Kauwikikilani Davis, great granddaughter of Isaac Davis. He worked in Lahaina as a carpenter for Kamehameha III until c. 1850, when he obtained a lease for a houselot at Kalepolepo. Halstead built a large Pennsylvania Dutch style house entirely of *koa* next to the south wall of the pond, and opened a trading station on the lower floor. Whalers came ashore to buy fresh produce that was brought in by the farmers via the Kalepolepo Road. Kula produce was also shipped out by Halstead to California during the gold rush era. During this period, Hobron's interisland schooner, *Maria*, made regular stops (c. every 10 days) at Kalepolepo, on its route between Honolulu, Lahaina, Macee's Landing (Makena), and Kawaihae (Thomas 1983:42). Halstead operated the trade station until 1860, when the whaling and gold rush trade began to diminish. He moved upcountry to Ulupalakua in 1876 and died there in 1887 (Wilcox 1921:66).

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Kalepolepo Fishpond

Description (continued)

Kalepolepo was visited by Kamehamehas III, IV and V between 1850 and 1870. Halstead's house served as the social center during these visits. The *koa* house remained standing until it was burned down in 1946 by the Kihei Yacht Club (Kolb 1995:68).

There are few available records of activities around Kalepolepo Pond between c. 1880 and the early twentieth century. Available evidence indicates that it was possibly not functional during this time. During the late 1930's, the Waiohuli Kai fishpond was considered as a potential harbor area by the *Hui Moku o Kalepolepo* (Faris 1939). The necessary dredging of the pond in order to deepen it for a harbor area was apparently never completed. During World War II, a degassing plant was built along the northern shoreline of Kalepolepo Pond. This building was later converted to offices for the Bureau of Standards. More recently, The National Oceanic and Atmospheric Administration (NOAA) established an Ionosphere Station at this location.

The Federal Government still retains a small parcel fronting the pond (TMK 3-9-01:87). Sections of federal land to the north and south of Parcel 87 have been deeded to the County of Maui. The beach area at the northern end of the pond wall is now owned by the County of Maui (Parcel 147), along with a small parcel fronting the central portion of the pond. Menehune Shores Condominium occupies the southern shoreline area (Parcel 85). All of the Land Commission Award parcels in this area have been incorporated into one of the three parcels that are now present along the shore. The County Park is the principal access area to the pond, although people may easily walk in along the shoreline from either side. The site is a popular fishing area, particularly for net throwing and catching small fry bait fish. The shallow, calm waters of the pond are used for swimming.

Physical Characteristics - As used in the context of this discussion, fishponds are aquacultural structures that were designed and built by Hawaiians for purposes of raising fish and other aquatic resources. The six formal fishpond types identified in Kikuchi's (1973) synthetic study have been applied in subsequent works, providing a standardized typology for all the islands (DHM, Inc. et al.1990a).

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Kalepolepo Fishpond

Description (continued)

Following Kikuchi's typology, Kalepolepo Pond is a Type I, or *loko kuapa* type pond, which is defined as "A fishpond of littoral water whose side or sides facing the sea consist of a stone or coral wall usually containing one or more sluice grates" (Kikuchi 1973:227). Ten of the 44 fishponds identified for Maui are *loko kuapa* ponds (DHM, Inc. et al. 1990a:III-5).*

The wall of Kalepolepo Pond is situated along the edge of a coral reef, and was constructed offshore from a sand beach area. The wall is constructed of rounded basalt boulders and cobbles which average 0.3 to 0.6 m in diameter, with coral and basalt cobble and pebble fill. The major segment of the wall is relatively linear, oriented at approximately 170 degrees Az, parallel to the shoreline (see plan map). The north and south sides of the wall curve gently toward the shoreline. A more defined corner is present in the wall at the northern end. At the southern end of the straight segment is an opening which probably correlates with a former sluice grate, or *makaha*.

The original eastern extent of the north and south ends of the wall is not known. Presently, the northern end is quite abrupt and is disconnected with the current shoreline. The southern end of the wall extends further east than the northern end. It is not known whether this difference was an aspect of the original pond design. Given the historic records of pond siltation, it would not be unfeasible to suggest that both sides of the wall extended c. 200 m at one time. No subsurface exploration has occurred in the areas of the wall to date, so it is not known whether buried portions of the wall are present.

The existing wall has a total length of 334 m, including the 22 m wide opening. The southern portion is 110 m from its identifiable end to the opening. DHM Inc has estimated that this side was originally over 180 m long (1990b:188). The western side is 136 m long from the opening to the corner, and the northern portion is 66 m long from the corner to the identifiable end near the shoreline. The pond is 230 m wide, as measured along the shoreline. A considerable amount of loose and displaced stones are present in the area of the opening and along the inside of the northern wall. Examination of the opening area suggests that it was originally less than 10 m wide, probably around 6.0 m.

* The DHM, Inc. survey counted 11 *loko kuapa* for Maui Island, however, this number included Kealia Pond, which is a Type II pond that was misidentified as a Type I pond (1990:III-21).

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Kalepolepo Fishpond

Description (continued)

Wave action has caused erosion of the wall in this area. The reef shelf is slightly higher here, as compared with other sections of the west wall. There is a large amount of loose stone rubble along the inside of the pond wall, at the north side of the opening. This patterning of rubble may have been caused by wave action, or may reflect a former platform or widened wall area where a small guard house or netter's area was located (Apple and Kikuchi 1975:23,24).

Width measurements along the top of the wall range from 2.0 m at the northern end to 9.2 m near the center of the west side. The wider reading is probably most reflective of the original width of the upper portion of the wall. The base of the wall is generally buried under wall fall, and accurate height and width readings are difficult to obtain.

The most representative wall height readings are 1.0 m along the inside (center,west side) and 1.53 m outside (center,north wall). It should be noted that these readings reflect the existing wall, which was undoubtedly higher during the periods of productive pond use. At minus tide and low tide, most of the wall is visible, and extends approximately 0.3 to 0.5 m above the water surface. At high tide, much of the north and south walls, and the area around the opening become submerged. Waves wash over most of the western section at high tide. The top of the wall is presently 8.3 to 5.7 feet below land surface elevation at the shoreline (behind the boulder revetment at the Hawai'i Whale Sanctuary).

The best-preserved section of the wall is along the center and south end of the western side. In this area, the interior of the wall can be discerned as sloping outward from top to base. A horizontal distance of 1.5 to 2.0 m occurs between the top and base, indicating that the base was three to four meters wider than the top of the wall.

An alignment of large boulders, which appears to serve as a protective breakwater, is located off the northwestern corner of the pond wall (see plan map). It is not known whether this feature was part of the original pond; the boulders are larger than most of the visible pond wall stones. The alignment is set at the edge of a reef shelf, approximately 10 m from the outside of the pond wall. The area between the breakwater and the pond wall is filled with stones, and it is not possible to determine whether these are disturbed or purposely set stones.

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Kalepolepo Fishpond

Description (continued)

The western side of the wall is an average distance of 68.5 m from the present shoreline (at low tide). This distance is believed to be less than the original east-west axes of the pond. Present overall area of the pond has been calculated at three acres (DHM Inc. et al. 1990b:118).

The interior area of the pond is presently 1.0 to 1.5 m deep at low tide (see plan map). The pond floor is sand with some silt; there are very few stones scattered in the main area of the pond. It is possible that some stones are presently buried beneath the silty sand. The actual depth of the sand and any possible sediment deposits within the pond is presently unknown.

DHM Inc. et al. conducted an in-depth study of Kalepolepo Pond, and found that siltation here was moderate, and there was no encroachment of the pond system by vegetation (DHM Inc. et al. 1990b:118). The Office of State Planning has designated the pond water as Class A, which designates it to be protected from "...any discharge which has not received the best degree of treatment or control compatible with the criteria specified for this class" (DHM Inc. 1990a:IV-5).

Historic Impacts and Likely Appearance During Use - Historic maps and descriptive narratives of Kalepolepo Pond indicate that it was once larger than its present size of three acres. The pond apparently began to fill with silt during the late nineteenth century, when rapid deforestation was occurring upcountry (Wilcox 1921:67). A period of increased rainfall and flooding occurred during the late 1870's, causing a rapid encroachment of the shoreline into the pond. The pond walls, which were still intact at that time, served as a catchment for the silt and sand. By 1880, the pond was mostly filled, as documented by Monsarrat (map of 1880 cited in Neller 1982). In 1954, after the conclusion of the World War II activities along the shoreline, the pond was still mostly filled, and was identified as part of the sandy shoreline on the USGS map of that year (attached). As the height of the wall began to diminish, waves were able to wash into the pond and the alluvial deposits began to recede. By 1970, prior to the construction of Menehune Shores, the shoreline had moved back to within 10-20 m of its present low tide position (see attached plan map and aerial photograph). The shoreline is presently defined by a concrete seawall and boulder revetment, both of which stop the water at normal tide.

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Kalepolepo Fishpond

Description (continued)

Today, the northern section of the wall is considerably shorter than the southern section. Based on the appearance of the northern end of the wall, it is believed that it was impacted, and a portion along the shore was removed. This may have occurred during World War II, when military activities were relatively intensive along the shoreline at several localities in the Kihei area. It is possible that remnants of the north wall are buried under the beach. The east end of the south wall has been impacted by construction and landscaping at Menehune Shores. The wall fill in this area is mixed with broken chunks of structural concrete and imported stones. It is possible that part of the wall was removed, or is buried in this area as well.

During use of the pond for aquaculture, the present opening most likely contained a sluice grate, or *makaha*, which was a stationary wooden grate with openings to allow small fish and fresh sea water to pass into the pond, yet would not permit the mature fish to leave (Kikuchi 1973:59-63). It is not known whether the *makaha* was modified during the various restoration/repair projects that were undertaken at the pond. According to Apple and Kikuchi (1975:20), the stationary grates were sometimes replaced by movable gates or movable double grates after contact. The wall is of sufficient width to permit the use of double grates. In this arrangement, the fish are trapped between the two grates for easy harvesting.

It is likely that the pond was deeper during its period of use for raising mullet. If the pond waters are too shallow, the temperature remains too high, limiting the oxygen supply (Kikuchi 1973:82-87). Other important biological characteristics of the pond water include pH, turbidity, salinity, and bottom sediments (Kikuchi 1973:85-88; Apple and Kikuchi 1975:28-31).

As indicated in the description of the pond setting, fishponds require a steady in-flow of fresh water in order to maintain an adequate supply of nutrients, optimum salinity levels, and circulation (DHM Inc. et al. 1990a:A-7). During its productive use, there would have been some source of fresh water at Kalepolepo. This source is presently not known. Possible sources include the freshwater wetlands that were once present at the mouth of Kulanihako'i Stream, or submerged freshwater outlets along the shoreline. Given the extent of modern development in the coastal area behind the pond, it is not likely that the fresh water source for the pond is still active. The wetlands have been filled and the stream has been channeled directly into the ocean. At least a portion of the Menehune Shores property has also been filled. The seawall fronting this property is c. 10 feet high along the pond side and c. 4 feet high along the inland side.

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Kalepolepo Fishpond

Description (continued)

Today, the Kalepolepo area is now part of the greater Kihei community. Most of the original area of Kalepolepo is now used for residential purposes, as beach park, and as the base for the NOAA Hawaiian Islands Humpback Whale Sanctuary. Halstead's *koa* house and many of the former houselots are within the area of the Menehune Shores condominium. The remaining physical elements of Kalepolepo include the Kula Kai ponds, and the walls of David Malo's Congregational Church, located at the Trinity Church by the Sea.

Previous Investigations - Kalepolepo Pond was included in Kikuchi's inventory of Hawaiian fishponds that was conducted as part of his PhD. dissertation research (Kikuchi 1973). The pond was designated as site F6 (F designated Maui Island). Waiohuli Kai was designated site F28, and Keokea Kai was designated site F14. Kikuchi's survey consisted of identifying the pond type and estimating the acreage of the pond. Kikuchi's study was synthetic and covered the entire archipelago; site-specific details were therefore not presented in his fishpond inventory.

The first record of field investigations occurring at Kalepolepo Pond is the Hawaii Register of Historic Places Archaeological Registration Form, which was completed in 1973 (Connolly 1973). At that time, the State HRHP number of 50-50-09-1288 and the B.P. Bishop Museum number 50-Ma-C3-1 was assigned to the site. As part of the recordation, a sketch map of the pond wall was drawn, and a significance assessment was made. The site was recommended for placement on the Hawaii Register of Historic Places. The following summary statement was given:

This fishpond is not only a good representative of its type, but it is one of the few remaining fishponds on Maui. This fact adds to its interpretive potential and increases the need for protection of the site. We recommend Valuable status, State Register (Connolly 1973).

The site was placed on the Hawaii Register July 15, 1974. It was removed from the register in 1980, due to technicalities involving owner notification.

Waiohuli Kai and Keokea Kai Ponds were not recorded by Connolly at that time. These two ponds were identified on aerial photographs during Cordy's (1977) archaeological reconnaissance of the Kihei area, and were assigned State Inventory of Historic Places (SIHP) site numbers at that time. Cordy did not conduct site-specific recording of the Kula Kai fishponds at that time.

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Kalepolepo Fishpond

Description (continued)

In 1981, Charles Keau of the Maui County Department of Parks and Recreation conducted an archaeological Reconnaissance of the area that is now the Maui County Kalepolepo Park, and the open beach area to the north of the federal building. At that time, the property was surplus Federal land, and was covered with thick vegetation. Keau identified two sections of picket fencing and a cement block in the area of the park, and a stone platform in the northern parcel (Keau 1981). He recommended that an inventory survey with testing be conducted prior to ground disturbance.

Keau and Neller returned to the area in 1982, while the seawall along Menehune Shores was being constructed. No new information regarding the possible historic features was found at that time. Neller recommended that all construction activities in the area should be monitored by an archaeologist, due to the information from historic documents indicating that sites were present in the area (Neller 1982). No specific information was recorded for the fishpond at that time.

In 1990, the Office of State Planning commissioned a state-wide survey and assessment of Hawaiian fishponds. This work was authorized and funded under the federal Coastal Zone Management Act, and included a summary of permit and review requirements for fishpond use (DHM Inc. et al. 1990a).

Kalepolepo Pond was included among 74 ponds selected across the state for in-depth study (DHM Inc. 1990b). Fieldwork conducted at the site in 1990 consisted of taking photographs, gathering data on the size and construction of the wall, assessing water quality and conditions, and the integrity of the pond; and assessing site significance under the National Register criteria. Kalepolepo was only Maui fishpond, and one of only seven ponds statewide that was found to be significant under all four of the National Register Criteria (DHM Inc. et al. 1990aIV-9 thru -11).

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Kalepolepo Fishpond

Statement of Significance (continued)

Information is potentially present that could help to clarify the date of original construction, changes in the pond wall through the many repair projects that have occurred, changes in the shoreline behind the pond which directly affected the size of the pond and impacted its productivity, and the original footprint of the wall at its easternmost extent. In addition to the collection of additional archaeological data, the information value of the pond will allow for in-depth comparisons of this site with other fishponds of the *loko kuapa* type. Recent studies in fishpond dynamics have also demonstrated the economic benefits of understanding traditional fishpond technology and its application to modern aquaculture management (Wyban 1992).

An important historical context for the understanding the social setting and significance of the Kalepolepo fishpond is the history of social organization in Hawai'i. The economic, political and religious importance of aquaculture to the Hawaiian culture is well-represented in the history and setting of Kalepolepo Pond. During its period of use, it was under the control of powerful chiefs, and was selected for the residency of the most powerful *kahuna* recognized by Kamehameha I, Hewahewa.

Between the time of 'Umi and Kamehameha I, restoration work on Kalepolepo Pond was conducted under the direction of three prominent chiefs who were overlords of either all Maui lands or all Hawai'i Island lands ('Umi, Kekaulike, and Kamehameha). This pattern indicates that the pond was royal, in that its produce was the property of the high chief, to disperse or limit as he/she saw fit. Major repair work on the Kula Kai Ponds would have required the assemblage of a considerable number of workers. The combined acreage of the three ponds, as estimated by Kikuchi (1973:256,258) was c. 48 acres. Such work requirements would have been feasible only for those with sufficient political power to do so. In Kamakau's description of Kamehameha's repair work, he noted that "All the men and women of East Maui worked at Haneoo and all the men and women of West Maui at Kalepolepo"(1869:1303).

The political importance of the Kalepolepo Fishponds is also indicated by the presence of two *heiau* immediately inland of the ponds. Walker visited the sites of these *heiau* in 1929, and indicated that both were destroyed. The *heiau* named Kalaihi was located at the northern end of the "large fishpond, still to be seen" (possibly Waiohuli Kai Pond). The Rice poultry yard was on the site at the time of Walker's visit (1930:269). The second *heiau*, named Kealalipoa, was found at the south end of the large pond, behind the extant Mormon Church, in a destroyed state (Walker 1930:269).

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Kalepolepo Fishpond

Statement of Significance (continued)

Kalepolepo Fishpond is prominent in the context of the local history for the Kula Kai/Kihei area. Together with the other ponds of Kula Kai, Kalepolepo was the focal reason for the development of a residential and ceremonial center prior to western contact. It was the existence of the established community that attracted the traders and missionaries to Kalepolepo. This settlement was the core of what has become a sprawling seaside community.

The importance to Kalepolepo Pond in the history of the Kihei area is that it is one of very few visible material remains of its early settlement, and of a lifestyle that was well adapted to the Kihei environment. The pond was located so as to take advantage of many natural features, including the coral reef, fresh water, the ocean currents, and the available ocean resources.

There are still many questions regarding the composition of the natural environment during the time that Kalepolepo Pond was in use. The changes in the extent and composition of the shoreline, the nature and source of fresh water, the extent of the wetlands inland of the pond, and changes in water quality are problems that are directly relevant to the managing of Kihei's natural resources. Kalepolepo Pond is an important reference point, where the past and the present can be brought together and compared.

Because of the condition of the pond wall and the amount of historic/archival information available for Kalepolepo Pond, this site has a very high potential for restoration, public education, and possibly productive use through traditional aquaculture. These uses would enhance the local and regional importance of the site.

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Kalepolepo Fishpond

Statement of Significance

Summary. - Kalepolepo Fishpond was an economic resource that was important for its subsistence value to the people of the Kula District of Maui between approximately AD 1500 and 1880. It is a well-preserved example of the technological achievements associated with the development of Hawaiian aquaculture. During its period of use, the pond was an important political resource for the *ali'i* of Maui, and for the Hawaiian Monarchy, within the context of the traditional Hawaiian social system. The history of the repairs and uses of the pond reflect the social history of political power and leadership on the level of the district, island, and archipelago. Kalepolepo Pond was also a resource and place of cultural significance for all strata of Hawaiian society, including the chiefs, priests and commoners. For this reason, it is an important element of the cultural heritage of the Hawaiian people, and it meets National Register Criterion A in the areas of Social History, Maritime History, Hawaiian Heritage, and Industry (aquaculture).

For the greater part of the c. 400 year period that the pond was in active use, there was a settlement present at the shore of Kalepolepo Pond which included a cluster of homes, ceremonial places (two *heiau*, later two churches), and most likely a high ranking individual's residence. The location of the settlement was directly tied to the ponds of Kula Kai, which were the focal elements of the overall community structure and its landscape. Economically, the traditional Hawaiian settlement at Kalepolepo was primarily focused on fishing and maintaining the ponds. Ceremonial activities were also an important aspect of the community.

Historically, Kalepolepo Pond is one of the best-documented fishponds for Maui, and has a high potential for providing new information regarding the maritime history and social history of the Hawaiian people. It meets National Register Criterion D in these areas, as well as in the area of Archaeology. Due to the period of use for Kalepolepo Pond, it potentially contains important information relating to prehistoric Hawaiian culture and historic period Hawaiian culture. Associated sites adjacent to the pond may also contain important archaeological information regarding the material culture of historic period foreigners, such as John Halstead and other American traders that settled here. The western trading interests at Kalepolepo between c. 1850 and 1860 were focused on the whaling and maritime trading industries, and co-existed with the continued traditional activities that focused on fishing and maintaining the ponds.

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Kalepolepo Fishpond

Statement of Significance (continued)

Kalepolepo retains considerable structural integrity, and it is one of the best-preserved fishponds for the Island of Maui (Connolly 1973). It meets National Register Criterion C as both an excellent example and as a unique example of the architectural achievements attained by the Hawaiian fishpond builders. Areas relevant to this Criterion include Maritime History, Hawaiian Heritage, and Industry (aquaculture).

The history of Kalepolepo is also the history of the comings and goings of *ali'i nui* to the Kula Kai area. The pond has been remembered primarily for its many repairs, conducted always under the command of a high chief: 'Umi a Liloa, Kekaulike, Kamehameha I, and Ho'apili. The pond was utilized by Kekuaiwa Kamehameha, Kahekili II, and visited by the Kamehamehas III, IV and V after the establishment of the Hawaiian monarchy.

An important historic figure who saw first-hand the contrasts between tradition and westernization is associated with Kalepolepo. David Malo, who was among the first generation of Christian ministers, lived at Kalepolepo as overseer of the pond and as the religious guardian of the place and its people. The site meets National Register Criterion B, in that it was directly associated with David Malo (c. 1793-1853).

Historic Contexts - Kalepolepo Fishpond is a significant when considered in a number of historic contexts. The most prominent of these contexts are: Hawaiian aquaculture, the history of Hawaiian social organization, the period of culture contact in Hawai'i, and the local history of the Kula Kai area.

Kalepolepo Fishpond contains a considerable amount of information that is important for understanding the history and technology of Hawaiian aquaculture. Much of this information has not yet been retrieved. There is more information available regarding the construction techniques and materials used in building the wall, and in the dynamics of the pond ecosystem. There is a high potential for subsurface deposits in the shoreline areas that have not been impacted by construction, such as the County of Maui Park parcels.

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Kalepolepo Fishpond

Statement of Significance (continued)

These two *heiau* were the only such ceremonial centers identified by Walker along the entire coastline between Ma'alaea and Makena. Their location near the three ponds reflects a political and religious importance of the locality, and its use as a gathering place for both *ali'i* and *maka'ainana*.

The age and period of use for the two *heiau* is not known, and there is no information regarding their function. The *heiau* were destroyed some time after 1819, when the traditional religion and *kapu* system was overthrown, and sometime before 1929, when they were observed in a destroyed state by Walker (1931). The sites were possibly already destroyed in 1917 when Thrum attempted to locate information regarding their whereabouts (Thrum 1917:59).

In addition to the presence of *heiau*, the religious importance of the site is reflected in the appearance of the sacred *Mo'o*, Mokuhinia, at Kalepolepo. The *mo'olelo* of Mokuhinia does not establish a direct association of the deity with a specific pond at Kalepolepo, however, it is likely that she was associated with one, or possibly all of the three Kula Kai ponds.

Kalepolepo was situated at the coastal terminus of a major *mauka-makai* transportation route (the Kalepolepo Road) which passed through three *ahupua'a* between the fishponds and the upper Kula settlement in Keokea. It was also located along the route of Pi'ilani's Alanui, which circled the Island. The presence of this trail meant that fresh fish from the Kula Kai ponds could be taken directly to Wailuku, or wherever the high chief was located at the time. Kalepolepo was along the route of the annual Makahiki procession.

Under traditional land tenure, Hewahewa would have been the chief of the *ahupua'a* of Ka'ono'oulu and of Kalepolepo. He therefore would have been one of the principal benefactors and overseers of Kalepolepo Pond, and may have controlled the distribution of its produce. The fact that Ho'apili, rather than Hewahewa, was the overseer of the pond repairs in the 1840's indicates that it was considered royal property, and was not the total responsibility of the local *ahupua'a* chief.

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Kalepolepo Fishpond

Statement of Significance (continued)

The history of Kalepolepo and its ponds includes the period of western contact and the introduction of Christianity to Maui (AD 1798-1850). This is an important historic context, in that it was a time of rapid social and economic change and rapid depopulation of the Native Hawaiians. Kalepolepo is associated with a well-known religious leader who were influential during this period.

Historic accounts of Malo indicated that he was more than simply a minister to the Kilolani Church. He was involved in the workings of the community, and is credited with restoring the natural beauty to the shoreline area behind the ponds. It is likely that he also directed and/or participated in taking care of the ponds. Malo was an industrious individual who quickly learned western technology and put it to practical applications. He planted cotton and had it spun and woven, and used to make his own clothing. He planted sugar cane and manufactured an excellent quality of Molasses (Emerson in Malo 1980). Malo also had lands in Waikapu and Lahaina, where he had a breadfruit grove behind Alamihi Fishpond (Alexander 1884).

When he arrived at Kalepolepo, Malo began the task of constructing the Kilolani Church, a project that was not completed until 1852 (Frech 1988). The church was built from blocks of cut coral and was located c. .5 km inland from the fishpond. Prior to completion of the church, Malo conducted services closer to the pond, under the shade of the coconut palms. The service was called by blowing a large conch shell that belonged to Halstead (Wilcox 1921:67).

According to Wilcox (1921:67), the shoreline of Kalepolepo was planted by Malo with coconut, *kou*, taro and *ape*, a large taro-like plant that was believed to ward off evil spirits (Pukui and Elbert 1986:28). It is not certain whether Malo was at Kalepolepo during the pond repair work that was done by Ho'apili. It is certain that the pond waters were clear and productive during the decade that Malo lived at Kalepolepo (Wilcox 1921:67), and that it was a retreat destination for the monarchs during this period. Lot (Kamehameha V) apparently stayed for an extended period and ran up a debt with Halstead (Wilcox 1921:66).

Malo's knowledge of traditional Hawaiian history and customs was quite extensive, and while at Lahainaluna, he contributed significantly to the recordation of this history. His works have been incorporated in historical compendiums, and have been translated and published under his name (Malo 1980). His contributions, both while he was living and through his writing, are recognized throughout Hawai'i.

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Section Number 10 Page 1

Kalepolepo Fishpond

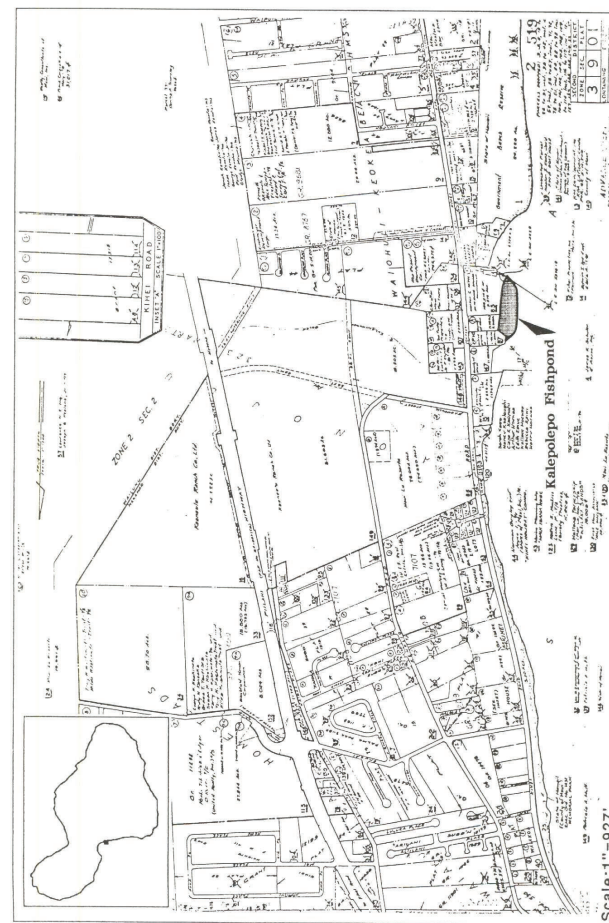
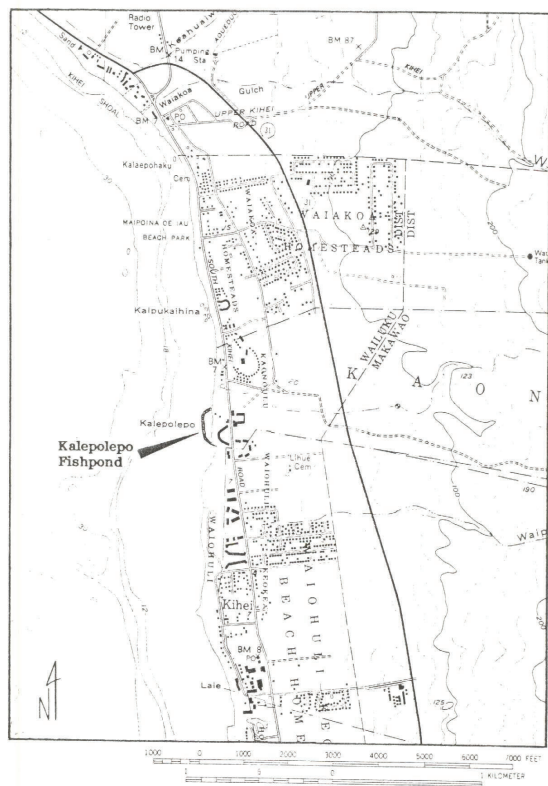
Verbal Boundary Description

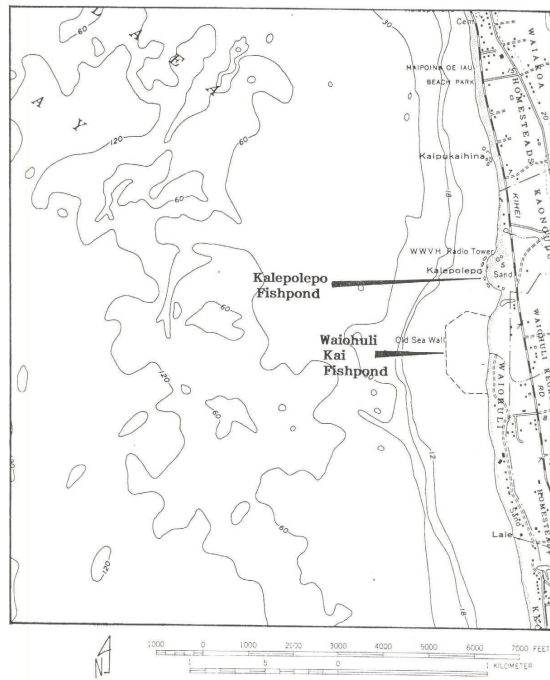
The boundary of Site 50-50-09-1288 follows along the outer perimeter of the pond wall and along the shoreline, as it exists in 1996. The site is bounded to the north, west and south by the sea, and on the east by Parcels 85, 87 and 147 of Tax Map Key (2) 3-9-001.

Boundary Justification

Only that portion of the wall that is visible is used in determining the boundary of the site at this time. Buried portions of the wall may extend inland from the present shoreline; however its presence has not been documented to date. There may also be archaeological deposits associated with the pond within the one or all of the adjacent properties; however, such deposits have not been documented to date. The site boundaries therefore follow the outermost perimeter of the fishpond wall and the shoreline.

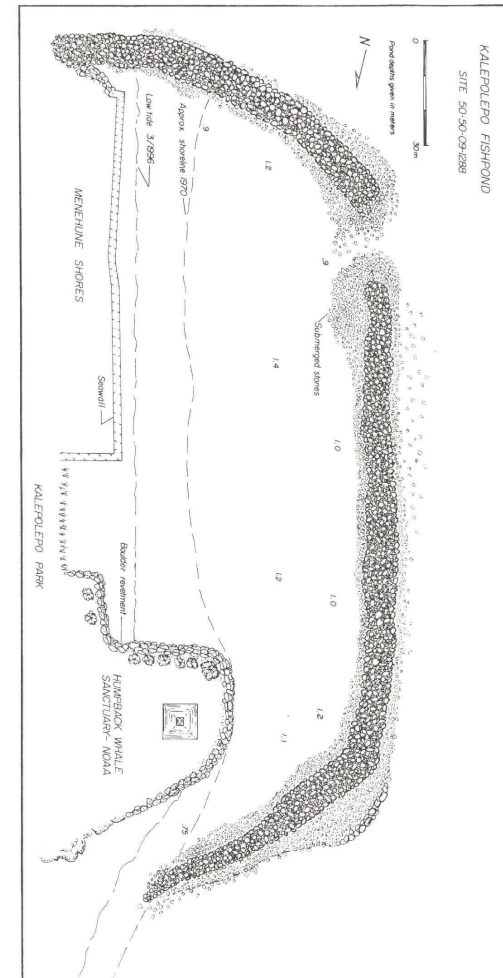
D25





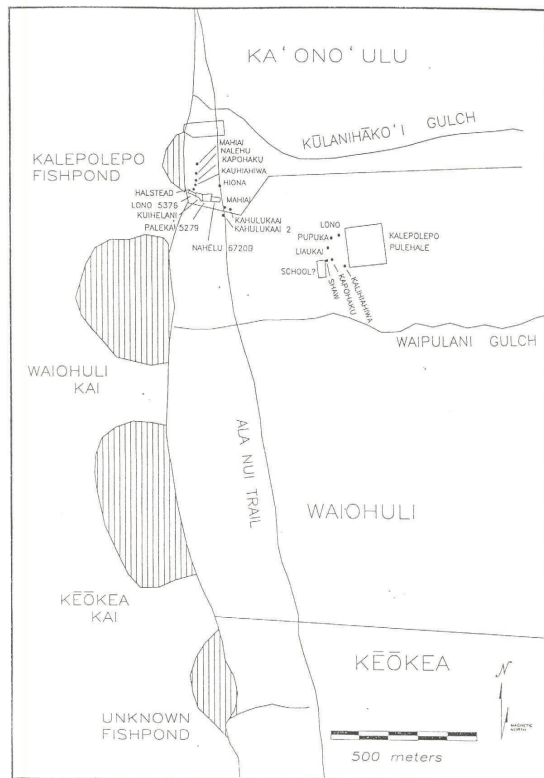
Portion of Ma'alaea 7.5 Minute Quadrangle (1954) Showing Kalepolepo Fishpond Mostly Filled With Sand. Waiohuli Kai Pond also depicted.

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Scaled Plan View Map of Kalepolepo Fishpond (SHPP) 1996)

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Kalepolepo in the Nineteenth Century (Kolb 1995:63)



**HAWAI‘I STATE PLAN –
ASSESSMENT OF
PROJECT APPLICABILITY
TO GOALS, OBJECTIVES,
AND POLICIES**

APPENDIX

G-1



APPENDIX G-1

Analysis of Project Applicability to Hawai'i State Plan

Chapter 226, HRS, also known as the Hawai'i State Plan, is a long-range comprehensive plan which serves as a guide for the future long-term development of the State by identifying goals, objectives, policies, and priorities, as well as implementation mechanisms. The Plan consists of three (3) parts. Part I includes the Overall Theme, Goals, Objectives, and Policies; Part II includes Planning, Coordination, and Implementation; and Part III establishes Priority Guidelines. Inasmuch as Part II of the State Plan covers its administrative structure and implementation process, discussion of the proposed project's applicability to Part II is not appropriate. Below is an analysis of the project's applicability to Part I and Part III of the Hawai'i State Plan.

The methodology for the analysis involves examining the project's applicability to the Hawai'i State Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the Hawai'i State Plan, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advances or promotes 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 supports or advances 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 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.			
Analysis: The North Kihei Wastewater Collection and Transmission System project proposes to improve the existing Wastewater Pump Stations as well as increase wastewater capacity for the urban Kihei area. The existing system is reaching its capacity limits and with new development, residential and commercial, and improvements planned for the area, the upgrade and increase is necessary. This project fulfills and meets the State goals of guaranteeing, for present and future generations, a desired physical environment and overall well-being while also supporting a strong economy.			
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.	✓		
Policies: (1) Manage population growth statewide in a manner that provides increased opportunities for Hawaii's people to pursue their physical, social, and economic aspirations while recognizing the unique needs of each county.	✓		

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 North Kihei Mauka Transmission Line project is directly applicable to guiding population growth to be consistent with the achievement of physical, economic and social and objectives of HRS 226. The proposed project will provide wastewater system capacity for the North Kihei area which will support future economic expansion and population growth in areas planned and designated for urban expansion.			
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.	✓		
Policies:			
(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.			✓
(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.			✓

Hawai'i State Plan, Chapter 226, HRS Part I. Overall Themes, Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable	DA	IA	NA
(6) Seek broader outlets for new or expanded Hawaii business investments.			✓
(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.			✓
Analysis: The proposed project is directly applicable to the objectives and policies related to the economy in general. In the short term, the proposed project will support construction jobs and material supply companies during project construction. In the long term, the proposed project will provide wastewater expansion capacity for existing and future businesses in North Kihei, some which may diversify Maui's economy from the tourism sector.			

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DA	IA	NA	
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.			✓
(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:			
(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.			✓
(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			✓

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DA	IA	NA	
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 project involves wastewater system upgrades in North Kihei and is not applicable to objectives and policies related to agriculture.			
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.			
Policies:			
(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.			✓
Analysis: The proposed project is indirectly applicable to the objective of a visitor industry that constitutes a major component of steady growth for Hawaii's economy. The proposed project will provide increased wastewater capacity in North Kihei which will facilitate future business development in North Kihei. Due to the prominence of the tourism activity in Kihei, future economic expansion will involve tourist based businesses.			
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.			
Policies:			
(1) Encourage the sustained flow of federal expenditures in Hawaii that generates long-term government civilian employment;			✓

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(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 project involves wastewater system upgrades in North Kihei and is not applicable to the objective of seeking a stable federal investment base as 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.		✓	
Policies:			
(1) Facilitate investment and employment growth in economic activities that have the potential to expand and diversify Hawaii's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;			✓
(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;			✓

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(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;			✓
(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 project is indirectly applicable to the objective of planning for potential growth and innovative activities. The proposed project will provide increased wastewater capacity in North Kihei which will facilitate future business development in North Kihei, which may involve new business opportunities related to growth in innovative activities.			
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.			✓
Policies:			
(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;			✓

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(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 project involves wastewater system upgrades in North Kihei and is not applicable to the objective of developing broadband and wireless communication capability and positioning Hawaii as a leader in broadband 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.		✓	
Policies:			
(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.			✓

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(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 indirectly applicable to the prudent use of Hawaii's land-based resources to protect the land-based, shoreline and marine resources. The proposed project will provide additional wastewater system capacity and mitigate the potential for wastewater spills. In planning for the proposed project, biological resources inventory and assessment was carried out to ensure the project will not adversely impact rare and endangered species or their habitat.			
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.		✓	
Policies:			
(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 project is indirectly applicable to the objective of enhancement of Hawaii's scenic assets, natural beauty and multi-cultural/historic resources. An environmental assessment (EA) was carried out on the proposed action to ensure adverse visual impacts are avoided or mitigated. As well, archaeological consultation and cultural impact assessment were carried out on the proposed project to ensure protection of cultural and historic 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.		✓	
Policies:			
(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.		✓	

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(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.		✓	
(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 project is indirectly applicable to the objectives and policies for the physical environment related to land, air, and water quality resources and greater public awareness and appreciation of Hawaii's environmental resources. An EA has been carried out on the proposed project to ensure adverse impacts to the physical environment are avoided or mitigated. The EA and permitting requirements, including a Special Management Area Use Permit will involve opportunities for the public to review and comment on the proposed project. In addition, a Best Management Practices (BMP) plan will be prepared for the proposed project to ensure water and air quality will not be adversely impacted during construction. The BMPs will include, but not limited to, temporary drainage basins and swales to prevent stormwater runoff from impacting downstream and adjacent properties, as well as dust fences to maintain air quality during construction.			
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.	✓		
Policies:			
(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	✓		
(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.			✓
Analysis: The proposed project is directly applicable to planning for the State's facility systems that support statewide social, economic, and physical objectives. The proposed project will ensure wastewater services are available in North Kihei to support future growth. The proposed project will support urban development in close proximity to existing wastewater service. The proposed project represents a capital improvement project that is in consonance with State and County plans and will provide wastewater service that can be supported by resource capacity and at a reasonable cost to the user.			

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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.	✓		
Policies:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	✓		
(2) Promote re-use 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 applicable to the objectives and policies for liquid waste facility systems. The proposed project will increase the capacity of the wastewater facility system in North Kihei to support future housing and business development and mitigate the potential for wastewater spills. The proposed project provides adequate development of sewerage facilities to complement planned growth in North Kihei.			
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.		✓	
Policies:			
(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 project involves wastewater system improvements in North Kihei and is indirectly applicable to water systems because the North Kihei Wastewater Collection and Transmission System provides a significant amount of R-1 water which relieves the use of potable water for irrigation.			

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DA	IA	NA	
Chapter 226-17 Objectives and policies for facility systems -- transportation.			
Objectives: Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.			✓
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.			✓
Policies:			
(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 project involves wastewater system improvements in North Kihei and is not applicable to the objective and policies for facility development of transportation services.			
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;			✓

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DA	IA	NA	
(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.			✓
(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;			✓
(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;			✓

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(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 project involves wastewater system capacity improvements and is not applicable to the objectives and policies related to energy facility systems.			
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.			
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.			✓
(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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to telecommunication systems.			
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.		✓	
Policies:			
(1) Effectively accommodate the housing needs of Hawaii's people.		✓	
(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.		✓	

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(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 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 project is indirectly applicable to the objectives and policies related to socio-cultural advancement of housing. The proposed project provides wastewater infrastructure system capacity services to support future housing in an area of North Kihei that is planned for future growth.			
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.			✓
Policies:			
(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			✓

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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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to socio-cultural advancement related to 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.			✓
Policies:			
(1) Support educational programs and activities that enhance personal 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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to socio-cultural advancement for education.			
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.			✓
Policies:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			✓

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(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.			✓
(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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to the socio-cultural advancement of social services.			
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.		✓	
Policies:			
(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.			✓

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Analysis: The proposed project is indirectly applicable to the objectives and policies for socio-cultural advancement related to leisure. The proposed project involves wastewater service system upgrades in North Kihei which will allow expansion of recreational leisure activities and facilities in the area for 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.			✓
Policies:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			✓
(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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to socio-cultural advancement of individual rights and personal well-being.			
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.			✓
Policies:			
(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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to socio-cultural advancement of culture.			
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:			
(1) Assurance of public safety and adequate protection of life and property for all people.			✓

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(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):			
(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):			
(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):			
(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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the objectives and policies related to socio-cultural advancement of public safety.			
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.	✓		
Policies:			
(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.			✓

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(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 project is directly applicable to the socio-cultural advancement related to government. The proposed project encompasses an efficient, effective and responsive government services involving provision of wastewater system infrastructure in anticipation of future urban expansion in North Kihei. The proposed project will ensure wastewater services are available in a timely manner to support planned growth.			

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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;			✓

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(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.			✓
(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.			✓

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(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.			✓
(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.			✓

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(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.			✓
(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.			✓

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Analysis: The proposed project is directly and indirectly applicable to the economic priority guidelines set forth in HRS 226-103. In the short term, the proposed project will support construction jobs and material suppliers. In the long term, the proposed project will ensure wastewater services are adequately provided to support future commercial business land uses.			
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.	✓		
(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.	✓		

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(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.	✓		
(13) Protect and enhance Hawaii's shoreline, open spaces, and scenic resources.		✓	
Analysis: The proposed project is directly applicable to the population growth and land resources priority guidelines set forth in HRS 226-103. The proposed project will ensure the timely provision of wastewater services to support future housing and commercial development projects in North Kihei. The proposed project is also directly applicable to the objective of protecting Hawaii's shoreline, open spaces and scenic resources. Drainage improvements will be carried out on the proposed project were required to capture increases in stormwater runoff onsite and prevent runoff from entering adjacent properties and the nearshore marine environment.			
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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the crime and criminal justice priority guidelines set forth in HRS 226-103.			
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 low- and moderate-income and gap-group households.		✓	

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(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- and moderate-income households, gap-group 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.			✓
Analysis: The proposed project is indirectly applicable to the affordable housing priority guidelines set forth in HRS 227-103. Adequate wastewater system services will support future development in North Kihei which may involve future affordable housing developments projects on marginal or nonessential agricultural land.			
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 project involves wastewater system capacity improvements in North Kihei and is not applicable to the quality education priority guidelines set forth in HRS 226-103.			

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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.			✓
Analysis: The proposed project involves wastewater system capacity improvements in North Kihei and is not applicable to the sustainability priority guidelines set forth in HRS 226-103.			
CHAPTER 226-109: Climate change adaptation			
Priority guidelines and principles to promote climate change adaptation shall include:			
(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 is indirectly applicable to the climate change adaptation priority guidelines. The project increases resilience of the wastewater system and mitigates the potential for wastewater spills.			



**COUNTYWIDE POLICY
PLAN – ASSESSMENT
OF PROJECT
APPLICABILITY
TO GOALS, OBJECTIVES,
AND POLICIES**



APPENDIX

G-2

APPENDIX G-2

Analysis of Project Applicability to Countywide Policy Plan

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

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

Discussion of 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 advances, promotes or affects 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 supports, advances or affects 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.						✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Implementing Actions:			
(a) Develop island-wide networks of greenways, watercourses, and habitat corridors.			✓
Analysis: The proposed North Kihei Wastewater Collection and Transmission System project is indirectly applicable to the Countywide goal of preserving, managing, and caring for the natural environment in perpetuity. As a wastewater infrastructure improvements project, the needed upgrade will indirectly help to protect South Maui's beaches, shoreline, coastal ecosystems, and environment by mitigating any unintentional wastewater spills or leakage into the ocean.			
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 project is indirectly applicable to the objective of improving the quality of environmentally sensitive, locally valued natural resources of each island. Drainage improvement will be carried out throughout the wastewater alignment corridor, which will help restore water quality and improve the nearshore reef environment.			
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.	✓		

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(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 action is directly and indirectly applicable to the objective and policies related to natural environment stewardship. This is a wastewater infrastructure improvements project that will protect the environment. These improvements are being done to address capacity issues as well as upgrade an aging wastewater system to mitigate any potential spills or leakage into the ocean. The use of construction BMPs will further prevent erosion and nonpoint source pollution. Further the project hired a biologist to conduct a flora and fauna study to ensure protection of any threatened and/or endangered species. See Appendix "C".			
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 project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objective and policies to educate residents and visitors about responsible stewardship practices.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Policies:			
(a) Protect and preserve access to mountain, ocean, and island resources for traditional Hawaiian cultural practices.		✓	
(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 of protecting the multi-cultural values and traditions. An archaeological consultation and a cultural impact assessment were carried out on the proposed project to ensure protection of native Hawaiian rights and to ensure historic and cultural resources are not adversely impacted by the proposed project.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed project is indirectly applicable to the objective of respect for unique local cultures and natural environment. An EA is being carried out to assess the project's impact on the environment and to identify measures to avoid or mitigate adverse impacts to the environment. A Cultural Impact Assessment report has been completed as well as a Section 106 consultation with the SHPD and Native Hawaiian Organizations has been initiated. These consultations are being carried out in recognition of the interconnectedness between the natural environment and the cultural heritage of the project area.			
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.			✓
(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 involves capacity improvements to the North Kihel mauka wastewater system and is not applicable to the objective of preserving the arts, culture and history of Maui County.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(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 the objective to protect significant cultural and historic resources. An EA is being carried out on the proposed action to identify potential impacts and propose mitigative measures, as applicable. A cultural impact assessment and consultation with SHPD along with various Native Hawaiian Organization have been carried out on the proposed project to ensure cultural activities, historic resources, and historic lands are not adversely impacted by the proposed action.			
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 project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objective of improving education.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(n) Encourage alternative learning and educational opportunities.			✓
Implementing Actions:			
(a) Develop safe walking and bicycling programs for school children.			✓
Analysis: The proposed project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objective of providing nurturing learning environments that build skills for the 21st century.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objective of providing all residents with better 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.			✓
(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: The proposed project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objective of 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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the goal and objectives related to strengthening social and healthcare services.			
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.			✓
(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 project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objectives and policies related to strengthening partnerships with Federal and State agencies and the private sector to improve the quality and delivery of social and healthcare services.			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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: The proposed project involves capacity improvements to the North Kihei mauka wastewater system and is not applicable to the objectives and policies related to strengthen 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.			✓
(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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 project is indirectly applicable to the goal of providing affordable housing opportunities for all residents. The proposed project will provide increased wastewater capacity for future housing and community development in North Kihei, including affordable 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.			✓
Analysis: The proposed project is indirectly applicable to the objective of increasing the mix of housing types in towns and neighborhoods. The proposed project will increase the wastewater system capacity in North Kihei to support future land use development in an area designated for urban growth. Future development may include, but not limited to, a mix of residential unit types to expand consumer choice.			
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.		✓	

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 proposed project is indirectly applicable to the objective to increase and maintain the affordable housing inventory. The proposed project will increase the capacity in the North Kihei wastewater system to support future development. It is anticipated that future development will include affordable housing projects, which will increase the affordable housing inventory.			
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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the objectives to expand education related to housing.			
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.			✓
(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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 project is indirectly applicable to the goal of strengthening the local economy. The proposed project will increase the capacity of the North Kihei wastewater system, which will support future economic development. The proposed project represents an investment in infrastructure to foster economic development and diversification. In ensuring wastewater capacity is available in a timely manner to support development of future industries, the County demonstrates understanding of the carrying capacity of the wastewater system infrastructure and the role of industrial development in the economy.			
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.			✓
(j) Encourage healthy and organic farm practices that contribute to land health and regeneration.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(k) Support cooperatives and other types of communal farming nontraditional 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 project is not applicable to the objective of diversifying and expanding sustainable forms of agriculture.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(n) Recognize the important contributions that the visitor industry makes to the County's economy, and support a healthy and vibrant visitor industry.		✓	
Analysis: The proposed project is indirectly applicable to a visitor industry that respects the resident culture and the environment. The proposed project will provide increase wastewater system capacity in the North Kihei service area, which includes many businesses related to the tourist industry. As such, the increase in the wastewater capacity will allow existing businesses to expand and new businesses to locate in the North Kihei area, which in the long run, supports a healthy and vibrant 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: <ul style="list-style-type: none"> • Health and wellness industry; • Sports and recreation industry; • Film and entertainment industry; • Arts and culture industry; • Renewable-energy industry; 		✓	
<ul style="list-style-type: none"> • Research and development industry; • High-technology and knowledge-based industries; • Education and training industry; • Ecotourism industry; and • Agritourism industry. 			
Analysis: The proposed project is indirectly applicable to the objective to expand economic sectors and support emerging industries. The proposed project will increase wastewater system capacity in North Kihei, which will support future economic development in the area. Future businesses may involve, but not necessarily limited to, arts and culture, renewable energy, health and wellness, and high-technology.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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 indirectly applicable to the goal and objectives to improve parks and public facilities. The proposed project will increase wastewater system capacity in the North Kihei service area, which will support future recreational facility development in the service area.			
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 project is indirectly applicable to the goal and objectives to improve parks and public facilities. The proposed project will increase wastewater system capacity in the North Kihei service area, which will support future dedicated shelters and facilities for disaster relief, and ensure public facilities are adequately serviced with wastewater infrastructure.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed project is indirectly applicable to the objectives to enhance planning for parks and public facilities. The proposed project will increase wastewater system capacity in the North Kihei area, which will enhance planning for future public facilities requiring wastewater services.			
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.			✓
(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 project involves capacity improvements to the North Kihei wastewater system, which is not applicable to the goals and objectives to diversify transportation options.			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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.			✓
(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 project involves capacity improvements to the North Kīhei wastewater system, which is not applicable to the objectives to reduce reliance on the automobile and fossil fuels.			
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 project involves capacity improvements to the North Kīhei wastewater system, which is not applicable to the objectives to improve reliable air transportation.			
Objective:			
(4) Improve opportunities for affordable, efficient, safe, and reliable ocean transportation.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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.			✓
Analysis: The proposed project involves capacity improvements to the North Kīhei wastewater system, which is not applicable to the goals and objectives to improve 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 proposed project involves capacity improvements to the North Kīhei wastewater system, which is not applicable to the goals and objective to expand the planning and management of transportation systems.			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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.			✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system, which is directly applicable to the goal to improve the physical infrastructure of the County's wastewater transmission system.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(d) Implement and regularly update the Integrated Solid Waste Management Plan.			✓
(e) Phase out the use of injection wells.			✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system, and is directly applicable to the objectives related to pursuing improvements and upgrades to existing wastewater systems consistent with current community plans, Maui Island Plan and 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.			✓
(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 project is not applicable to the objective of promoting 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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 proposed project involves capacity improvements to the North Kihei wastewater system and is directly applicable to the objective to direct growth in a way that makes efficient use of existing infrastructure and to areas where there is available infrastructure capacity. The proposed project capitalizes on improving existing infrastructure capacity in a cost effective manner.			
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.	✓		
(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 project is directly applicable to the objective to improve planning and management of infrastructure systems. The proposed project need arises from assessment of wastewater infrastructure capacity and projection of future wastewater infrastructure needs in an area designated as an Urban Growth Boundary in the Maui Island Plan. The proposed project will ensure infrastructure is built concurrently or prior to development.			

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
J. PROMOTE SUSTAINABLE LAND USE AND GROWTH MANAGEMENT			
Goal: Community character, lifestyles, economies, and natural assets will be preserved by managing growth and using land in a sustainable manner.	✓		
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.		✓	
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 directly applicable to the goal of managing growth. Provision of wastewater capacity will facilitate urban growth to designated areas as set out in the MIP. The proposed project does not involve development of summits, slopes and ridgelines, and restricts development in culturally sensitive lands and areas prone to natural hazards or sea-level rise.			
Objective:			
(2) Improve planning for and management of agricultural lands and rural areas.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
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 involves capacity improvements to the wastewater system in North Kihei and is not applicable to the objective of improving planning and management of agricultural lands and rural areas.			
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.			✓
(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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(c) Establish and enhance urban forests in neighborhoods and business districts.			✓
Analysis: The proposed project is directly applicable to the goal of designing all developments to be in harmony with the environment. In this regard, an environmental assessment is being prepared to assess the project and ensure that the project does not adversely impact the environment and is developed in harmony with environmental and socio-economic parameters.			
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 sunseting stipulations on development entitlements and their implementation.			✓
Analysis: The proposed project is directly applicable to the objective to improve efficiency in land use planning and management. An EA is being prepared for the proposed project to assess direct, indirect, and cumulative impacts of the project and identify measures to avoid or mitigate adverse impacts. The EA identifies project need, assessment of project consistency with the General Plan, and analysis of impacts. The proposed project is consistent with the Kihei-Makena Community Plan, Countywide Policy Plan, and Urban Growth Boundaries established by the Maui Island Plan.			
K. STRIVE FOR GOOD GOVERNANCE			
Goal: Government services will be transparent, effective, efficient, and responsive to the needs of residents.	✓		
Objective:			
(1) Strengthen governmental planning, coordination, consensus building, and decision making.	✓		
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 is directly applicable to the goal of striving for good governance. The proposed project has been planned in anticipation of future demographic and economic shifts to accommodate planned population and business growth in designated areas set out in the MIP.			
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.			✓
(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.		✓	

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
Analysis: The proposed project is indirectly applicable to the objective to promote civic engagement. The proposed project is undergoing an EA, pursuant to Hawai'i Revised Statutes, 343, and Hawai'i Administrative Rules, Title 11 Section 200.1, Environmental Impact Statement Rules and the Special Management Area Major Permit process which requires public disclosure, review, and comment on the proposed action.			
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 Lana'i and Moloka'i 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 project is directly applicable to the implementation of capital improvements in a timely manner. The proposed project will provide an increase in capacity of the North Kihei wastewater system in anticipation of urban growth and in support of the Urban Growth Boundary established in the Maui Island Plan. Implementation of the proposed project will ensure that wastewater infrastructure will be available in a timely manner to support future urban growth. The proposed project will undergo public review during the EA and SMA permit process. As such, the proposed project is indirectly applicable to the objective of improving greater transparency in government decision making.			
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 proposed project is indirectly applicable to the implementation of the General Plan and review of discretionary permits for compliance with the Countywide Policy Plan. The proposed project provides necessary capacity in the wastewater system for North Kihei to support planned growth and development as set out in the General Plan and Maui Island Plan. The proposed project is compatible with the General Plan and Countywide Policy Plan as provided herein, in Chapter III of the EA.			
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 is directly applicable to the objective for the County government to be a role model for implementing cultural and environmental policies and practices. The County DEM, Wastewater Reclamation Division has retained qualified professionals to assess the proposed project in preparation of the EA, such as professional planners, engineers, biologist, archaeologists, and a cultural specialist. Consultation with SHPD and various Native Hawaiian Organizations as well as a cultural impact assessment have been carried out on the proposed action to ensure the proposed project will not adversely impact cultural and historic resources. In the EA document, appropriate Best Management Practices and archaeological and cultural procedures have been established to encourage contractors to incorporate environmentally sound and culturally appropriate practices.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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.			✓
(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 project is not applicable to the goal, objective, and policies as they relate to minimizing the causes and effects related to climate change. The project is a wastewater infrastructure improvement project that will support capacity issues to the existing wastewater system in South Maui.			
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.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 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.			✓
(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 North Kihei Wastewater Collection and Transmission System project is indirectly applicable to the goal, objectives, and policies as it relates to the impacts of sea-level rise and climate change. The project will improve old wastewater infrastructure and increase capacity. The new force mains, sewerlines, and improvements to the WWPSs will help to mitigate any potential wastewater spills or leakage into the ocean.			
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 and devices.			✓
(j) Encourage green footprint practices.			✓
(k) Reduce Maui County's dependence on fossil fuels and energy imports.			✓

COUNTYWIDE POLICY PLAN (Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable)	DA	IA	NA
(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 project is not applicable to the goal, objectives, and policies as it relates to the use of renewable and green technologies. As this is a wastewater system improvements project and will not utilize renewable or green technology.			



**MAUI ISLAND PLAN –
ASSESSMENT OF
PROJECT APPLICABILITY
TO GOALS, OBJECTIVES,
AND POLICIES**



APPENDIX

G-3

APPENDIX G-3

Analysis of Project Applicability to Maui Island Plan

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

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

1. *An island-wide land use strategy, including a managed and directed growth plan*
2. *A water element assessing supply, demand and quality parameters*
3. *A nearshore ecosystem element assessing nearshore waters and requirements for preservation and restoration*
4. *An implementation program which addresses the County's 20-year capital improvement requirements, financial program for implementation, and action implementation schedule*
5. *Milestone indicators designed to measure implementation progress of the MIP*

It is noted that Ordinance No. 4004 does not address the component relating to the implementation program. Chapter 2.80B of the Maui County Code, relating to the General Plan, was amended via Ordinance No. 3979, October 5, 2012, to provide that the implementation program component be adopted no later than one (1) year following the effective date of Ordinance No. 4004. In December 2013 and March 2014, the Council approved time extensions for approval and adoption of the implementation chapter of the MIP. The implementation program component of the MIP was adopted as Ordinance No. 4126 on May 29, 2014.

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

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

The proposed project has been reviewed with respect to pertinent goals, objectives, policies and implementing actions of the MIP. The analysis is presented in the table below.

The methodology used for assessing a project's relationship to the MIP involves examining the project's applicability to the Plan's goals, objectives, and policies. "Applicability" refers to a project's need, purpose and effects, and how these advance or promote a particular set of goals, objectives and priority guidelines. In assessing the relationship between a proposed action and the MIP, an action may be categorized in one of the following groups:

1. **Directly applicable:** the action and its potential effects directly advances or promotes 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 supports or advances 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			
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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives of healthy and vibrant island communities. The proposed project is an infrastructural component that will enable the North Kihei community to expand housing and other business related land uses that will help community meet its future housing and employment needs.			
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.		✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
2.1.1.c	Ensure traditional public access routes, including native Hawaiian trails, are maintained for public use.		✓
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 proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to respecting and protecting archaeological and cultural resources. In assessing the potential impacts of the proposed project, a cultural impact assessment and archaeological consultation were carried out.			
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.		✓

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DA	IA	NA	
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.	✓	
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the objectives related to more effective and efficient planning and review process that incorporates the best available cultural resources inventory, protection techniques, and preservation strategies. As noted above, assessment of the potential impacts of the proposed project included a cultural impact assessment to protect historic and cultural resources. A 6E consultation of the project involved coordination with the State Historic Preservation Division, as well as, the cultural impact assessment included interviews with knowledgeable cultural informants.			
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.	✓	

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DA	IA	NA	
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.		✓
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.	✓	

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DA	IA	NA	
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.	✓	
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 <i>Shoreline Access Inventory Update - Final Report</i> (March 2005), and its updates.		✓
2.2.4.c	Incorporate the <i>Shoreline Access Inventory Update - Final Report</i> (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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives to protecting reefs, shoreline and nearshore water quality. One of the main objectives of the proposed project is to prevent and mitigate any wastewater spills into the ocean and is thus indirectly applicable to protecting reefs, shoreline and nearshore water quality. Implementation of the proposed project will involve Best Management Practices during construction such as temporary drainage swales and detention basins, which will prevent increased stormwater runoff from impacting adjacent and downstream properties. In the long term, permanent drainage improvements will prevent increase stormwater runoff from entering adjacent and downstream properties. In addition, drainage system improvements will include catch basins with filtration, to filter harmful chemicals and sediment in the stormwater runoff which will help restore water quality in the nearshore marine environment.			
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.		✓

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DA	IA	NA	
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.		✓
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.		✓

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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.		✓
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 project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to healthy watersheds, streams, and riparian environments. An environmental assessment has been prepared for the proposed project to ensure adverse impacts to these resources are avoided or mitigated. Horizontal directional drilling will be utilized for force main crossings at Keōkea and Waimāha'iha'i gulches, such that there will be no surface disturbance in the gulch.			
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;		✓

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	(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).		✓
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		✓

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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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to protecting Maui's natural areas and indigenous flora and fauna. The EA included a flora and fauna analysis to ensure rare, endangered, indigenous flora and fauna and their habitats are not adversely impacted by the proposed project.			
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, Īao Valley, the Mauna Kahalawai (West Maui Mountains), Pu'u Ō'la'i, Kaho'olawe, Molokini, Moloka'i, and Lāna'i, 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.		✓

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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.		✓
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 project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to protecting scenic resources. An EA has been prepared for the proposed project to ensure adverse impacts to scenic vistas and resources are avoided or mitigated. The proposed action is located within the Special Management Area and as such, will be subject to design review by the Urban Design Review Board (UDRB). As such, the project will undergo further review and assessment by the UDRB to ensure the proposed project are not adversely impacting scenic views and vistas.			
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.	✓	

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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.			✓
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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goals and objectives related to natural hazards. The project will upgrade and improve the wastewater system for North Kihei and will indirectly support Maui County's effort to be disaster resilient.			
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.			✓

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	DA	IA	NA
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.			✓
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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to economic diversification. The proposed project will facilitate economic growth and diversification through provision of wastewater services to support expansion of commercial, business, industrial, and residential land use, including market and affordable housing developments in the North Kihei area.			
TOURISM			
Goal:			
4.2 A healthy visitor industry that provides economic well-being with stable and diverse employment opportunities.		✓	

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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.
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.

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4.2.3.b		✓	Use the required General Plan Annual Status Report to monitor trends related to residents and visitors.
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goal and objectives related to a healthy visitor industry that provides economic well-being with stable and diverse employment opportunities. The proposed project will facilitate economic growth through provision of wastewater services to support expansion of business activities in the North Kihei area, many of which will be related to the tourism industry. The proposed wastewater system improvements are located in an area designated for managed urban growth as set out in the MIP.			
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.

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DA	IA	NA	
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.		✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives to diversify the agricultural industry.			
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.	✓	

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4.4.2.d	Support the Maui County Energy Alliance Plan where consistent with the MIP.		✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goals and objectives related to emerging economic sectors. The proposed project will provide additional wastewater capacity to support businesses in North Kihei. This may include businesses in emerging economic sectors.			
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 project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goals and objectives related to small businesses. During construction, the proposed project will support jobs in the construction industry. In the long term, capacity improvements in the North Kihei wastewater system will support the expansion of commercial land use, which would provide future growth opportunities 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.		✓

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			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.
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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to the health industry and 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.

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			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.
			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.

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Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to the education and workforce development.			
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.	✓	
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.		✓

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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:		✓
	(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.		✓

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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.					✓
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 lā'au lapa'au.					✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goals and objectives related to housing and affordable housing. The proposed project will provide wastewater system capacity to support future land use development in North Kihei, which will include market and affordable housing developments. The proposed wastewater infrastructure improvements will be designed to deliver an appropriate level of service standard and cost for anticipated future land use activities. The proposed project is being planned and implemented to ensure wastewater infrastructure is timely provided to support future growth in North Kihei.						
CHAPTER 6 – INFRASTRUCTURE AND PUBLIC FACILITIES						
SOLID WASTE						
Goal:						
6.1	Maui will have implemented the ISWMP thereby diverting waste from its landfills, extending their capacities.					✓
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.					✓

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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.					✓
6.1.2.e	Discourage the disposal of landfill leachate by diversion to wastewater treatment plants, where practicable.					✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to solid waste disposal.						
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.	✓				

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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.
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, Kihei, Lahaina, and other wastewater systems.
Analysis: The proposed project is directly applicable to the goal and objectives related to wastewater systems. The proposed project involves capacity improvements to the North Kihei wastewater system. The proposed project provides timely wastewater capacity improvements to support future development in North Kihei in an area located within an Urban Growth Boundary as designated in the MIP. The proposed project has been designed to meet State and Federal standards for wastewater. The proposed wastewater system will convey wastewater to the Kihei Wastewater Reclamation Facility (WWRF) for treatment. The Kihei WWRF provides tertiary treatment of wastewater and R-1 quality of wastewater for irrigation purposes. Pursuant to Maui County Code, Chapter 14.34, the County has in place a wastewater assessment fee for facility expansion and system upgrades for the Kihei wastewater system including Kihei WWRF. As such, new users will pay connection and pro rata upgrade fees and charges. The County maintains the North Kihei wastewater system and regularly inspects and assesses the system to identify potential problems, forecasts future needs and the capacity of the system to meet future needs.			
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.

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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.
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 involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the goals and objectives related to water delivery systems. As a result of this project, the system will be able to provide more R-1 water, which will help to alleviate the use of potable water for irrigation purposes.			
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.

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			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.
			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 <i>Central Maui Pedestrian & Bicycle Master Plan</i> (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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to an intermodal transportation systems.			
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.

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			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.
			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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to an island-wide transit systems.			
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 <i>Pali to Puamana Parkway Master Plan</i> and the <i>Upcountry Greenways Master Plan</i> .

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
	DA	IA	NA
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.			✓
6.6.1.d Support the expansion of Haleakala National Park, where supported by affected communities.			✓
6.6.1.e Support lo'i 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 'Āhihi-Kīna'u and La Perouse-Keone'o'io 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.			✓

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	DA	IA	NA
Objective:			
6.6.3 An expanded network of greenways, trails, pathways, and bikeways.			✓
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 involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to establishing a network active and passive recreational parks connected by greenways, pedestrian and bicycle pathways.			
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 Pu'unāhē.			✓
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.			✓

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DA	IA	NA	
			✓
6.7.1.h			✓
6.7.1.i			✓
6.7.1.j			✓
6.7.1.k			✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is indirectly applicable to the following goals and objectives related to public facilities. The proposed project will provide future wastewater capacity in the North Kihei area, which would allow adequate planning of future public safety facilities to meet future community needs in North Kihei.			
SCHOOLS AND LIBRARIES			
Goal:			
6.8			✓
Objective:			
6.8.1			✓
Policies:			
6.8.1.a			✓
6.8.1.b			✓
6.8.1.c			✓
6.8.1.d			✓
6.8.1.e			✓
6.8.1.f			✓
6.8.1.g			✓
6.8.1.h			✓
6.8.1.i			✓
6.8.1.j			✓

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DA	IA	NA	
Objective:			
6.8.2			✓
Policies:			
6.8.2.a			✓
6.8.2.b			✓
Analysis: The proposed project is not applicable to the goals and objectives related to schools and libraries.			
HEALTH CARE			
Goal:			
6.9			✓
Objective:			
6.9.1			✓
Policies:			
6.9.1.a			✓
6.9.1.b			✓
6.9.1.c			✓
6.9.1.d			✓
6.9.1.e			✓
6.9.1.f			✓
6.9.1.g			✓
6.9.1.h			✓
Objective:			
6.9.2			✓
Policies:			
6.9.2.a			✓

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DA	IA	NA	
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.		✓
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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to delivery 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.		✓

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6.10.1.b	Support the Maui Solar Rooftop initiative.		✓
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 project is not applicable to goals and objectives related to energy.			

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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.		✓
6.11.3.b	Support State efforts to improve Kahului Airport operations to better serve passenger and cargo needs.		✓

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DA	IA	NA	
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 project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to harbors and airports.			
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.		✓
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.		✓

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	DA	IA	NA
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.			✓
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.			✓

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	DA	IA	NA
7.1.3.b Discourage land use and urban design that impedes interconnectivity between adjacent communities.			✓
Analysis: The proposed project involves capacity improvements to the North Kihei wastewater system and is not applicable to the goals and objectives related to protecting agricultural lands.			
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.			✓
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 project involves capacity improvements to the North Kihei wastewater system. The proposed project does not involve any rural designated lands. As such, the proposed project is not applicable to the goals and objectives related to protecting rural lands.			

Maui Island Plan Goals, Objectives and Policies				DA	IA	NA
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable						
<u>URBAN AREAS</u>						
<u>Goal:</u>						
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.			✓		
<u>Objective:</u>						
7.3.1	Facilitate and support a more compact, efficient, human-scale urban development pattern.			✓		
<u>Policies:</u>						
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 Waihe'e; Pukalani and Makawao; Pukalani and Kula; Makawao and Hāli'imaile; Lahaina and Kā'anapali; Kihei and Mā'alaea; and Mā'alaea 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.					✓
7.3.1.i	Discourage land use and urban design that impedes inter-connectivity between adjacent communities.					✓
<u>Objective:</u>						
7.3.2	Facilitate more self-sufficient and sustainable communities.					✓
<u>Policies:</u>						
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:					✓

Maui Island Plan Goals, Objectives and Policies				DA	IA	NA
Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable						
(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.					✓
<u>Objective:</u>						
7.3.3	Strengthen the island's sense of place.					✓
<u>Policies:</u>						
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.					✓
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.					✓
<u>Objective:</u>						
7.3.4	Strengthen planning and management for the visitor industry to protect resident quality of life and enhance the visitor experience.					✓

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DA	IA	NA	
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.		✓
Analysis: The proposed project is indirectly applicable to the following goals and objectives related to land use in urban areas. The proposed project will help facilitate higher-density compact urban communities, infill, and redevelopment of underutilized urban lots within the Kihei Urban Growth Boundary. The proposed will provide future capacity in the North Kihei wastewater system which will be one (1) infrastructure component to facilitate future growth and development, which will include, but is not limited to affordable housing projects.			
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.	✓	

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
DA	IA	NA	
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.	✓	
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 is directly applicable to the following goals and objectives related to Urban Growth in the Directed Growth Plan. The proposed project provides future wastewater infrastructure capacity within the Urban Growth Boundary (UGB) in accordance with the MIP, as well as promoting growth through providing wastewater infrastructure capacity to service appropriate infill and redevelopment of buildable land with the UGB.			
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.		✓

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
	DA	IA	NA
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.			✓
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 involves capacity improvements to the North Kihei wastewater system in a designated UGB and is not applicable to the goals and objectives related to Rural Growth Area Boundaries.			

Maui Island Plan Goals, Objectives and Policies Key: DA = Directly Applicable, IA = Indirectly Applicable, NA = Not Applicable			
	DA	IA	NA
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: The proposed project is located in the Kihei Urban Growth Boundary and does not involve any Protected Area lands. As such, the proposed project is not applicable to the Protected Area Policy of the MIP.			



**U.S. ARMY CORPS
OF ENGINEERS NO
PERMIT REQUIRED
DETERMINATION**

APPENDIX

H



DEPARTMENT OF THE ARMY
HONOLULU DISTRICT, U.S. ARMY CORPS OF ENGINEERS
FORT SHAFTER, HAWAII 96858-5440

January 27, 2022

SUBJECT: Determination of No Permit Required, County of Maui, Department of Environmental Management, Wastewater Main Installation, Keokea and Waimaha'ihai' Gulches, Kihei, Island of Maui, Hawaii'i, Department of the Army File No. POH-2021-00205

Mr. Derek Takahashi
County of Maui
Department of Environmental Management
250 High Street
Wailuku, Hawaii'i 96793

Mr. Takahashi

The Honolulu District, U.S. Army Corps of Engineers (Corps), Regulatory Office has received your request for a determination whether a Department of the Army (DA) permit is required for the new wastewater main installation that is part of the existing North Kihei Wastewater Transmission System located in Kihei, Island of Maui, Hawaii'i. Your request has been assigned Department of the Army (DA) file number POH-2021-00205. Please reference this number in all future correspondence with our office relating to this action.

We have reviewed your submittal pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344; "Section 404") and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403; "Section 10"). Section 404 requires DA authorization for the discharge (placement) of dredged and/or fill material into waters of the U.S., including wetlands. Section 10 requires DA authorization for the placement of structures in, under or over navigable waters of the U.S. and/or other work affecting the course, location, condition or navigable capacity of such waters. 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 activity is a regulated activity under Section 10 and/or Section 404, or if the activity is exempt under Section 404(f) and is not recaptured. The determination provided in this letter pertains only to whether your proposed project is an activity we regulate; it does not address geographic jurisdiction.

While we have not made a determination of the jurisdictional status of the aquatic resources on the property, based on the information you provided, we have determined

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that your proposed project would not involve an activity subject to the regulatory jurisdiction of the Corps; and, therefore, a DA permit is not required. This determination of no permit required addresses only the proposed work activities described in your submitted documentation.

While a DA permit is not required for your proposed project, you are responsible for obtaining all other applicable Federal, state, or local authorizations required by law. Be advised, a DA permit may be required if you alter the method, scope, or location of your proposed work. You should contact our office if you are considering modifying your project.

Thank you for your cooperation with the Honolulu District Regulatory Program. Should If you have any questions related to this determination, please contact me at 808-835-4309 or via e-mail at Kristi.D.Flucker@usace.army.mil. You are encouraged to provide comments on your experience with the Honolulu District Regulatory Office by accessing our web-based customer survey form at <https://regulatory.ops.usace.army.mil/customer-service-survey/>. For additional information about our Regulatory Program, please visit our web site at <http://www.poh.usace.army.mil/Missions/Regulatory.aspx>.

Sincerely,

Kristi Flucker
Biologist

cc:

Kari Luna Nunokawa, Munekiyo Hiraga kari@munekiyohiraga.com



**DEPARTMENT OF LAND AND
NATURAL RESOURCES
COMMISSION ON WATER
RESOURCE MANAGEMENT NO
STREAM CHANNEL
ALTERATION PERMIT
REQUIRED DETERMINATION**



APPENDIX



DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

March 3, 2022

SUZANNE D. CASE
CHAIRPERSON

MICHAEL G. BUCK
ELIZABETH A. CHAR, M.D.
NEIL J. HANNAHS
AURORA KAGAWA-VIVIANI, PH.D.
WAYNE K. KATAYAMA
PAUL J. MEYER

M. KALEO MANUEL
DEPUTY DIRECTOR

Ref: RFD.5877.6

Kari Luna Nunokawa, Ed.D.
Senior Manager
Munekiyo Hiraga
305 High Street, Suit 104
Wailuku, HI 96793
Via email: planning@munekiyo-hiraga.com

Aloha Ms. Nunokawa:

Request for Determination
Stream Channel Alteration Permit Application
North Kihei Mauka Transmission System Project
Kēōkea and Waimāha'iha'i Gulches, Kihei, Maui, TMKs (2) 3-9-033:999 and (2) 3-9-040:999

The Commission on Water Resource Management (Commission) is responding to your submission on March 28, 2022, regarding a plan to upgrade the existing North Kihei Wastewater Transmission System. The proposed action includes replacing existing gravity sewer lines, constructing new force mains and gravity sewer lines, development of a new wastewater pump station (WWPS), and improvements to existing WWPSs. The proposed new force main along Liloa Drive will cross under the Kēōkea and Waimāha'iha'i Gulches utilizing horizontal drilling.

The National Hydrography Dataset (NHD) classified the Waimāha'iha'i Gulch as intermittent. The Division of Aquatic Resources (DAR) classified it as non-perennial. DAR has not conducted any biological surveys for this gulch/stream. The Commission is not aware of any instream uses and the gulch/stream does not connect to the ocean. Neither the NHD or DAR identified Kēōkea Gulch as a stream in its lower reaches. Our records indicate that Kēōkea appears as a tributary of Waimāha'iha'i Gulch in its upland reaches. The Commission is not aware of any instream uses in Kēōkea Gulch. A review of aerial imagery also indicated that there is typically no flowing water in these reaches.

Based on the analysis above, the Commission will not require a Stream Channel Alteration Permit Application to be submitted because the proposed work does not adversely affect instream uses of water.

Kari Luna Nunokawa
March 3, 2022
Page 2

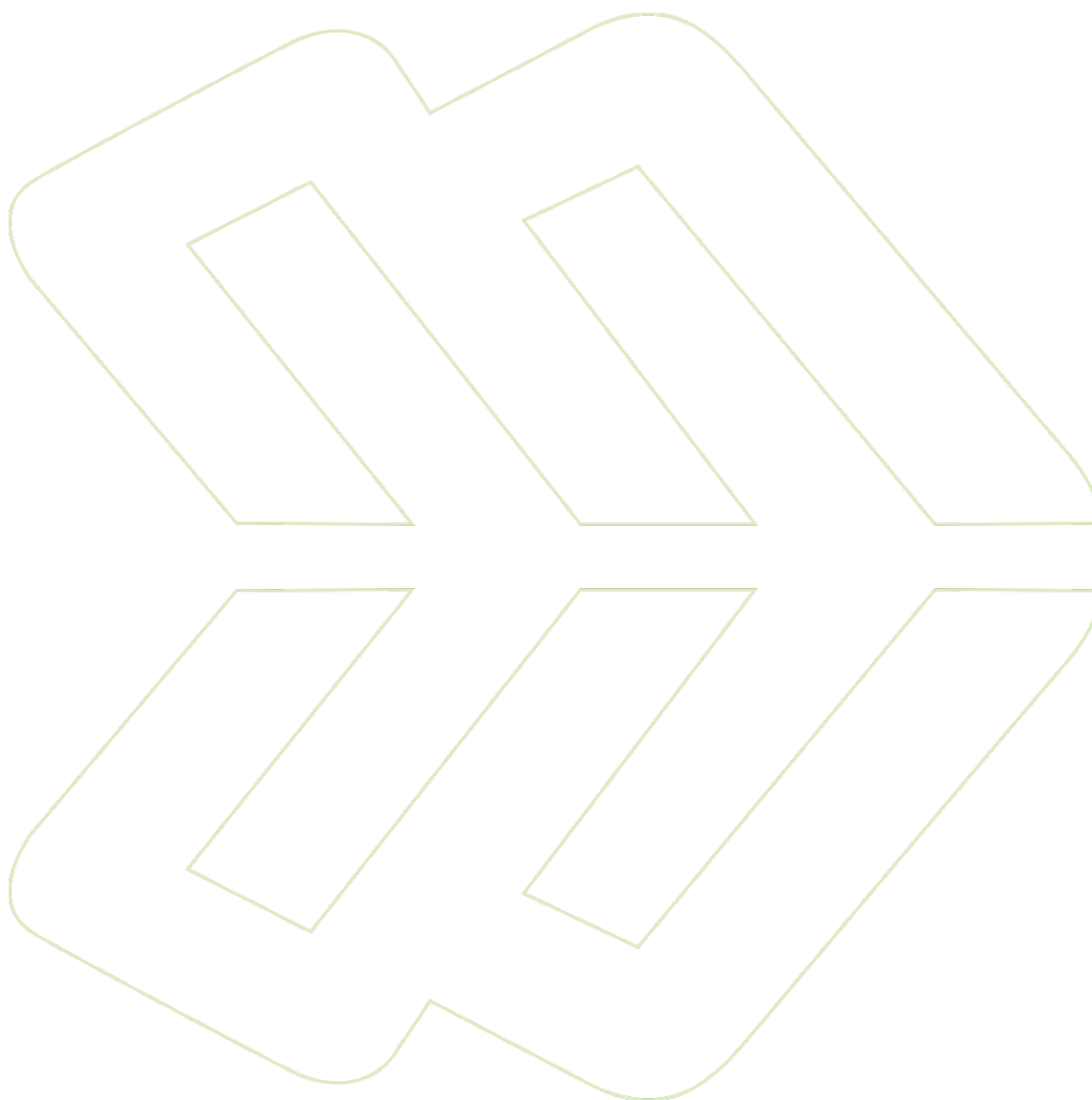
The Commission's Stream Protection and Management Branch has the responsibility to protect stream channels from alteration whenever practicable to provide for beneficial instream uses of water in the State under the authorization of the State Water Code, HRS §174C-71, and HAR §13-169-50, Protection of Instream Uses of Water. The Commission requires that a permit be approved prior to undertaking a stream channel alteration, other than in the course of normal maintenance.

Please be advised that the project may require other agency approvals regarding wetlands, water quality, grading, stockpiling, and floodways. This letter should not be used for other regulatory jurisdictions or used to imply compliance with other federal, state, or county rules. Work performed without appropriate permits or authorizations may be subject to fines and/or remedial actions. Prior to work in the stream channel, please implement best management practices and communicate with up/downstream owners and surrounding community, as practicable, your actions to be taken. If you have any questions, contact Rebecca Alakai at 587-0266, or rebecca.r.alakai@hawaii.gov.

Ola i ka wai,

A handwritten signature in dark ink, appearing to read "M. KALEO MANUEL".

M. KALEO MANUEL
Deputy Director



MUNEKIYO HIRAGA

Planning. Project Management. Sustainable Solutions.