SOLID WASTE MANAGEMENT DIVISION
DEPARTMENT OF PUBLIC WORKS
TROY TANIGAWA, P.E., COUNTY ENGINEER
BOYD GAYAGAS, DEPUTY COUNTY ENGINEER

DEREK S.K. KAWAKAMI, MAYOR
REIKO MATSUYAMA, MANAGING DIRECTOR

June 1, 2026

Ms. Mary Alice Evans, Director
Office of Planning and Sustainable Development
State of Hawai'i
235 South Beretania Street, 6th Floor
Honolulu, Hawai'i 96813

Subject: Kekaha Municipal Solid Waste Landfill Cell 3 Vertical Expansion
Kekaha, Kauaʻi, Hawaiʻi
Tax Map Key: (4) 1-2-002:001(por.) and (4) 1-2-002:009

Dear Ms. Evans:

The County of Kauaʻi, Department of Public Works, Solid Waste Division, hereby submits this Environmental Impact Statement Preparation Notice (EISPN) for the proposed Kekaha Municipal Solid Waste Landfill Cell 3 Vertical Expansion Project. The EISPN has been prepared pursuant to Hawai'i Revised Statutes (HRS) Chapter 343 and Hawai'i Administrative Rules (HAR) Section 11-200.1.

A copy of the EISPN, along with the other materials required for publication, has been submitted via the Environmental Review Program's online form. We respectfully request that the EISPN be published in the upcoming issue of the Environmental Notice.

Should you have any questions, please contact Kayla Yost at kayla.yost@tetratech.com or 808-352-2247.

Sincerely,

Allison Fraley

Allison Fraley, Solid Waste Division Chief

cc: Mayor Derek Kawakami, County of Kauaʻi

Kayla Yost, Tetra Tech

JOSH GREEN, M.D.
GOVERNOR
KE KIA‘ĀINA

EXECUTIVE CHAMBERS
KE KE‘ENA O KE KIA‘ĀINA

May 18, 2026

The Honorable Derek S.K. Kawakami
Mayor, County of Kaua‘i
4444 Rice Street, Suite 235
Līhu‘e, Hawai‘i 96766-1340

Aloha Mayor Kawakami:

Thank you for your April 13, 2026 letter requesting that I designate the Mayor of the County of Kaua‘i as the authorized representative and accepting authority for the Chapter 343 Environmental Impact Statement (EIS) associated with the proposed Kekaha Landfill Cell 3 Vertical Expansion Project.

Pursuant to Hawai‘i Administrative Rules § 11-200.1-7(b), and following consultation with the Office of Planning and Sustainable Development’s (OPSD) Environmental Review Program (ERP), I hereby designate you, in your capacity as Mayor of the County of Kaua‘i, as my authorized representative and the accepting authority for the proposed project’s EIS process under Hawai‘i Revised Statutes, Chapter 343.

As accepting authority, you may oversee the review process and determine the acceptability of the EIS in accordance with applicable provisions of Hawai‘i Revised Statutes Chapter 343 and Hawai‘i Administrative Rules Chapter 11-200.1.

Mahalo for your continued leadership and commitment to ensuring Kaua‘i maintains safe and reliable municipal solid waste capacity while advancing the appropriate environmental review process.

Mahalo,

Josh Green M.D.

Josh Green, M.D.
Governor, State of Hawai‘i

From: dbedt.opsd.erp@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Friday, May 29, 2026 2:50:50 PM

Action Name

Kekaha Municipal Solid Waste Landfill Cell 3 Vertical Expansion

Type of Document/Determination

Environmental impact statement preparation notice (EISPN)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds
- (2) Propose any use within any land classified as a conservation district
- (9)(C) Propose any landfill

Judicial district

Waimea, Kauaʻi

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

(4) 1-2-002:001 (por); (4) 1-2-002:009

Action type

Agency

Other required permits and approvals

Notice of Proposed Construction or Alteration (Federal Aviation Administration); Solid Waste Management Permit Modification (State of Hawaiʻi Department of Health [HDOH]); National Pollutant Discharge Elimination System General Permit for Discharges of Storm Water Associated with Construction Activities (HDOH) (as needed); Hawaiʻi Revised Statutes Chapter 6E Compliance (Historic Preservation Review) (State Historic Preservation District); Amended Special Use Permit (SUP SP-93-9) (State of Hawaiʻi Land Use Commission); Amended Use Permit (U-93-56) and Class IV Zoning Permit (Z-IV-93-64) (Kauaʻi Planning Commission); Amended Special Management Area Use Permit (Kauaʻi Planning Commission)

Proposing/determining agency

County of Kauai Solid Waste Division

Agency jurisdiction

County of Kauaʻi

Agency contact name

Allison Fraley

Agency contact email (for info about the action)

AFraley@kauai.gov

Email address for receiving comments

kayla.yost@tetratech.com

Website for receiving comments

https://www.kauai.gov/Cell-3Expansion

Agency contact phone

(808) 241-4837

Agency address

4444 Rice Street
Moʻikeha Building, Suite 275
Līhuʻe, HI 96766
United States
Map It

Public Scoping Meeting information

June 24, 2026, 5:30 p.m. – 7:00 p.m. Kekaha Neighborhood Center, 8130 Elepaio Road, Kekaha, HI

Accepting authority

County of Kauaʻi, Office of the Mayor

Accepting authority contact name

Derek Kawakami

Accepting authority contact email or URL

mayor@kauai.gov

Accepting authority contact phone

(808) 241-4900

Accepting authority address

4444 Rice Street
Moʻikeha Building, Suite 235
Līhuʻe, HI 96766
United States
Map It

Is there a consultant for this action?

Yes

Consultant

Tetra Tech

Consultant contact name

Kayla Yost

Consultant contact email

kayla.yost@tetratech.com

Consultant contact phone

(808) 441-6600

Consultant address

737 Bishop Street, Suite 2000
Honolulu, HI 96813
United States

Map It

Action summary

The County of Kaua`i, Department of Public Works, Solid Waste Division (County) is proposing to develop Cell 3 to gain additional airspace capacity at the Kekaha Landfill located in Kekaha, Kaua`i, Hawai`i. Kekaha Landfill is the only active, permitted municipal solid waste landfill on Kaua`i. It was established in 1953 and has been in continuous operation through sequential operational phases and expansion cells. Kekaha Landfill's currently permitted landfill area is 74 acres, which includes the Phase I, Phase II, Cell 1, and Cell 2 areas. Kekaha Landfill is anticipated to have capacity through 2030.
The County is proposing the Cell 3 vertical expansion to meet the near-term waste disposal requirements for Kauaʻi while a new landfill site can be permitted and constructed (which is anticipated to take approximately 10 years). Cell 3 would provide additional airspace through a vertical expansion over the footprint of the Phase I and Phase II landfill areas. An overliner system would be constructed above the pre-subtitle D, unlined Phase I disposal area to collect and recover leachate from future waste placed in Cell 3. The maximum elevation of Cell 3 would be 85 feet (ft) above mean sea level (amsl) in Phase I and 188 ft amsl in Phase II. Cell 3 would cover approximately 40 acres within the existing 74-acre permitted, limit-of-waste footprint. Cell 3 would add an additional, estimated 10 years of capacity to Kekaha Landfill.

Attached documents (signed agency letter & EA/EIS)

- KLF-Cell-3-Vertical-Expansion_EISPN_05.29.2026_Final.pdf
- KLF-Cell-3-COK-Transmittal-Letter_EISPN_05.29.2026.pdf
- KLF-Cell-3-Gov.-Green-Delegating-Letter_05.18.2026.pdf

Action location map

- KekahaLF_Cell3_ProjectArea_202605261.zip

Compliance certification (HRS §368-1.5):

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

Authorized individual

Kayla Yost

Authorized individual email

kayla.yost@tetratech.com

Authorized individual phone

(808) 352-2247

Authorization

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

ENVIRONMENTAL IMPACT STATEMENT PREPARATION NOTICE

Kekaha Municipal Solid Waste Landfill Cell 3 Vertical Expansion

Kekaha, Kauaʻi, Hawaiʻi

TMK: (4) 1-2-002:001(por.) and (4) 1-2-002:009

Approving Authority

County of Kauaʻi
Office of the Mayor

Prepared for

County of Kauaʻi
Department of Public Works
Solid Waste Division

Prepared by

Tetra Tech

June 2026

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Project Summary

Project Name	Kekaha Municipal Solid Waste Landfill Cell 3 Vertical Expansion
Proposing Agency	County of Kauaʻi Department of Public Works Solid Waste Division 4444 Rice Street Moʻikeha Building, Suite 275 Līhuʻe, HI 96766 Point of Contact: Allison Fraley, (808) 241-4837, AFraley@kauai.gov
Approving Authority	County of Kauaʻi Office of the Mayor 4444 Rice Street Moʻikeha Building, Suite 235 Līhuʻe, HI 96766 Point of Contact: Mayor Derek Kawakami, (808) 241-4900, mayor@kauai.gov
Consultant	Tetra Tech 737 Bishop Street, Suite 2000 Honolulu, HI 96813 Point of Contact: Kayla Yost, (808) 441-6600, kayla.yost@tetratech.com
Location	1.3 miles northwest of Kekaha, Kauaʻi
Judicial District	Waimea
Tax Map Keys (TMKs)	TMK (4) 1-2-002:001 (portion [por]) and TMK (4) 1-2-002:009
Project Area Acreage	Approximately 98 acres[1/]
Landowner	State of Hawaiʻi (Department of Land and Natural Resources)[2/]
Existing Land Use Designations	State Agriculture and Conservation District; County Agricultural District; Special Management Area
Development Plan (Land Use Classification)	West Kauaʻi Community Plan (Agriculture; Landfill, Drop-off Recycling Center, Green Waste Diversion Site, Beverage Deposit Redemption Center)
HRS Chapter 343-5(a) Trigger	(1) Propose use of state or county lands or the use of state or county funds (2) Propose any use within any land classified as a conservation district (9)(C) Propose a Landfill
Required Permits and Approvals	Notice of Proposed Construction or Alteration (Federal Aviation Administration) Solid Waste Management Permit Modification (State of Hawaiʻi Department of Health [HDOH]) National Pollutant Discharge Elimination System General Permit for Discharges of Storm Water Associated with Construction Activities (HDOH) (as needed) Hawaiʻi Revised Statutes (HRS) Chapter 6E Compliance (Historic Preservation Review) (State Historic Preservation District) Amended Special Use Permit (SUP SP-93-9) (State of Hawaiʻi Land Use Commission) Amended Use Permit (U-93-56) and Class IV Zoning Permit (Z-IV-93-64) (Kauaʻi Planning Commission) Amended Special Management Area Use Permit (Kauaʻi Planning Commission)

Project Overview	The County of Kaua`i, Department of Public Works, Solid Waste Division (County) is proposing to develop Cell 3 to gain additional airspace capacity at the Kekaha Landfill located in Kekaha, Kaua`i, Hawai`i. Kekaha Landfill is the only active, permitted municipal solid waste landfill on Kaua`i. The Kekaha Landfill encompasses approximately 98 acres of land within TMK (4) 1-2-002:001 (por) and TMK (4) 1-2-002:009. Kekaha Landfill was established in 1953 and has been in continuous operation through sequential operational phases and expansion cells. Kekaha Landfill's currently permitted landfill area is 74 acres, which includes the Phase I, Phase II, Cell 1, and Cell 2 areas. Kekaha Landfill is anticipated to have capacity through 2030. The County is proposing the Cell 3 vertical expansion to meet the near-term waste disposal requirements for Kaua'i while a new landfill site can be permitted and constructed (which is anticipated to take approximately 10 years). Cell 3 would provide additional airspace through a vertical expansion over the footprint of the Phase I and Phase II landfill areas. An overliner system would be constructed above the pre-subtitle D, unlined Phase I disposal area to collect and recover leachate from future waste placed in Cell 3. The expanded landfill disposal areas above Phase I and Phase II would be connected to the existing leachate, landfill gas, and stormwater management systems. The maximum elevation of Cell 3 would be 85 feet (ft) above mean sea level (amsl) in Phase I and 188 ft amsl in Phase II. Cell 3 would cover approximately 40 acres within the existing 74-acre permitted, limit-of-waste footprint. Cell 3 would add an additional, estimated 10 years of capacity to Kekaha Landfill.
Public Scoping Meeting and Comments	**Public Scoping Meeting:** Kekaha Neighborhood Center on June 24, 2026, 5:30 p.m. – 7:00 p.m.. **Written Scoping Comments:** Please submit copies of your comments to both the Proposing Agency (County) and the EIS Consultant (Tetra Tech). • County of Kaua'i, Department of Public Works, Solid Waste Division, Attn: Allision Fraley, 4444 Rice Street, Mo'ikeha Building, Suite 275, Līhu'e, HI 96766 or via email at AFraley@kauai.gov • Tetra Tech, Attn: Kayla Yost, 737 Bishop Street, Suite 2000, Honolulu, HI 96813 or via email at kayla.yost@tetratech.com Please send comments with the subject line of "Kekaha Landfill Cell 3 Vertical Expansion EIS Preparation Notice" and include your email address, if possible. Written comments must be postmarked on or before July 8, 2026. Up-to-date information on the status of the Cell 3 Vertical Expansion Project will also be posted on the County website: www.kauai.gov/Cell-3Expansion

1/ The Kekaha Landfill Facility encompasses approximately 98 acres. The permitted limit-of-waste footprint is approximately 74 acres. The limits of the proposed Cell 3 vertical expansion would be approximately 40 acres located within the permitted limit-of-waste footprint.

2/ Executive Order 1558 (signed April 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996), place the control and management of the lands underlying the Kekaha Landfill to the County of Kaua'i.

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Abbreviations and Acronyms

˚F	degrees Fahrenheit
§	section
µg/m^3	micrograms per cubic meter of air
ACS	American Community Survey
AIS	Archaeological Inventory Survey
amsl	above mean sea level
BLNR	State of Hawai‘i Board of Land and Natural Resources
BMP	best management practice
CCD	Census County Division
CDUP	Conservation District Use Permit
CFR	Code of Federal Regulations
CIA	Cultural Impact Assessment
County	County of Kaua‘i, Department of Public Works, Solid Waste Division
CSH	Cultural Surveys Hawai‘i
CSP	Covered Source Permit (Title V Air Permit)
CWRM	State of Hawai‘i Commission on Water Resource Management
CZO	Comprehensive Zoning Ordinance
dBA	A-weighted decibel
DBEDT	State of Hawai‘i Department of Business, Economic Development and Tourism
DLNR	State of Hawai‘i Department of Land and Natural Resources
DPW	County of Kaua‘i Department of Public Works
EA	Environmental Assessment
EIS	Environmental Impact Statement
EISPN	Environmental Impact Statement Preparation Notice
ESA	Endangered Species Act
eWaste	electronic waste
FAA	Federal Aviation Administration
FEMA	Federal Emergency Management Agency
ft	foot/feet
GCCS	gas collection and control system
GCL	geosynthetic clay liner
HAR	Hawai‘i Administrative Rules
HDOH	State of Hawai‘i Department of Health
HDOT	State of Hawai‘i Department of Transportation
HDPE	high-density polyethylene
HEPA	Hawai‘i Environmental Policy Act
HI-EMA	Hawai‘i Emergency Management Agency
HRS	Hawai‘i Revised Statutes
IPCC	Intergovernmental Panel on Climate Change
ISWM	Integrated Solid Waste Management
ISWMP	Integrated Solid Waste Management Plan
Kekaha Landfill	Kekaha Municipal Solid Waste Landfill
LandGEM	Landfill Gas Emission Model

LCRS	leachate collection and removal system
LDPE	Low-Density Polyethylene
LUC	State of Hawai‘i Land Use Commission
MBTA	Migratory Bird Treaty Act
mph	miles per hour
MSW	municipal solid waste
NAAQS	National Ambient Air Quality Standards
NFIP	National Flood Insurance Program
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OCCL	State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands
PCB	polychlorinated biphenyl
PGE	Pacific Geotechnical Engineers, Inc.
$PM_{2.5}$	particulate matter that measures up to 2.5 micrometers in diameter
PM_{10}	particulate matter that measures up to 10 micrometers in diameter
PMRF	Pacific Missile Range Facility
por.	portion
ppb	parts per billion by volume
ppm	parts per million
Proposed Action/Project	Kekaha Landfill Cell 3 Vertical Expansion
Proposing Agency	County of Kaua‘i, Department of Public Works, Solid Waste Division
RCRA	Resource Conservation and Recovery Act
ROI	region of influence
SDC	Seismic Design Category
SDS	Safety Data Sheet
SHPD	State Historic Preservation Division
SIHP	State Inventory of Historic Places
SLR-XA	Sea Level Rise Exposure Area
SMA	Special Management Area
SMA Rules	SMA Rules and Regulations of the County of Kaua‘i
SUP	Special Use Permit
SVOC	semi-volatile organic compounds
SWMP	Solid Waste Management Permit
SWPPP	storm water pollution prevention plan
TMDL	Total Maximum Daily Load
TMK	tax map key
UH	University of Hawai‘i
UIC	Underground Injection Control
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VOC	volatile organic compounds

1.0 Introduction

1.1 Project Overview

The County of Kaua‘i, Department of Public Works, Solid Waste Division (County/Proposing Agency) proposes to develop Cell 3 to gain additional airspace capacity at the Kekaha Municipal Solid Waste Landfill (Kekaha Landfill) located in Kekaha, Kaua‘i, Hawai‘i (Proposed Action/Project).

Pursuant to Hawai‘i Revised Statutes (HRS) Section (§) 342H-4, the County is responsible for the proper management and disposal of municipal solid waste (MSW)[1] on the Island of Kaua‘i. The Kekaha Landfill presently serves as Kaua‘i’s sole landfill facility for the disposal of MSW. Kekaha Landfill is approximately 1.3 miles northwest of the town of Kekaha in the southwest part of Kaua‘i and is within the Waimea Ahupua‘a and Kona Moku (district) (Figure 1-1). The facility encompasses approximately 98 acres of land within Tax Map Keys (TMK) (4) 1-2-002:001 (portion [por.]) and (4) 1-2-002:009 (Figure 1-2).

Kekaha Landfill was established in 1953 and has been in continuous operation through sequential operational phases and expansion cells. The facility’s currently permitted limit-of-waste footprint (i.e., landfill area) is 74 acres and includes Phase I, Phase II, Cell 1, and Cell 2. Phase I accepted waste from 1953 to October 1993 and has a peak elevation of 50 feet (ft) above mean sea level (amsl). Phase I predates the Resource Conservation and Recovery Act (RCRA) Subtitle D (40 Code of Federal Regulations [CFR] § 258)[2]. Therefore, there is no liner system beneath the Phase I refuse as there was no requirement for one at that time it was constructed and began operation. Phase II is an active, lined landfill that began accepting waste on October 9, 1993. Since commencing operations, Phase II was expanded horizontally into Cells 1 and 2 and vertically to its currently permitted maximum elevation of 120 ft amsl. The County is pursuing another vertical expansion of the Phase II area to a maximum elevation of 171.5 ft amsl with an anticipated permit approval in 2026.[3] As currently permitted by the Hawai‘i Department of Health (HDOH), Kekaha Landfill is projected to reach capacity in 2027. The vertical expansion to 171.5 ft amsl is anticipated to provide Kekaha Landfill with waste disposal capacity through 2030.

In recognition that Kekaha Landfill is anticipated to have capacity through 2030, and in recognition that the County will need more than five years to permit, design, and construct a new landfill, the County is proposing the Cell 3 vertical expansion to meet the near-term waste disposal requirements for the

[1] MSW is waste collected by the municipality (i.e., County of Kaua‘i) from residential, commercial, industrial, and construction and demolition sources. MSW includes both organic wastes, such as paper, cardboard, food, yard trimmings, and plastics, and inorganic wastes such as metal and glass.

[2] The United States Environmental Protection Agency (USEPA) adopted the Subtitle D regulations under RCRA on October 9, 1991, and most provisions became effective on October 9, 1993, including the requirement for a composite liner and a leachate collection system.

[3] The Final Environmental Assessment and Finding of No Significant Impact for the Kekaha Landfill Phase II Vertical Expansion was published in the February 13, 2024 issue of The Environmental Notice (Tetra Tech 2024). The County submitted a Solid Waste Management Permit (SWMP) modification application to HDOH in 2024. HDOH approval of the SWMP modification is anticipated in 2026.

Island of Kauaʻi (Proposed Action/Project). Cell 3 would provide additional airspace through a vertical expansion over the footprint of the Phase I and Phase II areas. No lateral expansion outside the existing 74-acre waste disposal limits would occur. An overliner system would be constructed above the pre-Subtitle D, Phase I disposal area to collect and recover leachate from future waste placed in the Cell 3 landfill area. The expanded landfill disposal areas above Phase I and Phase II would be connected to the existing leachate, landfill gas, and stormwater management systems. The maximum elevation within the Phase I area would be 85 ft amsl and the maximum elevation within the Phase II area would be 188 ft amsl.

If a new MSW landfill facility becomes operational during the Cell 3 operating period, the County would coordinate with HDOH to close Cell 3 and the Kekaha Landfill as soon as practicable, while ensuring continued compliance with all operational, environmental, and public service requirements.

1.2 HRS Chapter 343 Compliance and Reasons Supporting the Determination to Prepare an EIS

Compliance with the Hawaiʻi Environmental Policy Act (HEPA) environmental review is required for any agency action that includes one or more triggers identified in HRS § 343-5(a) and Hawaiʻi Administrative Rules (HAR) § 11-200.1, which are the regulations that define the steps and requirements to be in compliance with HRS Chapter 343. The Proposed Action includes use of state land and county funds, use of land within the conservation district, and proposes a landfill expansion, each of which triggers HEPA environmental review per HRS §§ 343-5(a)(1), 343-5(a)(2), and 343-5(a)(9)(C), respectively.

In accordance with HAR § 11-200.1-14(d)(2), the County has determined that the Proposed Action may have significant environmental impacts. Therefore, the County is preparing an Environmental Impact Statement (EIS), commencing with the preparation of an Environmental Impact Statement Preparation Notice (EISPN). Due to the proposed use of County funds in conjunction with state land, in accordance with HAR § 11-200.1-7 (b), the Governor of the State of Hawaiʻi has delegated the accepting authority for this EIS to the Office of the Mayor of the County of Kauaʻi (Appendix A).

1.2.1 Identification of Proposing Agency

County of Kauaʻi, Department of Public Works, Solid Waste Division

4444 Rice Street, Moʻikeha Building, Suite 275, Līhuʻe, HI 96766

Point of Contact: Allison Fraley, (808) 241-4837, AFraley@kauai.gov

1.2.2 Identification of Accepting Authority

County of Kauaʻi, Office of the Mayor

4444 Rice Street Moʻikeha Building, Suite 235 Līhuʻe, HI 96766

Point of Contact: Mayor Derek Kawakami, (808) 241-4900, mayor@kauai.gov

1.2.3 Identification of the Planning and Environmental Consultant

Tetra Tech

737 Bishop Street, Suite 2000 Honolulu, HI 96813

Point of Contact: Kayla Yost, (808) 441-6600, kayla.yost@tetratech.com

1.3 Permits and Approval Required for the Proposed Action

1.3.1 Existing Approvals and Entitlements

As illustrated in Figures 1-3 and Figure 1-4, the Kekaha Landfill is located in several county and state land use districts. The portion of Kekaha Landfill located on TMK (4) 1-2-002:009 (i.e., the majority of Phase I and a small portion of Phase II, Cell 2) is located within the state conservation district (limited subzone)[4] and within the Special Management Area (SMA). The portion of Kekaha Landfill located on TMK (4) 1-2-002:001 (por.) (i.e., the majority of Phase II and a small portion of Phase I) is in the state and county agricultural district (and outside the SMA). Table 1-1 outlines Kekaha Landfill's existing land use entitlements that allow the County to use the site for solid waste management and disposal.

Table 1-1. Existing Permits and Approvals for Kekaha Landfill

Permit/Approval	Description	Administrative Authority	TMK/ Permitted Landfill Area
Solid Waste Management Permit (SWMP) SWMP No. LF-0042-16 , September 2019	Solid waste management activities are regulated by the Hawai'i Department of Health (HDOH) under the provision of HRS Chapter 342H and HAR § 11.58.1. HDOH issued SWMP No. LF-0042-16 in 2019 to authorize the operation of Kekaha Landfill for an additional five years. The facility is currently operating under an administrative continuance of SWMP No. LF-0042-16. HDOH is processing a modification to it to expand the maximum permitted height of Phase II to 171.5 ft amsl (Pending SWMP No. LF-0042-23).	HDOH Solid and Hazardous Waste Branch	TMK (4) 1-2-002:009 and TMK (4) 1-2-002:001 (por.)
Covered Source Permit (CSP) No. 0802-01-C, September 2014	Air emissions from covered sources, which are major sources of air emissions and sources subject to a federal performance or control technology standard, are regulated by the U.S. Environmental Protection Agency (USEPA) and HDOH Clean Air Branch. A CSP (Title V Air Permit) is required for MSW Landfills per 40 CFR Part 60, Subpart WWW, 40 CFR Part 63, Subpart AAAA, and HAR § 11.60.1. HDOH issued CSP No. 0802-	HDOH Clean Air Branch and USEPA	TMK (4) 1-2-002:009 and TMK (4) 1-2-002:001 (por.)

[4] The Kekaha Landfill is located entirely within the county agricultural district. HRS § 205-5 Zoning states "(a) Except as herein provided, the powers granted to counties under section 46-4 shall govern the zoning within the districts, other than in conservation districts. Conservation districts shall be governed by the department of land and natural resources pursuant to chapter 183C". Therefore, the portion of Kekaha Landfill located in the state conservation district (i.e., Phase I and a portion of Phase II) is governed by DLNR; county zoning regulations do not apply.

Permit/Approval	Description	Administrative Authority	TMK/ Permitted Landfill Area
	01-C in 2014 for the Kekaha Landfill and the landfill gas collection and control system.		
Conservation District Use Permit (CDUP) (KA-3625), August 2012 as modified in April 2014 and May 2016 and December 2023	Land uses in the state conservation district are governed by the HAR § 13-5. Pursuant to HAR § 13-5-22, P-6, Public Purpose Uses require a CDUP. In 2012, the Board of Land and Natural Resources (BLNR) issued CDUP No. KA-3625, which permitted the expansion of the landfill area into Cells 1, 2, and 3 within the conservation district.[1/] CDUP No. KA-3625 was subsequently modified in April 2014 and May 2016 to extend the completion of construction deadlines on CDUP KA-3625 to August 24, 2020 and then August 24, 2022, respectively. Cells 1 and 2 began operations in 2009 and 2019, respectively. On December 7, 2023, the BLNR considered and granted the County's request for time extension to complete construction of Cell 3 as permitted under CDUP No. KA-3625. The BLNR approved an August 24, 2031 construction completion date for Cell 3.	Department of Land and Natural Resources, Office of Conservation and Coastal Lands and BLNR	TMK (4) 1-2-002:009; the majority of Phase I, small portion of Phase II, Cell 2, and Cell 3
Special Use Permit SP-93-9, July 1993	Uses within the state agricultural land use district are subject to the requirements of HRS Chapter 205. Solid waste management is not an expressly permitted use within the agricultural district per HRS § 205-4.5(a) but meets the criteria of unusual and reasonable uses permissible with the issuance of a Special Use Permit (SUP). If a parcel is greater than 15 acres, the SUP requires approval by the State of Hawai'i Land Use Commission (LUC) (HRS § 205-6[d]). The Kaua'i Planning Commission and LUC issued SUP SP-93-9 in 1993 to allow land within the state agricultural district to be used for landfill purposes.	Kaua'i Planning Commission and LUC	TMK (4) 1-2-002:001 (por.); Phase II (including Cells 1 and 2)
Use Permit U-93-56 and Class IV Zoning Permit Z-IV-93-64, May 1993	Uses within the county agriculture district are subject to the requirements of the Kaua'i Comprehensive Zoning Ordinance (CZO) (Kaua'i County Code Chapter 8). Pursuant to CZO 8-2.4(r)(15) Public and Private Utilities (which includes solid waste) are permissible in the agricultural district with a Use Permit. Pursuant to CZO 8-8.4 any use that requires a use permit also requires a Class IV zoning permit. The Kaua'i Planning Commission issued use permit U-93-56 and class IV zoning permit Z-IV-93-64 in 1993 to allow land classified in the county agricultural zone to be used for landfill purposes.	Kaua'i Planning Commission	TMK (4) 1-2-002:001 (por.); Phase II (including Cells 1 and 2)
Special Management Area (SMA) Use Permit (SMA(U)20-12 4), July 2012	Land uses within the SMA are regulated under HRS § 205A and the SMA Rules and Regulations of the County of Kaua'i (SMA Rules). Per the SMA Rules, any use, activity, or operation proposed within the SMA defined as a "development" requires an SMA permit. Development with a construction value of less than $500,000 must obtain an SMA minor permit and development valued at more than $500,000, or that would	Kaua'i Planning Commission	TMK (4) 1-2-002:009; the majority of Phase I, a small portion of Phase II, Cell 2, and Cell 3

Permit/Approval	Description	Administrative Authority	TMK/ Permitted Landfill Area
	have a significant adverse effect, must obtain an SMA use permit. The Kaua'i Planning Commission issued SMA use permit SMA(U)2012-4 in 2012 for the lateral expansion of Phase II into Cells 2 and 3 within the SMA.		

§ = section; CFR = Code of Federal Regulations; HAR = Hawai'i Administrative Rules; HRS = Hawai'i Revised Statutes; MSW = municipal solid waste; No. = number; por. = portion; TMK = Tax Map Key

1/ Cells 1, 2, and 3 expansions were described and evaluated in the 2007 Final Environmental Assessment (AECOM 2007). See Table 1-3 for a summary of the Kekaha Landfill operational phases and expansions to date.

1.3.2 Permits and Approvals for Implementation of the Proposed Action

In addition to the environmental disclosure requirements of HRS Chapter 343, the implementation of the Proposed Action would require the permits or approvals presented in Table 1-2.

Table 1-2. Permits and Approvals for Implementation of the Proposed Action

Permit/Approval	Description	Administrative Authority	Status
Notice of Proposed Construction or Alteration	The Federal Aviation Administration (FAA) must be notified of any construction that may affect the National Airspace System under provisions of 14 CFR 77. A "Determination of No Hazard" was obtained for the Proposed Action.[1/]	FAA	Complete.
Solid Waste Management Permit (SWMP) Modification	The Proposed Action would require a SWMP modification.	Hawai'i Department of Health (HDOH) Solid and Hazardous Waste Branch	To be obtained upon approval of land use permit modifications for the Proposed Action.
National Pollutant Discharge Elimination System (NPDES) General Permit for Discharges of Storm Water Associated with Construction Activities	Covers discharges of storm water associated with construction activities. NPDES permit coverage would be required if construction activities disturb one acre or more of total land area outside of the waste footprint.	HDOH Clean Water Branch	To be obtained, if needed, prior to construction.
Historic Preservation Review	Pursuant to HRS § 6E-8, before any agency commences any project which may affect historic property, the agency shall advise and allow the State Historic Preservation Division (SHPD) an opportunity for review the effect of the proposed project on historic properties. The proposed project shall not be commenced until SHPD has given its written concurrence. Based on findings from the previous archeological studies of the Project Area, a project-specific effect determination of "no historic properties affected" is anticipated.	Hawai'i Department of Land and Natural Resource (DLNR) SHPD	HRS Sec 6E review is ongoing. SHPD concurrence to be obtained prior to commencement of the Proposed Action.

Permit/Approval	Description	Administrative Authority	Status
Conservation District Use Permit (CDUP) (KA-3625)	The DLNR Office of Conservation and Coastal Lands (OCCL) reviewed the conceptual designs provided for the Proposed Action and concluded that it is consistent with CDUP KA-3625 and that no further conservation district permits would be required (DLNR OCCL Corr KA-25-194 dated July 24, 2025).	DLNR OCCL	Complete.
Amended Special Use Permit (SUP) (SUP SP-93-9)	The County of Kaua'i Planning Department determined the Proposed Action would require an amendment to SUP SP-93-9. Pursuant to HRS § 205-6[d], as the parcel is greater than 15 acres, the SUP amendment would require approval by the State of Hawai'i Land Use Commission (LUC) (County of Kaua'i Planning Department letter dated September 18, 2025).	Kaua'i Planning Commission and LUC	To be obtained upon approval of the Final EIS.
Amended Use Permit (U-93-56) and Class IV Zoning Permit (Z-IV-93-64)	The County of Kaua'i Planning Department determined that the Proposed Action would require an amendment to use permit U-93-56 and class IV zoning permit Z-IV-93-64 (County of Kaua'i Planning Department letter dated September 18, 2025).	Kaua'i Planning Commission	To be obtained upon approval of the Final EIS.
Amended Special Management Area (SMA) Use Permit	The Proposed Action would constitute a "development" per SMA rules § 1.4(F) and is assumed to have a construction value of more than $500,000, which triggers the requirements for an SMA use permit. The County of Kaua'i Planning Department determined that the Proposed Action would require an amendment to SMA(U)2012-4 (County of Kaua'i Planning Department letter dated September 18, 2025).	Kaua'i Planning Commission	To be obtained upon approval of the Final EIS.

§ = section; CFR = Code of Federal Regulations; HRS = Hawai'i Revised Statutes

1/ Aeronautical Study Number 2024-AWP-10977-OE, 2024-AWP-10978-OE, 2024-AWP-10979-OE, 2024-AWP-10980-OE, 2024-AWP-10982-OE, 2024-AWP-10983-OE, 2024-AWP-10985-OE, 2024-AWP-10986-OE, 2024-AWP-10987-OE, 2024-AWP-10988-OE.

1.4 Purpose and Need for the Proposed Action

The purpose of the Proposed Action is to prolong the life of Kekaha Landfill prior to exhausting the island's only permitted landfill airspace and to provide safe disposal capacity of MSW in Kaua'i County while a long-term MSW capacity solution can be identified.

The need for future landfill capacity is the result of extensive County planning efforts that incorporate the use of Integrated Solid Waste Management. As defined by the USEPA:

> *Integrated Solid Waste Management (ISWM) is a comprehensive waste prevention, recycling, composting, and disposal program. An effective ISWM system considers how to prevent, recycle, and manage solid waste in ways that most effectively protect human health and the environment. ISWM involves evaluating local needs and conditions, and then selecting and combining the most appropriate waste management activities for those conditions. The major ISWM activities are waste prevention, recycling, and composting, and combustion and disposal*

> *in properly designed, constructed, and managed landfills. Each of these activities requires careful planning, financing, collection, and transport* (USEPA 2002).

HRS Chapter 342G requires each county to develop an Integrated Solid Waste Management Plan (ISWMP), which is updated every 10 years. The County's ISWMP (Jacobs 2021) presents strategies for implementing environmentally prudent and cost-effective ISWM components to enhance or upgrade the County's existing solid waste management system. The County's existing solid waste management system includes the following main components:

- Solid waste collection
- Source reduction
- Recycling and bioconversion
- Special waste management
- Household hazardous waste and electronic waste (eWaste) management
- Public education
- Refuse transfer stations
- Kaua'i Resource Center
- Kekaha Landfill

The County recognizes the need to reduce, reuse and recycle as much of the solid waste stream as practicable and feasible. As detailed in the Kaua'i ISWMP update (Jacobs 2021) a key component of the County's solid waste management system is source reduction and recycling (see Section 1.6 for more information). The County currently diverts over 40 percent of the waste generated on island. However, as noted in the County's ISWMP: *"Even if the County significantly reduces disposal needs through upstream diversion, final treatment or disposal methods (or both) will be required to manage waste that cannot be reused or recycled in any other way* (Jacobs 2021)." Therefore, there is a continued need for MSW disposal even when the ISWMP goals for reducing, reusing, and recycling waste are achieved.

The County also understands there is a critical need to identify a long-term MSW capacity solution for the Island of Kaua'i and is currently working on the planning and permitting for a new landfill at Ma'alo (See Section 1.7 for more information). However, the permitting, design, and construction of a new landfill site is anticipated to require approximately 10 years, which means a new site would not be operational until after 2030, leaving the island of Kauai without a landfill for the safe disposal of MSW.

The closure of the Kekaha Landfill upon the exhaustion of landfill space without an alternative means of on-island disposal of MSW is neither practical nor feasible because it would fail to provide for the safe and sanitary handling and disposal of islandwide MSW, which is essential to the maintenance of public health and safety. On-island disposal is needed to ensure the county has capacity necessary for disaster response (e.g., following events like Hurricane Iniki) and to ensure the county has reliable and affordable waste management facilities.

Therefore, in recognition that the County is responsible for providing safe and environmentally-sound solid waste and disaster debris disposal capacity for the island of Kaua'i, and in recognition that Kekaha

Landfill is anticipated to reach capacity in 2030, and that the County will need more than five years to permit, design, and construct a new MSW landfill, the County is proposing the Cell 3 vertical expansion to meet the near-term waste disposal requirements for the Island of Kaua'i. The Proposed Action would add an additional, estimated 10 years of capacity to Kekaha Landfill, depending on future waste intake rates and potential waste diversion strategies, thus providing landfill capacity until a new landfill can be permitted, designed, and constructed.

1.5 Objectives of the Proposed Action

Considering the established need for safe and environmentally-sound solid waste disposal capacity for the island of Kaua'i, the Applicant has set forth the following objectives for the Proposed Action, in accordance with HAR § 11-200.1-24(g)(2):

- Vertically expand the existing Kekaha Landfill to provide the County with critical landfill capacity for MSW waste disposal.
- Deliver uninterrupted waste disposal services to the County while the siting, permitting, design, and construction of a new MSW landfill outside of the Kekaha area is completed.
- Continue operating the existing Kekaha Landfill in a manner that is compatible with surrounding land uses, respects and supports the community, is in compliance with all permit and approval requirements, and is fiscally and environmentally responsible.
- Continue to support the local community through the existing Host Community Benefits program.
- Support the local economy by providing cost-efficient waste disposal services, sustained local jobs, and direct, indirect, and induced revenue to the County and State.
- Reduce environmental impacts by leveraging existing infrastructure and expanding the environmental control systems into portions of the pre-subtitle D, Phase I area.

1.6 Waste Diversion and Recycling

As detailed in the Kaua'i ISWMP (Jacobs 2021), a key component of the County's solid waste management system is source reduction and recycling. Over 40 percent of waste generated on the island is diverted from the landfill through reuse, recycling, and recovery (Table 1-3).

Table 1-3. County of Kaua'i Landfill Diversion Rate, FY 2025

Category	Tons	Percentage of Total Waste Generated
Total Waste Generated	**167,751**	**100 percent**
Waste Landfilled	**92,922**	**55 percent**
Waste Diverted	**74,829**	**45 percent**
Green Waste	29,838	18 percent
Recycling	44,275	26 percent
Household Hazardous Waste	14	>1 percent
Food Banks	702	1 percent

The County has implemented a variety of programs and services that promote source reduction. These include a reuse operation at the County's Kaua'i Resource Center, public education and outreach, backyard composting, technical assistance to businesses, and implementation and enforcement of various waste diversion ordinances, including the Pay As You Throw program.[5]

The County also manages several programs to divert waste generated on the island from the landfill through reuse, recycling, and recovery of various types of waste. The County contracts a source separated drop bin recycling program for residents with eight recycling drop-off sites throughout the island. The County also accepts green waste and specified recyclable materials from residents at four refuse transfer stations free of charge. Recyclable materials accepted include cardboard, glass bottles and jars, aluminum and steel cans, plastic bottles and jars, mixed paper, tires, motor oil, scrap metal, appliances, motor oil filters, propane tanks, and green waste. Garden Isle Disposal also has a contract with the County to accept and process commercially generated recyclables at its facility. The County participates in the state Deposit Beverage Container Program;[6] there are five privately operated certified redemption centers throughout the County to collect and recycle beverage containers. The Puhi Metals Recycling Center also accepts and recycles automobiles, scrap metal, appliances, and eWaste from the County, the public, and commercial entities. Under a contract with the County, the services are provided free of charge to residential users and for a fee to commercial users.

The County also completed a feasibility study for alternative technologies to landfilling (HDR 2023) and is in the process of soliciting a two-step Request for Proposals process to determine if there are viable bidders for an alternative system to manage waste and create energy (see Section 4.2.3 for more information on alternative technologies). In addition, the County offers grant opportunities to support waste diversion efforts. Currently, the County has three grantees in place. Grants are for on-island plastic recycling processing, reusing construction and demolition materials, and a "Trashion" show raising awareness about the waste crisis.

Although the County continues to evaluate options to increase its landfill diversion rate, and to encourage residents and businesses to take advantage of existing diversion programs, recycling and waste diversion programs cannot eliminate the need for landfill capacity.

1.7 History of Siting a New Landfill Site

As stated in the introduction, the Proposed Action would provide additional air space volume for placement of refuse while the permitting, design, and construction of a new landfill is completed.

The County has previously attempted to site a new landfill at another location on the island and continues to investigate alternative landfill sites. The County began the landfill siting process in 2000,

[5] Residents pay a variable rate for refuse collection, which provides an economic incentive for reducing trash and increasing waste diversion and recycling.

[6] Within the state, a 5-cent deposit per beverage container is charged for the purchase of specific glass, aluminum, and plastic containers defined under the law. A 1-cent non-refundable container fee is also assessed to support the costs of recycling and program administration.

culminating in two reports: *Kauaʻi Municipal Solid Waste Landfill Siting Study* (Earth Tech 2001) and *New Kauaʻi Municipal Solid Waste Landfill, Kālepa Site Investigation* (Earth Tech 2002). Eight potential landfill sites were identified based on meeting established siting and environmental criteria (Kālepa, Kekaha Mauka, Kīpū, Kōloa, Kumukumu, Maʻalo, Puʻu o Papaʻi, and ʻUmi). The eight sites were then compared and ranked based on 19 environmental, technical, and social/cultural criteria.[7] The totals for each site from the siting criteria were summed and the list of sites were ranked according to suitability for a landfill: 1st – Kekaha Mauka, 2nd - Kīpū, 3rd – Kālepa, 4th – Kumukumu; 5th - Puʻu o Papaʻi, 6th - Maʻalo, 7th - Kōloa, and 8th - ʻUmi.

In 2007, the County convened the Mayor's Advisory Committee on Landfill Site Selection which was tasked to develop and prioritize 26 community-based criteria and rank seven of the eight previously identified landfill sites[8]. The criteria were weighted according to perceived importance and assigned a weight between 1 (least important) and 10 (most important).[9] The results of this siting study are summarized in the *Report of the Mayor's Advisory Committee on Landfill Site Selection* (R.M. Towill 2009). The rankings produced by the Mayor's Advisory Committee on Landfill Site Selection included the following: 1st – ʻUmi, 2nd – Kekaha Mauka, 3rd – Kōloa, 4th – Kīpū; 5th - Puʻu o Papaʻi, 6th - Maʻalo, 7th - Kālepa.

In 2012, the County reevaluated the suitability of the sites identified in the 2007 siting study using the community criteria evaluation as well as state and other landfill criteria, preliminary engineering evaluations, planning-level cost estimates, existing (agricultural) land use, and landowner willingness (AECOM 2012). The results of this siting study identified Maʻalo, a 270-acre state owned parcel north of Līhuʻe, as the preferred alternative. The basis for this decision was that it was the only site with a willing landowner, that allowed for the longest site life (estimated 264 years), was centrally located, had the least annual cost, and was the highest ranking on the community criteria evaluation of the sites evaluated (AECOM 2012). As part of its commitment to reduce, reuse, and recycle and to maximize diversion of waste from the landfill, the County also conducted a feasibility study of a resource recovery park (AECOM 2013a). The intent was to co-site the new MSW landfill and resource recovery park.

Subsequently, the County completed an engineering study and conceptual design for a new MSW landfill and resource recovery park at the Maʻalo site and initiated the environmental review process in accordance with HRS Chapter 343 and HAR § 11-200.1. In October 2018, the Mayor's Office accepted the Final EIS for the project (R. M. Towill 2018). However, during the permitting process, the County had to abandon its plans to develop a new landfill and resource recovery park at Maʻalo because the State of Hawaiʻi Department of Transportation's (HDOT) Airports Division and the Federal Aviation Administration (FAA) opposed the project due to the potential for the landfill to attract avian wildlife

[7] A description of the siting criteria and evaluation completed in these reports is included in Section 3.2 Alternative Locations in the 2018 FEIS prepared for the "New Kaua'i Landfill" (R.M. Towill 2018).

[8] One site, Kumukumu, was removed from the evaluation due to an anticipated subdivision development within a major portion of the site at the time of the study.

[9] The criteria are listed in Table 3-3 of the 2018 FEIS prepared for the "New Kaua'i Landfill" (R.M. Towill 2018).

species within five miles of the Līhuʻe Airport and the potential to increase possible bird-strikes. HDOT did not agree that the mitigation measures identified in the project's Landfill Wildlife Management Plan (AECOM 2017) would adequately minimize risk of aircraft wildlife/bird strikes from Līhuʻe Airport operations (HDOT Correspondence AIR-EP 18.0074 dated May 23, 2019).[10] Ultimately, the County was unable to reach an agreement with HDOT at that time and permits were not obtained for the Maʻalo site.

Seven of the original potential landfill sites evaluated in the 2001 to 2002, 2007, and 2012 siting studies were ultimately determined to be infeasible or problematic to develop. Three sites (Maʻalo, Kālepa, and Kīpū in Līhuʻe) presented potential airport proximity concerns. In 2020, the Hawaiʻi Legislature passed Act 73, which prohibits landfills within a 0.5 mile of a residence, school, or hospital; this law excludes four additional sites from further consideration (Kumukumu in Anahola, Kōloa in south Kauaʻi, Puʻu O Papaʻi in Hanapēpē, and ʻUmi in Kalāheo).

The remaining site, Kekaha Mauka, was pursued starting in 2022. The original Kekaha site under consideration was in active agricultural use, so the site owner, the Agribusiness Development Corporation, identified an alternate site farther west for potential evaluation. The County began reviewing this site and anticipated conducting a series of engineering analyses to assess site's technical feasibility. However, concerns about community opposition to a new landfill in Kekaha, along with potential tsunami inundation constraints, raised concerns about moving the project forward..

In 2024, the County restarted efforts to find a solution to the concerns FAA and HDOT had with the Maʻalo site as it is unconstrained by other considerations such as land availability, proximity to residences, schools, and hospitals, and it is not located in a tsunami inundation zone. Consultations with the FAA and HDOT to revise its Landfill Wildlife Management Plan (AECOM 2017) are ongoing and the goal is to develop a path forward for the permitting of a new landfill at the Maʻalo site (A. Fraley, County of Kauaʻi Department of Public Works (DPW), personal communication, February 16, 2026). The revised Landfill Wildlife Management Plan would be developed in close coordination with HDOT, FAA, and Līhuʻe Airport and would provide additional measures to avoid and minimize avian attractants at the landfill. For Maʻalo to proceed, all parties are to reach an agreement that landfill operations would not pose significant risk to aviation and airport operations. Based on the County's prior experience, permitting, design, and construction of a new landfill on Kauaʻi would take upwards of 10 years.

1.8 Existing Kekaha Landfill

1.8.1 Location and Land Ownership

Kekaha Landfill is approximately 1.3 miles northwest of the town of Kekaha in the southwest part of Kauaʻi and is within the Waimea Ahupuaʻa and Kona Moku (district) (Figure 1-1). The facility

[10] The record of HDOT's written opposition of the Maʻalo site is included in the 2018 FEIS for the "New Kaua'i Landfill" (R.M. Towill 2018) specifically in Appendix H – Wildlife Management Plan and in Section 10.3.2 of the Final EIS.

encompasses approximately 98 acres of land within TMK (4) 1-2-002:001 (por) and (4) 1-2-002:009, which are owned by the State of Hawai`i and administered by the Department of Land and Natural Resources (DLNR). Executive Order 1558 (signed April 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996) place the control and management of the lands underlying Kekaha Landfill with the County of Kaua'i. The facility is accessed from Kaumuali'i Highway (Highway 50).

Kekaha Landfill was established in 1953 and has been in continuous operation through sequential operational phases and expansion cells as described in Section 1.8.2 below. Approximately 74 acres of the Kekaha Landfill facility comprises the permitted landfill area (i.e., limit-of-waste footprint). The facility also includes an office, scale house, public convenience center, leachate evaporation pond, stormwater infiltration basin, landfill gas flare, and maintenance shop, which are located along the northeastern property line of the facility along Kaumuali'i Highway (Figure 1-2). Appendix B, Photo Log includes photos of the Kekaha Landfill facilities.

The Kekaha Landfill lies within the Mānā Plain, which extends from the ancient sea cliffs to the shoreline. The facility is adjacent to Kaumuali'i Highway and approximately 1,700 feet from the Pacific Ocean shoreline. The primary land use surrounding Kekaha landfill is agricultural and agriculture-related commercial activity, located to the west, north, and east of the Project Area. Other nearby uses include federal reserve lands (Pacific Missile Range Facility [PMRF] and U.S. Lighthouse Service) to the south and west, land leased by the Hawai'i National Guard to the south, and Kaua'i Raceway Park to the southeast. The landownership of the surrounding area is shown in Figure 1-5 (see also Appendix B, Photo Log).

1.8.2 Kekaha Landfill Operational Phases

Kekaha Landfill is comprised of sequential operational phases/ waste disposal areas. The current permitted landfill area is 74 acres, delineated as follows:

- Phase I: approximately 33 acres
- Phase II: approximately 44 acres including:
    - Original waste disposal area (31.2 acres)
    - Cell 1 expansion area (6.3 acres)
    - Cell 2 expansion area (6.5 acres)

Note that there is overlap in the Phase I and Cell 2 areas (approximately 3 acres) which accounts for why the total acreage of Phase I and Phase II add up to 77 acres, but the total Kekaha Landfill permitted landfill area is 74 acres. The limits of each disposal area are shown in Figure 1-2 and described in more detail below.

Phase I

The KLF Phase I is an inactive and unlined MSW landfill that began accepting solid waste in 1953 and ceased operations October 9, 1993, when it was succeeded by Phase II operations. The construction of the Phase I landfill cover commenced May 20, 1994, and was completed February 13, 1995, and was

designed and constructed in accordance with RCRA Subtitle D and HAR § 11.58.1. Because Phase I predates RCRA Subtitle D, there is no liner or leachate[11] collection and removal system beneath the refuse as there was no requirement for one at that time. In 2016, a landfill gas[12] collection and control system (GCCS), including a skid mounted enclosed flare, was installed at the landfill, in compliance with the site's Covered Source Permit (CSP) requirements. The Phase I landfill area covers approximately 33 acres and has a peak elevation of 50 ft amsl. Phase I gradually slopes down to an elevation of 10 to 12 ft amsl at its perimeter. The Phase I area is currently used for equipment and material staging.

The waste composition within the Phase I area is not well known. Because MSW is made up of many kinds of materials, it is very likely that the waste composition would vary between Phase I and Phase II, or even between two different areas of the same landfill area (e.g., within Phase I). Additionally, the Phase I area was operational from 1953 to 1993, during which time detailed disposal records were not required. This adds additional uncertainty to what could be expected within the Phase I area. However, historical municipal landfills have typically been observed to consist of 50-60 percent of soil type materials (cover material and heavily degraded waste), 20-30 percent of combustibles (e.g., plastic, paper, and wood), 10 percent of inorganics (concrete, stones, and glass), and a few percent of metals, primarily ferrous (Prechthai et al. 2008 as referenced in Stantec 2021). Based on discussions with landfill staff, it was noted that there is an area of the landfill around 1 acre in size which has historically been disposed with vehicle and car bodies. Based on this information, an estimated 58,000 cubic yards of metal may have been disposed in one specific location at this site. Further, during Hurricane lniki in 1992, the majority of the disaster debris was disposed at Kekaha Landfill.

Phase II, Cell 1, and Cell 2

Phase II is an active, lined MSW landfill that began accepting solid waste on October 9, 1993. Phase II was constructed in accordance with RCRA Subtitle D and HAR § 11.58.1 and is equipped with an engineered base liner, leachate collection and removal system, landfill gas collection and control system and perimeter gas monitoring, and a surface water management system (see Section 1.8.3 for more information). Phase II currently receives all MSW generated on the island. As currently permitted by its SWMP, Phase II has a landfill area of approximately 44 acres and a peak elevation of approximately 120 ft amsl. Phase II gradually slopes down to an elevation of approximately 14 to 40 ft amsl at its perimeter.

The original development of the Phase II landfill area was permitted to a maximum elevation of 37 ft amsl and was adjacent to the Phase I area with a small strip of undeveloped landfill area between the Phase I and Phase II fill areas. In 1998, Phase II was extended vertically to a maximum elevation of 60 ft amsl (Belt Collins 1998), in 2004 to a maximum elevation of 85 ft amsl (Earth Tech and Wil Chee 2004), and in 2013 to a maximum elevation of 120 ft amsl (AECOM 2013b). Lateral expansions of Phase II were reviewed in a 2007 EA (AECOM 2007) and included Cells 1, 2, and 3. Cell 1 was permitted in 2009 as a

[11] Leachate is the liquid that can drain or “leach” from a landfill.

[12] Landfill gas is produced when bacteria break down organic waste. Landfill gas is primarily made up of methane and carbon dioxide but may also be made up of small amounts of nitrogen, oxygen, ammonia, sulfides, hydrogen, and various other gases.

lateral expansion, adding 6.3 acres to the northwest area of the Phase II operations. Cell 2, brought on line in 2010/2020, added another 6.5 acres to the permitted area of the Phase II operations, effectively combining the waste footprint between Phase I and Phase II fill areas. Currently, another vertical expansion of the Phase II area to a maximum elevation of 171.5 ft amsl is being pursued by the County with an anticipated permit approval in 2026 (Tetra Tech 2024).

Phase II was developed and permitted in accordance with Federal Subtitle D regulations (40 CFR §258), which prohibit the disposal of certain wastes, including hazardous, liquid, and polychlorinated biphenyl (PCB) wastes. Additional restrictions are established under Kekaha Landfill's SWMP, which excludes materials such as loads with excessive green waste, scrap automobiles, white goods, whole tires, lead-acid batteries, and compressed gas tanks. Kekaha Landfill implements screening and exclusion procedures to prevent acceptance of these materials (see Section 1.8.3) and maintains diversion programs for recyclable materials and green waste, which are more appropriately managed outside of landfill disposal (see Section 1.6). The primary waste stream disposed at Kekaha Landfill is MSW, as defined in 40 CFR §258.

Cell 3

In addition to the Cell 1 and Cell 2 lateral expansions of Phase II, a Cell 3 expansion was described and evaluated in the 2007 Final EA (AECOM 2007). The Cell 3 expansion evaluated in the 2007 Final EA includes construction of an overliner over the existing Phase I fill area that would tie into the current lined Phase II (original Phase II permitted at the time of the analysis – prior to the horizontal and vertical expansions that have occurred since 2007). Cell 3 would include regrading and reconsolidation of waste within Phase I to allow a sloped overliner to collect and recover leachate from all future waste to be placed above the liner. The 2007 EA depicted Cell 3 with a maximum elevation of 85 ft amsl. Although the Proposed Action covers the same general scope as the Cell 3 action evaluated in the 2007 Final EA, it differs substantially in both scale and timing. Therefore, the County has determined at the onset that new environmental review documentation would be required to satisfy HRS Chapter 343.

Because a portion of the Cell 2 and Cell 3 lateral expansions were within the state conservation district and SMA, the County obtained CDUP No. KA-3625 and SMA(U)20-12 4 for the construction of Cells 1, 2, and 3 in 2012. Cells 1 and 2 were then permitted by the HDOH and commenced operations in 2010 and 2020, respectively. The County determined that if the siting of a new landfill could be accomplished within the anticipated operational life of Cells 1 and 2, development of Cell 3 would not be necessary. However, to date the County has been unsuccessful in permitting a new landfill despite extensive efforts to do so. The County recently requested a time extension to CDUP KA-3625 to allow construction of Cell 3. In its December 7, 2023 board meeting, BLNR approved an August 24, 2031 construction completion date for Cell 3.

As part of its due diligence for the Cell 3 vertical expansion, the County consulted with the DLNR Office of Conservation and Coastal Lands (OCCL) and County of Kaua'i Department of Planning to determine if the Proposed Action would be consistent with CDUP No. KA-3625 and SMA(U)20-12 4, or if additional

permitting would be required. OCCL reviewed the conceptual designs provided for the Proposed Action and concluded that as long as the maximum elevation within the conservation district does not exceed 85 ft. amsl, the Proposed Action is consistent with CDUP KA-3625 and that no further conservation district permits would be required (DLNR OCCL Corr KA-25-194 dated July 24, 2025). However, the County of Kaua'i Planning Department determined that the Proposed Action would require an amendment to SMA(U)2012-4 (County of Kaua'i Planning Department letter dated September 18, 2025).

Table 1-4 summarizes the Kekaha Landfill operational phases and expansions, to date. The **Proposed Action** is in bold text.

Table 1-4. Summary of Kekaha Landfill Operational Phases and Expansions

Order	Description	Year Commenced Operations	Maximum Elevation (ft amsl)	HDOH Permitted Landfill Area (acres)	Related Environmental Assessment	HDOH Permit
0	Phase I Operations	1953 - 1993	50	Phase I: 33	N/A	N/A
1	Phase II Begins Operation	1993	37	Phase II: 31.2	R.M. Towill 1983	LF0073-93
2	Phase II Vertical Expansion	1998	60	Phase II: 31.2	Belt Collins 1998	LF0027-98
3	Phase II Vertical Expansion	2005	85	Phase II: 31.2	Earth Tech and Wil Chee Planning 2004	LF0101-04
4	Phase II Lateral Expansion, Cell 1, 2, and 3[1/]	2010 Cell 1 2019 Cell 2	85	Cell 1: 6.3 Cell 2: 6.5	AECOM 2007	LF0053-09 (Cell 1) LF0042-16 (Cell 2)
5	Phase II Vertical Expansion[2/]	2014	120	Phase II, Cell 1, & Cell 2: 44	AECOM 2013b	LF0052-13
6	Phase II Vertical Expansion	TBD	171.5	Phase II, Cell 1, & Cell 2: 44	Tetra Tech 2024	LF-0042-23 (Pending)
7	**Cell 3 Vertical Expansion (Proposed Action)**	**TBD**	**85 (Phase I)** **188 (Phase II)**	Phase I: 33 Phase II, Cell 1, & Cell 2: 44	**TBD**	**TBD**

amsl = above mean sea level; ft = feet

1/ Cell 3 was described in the 2007 Final EA (AECOM 2007) as expanding Phase II directly over the closed Phase I with a maximum elevation of 85 ft amsl. Cell 3 included in the CDUP No. KA-3625 and SMA(U)20-12 4 but has not received a solid waste management permit from HDOH nor has construction of Cell 3 commenced.

2/ A vertical expansion to Phase II, Cell 1 (operating) and the proposed Cell 2 was permitted in 2014. Cell 2 was permitted for vertical expansion five years prior to commencing construction in 2019.

1.8.3 Kekaha Landfill Operations and Environmental Controls

This section summarizes the existing operations and environmental controls at Kekaha Landfill. Kekaha Landfill operates in accordance with applicable federal, state, and county regulations including:

- Federal Regulations:

    - CFR Title 40 – Protection of the Environment
- State of Hawai‘i Regulations:
    - HRS Chapter 342H Solid Waste Pollution
    - HRS Chapter 3421 Special Wastes Recycling
    - HAR § 11-54 & 55, Water Quality Standards & Water Pollution Control
    - HAR § 11-58.1, Solid Waste Management Control
    - HAR § 11-60.1, Air Pollution Control
- Permits:
    - Solid Waste Management Permit No. LF-0042-16
    - Covered Source Air Permit No. 0802-01-C
    - Conservation District Use Permit KA-3625
    - Special Use Permit SP-93-9, Use Permit U-93-56 and Class IV Zoning Permit Z-IV-93-64
    - Special Management Area Use Permit (SMA(U)20-12 4)
- Internal Policies of County of Kaua‘i
- Environmentally sound operating practices and effective safety programs

The *Kekaha Municipal Solid Waste Landfill Operations Manual* (Geosyntec 2023a) contains the policies and procedures that govern operations at Kekaha Landfill including the following:

- *Waste Acceptance/Hazardous Waste Exclusion Program* (Geosyntec 2023b)
- *Safety and Health Plan* (Geosyntec 2023c)
- *Emergency Action Plan* (Geosyntec 2023d)
- *Operations Plan* (Geosyntec 2023e)
- *Leachate Management Plan* (Geosyntec 2023f)
- *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g)
- *Perimeter Gas Monitoring Plan* (Geosyntec 2023h)
- *Subsurface Landfill Gas Temperature Monitoring and Contingency Plan* (Geosyntec 2023i)
- *Closure/Post-Closure Plan* (AECOM 2016)
- *Surface Water Management Plan 2024-2025 Annual Update* (Geosyntec 2025a)
- *Spill Prevention, Control, and Counter Measures Plan (*Geosyntec 2023j)

Kekaha Landfill Operations

Kekaha Landfill’s current operating hours are 8:00 a.m. to 4:00 p.m., 7 days per week, approximately 352 days per year. Kekaha Landfill accepts an average of 275 tons of waste per day but is permitted to receive up to 600 tons of waste per day, including MSW, industrial/commercial, green waste, tires, wood, metals, and other special wastes.

The term "special waste" refers to non-hazardous waste that requires special processing and handling/disposal techniques due to the quantity or volume of the material, or its unique physical, chemical, or biological characteristics. Types of special wastes that are accepted at Kekaha Landfill

include, but are not limited to: asbestos-containing waste (friable and non-friable[13]); treated medical wastes that have been rendered non-infectious (sterilized or incinerated); soils, debris, and other materials contaminated with petroleum or other chemical products; PCB-contaminated waste;[14] and dead animals/offal. All special waste materials must be pre-approved before acceptance and are subject to additional screening and handling requirements.

The County maintains a *Waste Acceptance/Hazardous Waste Exclusion Program* (Geosyntec 2023b) that: defines acceptable and unacceptable wastes and establishes procedures to prevent, detect, and manage waste unsuitable for landfill disposal. The program complies with the MSW landfill operating criteria in 40 CFR § 258.20 and HAR § 11-58-15(a) and requires the following:

1. Random inspections or other measures to ensure incoming loads do not contain regulated hazardous wastes, PCB wastes, or other non-hazardous waste not accepted at Kekaha Landfill.
2. Documentation and retention of inspection records.
3. Training for personnel to recognize regulated hazardous wastes, PCB wastes, and other non-acceptable wastes.
4. Prompt notification to HDOH if regulated hazardous waste or PCB waste is discovered.

Scale house attendants and equipment operators monitor incoming waste and divert unacceptable loads from disposal at Kekaha Landfill. Once a waste load has been determined to be acceptable by the scale house attendant, it is weighed and the hauler proceeds to either the Material Drop-off Facility (i.e., residential self-haul) or the active disposal area (i.e., transfer trailers and commercial haul). Daily operations include the tipping of waste into a specific area of the landfill, called the working face, followed by compaction or crushing of the waste and covering it with soil at day's end. In the active disposal area, the landfill uses an “area fill” method: waste is spread and compacted in horizontal layers, or lifts, to form waste cells. At the end of each workday, the exposed waste at the working face is covered with cover soil or an alternate daily cover approved by HDOH. Daily cover helps mitigate odors, vectors, leachate, and windblown trash. Waste placement and compaction continue until final elevations and grades are reached. During placement operations, the waste surface is graded to prevent surface-water run-on and to direct runoff into Kekaha Landfill’s stormwater drainage features.

The County employs approximately 20 full-time personnel to safely and efficiently manage incoming waste at Kekaha Landfill. Management conducts weekly, monthly, and annual training to ensure staff maintain a high level of knowledge in safety and emergency procedures, waste-acceptance and

[13] There are two general forms of asbestos. Friable asbestos materials contain more than 1 percent asbestos and when dry, can be crumbled, pulverized, or reduced to powder by hand. Dry, friable asbestos becomes an inhalation hazard when it is broken up or damaged because asbestos fibers are released into the air. Non-friable asbestos-containing materials contain more than 1% asbestos and when dry, cannot be crumbled, pulverized, or reduced to powder by hand. Dry, non-friable asbestos materials are not likely to release asbestos fibers because the fibers have been bound in a tight matrix. Only sanding or cutting this type of material could release asbestos fibers.

[14] PCB-contaminated solid waste can be accepted for disposal at Kekaha Landfill Phase II following verification that the waste contains less than 50 ppm PCBs.

compliance policies, and environmental protection practices. Employees must follow safe work practices described in training materials, Safety Data Sheets (SDS), and site operating procedures, including the facility's *Safety and Health Plan* (Geosyntec 2023c) and *Emergency Action Plan* (Geosyntec 2023d).

Landfill equipment current includes compactors (2), a bulldozer, a dump truck, excavators (2), a front-end loader, a roll-off truck, a pickup truck, a smooth drum roller, a grader, a water truck, and other auxiliary machinery (e.g., skid-mounted landfill gas flare; emergency generator).

The current staff and equipment are adequate to handle the daily waste volume accepted at the site, support routine and non-routine tasks, and carry out the excavation and construction activities required for cell development and cover-soil production.

Environmental Monitoring and Control Systems

Existing environmental monitoring and control systems at Kekaha Landfill include the following:

- **Liner and Leachate Collection and Removal System** – Leachate is the liquid that can drain or "leach" from a landfill. Moisture within the landfill moves through the waste by gravity, collecting dissolved material along the way, and accumulates at a low point beneath the waste pile, but above the impermeable liner of the landfill. The liner and leachate collection and removal system (LCRS) collects leachate and retains it on-site in a lined leachate evaporation pond (Figure 1-2).

  All disposal areas at Kekaha Landfill Phase II are equipped with a bottom and side slope composite liner and LCRS. The base liner consists of several layers of geosynthetic clay and geomembrane liner (60-millimeter-thick high-density polyethylene [HDPE]) as detailed in Kekaha Landfill's SWMP. Above the base liner is a drainage layer containing perforated HDPE pipes. These pipes direct leachate into collection/extraction risers at the perimeter of the landfill unit. Leachate from these risers is then directed via a pump station (i.e., wet wells) to the lined leachate evaporation pond. Sensors detect leachate levels and automatically activate pumps when the leachate reaches a predetermined level. The approximately 2-acre leachate evaporation pond is lined to prevent infiltration of the water into the underlying soils. It has a maximum depth of 6 ft with an additional 2 ft of freeboard, and it was designed to completely evaporate all leachate collected from the landfill during a normal precipitation/evaporation year. Two floating aerators are used to accelerate evaporation. The LCRS is operated and maintained in accordance with the facility's *Leachate Management Plan* (Geosyntec 2023f). Leachate monitoring and sampling activities are conducted annually at Kekaha Landfill Phase II in accordance with facility's *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g).

- **Landfill Gas Collection and Control System and Perimeter Gas Monitoring** – Landfill gas is produced when bacteria break down organic waste and is primarily made up of methane and carbon dioxide but may also be made up of small amounts of nitrogen, oxygen, ammonia, sulfides, hydrogen, and various other gases. The GCCS collects landfill gases from within the waste volume and safely combusts them in an enclosed landfill gas flare.

Kekaha Landfill's existing GCCS consists of a collection network of HDPE pipes, gas collection devices (i.e., gas wells), and an enclosed landfill gas flare that is designed to minimize and control surface emissions. A perimeter gas monitoring network, consisting of 12 perimeter gas probes, is installed around Kekaha Landfill to detect landfill gas migration. The landfill gas probes are sampled for methane, carbon dioxide, and oxygen. The perimeter gas probe network is monitored on a quarterly basis in accordance with facility's *Perimeter Gas Monitoring Plan* (Geosyntec 2023h).

- **Surface Water Management System** – Described in Kekaha Landfill's *Surface Water Management Plan 2024-2025 Annual Update* (Geosyntec 2025a), stormwater is managed at Kekaha Landfill by controlled grading on the surface of the landfill and by maintaining an engineered system of drainage ditches, channels, pipes, and basins. The surface water system includes diversion berms located on the side slopes below the perimeter of the landfill top deck and along the perimeter road, which direct surface water to down drains. The down drains convey runoff to infiltration ditches around the perimeter of the landfill and to an existing, approximately 2.2-acre stormwater infiltration basin. The stormwater management system was designed to convey runoff from a 25-year, 24-hour storm, as required by the solid waste regulations (HAR § 11-58.1-15(g)).

  Kekaha Landfill's SWMP requires annual updates to the *Surface Water Management Plan* be prepared and filed with HDOH by September 1 of each year. As part of the annual updates, the County is required to report on its annual inspections of surface water management features and facilities, file updated topographic drawings and surface water drainage paths and conveyances, and drainage system modifications planned for the next year in response to waste filling.

  In addition, Kekaha Landfill Phase II implements a *Spill Prevention, Control, and Countermeasure Plan* (Geosyntec 2023j) to prevent releases of petroleum products used on-site and, if a release occurs, contaminants are not discharged into surface waters.

  Stormwater runoff associated with industrial activities is regulated by the National Pollutant Discharge Elimination System (NPDES) General Permit (HAR § 11-55). Because there is no stormwater discharge point from Kekaha Landfill Phase II, a request for NPDES exclusion was verbally granted by HDOH in July 2021 (D. Moises, HDOH, personal communication—email to COK, July 6, 2021).

- **Groundwater Monitoring** – In accordance with HAR § 11-58.1-16, a groundwater monitoring program is in place at Kekaha Landfill to monitor for impact to the groundwater from the landfill. The program includes a groundwater well network and sampling, monitoring, and analytical procedures. Groundwater from three Phase I and three Phase II groundwater monitoring wells is sampled on a quarterly basis to better understand background groundwater quality and determine whether there are any landfill-related contaminants present in the groundwater. In coordination with HDOH, the County recently installed three new monitoring

wells, MII-6A, MWII-8, and MWII-9, in November 2025 with quarterly groundwater monitoring anticipated to begin in first quarter 2026. Kekaha Landfill groundwater monitoring activities are conducted pursuant to the *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g).

1.9 Proposed Scope and Organization of the EIS

The scope of the EIS will meet the requirements of HAR § 11-200.1 Subchapter 10 and will be informed by comments received in response to this EISPN. The County currently proposes the following scope and organization of the EIS.

- *Introduction* will provide the purpose, need, and objectives for the Proposed Action, relevant background information, and a description of existing operations at the Kekaha Landfill.
- *Project Description* will provide a detailed description of the Applicant's Proposed Action and a No Action Alternative. This section also provides a summary of alternatives considered but dismissed from further consideration.
- *Project Alternatives* will provide a description of the No Action Alternative and a summary of alternatives considered but dismissed from further consideration.
- *Existing Environment, Potential Impacts, and Mitigation Measures* will present the existing environmental setting for the full range of potentially affected resources and evaluate the potential effects of the Proposed Action and No Action Alternative. The analysis of potential impacts encompasses both direct impacts—those occurring simultaneously and in the same location as the specific action—and indirect impacts—those arising from an action but occurring later or being geographically separated yet foreseeable within a reasonable timeframe as well as short- and long-term impacts on the human, natural, and built environments. Seventeen resource areas will be evaluated, as follows:
    - Climate and Climate Change
    - Air Quality
    - Geology, Topography, and Soils
    - Water Resources (Surface Water and Groundwater)
    - Biological Resources (Flora and Fauna)
    - Natural Hazards (Floods, Tsunamis, Hurricanes and Severe Storms, Earthquakes and Seismic Activities, and Sea Level Rise)
    - Archeological Resources and Historic Properties
    - Cultural Resources
    - Visual Resources
    - Noise
    - Human Health and Safety (Heavy Equipment, Vector Control, Explosive Gas, Special and Hazardous Waste, Petroleum Products, Landfill Fires, Injury and Illness)
    - Public Infrastructure and Services
    - Transportation and Traffic
    - Land Use

  - Socioeconomic Characteristics
  - Cumulative Impacts[15]
- *Regulatory Context/Consistency with Plans and Policies* will outline the regulatory context and assess the Proposed Action's consistency with relevant plans and policies, discussing the regulatory framework that governs it.
- *Other HRS Chapter 343 Requirements* will cover additional requirements under HRS Chapter 343, including the relationship between local short-term uses and long-term productivity, the irreversible and irretrievable commitment of resources, unavoidable environmental effects, and unresolved issues.
- *Consulted Parties* will list the parties consulted during the planning stages of the Proposed Action.
- *List of Prepares* will provide a list of individuals that contributed to the development of this EIS.

1.9.1 Site-Specific Studies Contributing to the EIS

Data would be compiled from various environmental studies, permits, and assessments to inform the EIS. The Proposed Action is supported by a comprehensive body of environmental documentation that spans over 40 years, including site-specific data collected under State and Federal landfill reporting requirements. Table 1-5 lists the key site-specific studies, operational plans, and reports that would be referenced in the development of the EIS.

Table 1-5. Site-Specific Studies, Operational Plans, and Reports to be Evaluated in the EIS

Authors	Year	Title
Previous Kekaha Landfill Environmental Review Documents		
R.M. Towill	1983	Revised Environmental Impact Statement, Kekaha Sanitary Landfill Expansion Project
Belt Collins	1998	Final Environmental Assessment, Kekaha Landfill Phase II Vertical Expansion
Earth Tech and Wil Chee	2004	Final Environmental Assessment, Kekaha Landfill Phase II Second Vertical Expansion
AECOM	2007	Final Environmental Assessment, Kekaha Landfill Phase II Lateral Expansion
AECOM	2013b	Final Environmental Assessment, Kekaha Landfill Phase II Vertical Expansion
Tetra Tech	2024	Final Environmental Assessment, Kekaha Landfill Phase II Vertical Expansion
Previous Kekaha Landfill Due Diligence Studies		
DLNR	1982	Biological Resources Survey Letter, Fauna and Flora Survey, Kekaha Sanitary Landfill Site
Ching	1982	Archaeological Reconnaissance of 3 Sites for Proposed Kaua'i Central Sanitary Landfill Project, Kekaha, Kipu, and Kumukumu, Kaua'i Island (TMK (4) 1-2-002:001, 009, 021, 040; (4) 3-4-006:012; and (4) 4-7-004:001)
Folk and Hammatt	1993	Archaeological Inventory Survey and Subsurface Testing at the Kekaha Phase II Landfill Site (TMK (4) 1-2-002:009)
SWCA	2016	Proposed Ma'alo Landfill Project Wildlife Hazard Assessment (included biological surveys at Kekaha Landfill)
Baculpo and Hammatt	2023	Cultural Impact Assessment for the Kekaha Municipal Solid Waste Landfill Phase II Vertical Expansion Project (TMK (4) 1-2-002:009, 001 [por.])

[15] *Cumulative Impacts* evaluates the potential impacts of the Proposed Action in the context of past, present, and reasonably foreseeable future actions. Where appropriate, the EIS will identify actions and measures that could mitigate these impacts.

Authors	Year	Title
Cultural Surveys Hawai‘i	2023	Request for Concurrence with Project Effect Determination of “No Historic Properties Affected” HRS Section 6E-8/HAR Section 275-7 for the Kekaha Landfill Phase II Vertical Expansion Project
Kekaha Landfill Operational Plans and Reports		
PGE	2008	Final Letter Report, Geotechnical Exploration, Horizontal Expansion of the Kekaha MSW Phase II Landfill
PGE	2012	Final Letter Report, Geotechnical Exploration, Kekaha Landfill Phase II Cell 2 Lateral Expansion
PGE	2015	Final Letter Report, Geotechnical Consultation, Gas Collection and Control System Design, Kekaha Sanitary Landfill
AECOM	2016	Closure/Post-Closure Plan, Kekaha Landfill Phase II
Jacobs	2021	Integrated Solid Waste Management Plan Update
Geosyntec	2023a	Operations Manual
Geosyntec	2023b	Waste Acceptance/Hazardous Waste Exclusion Program Plan
Geosyntec	2023c	Health and Safety Plan
Geosyntec	2023d	Emergency Action Plan
Geosyntec	2023e	Operations Plan
Geosyntec	2023f	Leachate Management Plan
Geosyntec	2023g	Groundwater and Leachate Monitoring Plan
Geosyntec	2023h	Perimeter Gas Monitoring Plan
Geosyntec	2023i	Subsurface Landfill Gas Temperature Monitoring and Contingency Plan
Geosyntec	2023j	Spill Prevention, Control, and Countermeasures Plan
Geosyntec	2025a	Surface Water Management Plan 2024-2025 Annual Update
Geosyntec	2025b	Kekaha Municipal Solid Waste Landfill Annual Operating Report, July 1, 2024 through June 30, 2025
Geosyntec	2026a	2nd Semi-annual Covered Source Permit Report for Year 2025
Geosyntec	2026b	1st Quarter 2026 Groundwater and Leachate Monitoring Report
Landfill Siting Studies and Landfill Alternatives		
Earth Tech	2001	Kaua‘i Municipal Solid Waste Landfill Siting Study, Kaua‘i, Hawai‘i
Earth Tech	2002	New Kaua‘i Municipal Solid Waste Landfill Kalepa Site Evaluation, Kaua‘i, Hawai‘i
R.M. Towill	2009	Mayor’s Advisory Committee on Landfill Site Selection: Vol. 1: Report, Vol. 2: Site Data Sheets
AECOM	2012	New Kaua‘i Landfill Siting Study Report
AECOM	2013a	Kaua‘i Resource Recovery Park Feasibility Study
AECOM, Pacific Waste Consulting Group, and R.M. Towill	2017	Alternatives Analysis, Proposed New Kaua‘i Landfill and Resource Recovery Park, Ma’alo, Kaua‘i, HI
R.M. Towill	2018	Final Environmental Impact Statement New Kaua‘i Landfill Ma‘alo, Kaua‘i, Hawai‘i
Stantec	2021	Phase 1 Landfill Mining Feasibility Study, Kekaha Landfill
HDR Engineering	2023	Study of Feasible Technologies for Long-Term Management of Municipal Solid Waste on the Island of Kaua‘i

Table 1-6 lists the due diligence studies being conducted specifically for the Cell 3 vertical expansion.

Table 1-6. Project-Specific Due Diligence Studies to be Evaluated in the EIS

Authors	Year	Title
Tetra Tech	2026a	Cell 3 Vertical Expansion Conceptual Design and Engineering Report (in progress)
Tetra Tech	2026b	Hydrology and Groundwater Quality Report (in progress)
Tetra Tech	2026c	Biological Survey Report (in progress)
Tetra Tech	2026d	Visual Renderings (in progress)
Cultural Surveys Hawai'i	2026a	Archaeological Literature Review and Field Inspection Report (in progress)
Cultural Surveys Hawai'i	2026b	Cultural Impact Assessment (in progress)

2.0 Project Description

2.1 Project Components

The Proposed Action would consist of the following:

- **Phase I Waste Reshaping -** To achieve the necessary grades for the installation of the Phase I overliner system, approximately 253,000 cubic yards of waste would need to be relocated within the Phase I area. The majority of the waste would be reburied within the landfill; however, some waste (e.g., hazardous waste, recyclable metals) may be excavated and transported for off-site disposal. As shown in Figure 2-1, existing refuse from Phase I would be relocated to the makai portion of the Phase I landfill area to build up the outer edge of the landfill and create the final grades and slope required to install the overliner. This unlined area would then be closed and the final cover installed per state regulations and the HDOH approved Closure/Post-Closure Plan (see Section 2.6 below for more information). An overliner would then be installed over the remining portion of Phase I as described in the next bullet point. See Section 2.3.5 for additional details on the Phase I reshaping.
- **Installation of Phase I Overliner and Leachate Collection and Removal System** – Installation of an impermeable overliner and leachate collection and removal system within the Phase I area to prevent leachate generated by waste placed in Cell 3 from impacting groundwater beneath the landfill. The geomembrane proposed for the Phase I overliner is a composite liner system comprised of a geosynthetic clay liner (GCL) layer overlaid by HDPE. This HDPE/GCL composite is the predominant type of liner system used in modern landfills and is ideal for leachate containment. The overliner system would be tied into the existing Subtitle D base liner system that currently underlies the Phase II landfill and is also an HDPE/GCL composite. Installation of a composite liner system over the top and some side slopes of Phase I would result in additional impermeable barriers that would help to prevent rainwater from infiltrating the existing waste in Phase I that would remain in place. See Section 2.3.6 for additional details.
- **Phased Cell 3 Vertical Expansion -** Airspace for the waste disposal area is gained from increasing the overall height of the landfill. Under the Proposed Action, the engineered waste disposal area would be extended upward to a maximum elevation of 85 ft amsl within Phase I and 188 ft amsl within Phase II. Cell 3 would cover approximately 40 acres and would be located entirely within the existing 74-acre permitted, limit-of-waste footprint. Cell 3 is estimated to provide

approximately 1,400,000 cubic yards of additional disposal capacity (Table 2-1). See Section 2.2 for additional details.

- **Tsunami Mitigation Armoring –** Installation of rip-rap or other armoring material around the perimeter of the landfill waste footprint up to the height of the tsunami inundation elevation plus freeboard to dissipate wave energy in the event of a tsunami. The armoring would be partially located outside the permitted landfill waste area but within the Kekaha Landfill property. See Section 2.3.7 below for additional information.

Table 2-1. Estimated Additional Landfill Capacity from Proposed Action

Proposed Expansion Area	Additional Design Volume (cubic yards)	Annual Tonnage (tons)	Annual in-place Waste (cubic yards)	Estimated Additional Years of Capacity with Cell 3 Vertical Expansion
Cell 3 Vertical Expansion	1,400,000	89,000	137,000	10.2

Assumptions:

Design volume estimated as the volume between the proposed top of final cover surface (with the proposed vertical expansion) and the existing permitted top of final cover surface, minus the increased volume of final cover required due to the extended side slope lengths.

Annual in-place waste volume estimate based on an assumed in-place waste density of 1,300 pounds of waste per cubic yard of waste volume.

The components of the Proposed Action are shown in Figure 2-1 and described in more detail below. Figures 2-2 show the existing topography of Kekaha Landfill and Figures 2-2 and 2-3 show the plan and profile of the final grades for the proposed Cell 3 Vertical Expansion.

2.2 Proposed Action Design Features

The following identifies the features of the Cell 3 vertical expansion design as provided in the *Conceptual Design and Engineering Report* (Tetra Tech 2026a). The basic design features or components are stipulated in federal and state regulations. Other technical factors considered in the design include geotechnical design, landfill gas extraction system, leachate management system, and surface water management system, as summarized below. The Cell 3 expansion would tie into the existing environmental control systems at Kekaha Landfill, which are described in Section 1.8.3 above.

The Cell 3 expansion would be constructed in four modules/phases. The initial Cell 3 module would be constructed at the southern side of the Phase I area and would include waste reshaping, installation of the overliner, and construction of a leachate sump. After completion of the first module, waste filling would begin in that area. Construction of the second Cell 3 module would commence in the northern side of the Phase I area and include waste reshaping, installation of the overliner, and construction of a leachate sump. Once waste filling is completed to a uniform elevation over the Phase I overliner area, modules 3 and 4 would continue to be filled in operational phases (lifts) until the final elevation of Cell 3 is reached.

2.2.1 Geotechnical Design

Geotechnical design of the Cell 3 vertical expansion includes an evaluation of structural criteria to evaluate long-term stability and protection of the landfill base liner systems, sideslopes, and landfill gas extraction and leachate management systems.

The slope stability of the proposed landfill geometry was analyzed based on the anticipated final shape after completion of waste placement and installation of final cover. The landfill permit application would contain the complete geotechnical evaluations for the final design. Top slopes are designed to be sloped at 5 percent (20:1 H:V[16]); sideslopes of both final and intermediate covers (e.g., for each phase) are designed to be sloped at a ratio of 3 to 3.5:1 (H:V). To address slope stability and stormwater management, the proposed vertical expansion would incorporate benches in the slope design. The existing all-weather access roads would be extended to access the upper reaches of the landfill area.

The slope stability analysis included two types of failure scenarios based on the geometry of the facility and the geotechnical properties of foundation soils and waste mass:

- A block type failure along the base liner critical interface
- A circular failure that passes through the foundation soils or support structures (e.g., perimeter berms) as well as through the waste mass

For slope stability, the factor of safety is defined as a minimum ratio of maximum available resisting forces divided by actual driving forces under various scenarios. Consistent with current industry practice and the USEPA's Solid Waste Disposal Facility Criteria: Technical Manual (EPA/530-R-93-017) (USEPA 1993) a minimum factor of safety of 1.5 for long-term static conditions was used. The calculated factor of safety was compared to the minimum allowable factor of safety for static (nonseismic) conditions of 1.5 for each scenario. The calculated factor of safety was equal to or higher than 1.5 in all static cases, therefore suggesting stable conditions and acceptable design.

2.2.2 Liner (Geomembrane) Compatibility

As described in Section 1.8.3 above, the Phase II area is equipped with a bottom and side slope composite liner that consists of several layers of geosynthetic clay and geomembrane liner (60-millimeter-thick HDPE) as detailed in Kekaha Landfill's SWMP. In general, 60-mil HDPE/GCL composites, which is the type of liner that was installed with Phase II are commonly used for landfills with waste depths substantially greater than the Kekaha Landfill, even with the proposed expansion, and are expected to have an operational life for centuries. Tetra Tech conducted an engineering analysis of the existing Phase II liner system; the analysis concluded that the existing liner could withstand the additional settlement imposed by the additional fill over the Phase II liner area due to the Cell 3 expansion (Tetra Tech 2026a).

[16] Horizontal vs Vertical Ratio; for every 20 horizontal units, there is 1 vertical unit.

The Phase I overliner system would have multiple layers of environmental protection and would generally include (top-to-bottom):

1. **Subgrade preparation**: Final smoothing of the waste surface and placement of a sacrificial leveling layer, often a low-permeability soil or geosynthetic cushion.
2. **Geosynthetic clay liner**: Place GCL material over the finished overliner subgrade. Panels of GCL are seamed together with granular bentonite material or other manufacturer-specified configurations to provide a low-permeability layer beneath the geomembrane, which also provides cushioning for the geomembrane to protect against protrusions in the underlying Phase I waste.
3. **Geomembrane placement**: Install HDPE or other specified geomembrane panels. Panels are welded together using thermal fusion (seam welding) with testing (vacuum box, air channel, or destructive seam tests).
4. **Geotextile protection layer**: Place non-woven geotextile over the geomembrane to protect it from damage from overlying materials and to act as a filter where needed.
5. **Drainage layer**: Install geonets, gravel drainage layers, or prefabricated drainage composites to provide a controlled path for lateral drainage of leachate.
6. **Protective cover soil:** Place and compact soil to design thickness. Waste would be placed above this final soil layer.
7. **Anchoring and edge detailing**: Properly anchor the geomembrane at slopes, toes, and around penetrations; extend liner to tie-ins or termination structures.

Exact overliner components would be included in the final design documents for the Proposed Action and approved by HDOH.

The geomembrane proposed for the Phase I overliner is manufactured from HDPE, which has high ultraviolet ray and chemical resistance while providing flexibility. These features make an HDPE geomembrane ideal for leachate retention. HDPE geomembranes are the predominant means of liner systems for all modern landfills. The use of HDPE geomembrane for the Phase I overliner is the appropriate application, required by regulation, and would perform well in retaining collected leachate and overall site stability. The use of GCLs is also appropriate as it combines geosynthetic materials with bentonite clay to form a highly impermeable barrier that performs well in demanding applications such as serving as part of the liner system for a MSW landfill.

2.2.3 Leachate Collection and Removal System and Leachate Pond

As described in Section 1.8.3 above, the Phase II area is equipped with a drainage layer containing perforated HDPE pipes that direct leachate into collection/extraction risers at the perimeter of the landfill unit. Leachate from these risers is then directed via a pump station (i.e., wet wells) to the lined leachate evaporation pond. Tetra Tech conducted an engineering analysis of the existing Phase II LCRS, which concluded that buried components of that system could withstand the additional load of the Cell 3 expansion (Tetra Tech 2026a).

Due to the additional lined area above the Phase I area, the total landfill leachate generation rate and collection was analyzed. Tetra Tech's engineering analysis concluded that the existing Phase II leachate collections system is adequately sized, and the existing leachate evaporation pond has sufficient capacity for the leachate volume that would be generated from above the Phase I overliner (Tetra Tech 2026a). The leachate collection system for the Cell 3 area over the Phase I overliner would consist of a drainage layer and a leachate collection pipe system to drain leachate to two leachate sumps located on opposite sides of the landfill (Sump 3A and 3B). The leachate collection piping would run continuously between the two sumps providing a means for cleanout of this leachate collection pipe system if necessary. The leachate collection piping would also collect flows from the existing sump locations within Phase II, Cell 2 by gravity flow, eliminating the need for pumping from the Phase II, Cell 2 sumps.

The leachate collection removal system and leachate evaporation pond would continue to be operated and maintained in accordance with the facility's *Leachate Management Plan* (Geosyntec 2023f) and *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g).

2.2.4 Landfill Gas Collection and Control System

An MSW landfill requires a GCCS to prevent buildup of flammable gas (principally methane) produced by the microbial digestion of organic waste over time. Kekaha Landfill's existing GCCS consists of a collection network of HDPE pipes, gas collection devices (i.e., gas wells), and an enclosed landfill gas flare that is designed to minimize and control emissions.

Due to the additional waste tonnage to be accepted as a result of the Proposed Action, the total landfill gas generation rate and landfill gas collected in the GCCS would increase. Tetra Tech conducted an engineering analysis of the GCCS for the Proposed Acton; the analysis concluded that the existing GCCS is adequately sized to accommodate the anticipated increase in landfill gas flow (Tetra Tech 2026a).

Existing GCCS infrastructure located within the vertical expansion footprint would be impacted by the additional fill. To address this, several phases of improvements would maintain gas collection as Cell 3 is constructed and made operational. First, the existing vertical landfill gas extraction wells within Phase I would be removed and a new landfill gas header installed outside the area of disturbance. Once the waste reshaping is completed, new lateral piping and extraction wells would be installed to provide landfill gas collection for the existing Phase I waste. Next, new lateral piping and extraction wells would be installed above the overliner and within the vertically expanded area to provide landfill gas collection for new waste placed in Cell 3. The proposed GCCS modifications would be tied into the existing GCCS.

No changes to the perimeter landfill gas monitoring system are proposed. Kekaha would continue to monitor its perimeter gas probes on a quarterly basis in accordance with the facility's SWMP and *Perimeter Gas Monitoring Plan* (Geosyntec 2023h).

2.2.5 Surface Water Management System

Stormwater is currently managed at Kekaha Landfill by controlled grading on the surface of the landfill and by maintaining an engineered system of diversion berms and benches which convey runoff to riprapped down drains (i.e., flumes). The down drains convey runoff to infiltration ditches around the perimeter of the landfill and to an existing stormwater infiltration basin.

Tetra Tech's engineering analysis concluded that the existing perimeter infiltration ditches and the stormwater infiltration basin are adequately sized to accommodate the runoff from the Cell 3 expansion (Tetra Tech 2026a). The stormwater management system would continue to be able to convey runoff from a 25-year, 24-hour storm, as required by the solid waste regulations (HAR § 11-58.1-15(g)).

Surface water drainage features over the cover would be modified to accommodate the proposed final grading for Cell 3. Energy dissipation structures would be installed at the bottom of the stormwater down drains (which would be within the existing stormwater ditches/infiltration areas). The proposed surface water management system would tie into the existing stormwater system at the limits of the vertical expansion. No changes to the existing perimeter infiltration ditches or stormwater infiltration basin are warranted or proposed.

As required by Kekaha Landfill's SWMP, the County would continue to provide HDOH annual updates to the facility's *Surface Water Management Plan* (Geosyntec 2025a).

2.3 Construction Activities

Construction activities associated with the Proposed Action would include Phase I waste reshaping and installation of the Phase I overliner. Construction activities are anticipated to take place over a 12-to-18-month period.

2.3.1 Site Safety and Environmental Compliance

Prior to the start of construction, Project-specific plans addressing construction safety and environmental compliance would be prepared and finalized. The specific plans needed for construction would be based on industry best practices, requirements specified in applicable permit conditions of approval, and relevant federal, state, and local regulations; these are expected to include, but are not necessarily limited to: 1) construction safety plan, 2) hazardous material procedures, 3) storm water pollution prevention plan (SWPPP) (as needed), 4) erosion control plan, 5) endangered species awareness training; 6) invasive species prevention procedures; and 7) traffic management plan (as needed). The applicable plans would be coordinated with the relevant agencies and implemented throughout Project construction (including construction worker training as needed).

2.3.2 Construction Staff

During construction, approximately 8 to 25 construction workers would be employed at the Project daily. This range covers the variation between work tasks. Some work, such as the waste reshaping and

earthwork tasks, would require few workers. Larger crews would be required during the deployment of the geosynthetic liner, which would occur over short durations during the construction of the Cell 3 overliner. The construction workers would consist of a majority of locally hired workers and a limited number of specialized workers for specific construction tasks (e.g., liner installation and testing, hazardous waste management).

2.3.3 Transport and Delivery

Heavy vehicles delivering equipment and materials are expected to travel from Līhu'e (Nāwiliwili Harbor) to the Project Area using Nāwiliwili Road and Kaumuali'i Highway. It is anticipated that a maximum of 55 vehicles per day (including up to 25 worker vehicles and 30 truck deliveries) would be added to the roadway network during construction. However, the average vehicles per day would likely be significantly less. No public roadway improvements are expected to be required to accommodate the equipment transport.

2.3.4 Site Preparation

Prior to waste reshaping activities, erosion and sediment control best management practices (BMP) would be implemented in accordance with applicable regulatory requirements. A temporary construction fence/dust screen would be installed downwind of the Phase I area. No ground disturbing activities would occur until BMPs were properly implemented. Lined and bermed staging areas would be established for segregated waste.

2.3.5 Phase I Waste Reshaping

To achieve the necessary grades for the installation of the Phase I overliner system, approximately 253,000 cubic yards of waste would need to be relocated within the Phase I area.[17] The majority of the waste would be reburied within the landfill; however, some waste (e.g., hazardous waste, recyclable metals) may be excavated and transported for off-site disposal.

The work area would be segregated into working phases to limit exposure and maintain operational control. Excavators and dump trucks would remove the top cover soil, which would be stockpiled and used for daily or intermediate cover. The exposed Phase I waste would be visually screened for large recyclables and unacceptable or hazardous materials. To the extent practicable, materials that can be reused on-site (e.g., soil) or recycled would be recovered and segregated for later use. Due to the age of Phase I, the potential to encounter hazardous materials should be expected and the selected contractor would manage those that are identified properly, segregate them from other waste materials being relocated, and arrange for proper disposal at a licensed facility. Those contingencies would be included in the Contractor's Health and Safety plan. Segregated waste would be temporarily staged in designated lined, bermed areas with leachate, stormwater, and air controls, as required by HDOH.

[17] The overall volume of Phase I is approximately 1.6 million cubic yards; approximately 16 percent of the total volume of Phase I would be relocated within the Phase I area.

Excavators and dump trucks would transport the waste fill determined to be re-usable at the site to designated fill areas within the Phase I footprint. Within the fill areas, compactors would be used to compact the relocated waste fill, and dozers would be used to place daily or intermediate cover (e.g., soil or an approved HDOH alternative) to relocation areas to limit infiltration and vectors. The County would implement odor and dust control measures during excavation, including applying water mist with a water truck, immediately covering odorous waste with daily cover material, and using odor neutralizers.

At the end of the working day, daily cover (or an approved HDOH alternative) would be applied to the active working face in both the excavation and fill areas of the waste reshaping.

If off-site disposal is required, trucks would be lined and covered in accordance with State and Federal guidelines for transportation of solid and hazardous waste, as applicable. The County would develop a Traffic Control Plan to determine permitted truck routes and timing to reduce community impacts.

The Phase I surface would then be prepared for overliner installation. The waste surface would be regraded to design elevations, providing stability and proper drainage of leachate. The waste surface would be compacted to meet design density. Pre-installation testing would verify surface geometry, slope tolerances, and absence of sharp protrusions that could puncture the liner.

2.3.6 Phase I Overliner and Leachate Collection and Removal System

Next, an impermeable overliner and LCRS would be installed within the Phase I area to prevent leachate from waste placed within Cell 3 from impacting groundwater beneath the landfill. Although the majority of the existing Phase I landfill would remain unlined, installation of a composite liner system over the top and some side slopes of Phase I would result in additional impermeable barriers that would help to prevent rainwater from entering the existing Phase I waste. The Phase I overliner system would be installed in multiple layers as detailed in Section 2.2.2. The overliner system would be tied into the existing Subtitle D base liner system and leachate collection system that underlies the Phase II landfill.

Installation of the overliner would be conducted using equipment such as loaders and small dozers as well as smaller seaming equipment (e.g., wedge and extrusion welders, generators, test equipment).

2.3.7 Tsunami Mitigation Armoring

To mitigate the potential for damage to the landfill in the event of a tsunami event affecting Kaua'i, the KLF site has been evaluated and armoring of the perimeter of the landfill is proposed to extend up to the height of the tsunami inundation elevation plus a freeboard allowance. The armoring would consist of large-diameter rock rip-rap or concrete revetments sized to resist the flow velocities of the predicted tsunami waves and dissipate the wave energy. Tsunami evaluations and design assumptions are based on the requirements of the American Society of Civil Engineers' Standard 7-22, *Minimum Design Loads and Associated Criteria for Buildings and Other Structures* (ASCE 2022).

2.3.8 Revegetation, Landscaping, and Post-Construction Site Control

Following construction, areas that have been temporarily disturbed would be revegetated for soil stabilization and erosion control (except the active landfill face). It is anticipated that revegetation would involve the application of hydroseeding, with a suitable mix of non-invasive grass species and/or species currently found throughout the site. Stormwater drainage features would be constructed within the Phase I area to address long-term stormwater requirements (see Section 2.2.5).

2.4 Operations and Maintenance

Kekaha Landfill would continue to accept, on average, approximately 37 commercial loads and 114 non-commercial loads per day, which includes loads consisting of both recyclable and non-recyclable material. No substantial changes to Kekaha Landfill's existing operations are proposed. As described in Section 1.8.3, the County incorporates engineering and operational controls to minimize and avoid adverse impacts to the environment and public nuisances, including a waste acceptance and exclusion program, leachate management plan, groundwater and leachate monitoring, perimeter gas monitoring plan, surface water management plan, access and traffic control, litter control, dust control, odor control, vector control, explosive gas control, spill prevention, control, and countermeasure plan, and emergency management procedures. These controls are detailed in Kekaha Landfill's *Operations Manual* (Geosyntec 2023a), which would be amended to incorporate the Proposed Action, as necessary. Kekaha Landfill would continue to implement these engineering and operational controls under the Proposed Action to minimize the operational impacts.

2.5 Community Benefits Program

The Kekaha Host Community Benefit fund commenced in 2008 "as a place-based reinvestment model, transforming environmental burden into long-term social, economic, and cultural benefit" (Kekaha HCB 2026). The Host Community Benefit fund started with $650,000 in 2008. Since then, the amount allocated annually has ranged from $1 per ton to over $3 per ton and is determined during the annual budget process by the Administration and the Kaua'i County Council. Currently, the rate is $3.65 per ton disposed. In fiscal year 2025, 92,992 tons were disposed. The fiscal year 2027 Host Community Benefit fund budget is $339,421.

Between 2012 and 2025, the Citizens Advisory Committee that manages the distribution of HCB funds, has approved 131 different projects valued at over $3.87 million (Kekaha HCB 2026). Projects funded by the Host Community Benefit fund directly benefit the Kekaha Community and include community improvements, economic revitalization, and various environmental sustainability, educational, cultural, art, and health and wellness programs. The Host Community Benefit fund would continue for the duration of the Proposed Action.

2.6 Closure and Post-Closure

If a new MSW landfill facility becomes operational during the Cell 3 operating period, the County would coordinate with HDOH to close Cell 3 and the Kekaha Landfill as soon as practicable, while ensuring continued compliance with all operational, environmental, and public service requirements.

The County is responsible for 30 years of post-closure care of the Phase II landfill in accordance with Kekaha Landfill *Closure/Post-Closure Plan* (AECOM 2016). The Proposed Action would require the County to revise its *Closure/Post-Closure Plan* to incorporate the Cell 3 landfill area. The *Closure/Post-Closure Plan* is reviewed and approved by HDOH and forms the basis of design for the landfill closure construction plans and specifications and for post-closure maintenance and monitoring.

The post-closure maintenance and monitoring requirements are intended to ensure proper functioning of the landfill systems during the 30-year post-closure care period for the long-term protection of the environment and public health. This is accomplished in part by the specification of an environmentally responsible final cover and related components, which prevent erosion of the cover materials and infiltration of surface water into the waste mass, reduce leachate generation, and support the collection and extraction of landfill gases and leachate.

The final cover would consist of (top to bottom) a minimum 18-inch vegetative/protective soil layer, 40-mil linear Low-Density Polyethylene (LDPE) liner and GCL. A geocomposite drainage layer would be placed over the LDPE liner to promote lateral drainage of surface water, reducing the potential for ponding on the cap and promoting overall slope stability. A 12-inch rooting zone soil layer would be placed above the geocomposite drainage layer. Finally, topsoil would be installed and revegetated. The grass surface would promote evapotranspiration of storm water, and would stabilize the cover, decreasing the potential for erosion. The complete landfill cover also removes the pathways for exposure to the landfill.

Post-closure activities include monitoring and maintenance of the landfill final cover, stormwater management systems, landfill gas management, LCRS operation, and groundwater monitoring.

2.7 Project Schedule and Cost

The Proposed Action can begin once all approvals are received. Table 2-2 provides a tentative timeline for the Proposed Action. This schedule is subject to change.

The Cell 3 vertical expansion would incur costs for preparation of the design, plans, EIS, and permits to an amount of approximately $2.4 million (USD). Waste reshaping and construction of the overliner above Phase I would cost approximately $43 million (USD) adjusted for inflation in 2030. The Project would be entirely funded by the County of Kaua‘i.

Table 2-2. Proposed Action Implementation Schedule

Item	Anticipated Date of Completion
HRS Chapter 343 Environmental Impact Statement	Q3 2027
Land Use Approvals	Q1 2028
Final Operations Plan and Design	Q1 2028
Hawai'i Department of Health Solid Waste Management Permit	Q1 2029
Phase I Waste Reconsolidation and Installation of Overliner	Q2 2030
Begin Waste Placement in Cell 3 Vertical Expansion Volume	Q1 2030
Total Time Duration	~ 4 years

3.0 Affected Environment

This section includes an overview of the environmental setting of the Project Area and its vicinity, as it exists before commencement of the Proposed Action. Pursuant to HAR § 11-200.1-24, the description of the affected environment focuses on those resources and conditions potentially impacted by the Project, with the level of detail commensurate with the importance of the impact; resources that are not present (or otherwise do not apply) are not discussed. Special emphasis is placed on environmental resources that are rare or unique to the region and the Project Area. Each affected environment description will include an overview of the following (more details will be provided in the Draft EIS):

- Definition of the resource and the geographic extent of the analysis (region of influence [ROI]);
- Description of the regulatory framework governing the resource, as applicable (additional regulatory context will be provided in the Draft EIS);
- Description of existing environmental conditions associated with the resource;
- Description of the impact of existing Kekaha Landfill operations on each resource (prior to implementation of the Proposed Action); and
- Mitigation measures or BMPs that are currently implemented by Kekaha Landfill to avoid or minimize potential impacts, where relevant.

This information will serve as a baseline from which to identify and evaluate potential environmental impacts that may result from the implementation of the Proposed Action. An analysis of potential impacts from the Proposed Action and No Action Alternative on the affected environment will be included in the Draft EIS. The analysis will encompass both direct impacts—those occurring simultaneously and in the same location as the specific action—and indirect impacts—those arising from an action but occurring later or being geographically separated yet foreseeable within a reasonable timeframe as well as short- and long-term impacts on the human, natural, and built environments. Cumulative impacts will also be evaluated in the Draft EIS (i.e., the potential impacts of the Proposed Action in the context of past, present, and reasonably foreseeable future actions).

3.1 Climate and Climate Change

Climate refers to the average weather conditions in a region over a long period of time. The climate of a location is affected by its latitude, elevation, and proximity to the ocean and are typically characterized by temperature, humidity, wind patterns, and rainfall. Greenhouse gases are chemical compounds found in the earth's atmosphere that can trap heat. Because climate and climate change occur at a regional scale rather than at a site-specific level, the ROI for this analysis is defined as the State of Hawai'i.

The Hawaiian Islands have a semi-tropical climate, characterized by mild temperatures and moderate humidity throughout the year (except at high elevations), persistent northeasterly trade winds, and infrequent, severe storms. The two primary seasons recognized are summer and winter. The summer or dry season (May through September) is characterized by warmer temperatures, drier conditions, and

prevalent trade winds. During the winter or wet season (October through April) temperatures are cooler, winds are more variable, and rainfall is higher compared to the summer (WRCC 2026). Local climate conditions in Hawai‘i are also influenced by the rugged, mountainous topography, with drier and warmer conditions on the leeward side and wetter and cooler conditions on the windward side of each island (Giambelluca and Schroeder 1998).

The Kekaha Landfill is located on the leeward side of the island of Kaua‘i. Mean annual rainfall in Kekaha is approximately 18.2 inches and ranges from less than 1 inch in the summer months to 2 to 3 inches in the winter (Giambelluca et al. 2014). In the vicinity of the Project Area, moisture zones are described as ranging from arid near the coastline to very dry in the Mānā Plains (Price et al. 2012). The daytime temperatures average from the 70s to 80s degrees Fahrenheit (˚F) and nighttime temperatures in the upper 60s to 70s ˚F. The prevailing wind direction is from the east at an average of 4 miles per hour (mph) (Giambelluca et al. 2014).

Climate change refers to long-term changes in temperature, precipitation, wind patterns, and other aspects of the earth’s climate, which has been widely attributed to increased emissions of greenhouse gases (primarily carbon dioxide, but also methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride). Concentrations of the earth’s atmospheric carbon dioxide have increased approximately 45 percent over background levels, from 280 to over 410 parts per million (ppm), which is the highest level to occur in at least two million years (IPCC 2022). The impacts of climate change in Hawai‘i have been broadly investigated and are well documented; these include increasing air temperatures and associated heat waves, declining trade winds and rainfall levels, increasing intensity of storms and frequency of extreme weather events, increasing ocean temperature and acidification, and rising sea levels (Climate Change Commission 2023). The impacts of climate change on Kekaha Landfill, including increased frequency and severity of certain natural hazard and sea level rise, are discussed in Section 3.6.

Existing Kekaha Landfill operations contribute a minor amount of greenhouse gases to the environment in the form of exhaust from vehicles and refuse trucks traveling to and from the site, exhaust from equipment used in landfill operations, and controlled landfill gas emissions (see Section 3.2). These emissions are minor in comparison to county- and state-wide greenhouse gas emissions. BMPs to minimize impacts to air quality, as listed in Section 3.2, would also reduce greenhouse gas emissions that contribute to climate change.

3.2 Air Quality

Air quality is the degree to which the ambient air is pollution-free and is assessed by measuring a number of indicators of pollution. Air quality is influenced by a complex mix of factors, including weather patterns, human activities, and natural sources of pollution. Weather conditions like rain, temperature, and wind speed play a role in how pollutants disperse and react in the atmosphere. The ROI for air quality is the Project Area and downwind areas. Modeling of downwind areas was not completed as part of this assessment. However, areas downwind of the Project Area would typically

include places to the west or southwest. During Kona winds, downwind areas would be places to the north or east.

Under the Clean Air Act, the USEPA has established nationwide air quality standards to protect public health and welfare. These National Ambient Air Quality Standards (NAAQS) represent the maximum allowable atmospheric concentrations for six criteria pollutants: carbon monoxide, nitrogen dioxide, sulfur dioxide, ozone, lead, and two types of particulate matter (respirable particulate matter that measures up to 10 micrometers in diameter [PM_{10}] and respirable particulate matter that measures up to 2.5 micrometers in diameter [$PM_{2.5}$]). NAAQS are based primarily on evidence of acute (short-term) and chronic (long-term) health effects. NAAQS are applicable to outdoor locations to which the general public has access. Primary standards relate to limits for protection of public health, whereas secondary standards relate to limits for protection of public welfare. The USEPA designates attainment areas as having air quality equal to or better than NAAQS, based on measurements of ambient criteria pollutant data. Areas with air quality worse than NAAQS are designated non-attainment. Hawai'i has attainment status for all criteria pollutants[18] (HDOH 2025a).

Pursuant to HRS Chapter 342B (Air Pollution Control), the HDOH Clean Air Branch is responsible for implementing air pollution control in the State. HDOH has established Hawai'i ambient air quality standards, which are sometimes more stringent than the NAAQS, or address pollutants that are not covered by the NAAQS. The Hawai'i ambient air quality standards are based primarily on health effects data, but also reflect other considerations such as protection of crops, protection of materials, or avoidance of nuisance conditions (such as objectionable odors). Both the federal and state ambient air quality standards are listed in Table 3-1.

[18] Air quality monitoring stations near Kilauea on the Island of Hawai'i often measure exceedances in the NAAQS for sulfur dioxide and occasionally measure exceedances of the NAAQS for $PM_{2.5}$. The volcano is a natural event; therefore, the State requests exclusion of these exceedances from the determination of attainment.

Table 3-1. Federal and State Ambient Air Quality Standards

Air Pollutant	Averaging Time	Hawai`i State Air Quality Standard	Federal Primary Air Quality Standard	Federal Secondary Air Quality Standard
Carbon Monoxide (CO)	1-hour	9 ppm	35 ppm	--
	8-hour	4.4 ppm	9 ppm	--
Nitrogen Dioxide (NO_2)	1-hour	--	100 ppb	--
	Annual	0.04 ppm	53 ppb	53 ppb
PM_{10}	24-hour	150 µg/m^3	150 µg/m^3	--
	Annual	50 µg/m^3	--	--
$PM_{2.5}$	24-hour	--	35 µg/m^3	35 µg/m^3
	Annual	--	9 µg/m^3	15 µg/m^3
Ozone (O_3)	8-hour	0.08 ppm	0.07 ppm	0.07 ppm
Sulfur Dioxide (SO_2)	1-hour	--	75 ppb	--
	3-hour	0.5 ppm	--	--
	24-hour	0.14 ppm	--	--
	Annual	0.03 ppm	--	10 ppb
Lead (Pb)	3-month (rolling)	1.5 µg/m^3	0.15 µg/m^3	0.15 µg/m^3
Hydrogen Sulfide	1-hour	25 ppb	--	--

PM = particulate matter; ppb = parts per billion by volume; ppm = parts per million by volume; µg/m^3 = micrograms per cubic meter of air

Source: HDOH 2025b

The HDOH and USEPA maintain a network of air quality monitoring stations throughout the islands. The only air quality monitoring station on Kaua‘i is the Niumalu Station, located on Hulemalu Road in Līhu‘e, approximately 23 miles east of the Project Area. This station monitors emissions from the cruise ships in Nāwiliwili Harbor approximately 1.0 mile upwind. It was largely decommissioned in March 2022 and currently monitors only for sulfur dioxide. The next nearest station is located in Kapolei on O‘ahu. Recent available data from the Niumalu and Kapolei station indicate that criteria pollutants do not exceed either the federal or state ambient air quality standards (HDOH 2025a).

In general, existing air quality in the vicinity of Kekaha Landfill is good. Airborne emissions on the island are relatively low due to low levels of development and prevailing trade winds that help disperse the accumulation of air emissions. Sources of pollutant air emissions in the vicinity include vehicle exhaust from Kaumuali‘i Highway, dust from agricultural cultivation and construction, and occasional smoke from wildfires. Potential sources of air pollutants and emissions associated with Kekaha Landfill facility include diesel- and gasoline-powered equipment, motor vehicles and refuse transfer trucks, landfill gas, and fugitive dust. These sources are discussed in more detail below. Air emissions and dust from special wastes (i.e., asbestos-containing waste; medical wastes; soils, debris, and other materials contaminated with petroleum or other chemical products; PCB-contaminated waste; and dead animals/offal) are discussed in Section 3.11.

3.2.1 Vehicular and Equipment Combustion

The existing Kekaha Landfill operations generate minor air emissions from vehicles and refuse trucks driving to and from the facility as well as diesel- and gasoline-powered equipment used in landfill operations. Daily vehicle traffic to and from Kekaha Landfill includes 14 employee vehicles[19] and waste loads from 37 commercial vehicles and 114 non-commercial vehicles (A. Fraley, DPW, personal communication, May 5, 2026). As described in Section 3.13 below, on average landfill-related traffic accounts for only 5 percent of the traffic volume on Kaumualiʻi Highway in the vicinity of Kekaha Landfill. The equipment used at the landfill for regular operations (see Section 1.8.3) produces a negligible amount of emissions. This equipment is similar to the types of equipment used in the nearby commercial and agricultural properties. All vehicles and equipment are maintained in proper working order and follow state and federal emission standards. Prevailing trade winds in the Kekaha landfill area are from the east (i.e., blow away from Kekaha town), which help disperse the accumulation of emissions from vehicles and equipment. Therefore, Kekaha operations generate a relatively small amount of exhaust emissions, less than the exhaust emissions from daily traffic on Kaumualiʻi Highway and nearby commercial and agricultural uses.

3.2.2 Fugitive Dust

Fugitive dust emissions are governed by HDOH Clean Air Branch. HAR § 11-60.1-33, Fugitive Dust, states in part, that no person shall cause or permit visible fugitive dust to become airborne without taking reasonable precautions, and that no person shall cause or permit the discharge of visible fugitive dust beyond the property lot line on which the fugitive dust originates. Reasonable precautions to control fugitive dust are determined on a case-by-case basis.

Fugitive dust is currently managed by Kekaha Landfill personnel in accordance with the Dust Prevention Program described in Kekaha Landfill's *Operations Plan* (Geosyntec 2023e). To prevent dust generation, Kekaha Landfill minimizes the extent of disturbed area at any given time, revegetates or stabilizes disturbed areas as soon as practicable, and maintains permanent landscaping. Access roads are kept in good working condition and vehicle speeds on all unpaved access roads are limited to 15 mph. All trucks hauling dirt, sand, soil, or other loose materials are required to be covered. Site operations personnel also utilize a 4,000-gallon water truck to apply water to areas that may be potential dust problems, such as access roads, work areas, and stockpiles. The volume of water and frequency of spraying are increased as needed during particularly dry or windy conditions, or during times of increased truck traffic on site. In the event that landfill operations do generate fugitive dust, prevailing trade winds from the east help disperse the dust away from the main residential and commercial area of Kekaha.

[19] The total number of landfill employees is 20. 14 or fewer people work at the landfill on any given day.

3.2.3 Landfill Gas

Landfill gas is a natural byproduct of the anaerobic decomposition of organic materials in landfills, such as food waste, paper and yard trimmings and consists primarily of methane and carbon dioxide, as well as nitrogen, oxygen, sulfur components, and trace amounts of non-methane organic compounds. A landfill gas generation model for waste intakes and gas collection was prepared by Tetra Tech utilizing the USEPA's Landfill Gas Emission Model (LandGEM) V3.03. LandGEM is based on a first-order decomposition rate equation for quantifying emissions from the decomposition of waste in MSW landfills. The model provides a relatively simple approach to estimating landfill gas emissions. The model predicts that landfill gas would peak shortly after closure (the end of additional waste placement) of the entire landfill and landfill gas generation and collection would then decrease over time. Since the Phase I landfill area has not received waste since 1993, the landfill gas generation from the Phase I area has steadily decreased and is now only a fraction of the original levels.

As described in Section 1.8.3, Kekaha Landfill's existing GCCS collects landfill gas from within the waste volume and safely combusts it in an enclosed landfill gas flare. The landfill gas flare is designed to minimize and control emissions in accordance with Kekaha Landfill's CSP Permit No. 0802-01-C. The GCCS is designed to extract landfill gas at a sufficient rate to minimize the subsurface lateral migration and surface emissions of landfill gas. This is achieved by sizing, installing, and operating collection elements that effectively collect landfill gas, including adequately sized transmission headers and laterals (pipe network) and LFG moving equipment (blowers), all controlled in a manner that is expected to handle the estimated LFG flow rate.

In accordance with HAR § 11-60.1, Kekaha Landfill reports the GCCS operational and monitoring data and CSP permit compliance tracking semi-annually to the HDOH Clean Air Branch.[20] These reports disclose exceedances of applicable parameters, including gauge pressure in the gas collection header, concentration of nitrogen, oxygen, and methane, and gas temperature. If exceedances are observed, landfill personnel take immediate corrective action to bring that exceedance into compliance. GCCS operational and monitoring data have indicated that landfill gas emissions were in compliance with CSP Permit No. 0802-01-C since the permit was issued in September 2014.

3.2.4 Odor Control

The odor control program at Kekaha Landfill consists of identification and special handling of odorous wastes, application of daily and intermediate cover, and management of landfill gas (Geosyntec 2023e). Odorous waste accepted at Kekaha Landfill include sewage sludge and grit, dead animals, grease trap waste, and food waste. Wastes capable of creating off-site odor problems are identified at the scale house and immediately directed to the active landfill area to be buried and covered with non-odorous waste. Additionally, daily and intermediate cover soil is placed and compacted over the MSW and is an effective means of preventing odors from general solid waste landfilling activities. Regular inspection

[20] The County submits two semi-annual reports and an annual report to HDOH each year.

and maintenance of cover to eliminate cracks and fissures in cover soil is also conducted as an important element of odor control from solid waste after it is buried.

3.3 Geology, Topography, and Soils

Geology describes the structure of the Earth on and beneath its surface and the materials and processes (e.g., landslides, earthquakes, floods, and volcanic eruptions) that shape that structure. Topography refers to an area's surface features including its shape, height, and depth. Soils are unconsolidated surface materials that form from the weathering of underlying bedrock or other parent material. Soil drainage, texture, strength, shrink and swell potential, and rates of erosion affect the suitability of the ground to support manmade structures and facilities. The ROI for geology, topography, and soils is the Project Area and areas surrounding the Project Area.

Site specific geologic conditions are informed by previous geotechnical investigations conducted by Pacific Geotechnical Engineers, Inc. (PGE), in October 2008, August 2012, and August 2015 within the Project Area (PGE 2008, 2012, 2015), as well as an engineering analysis by Tetra Tech (2022).

3.3.1 Geology

A geologic map of the Project Area and vicinity is shown in Figure 3-1 (Macdonald et al. 1960 as referenced in Sherrod et al. 2007). Kekaha Landfill is located within the Mānā coastal plain and is approximately 1,700 ft from the Pacific Ocean. The Mānā coastal plain lies at the foot of an ancient sea cliff composed of Pāhoehoe and ʻAʻā lava flows of the Waimea Canyon Volcanic series. The plain is mainly composed of thick deposits of alluvium[21] composed of clay, silt, and other detritus derived from weathered basalt. Lagoonal deposits composed of a mixture of calcareous[22] and alluvial sediments are generally present in low-lying areas of the plain, just inland of the shoreline. The shoreline is generally overlain by beach deposits composed of well-sorted[23] sand and gravel. As a result of agricultural development of the Mānā Plain, most of the lagoonal environments in the plain have been covered by fill (PGE 2008, PGE 2012, PGE 2015).

Kekaha Landfill is located inland of a beach berm crest and overlays lagoonal deposits composed of calcareous dune and older beach deposits (Figure 3-1). Development of the landfill has resulted in the widespread placement of fill over the lagoonal deposits. Kekaha Landfill is not located in an unstable area pursuant to HAR § 11-58.1-13(f).[24]

[21] Alluvium refers to the loose, unconsolidated sediment, such as silt, sand, clay, and gravel, that has been eroded, reshaped, and deposited by flowing water.

[22] Calcareous means primarily composed of calcium carbonate, such as shell fragments.

[23] Well-sorted sand and gravel refers to sediment where the grains are nearly the same size, which suggests a consistent energy environment during transport and deposition, such as beaches.

[24] HAR § 11-58.1-03 defines "Unstable area" as a location that is susceptible to natural or artificial events or forces capable of impairing the integrity of some or all of the landfill structural components responsible for preventing releases from a landfill. Unstable areas can include poor foundation conditions, areas susceptible to mass movements, and Karst terranes.

3.3.2 Topography

The U.S. Geological Survey (USGS) topographic map of the Project Area and vicinity is shown in Figure 3-2. The arc-shaped Mānā Plain ranges in elevation from sea level to 50 ft amsl and is approximately 15 miles long and 2 miles wide. The elevation of Kekaha Landfill site prior to construction was 10 to 11 ft amsl with a slope slightly southwest toward the coastline.

Topography within the Project Area has been significantly modified from the construction and operation of the existing Kekaha Landfill facility. Phase I landfill has a peak elevation of 50 ft amsl and gradually slopes down to an elevation of 10 to 12 ft amsl at its perimeter. The base elevation of Kekaha Landfill Phase II varies from approximately 7 to 12 ft amsl and its current peak height is 120 ft amsl. The final geometry of Kekaha Landfill with a maximum elevation of 171.5 ft amsl was verified for slope stability (Tetra Tech 2022). The stability analysis looked at two different failure scenarios based on the geometry of the facility, foundation soils, and waste mass. Based on the soil and waste mass properties, the Kekaha Landfill is expected to remain stable (Tetra Tech 2022).

3.3.3 Soils

Soils underlying Kekaha Landfill are classified by the Natural Resources Conservation Service (NRCS) as Jaucus loamy fine sand, 0 to 8 percent slopes (NRCS 2025; see Figure 3-3). Jaucas loamy fine sand is a calcareous soil that developed from wind-and-water deposited calcareous sand derived from coral and marine shells (Foote et al. 1972). Jaucas loamy fine sand soil is too permeable to allow for surface water ponding or runoff; as a result, the potential for vertical migration of water is great, but erosion by surface water runoff is unlikely. Wind erosion is a severe hazard in the absence of vegetation (Foote et al. 1972).

Soil borings and test pits conducted by PGE found that the predominant on-site foundation soils are poorly graded sands. Results of the percolation tests determined percolation rates of 2 to 6 minutes per inch (PGE 2008, PGE 2012, PGE 2015).

Development of Kekaha Landfill has resulted in the widespread placement of fill over the native soils. As described in Section 1.8.3, the existing LCRS and stormwater management system prevents uncontrolled runoff and erosion that has the potential to alter the underlying geological conditions and soils. The existing liner and LCRS also prevents contamination of soil beneath the Phase II area of the landfill. However, there is no liner or LCRS beneath the Phase I refuse because Phase I predates RCRA Subtitle D and there was no requirement for one at that time. It is likely that constituents present in the refuse have come into contact with soils underlying the Phase I area. Additional information on the potential impact of Phase I refuse on soils underly the landfill will be provided in the Draft EIS.

3.4 Water Resources

Groundwater refers to subsurface hydrologic resources, such as water occurring in subsurface geological formations like aquifers. Surface water features include lakes, rivers, streams, and wetlands. Marine

waters include seas and oceans. The ROI for water resources is the Project Area and the area immediately surrounding (and particularly downstream of) the Project Area.

Site-specific information was obtained from Kekaha Landfill's *Leachate Monitoring Plan* (Geosyntec 2023f), *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g), *Surface Water Management Plan* (Geosyntec 2025a), and the latest *Groundwater and Leachate Monitoring Report* (Geosyntec 2026b). A Project-specific *Geology, Hydrogeology and Water Quality Report* is being prepared for inclusion in the Draft EIS.

3.4.1 Groundwater

Regional Hydrogeology

Groundwater resources across the Hawaiian Islands have been delineated by the DLNR Commission on Water Resource Management (CWRM) into hydrologic units or sectors, primarily based on geologic and hydrologic characteristics. The island of Kaua'i is divided into three hydrologic units which are further split into aquifer systems. As shown in Figure 3-4, The Project Area is located within the Kekaha Aquifer System (CWRM Aquifer Code 20301), one of four aquifers systems within the Waimea Sector (CWRM 2022). The Kekaha Aquifer System covers the entire southwest portion of the island, including all of Kekaha Town. The Kekaha Aquifer System has a sustainable yield of 10 million gallons per day (MGD) which is the maximum rate at which groundwater can be withdrawn without harming the water source (CWRM 2018).

The Kekaha-Mānā coastal plain is underlain by two aquifers: a coastal plain/ caprock aquifer within the near-surface sedimentary deposits (i.e., coastal plain aquifer) and a deep aquifer within the underlying fractured basalt (i.e., basalt aquifer) (CWRM 2019). The deep basaltic aquifer occurs within lava flows of the Nāpali formation. The Nāpali formation carries basal ground water[25] over much of the island except close to the leeward coast (Macdonald et. el. 1960). The USGS estimates the basalt aquifer has generally high hydraulic conductivity,[26] approximately 400 ft per day (Burt 1976). Saturated sediments of the caprock aquifer overlie the basaltic aquifer and limit the seaward discharge of groundwater from the deeper aquifer. According to the USGS, the average hydraulic conductivity of the coastal plain aquifer is approximately 0.12 ft per day (Burt 1976).

Within the Mānā Plain, generally groundwater flows from the higher elevations to the northeast, through the Nāpali basalts, into the sedimentary coastal plain aquifer flows and discharges to the Pacific Ocean. Total dissolved solids concentrations increase significantly from inland (mauka) areas to seaward (makai) areas as the groundwater flows through the coastal sediments and mixes with sea water (Sanifill and Baquerizo 1996). However, the results of an April 1994 tidal study indicate that tidal effects do not significantly influence the prevailing groundwater flow direction within the coastal plain aquifer at the

[25] Basal ground water is ground water in freshwater-lens or a dike-impoundment system (USGS 2016).

[26] High hydraulic conductivity indicates materials with high permeability that allow water to pass through easily.

Project Site (Sanifill and Baquerizo 1996). The water table level in the Mānā Plain is controlled by pumping stations operated and maintained by the Agribusiness Development Corporation and the Kekaha Agricultural Association, in coordination with the U.S. Navy. The groundwater management system controls flooding and facilitates cultivation of the lower elevations on the Mānā Plain (Sanifill and Baquerizo 1996).

The HDOH Safe Drinking Water Branch also delineates groundwater resources based on an Underground Injection Control line. Areas makai (toward the ocean) of the UIC line have an underlying aquifer that is not a drinking water source whereas areas mauka (toward the mountains) of the UIC line have underground sources of drinking water (HDOH SDWB 2023). Groundwater underlying the Project Area is makai of the Underground Injection Control line and is not a drinking water source (see Figure 3-4).

Site Hydrogeology

Previous studies (Sanifill and Baquerizo 1996) report that borings near the Kekaha Landfill have been advanced to depths of more than 50 feet without reaching the bottom of the coastal plain aquifer, and it is estimated that the thickness of the coastal plain aquifer may exceed 400 feet beneath the Project Area. Shallow groundwater underlying the Project Area is encountered within the coastal plain aquifer at approximately 5 to 7 feet below ground surface (elevation of 4 to 5 ft amsl). The historic water level monitoring data suggests groundwater generally flows southwest towards the Pacific Ocean, with a hydraulic gradient[27] of approximately 0.0005 ft per ft (Geosyntec 2023g). However, the historic monitoring data shows periodic shifts in the groundwater flow (to the north, south, west, and east), which may be influenced by variations in pumping rates for the groundwater management system wells, pumping of other production wells near the site, water levels in irrigation canals near the site, infiltration of water from unlined drainage ditches in the aquiculture facility adjacent to the landfill, and infiltration of water in the landfill's surface water control systems (Geosyntec 2023g).

The total dissolved solids and major cation and anion concentrations (i.e., calcium, potassium, magnesium, chloride, bicarbonate, and sulfate) indicate significant chemical variability of the groundwater underlying the site that is not related to the landfill (GeoChem Applications 2012). Seawater intrusion in the shallow coastal plain sediment and infiltration of nutrient-rich brackish water from the aquaculture (shrimp farm) facility immediately northwest of the Project Area contributes to variations in the hydrogeochemical characteristics of the groundwater (Geosyntec 2023g). Groundwater underneath Kekaha Landfill is brackish; therefore, it is not suitable for current or future use as irrigation water or as a potable water supply.

[27] A hydraulic gradient is the slope of the water table.

Kekaha Landfill Leachate Collection and Removal System and Leachate Monitoring

As described in Kekaha Landfill's *Leachate Monitoring Plan* (Geosyntec 2023f) and described in Section 1.8.3 above, the Phase II area is equipped with a bottom and side slope composite liner and LCRS, which provides an impermeable barrier between the buried waste and the underlying soils and groundwater. The LCRS collects leachate from the Phase II area and directs it via a pump station to the approximately 2-acre lined leachate evaporation pond (Figure 1-2). The leachate evaporation pond is designed to completely evaporate all leachate collected from the landfill during a normal precipitation/evaporation year. No leachate from the Phase II area is discharged outside of the Project Area.

There is no liner or LCRS beneath the Phase I refuse because Phase I predates RCRA Subtitle D and there was no requirement for one at that time. Leachate generated within the Phase I area currently percolates into the underlying soils and groundwater.

Leachate is sampled annually at Kekaha Landfill, in conjunction with the site's groundwater monitoring program. Kekaha Landfill's groundwater and leachate monitoring activities are conducted pursuant to its *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g), which complies with federal (40 CFR Part 258) and state solid waste regulations (HAR § 11.58.1) and the facility's SWMP. Leachate samples are collected on a routine basis (from Wet Well-1 and Wet Well-2 since 1994 and from Wet Well-3 since 2010) and the results are compared to the groundwater monitoring data (Geosyntec 2023g). The leachate data is used to characterize the potential contaminant source (i.e., the landfill waste materials) and evaluate the suitability of site-specific groundwater monitoring parameters. Leachate samples are analyzed for the constituents listed in Table 3-2.

Table 3-2. Summary of Kekaha Landfill Phase II Leachate Monitoring Parameters

Constituents listed in Appendix II of 40 CFR Part 258 (Subtitle D)
Full List of Appendix II constituents available here: https://www.ecfr.gov/current/title-40/chapter-I/subchapter-I/part-258/appendix-Appendix%20II%20to%20Part%20258

Additional Constituents		
Major Cations and Anions:	**Major Leachate Indicators:**	**Field Measurements:**
Calcium, total	Bromide	Specific conductance
Magnesium, total	Total dispended solids	pH
Manganese, total	Total organic carbon	Temperature
Potassium, total	Alkalinity, total (as CaCO3)	Turbidity
Sodium, total	Ammonia (as N)	Oxidation reduction potential
Chloride	Chemical oxygen demand	
Sulfide, total	Iron, dissolved and total	
Sulfate	Nitrate-Nitrite (as N)	
Carbonate (as CO3)		
Bicarbonate (as HCO3)		

Source: Geosyntec 2023g

The latest leachate monitoring report indicates that leachate chemistry has remained stable and characteristic of typical landfill leachate with no evidence of significant emerging trends. The sampling results indicate that the Phase II landfill is still biologically active, but it's in a late-stage, oxygen-free, methane-producing condition typical of an established, older landfill. While regulatory screening levels were exceeded on occasion for select metals and volatile organic compounds (VOCs), these conditions are consistent with historical patterns and do not indicate a significant change in leachate quality or behavior (i.e., do not suggest a new or expanding contamination source). A detailed analysis of the leachate monitoring data at Kekaha Landfill will be provided in the Draft EIS.

Kekaha Landfill Groundwater Monitoring

As introduced above, groundwater monitoring is regularly conducted at Kekaha Landfill in accordance with its *Groundwater and Leachate Monitoring Plan* (Geosyntec 2023g). Groundwater monitoring at Kekaha Landfill Phase II site began in 1994. The purpose of the monitoring is to detect and evaluate potential changes to groundwater in the area of the landfill to evaluate if past and/or present MSW disposal operations have impacted groundwater quality within the coastal plain aquifer beneath Kekaha Landfill.

The monitoring program includes a groundwater well network and sampling, monitoring, and analytical procedures. Currently, groundwater is sampled on a quarterly basis from six groundwater monitoring wells: MWI-1A, MWI-2A, MWI-3A, MWII-2, MWII-5, and MWII-7 (Geosyntec 2023g). The Phase I monitoring wells are MWI-1A, MWI-2A, MWI-3A and the Phase II monitoring wells are MWII-2, MWII-5, MWII-7.

In coordination with HDOH, the County recently installed three new monitoring wells: MII-6A, MWII-8, and MWII-9.[28] MWII-6A is on the southeast side of the landfill and would provide cross-gradient groundwater data. MWII-8 and MWII-9 are mauka (inland) of the landfill, on the northeast side of the Kaumuali'i Highway, and would provide upgradient groundwater data to establish background limits for the detection monitoring network. All three wells were installed in November 2025 with quarterly groundwater monitoring starting the first quarter of 2026. The list of parameters identified for the Kekaha Landfill groundwater monitoring program is presented in Table 3-3.

[28] The first quarter 2026 Groundwater and Leachate Monitoring Report included the sampling results from three additional wells MII-6A, MWII-8, and MWII-9, which were recently added to the monitoring network. However, eight quarters of data must be collected before results from these three new wells can be incorporated into statistical analyses, including updates to the background groundwater concentrations (Geosyntec 2026b).

Table 3-3. Summary of Kekaha Landfill Groundwater Detection Monitoring Parameters

Constituents listed in Appendix I of 40 CFR Part 258 (Subtitle D)		
Inorganic Constituents:	**Organic Constituents:**	
Antimony	Acetone	Ethylbenzene
Arsenic	Acrylonitrile	2-Hexanone; Methyl butyl ketone
Barium	Benzene	Methyl bromide; Bromomethane
Beryllium	Bromochloromethane	Methyl chloride; Chloromethane
Cadmium	Bromodichloromethane	Methylene bromide; Dibromomethane
Chromium	Bromoform; Tribromomethane	Methylene chloride; Dichloromethane
Cobalt	Carbon disulfide	Methyl ethyl ketone; MEK; 2-Butanone
Copper	Dibromochloromethane; Chlorodibromomethane	Methyl iodide; Idomethane
Lead	1,2-Dibromo-3-chloropropane; DBCP	4-Methyl-2-pentanone; Methyl isobutyl ketone
Nickel	1,2-Dibromoethane; Ethylene dibromide; EDB	Styrene
Selenium	o-Dichlorobenzene; 1,2-Dichlorobenzene	1,1,1,2-Tetrachloroethane
Silver	p-Dichlorobenzene; 1,4-Dichlorobenzene	1,1,2,2-Tetrachloroethane
Thallium	trans-1, 4-Dichloro-2-butene	Tetrachloroethylene; Tetrachloroethene; Perchloroethylene
Vanadium	1,1-Dichlorethane; Ethylidene chloride	Toluene
Zinc	1,2-Dichlorethane; Ethylene dichloride	1,1,1-Trichloroethane; Methylchloroform
	1,1-Dichloroethylene; 1,1-Dichloroethene; Vinylidene chloride	1,1,2-Trichloroethane
	cis-1,2-Dichloroethylene; cis-1,2-Dichloroethene	Trichloroethylene; Trichloroethene
	trans-1, 2-Dichloroethylene; trans-1,2-Dichloroethene	Trichlorofluoromethane; CFC-11
	1,2-Dichloropropane; Propylene dichloride	1,2,3-Trichloropropane
	cis-1,3-Dichloropropene	Vinyl acetate
	trans-1,3-Dichloropropene	Vinyl chloride
		Xylenes

Additional Constituents		
Major Cations and Anions:	**Major Leachate Indicators:**	**Field Measurements:**
Calcium, dissolved	Bromide	Specific conductance
Magnesium, dissolved	Total dispended solids	pH
Manganese, total and dissolved	Alkalinity, total (as CaCO3)	Temperature
Potassium, dissolved	Chemical oxygen demand	Turbidity
Sodium, dissolved	Iron, dissolved and total	Oxidation reduction potential
Chloride	Nitrate-Nitrite (as N)	
Sulfate		
Carbonate (as CO3)		
Bicarbonate (as HCO3)		

Source: Geosyntec 2023g

As detailed in the table above, the groundwater monitoring program evaluates VOCs, semi-volatile compounds (SVOCs), pesticides, metals, general chemistry parameters, and nitrogen compounds. Overall, the dataset provides a basis for evaluating temporal trends and identifying analytes of recurring concern.

The first quarter 2026 groundwater and leachate monitoring reported that some chemical constituents were detected in the Phase I monitoring wells (MWI-1A, MWI-2A, MWI-3A) above the background limits (Geosyntec 2026b). However, the groundwater monitoring sampling data was consistent with historical data and indicates no upward long-term trends attributable to new or expanded landfill release. Further, the current background limits for the Phase I monitoring wells are based on the composite data from the Phase II monitoring wells. HDOH and the County are coordinating to update the Phase I background limits based on crossgradient and upgradient groundwater data from the newly installed MWII-6A, MWII-8, and MWII-9.

Historically, groundwater monitoring results from the Phase II wells (MWII-2, MWII-5, MWII-7) have indicated several statistically significant increases in parameters, such as ammonia as nitrogen, arsenic, calcium, potassium, and total organic carbon (Geosyntec 2026b). Alternative source demonstration reports (Sanifill 1998, WMH 2006, WMH 2007, WMH 2008, GeoChem 2012) suggest that these exceedances likely stem from sources including fertilizer use on nearby agricultural land, biodegradation of organic fill material prior to construction of the Phase II Landfill, naturally occurring arsenic in the volcanic soils, the unlined Phase I landfill site, and the adjacent aquaculture facility.

In a letter dated May 22, 2014, the HDOH, Solid and Hazardous Waste Branch responded to the previously mentioned alternative source demonstration reports with the following comments:

- The ammonia as nitrogen statistically significant increases are not related to Phase II Landfill releases, but due to fertilizer compounds associated with upgradient agricultural activities and biodegradation of organic fill materials.
- The TOC statistically significant increases are likely from the Phase I Landfill. SHWB noted that the TOC was detected in the historical Phase I Landfill monitoring wells at significantly greater concentrations and earlier than the detection of TOC in well MWII-6.
- Based on the GeoChem 2012 alternative source demonstration report, SHWB agreed that the calcium and potassium statistically significant increases observed at MWII-7 are not related to Phase II Landfill releases but are associated with impacts from the adjacent aquaculture facility.

Review of the most recent groundwater monitoring sampling data from the Phase II wells show no indications of upward long-term trends attributable to a landfill release. Persistent exceedances in MWII-7 remain consistent with non-landfill background influences, associated with the adjacent aquaculture facility. Arsenic exceedances are recurrent but stable and consistent with historically documented natural and agricultural sources.

Additional analysis of the groundwater monitoring data at Kekaha Landfill will be provided in the Draft EIS.

3.4.2 Surface Water

The Project Area is situated within the Hō‘ea watershed (Parham et al. 2008). No surface water features have been identified within the Project Area by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory data (USFWS 2025), the USGS topographic and National Hydrography Dataset (USGS

2023), or the State of Hawai'i Division of Aquatic Resources dataset (DAR 2008; Figure 3-5). Various surface waters are present in the vicinity of Kekaha Landfill including wetlands in the agricultural fields to the north and man-made ponds and canals at the Sunrise Shrimp Farm to the northwest of the Project Area.

As described in Kekaha Landfill's *Surface Water Management Plan* (Geosyntec 2025a) and Section 1.8.3 above, stormwater is managed at Kekaha Landfill by controlled grading on the surface of the landfill and by maintaining an engineered system of drainage ditches, channels, pipes, and basins. Runoff from the top of the Phase I and Phase II flows radially off the landfill. Runoff in Phase I is collected at a series of inlet pipe drains located around the perimeter of the landfill. These drains discharge to an infiltration ditch that surrounds Phase I. Runoff from Phase II flows into diversion berms located on the side slopes below the perimeter of the landfill top deck and along the perimeter road, which direct surface water to down drains. The down drains convey runoff to infiltration ditches around the perimeter of the landfill. Runoff then infiltrates, evaporates, or flows to the 2.2-acre stormwater infiltration basin. The stormwater management system was designed to convey runoff from a 25-year, 24-hour storm, as required by the solid waste regulations (HAR § 11-58.1-15(g)). Runoff from paved areas, including employee parking and the public material drop-off area, sheet flows to vegetated areas and/or the infiltration ditches along the perimeter and access road, where it infiltrates, evaporates, and/or flows to the stormwater infiltration basin. Stormwater immediately adjacent to the north side of maintenance building sheet flows to the wash rack, which gets periodically pumped and conveyed to the leachate evaporation lagoon for on-site treatment. The facility does not discharge stormwater to off-site areas.

3.4.3 Marine Waters

The Pacific Ocean is approximately 1,600 ft makai of the Project Area.

HAR Section 11-54-3(c) classifies marine waters as Class A or Class AA. The objective of Class A waters is to protect their use for recreational purposes and aesthetic enjoyment; uses are permitted as long as they are compatible with the protection and propagation of fish, shellfish, and wildlife, and recreation in and on these waters. Class A waters are not intended to receive any discharge which has not received the best degree of treatment or control compatible with the criteria established for this class. Class AA waters are intended to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality. The marine waters south of the Project Area are classified by HDOH as Class A Waters.

As required by Section 303 of the Clean Water Act, HDOH has established water quality standards for waters across the state. These standards, which are detailed in HAR § 11-54, designate the beneficial uses, establish water quality criteria, and specify requirements for protecting and maintaining healthy waters. Water bodies that do not achieve the criteria are designated as "impaired" and are placed on the Clean Water Act Section 303(d) List of Impaired Waters; for each water body on the Section 303(d) list, a Total Maximum Daily Load (TMDL) must be developed to bring that water body into compliance

with water quality standards. A priority ranking of impaired waters for TMDL development is based on the severity of pollution and the uses of the waters.

Monitoring of marine waters is routinely conducted and reported by HDOH; the most recent monitoring results are contained in the *2024 State of Hawai'i Water Quality Monitoring and Assessment Report* (HDOH CWB 2024). The main marine water quality parameters assessed in this report include fecal indicator bacteria (enterococci), turbidity, chlorophyll a,[29] and nutrients (total nitrogen, nitrate+nitrite-nitrogen, ammonium-nitrogen, and total phosphorus). The nearest monitoring stations to the Project Area are the Kekaha Beach Park and the Pacific Missile Range Facility (Open Coastal) stations located approximately 1.4 miles east and 2.3 miles west of the Project Area, respectively (HDOH 2017). The most current water quality monitoring results show marine waters at both stations in attainment for all criteria except turbidity and chlorophyll a (TMDL needed; low priority) (HDOH CWB 2024).[30]

3.5 Biological Resources

The ROI for biological resources (i.e., vegetation and wildlife) is the Project Area and its immediate surroundings.

This analysis relies on previous biological surveys conducted within the Project Area (DLNR 1982, SWCA 2016) and its vicinity (Department of Navy 2017, NAVFAC 2014, NAVFAC 2023). In addition, Tetra Tech conducted a biological resource survey of the Project Area in February 2026 to characterize existing plant and animal habitat and to determine whether state or federally-listed endangered or threatened species (pursuant to the federal Endangered Species Act [ESA] or HRS Chapter 195D), or otherwise rare plants or animals have the potential to occur in and could be impacted by the Project (Tetra Tech 2026c).

Surveys conducted in 1982, prior to construction of the Phase II landfill, described the site as highly modified and dominated by non-native plants and animals (DLNR 1982). At that time, no state- or federally listed species were recorded or identified as likely to occur. Subsequent construction and operation of the Phase II landfill and associated infrastructure have further disturbed the Project Area, degrading the already marginal habitat for native flora and fauna. The February 2026 survey confirmed extensive disturbance across the Project Area, which has reduced the abundance of native species and the availability of suitable native habitats, and the area is dominated by species non-native to the Hawaiian Islands (Tetra Tech 2026c).

[29] Chlorophyll a is a measure of the amount of algae and cyanobacteria growing in a waterbody. Waters with high levels of nutrients from fertilizers, septic systems, sewage treatment plants and urban runoff may have high concentrations of chlorophyll a and excess amounts of algae and cyanobacteria. Leachate from MWS landfills can contribute to increased chlorophyll a levels in nearby waters.

[30] Assessment results in the *2024 State of Hawai'i Water Quality Monitoring and Assessment Report* (HDOH CWB 2024) show that of the 148 marine water bodies assessed, 137 (93%) do not attain water quality standards for one or more parameters. Turbidity was the leading cause of impairment for marine waters with 111 out of 120 assessed waters failing to meet the criteria. Statewide, 19 out of 25 marine assessments failed to meet water quality standards for chlorophyll a.

Despite these disturbed conditions, three federally and state listed endangered or threatened species were observed within the Project Area —the Hawaiian goose/ nēnē (*Branta sandvicensis*), the Hawaiian duck/ koloa (*Anas wyvilliana*), and the Hawaiian stilt/ ae‘o (*Himantopus mexicanus knudseni*) (Tetra Tech 2026c; SWCA 2016). Several additional listed animal species may occasionally occur in or traverse the Project Area: including the Hawaiian common gallinule/ ‘alae ‘ula (*Gallinula galeata sandvicensis),* Hawaiian coot/ ‘alae ke‘o ke‘o (*Fulica alai),* band-rumped storm-petrel/ ‘akē‘akē (*Hydrobates castro),* Hawaiian petrel/ ‘ua‘u (*Pterodroma sandwichensis),* Newell’s shearwater/ ‘a‘o (*Puffinus auricularis newelli)*, and Hawaiian hoary bat/ ‘ōpe‘ape‘a (*Lasiurus semotus)* (Tetra Tech 2026c).

3.5.1 Critical Habitat

No critical habitat for listed species has been designated by the USFWS within the Project Area (Figure 3-6). Critical habitat for the endangered lau‘ehu (*Panicum niihauense*) occurs 0.3 miles south of the Project Area in the coastal sand dunes (USFWS 2003).

The National Oceanic and Atmospheric Administration (NOAA) has proposed marine critical habitat for the Central North Pacific distinct population segment of the threatened green sea turtle/ honu (*Chelonia mydas*) offshore of the Study Area (Figure 3-6), which includes all waters surrounding the island from the mean high water line to the 65-ft water depth (NOAA 2023a, NOAA 2023b). Designated marine critical habitat for the endangered Hawaiian monk seal/ ‘īlio-holo-i-ka-uaua (*Neomonachus schauinslandi*) and Hawaiian Islands distinct population segment of the false killer whale (*Pseudorca crassidens*) occurs further offshore of the Project Area (Figure 3-6; NOAA 2023a).

3.5.2 Vegetation

The vegetation survey conducted prior to construction of the Phase II landfill characterized the vegetation as highly altered and dominated by non-native plant species (DLNR 1982). Dominant plant species recorded during the survey included the following non-native species: beach wiregrass (*Dactyloctenium aegyptium*), Bermuda grass (*Cynodon dactylon*), sandbur (*Cenchrus echinatus*), golden crown-beard (*Verbesina encelioides*), cocklebur (*Xanthium strumarium*), lantana (*Lantana camara*), Indian fleabane (*Pluchea indica*), klu (*Vachellia farnesiana*), koa haole (*Leucaena leucocephala* subsp. *leucocephala*), and kiawe (*Neltuma pallida*). No rare or listed native plants were recorded at the site and were considered highly unlikely to occur (DLNR 1982).

The vegetation survey conducted in February 2026 confirmed the Project Area is dominated by non-native plants. Four native plant species were observed in the Project Area (Table 3-4); all of these species are indigenous to and common throughout the Hawaiian Islands (Wagner et al. 2023). No federal or state listed threatened, endangered, proposed listed, or candidate plant species were observed.

Table 3-4. Native Plant Species Recorded in the Study Area During the 2026 Biological Survey

Common/ Hawaiian Name	Scientific Name	Status[1/]
ʻaʻaliʻi	*Dodonaea viscosa*	I
hoary abutilon	*Abutilon incanum*	I
ʻilima	*Sida fallax*	I
ʻuhaloa	*Waltheria indica*	I

1/ Biogeographical Status: I = Indigenous (native to the Hawaiian Islands and elsewhere)
Source: Tetra Tech 2026c

Vegetation in the Project Area is mostly characterized by maintained grass fields interspersed with various weedy species within the fields or along the edges. Within the Phase I area, the fields are dominated by buffelgrass (*Cenchrus ciliaris*) and swollen fingergrass (*Chloris barbata*), which is generally maintained below 1 foot in height. The grass fields in the Phase II area consist of mats of buffelgrass, swollen fingergrass, and Guinea grass (*Megathyrsus maximus*) about 3 to 4 feet in height. Common herbaceous and low-growing species within the fields and along the edges. The native ʻuhaloa (*Waltheria indica*) is the only relatively common native species and occurs in a few dense patches along the western edge of the Project Area. Large shrubs and trees, such as castor bean (*Ricinus communis*), koa haole (*Leucaena leucocephala* subsp. *leucocephala*), and klu (*Vachellia farnesiana*), are present along the edges of Phases I and II. Unvegetated, exposed bare areas are present at the top and southern slope of Phase II and around the active landfill face.

The mowed infiltration basin in the northern corner of the Project Area is dominated by Bermuda grass with other weedy species scattered throughout. A line of large trees (over 15 feet tall) borders the Project Area along the highway; these include ʻopiuma (*Pithecellobium dulce*), koa haole, kou haole (*Cordia sebestena*), oleander (*Nerium oleander*), neem (*Azadirachta indica*), and klu. Various ornamentals species are planted near the facility buildings including pink trumpet tree (*Tabebuia heterophylla*), monkeypod (*Samanea saman*), night blooming cereus (*Selenicereus undatus*), pomegranate (*Punica granatum*), and blue plumbago (*Plumbago auriculata*).

3.5.3 Wildlife

Wildlife surveys conducted in 1982, prior to the construction of the Phase II landfill, recorded only non-native bird and mammal species at the Kekaha Landfill site; no rare or listed wildlife species were observed (DLNR 1982).

Bi-monthly wildlife surveys conducted at Kekaha Landfill between August 2014 and August 2015 documented two listed bird species within the Project Area: the Hawaiian stilt and Hawaiian goose (SWCA 2016). The endangered Hawaiian duck, Hawaiian common gallinule, and Hawaiian coot were also recorded in the vicinity of the Project Area (NAVFAC 2014, SWCA 2016). None of these listed birds appear to be attracted to waste handling operations but may be occasionally attracted to the leachate evaporation pond and stormwater infiltration basin within the Project Area, as well as water features adjacent to (but not associated with) Kekaha Landfill (SWCA 2016). In addition, four native bird species

protected by the Migratory Bird Treaty Act (MBTA) were observed within the Project Area and vicinity: black-crowned night heron/ʻaukuʻu (*Nycticorax nycticorax*), Pacific golden-plover/kolea (*Pluvialis fulva*), great frigatebird/ ʻiwa (*Fregata minor*), and Hawaiian short-eared owl/pueo (*Asio flammeus sandwichensis*) (NAVFAC 2014, SWCA 2016).

During the February 2026 biological survey, nineteen bird species were recorded in the Project Area and immediate vicinity during the surveys (Tetra Tech 2026c). This includes the listed Hawaiian goose, Hawaiian stilt, and Hawaiian duck. Four additional native bird species—Pacific golden-plover, ruddy turnstone/ ʻakekeke (*Arenaria interpres*), black-crowned night heron, and great frigatebird—were observed within the Project Area during the survey; these species are also protected by the MBTA. The remaining bird species recorded are non-native to the Hawaiian Islands. The most common bird species recorded during the surveys were the common myna (*Acridotheres tristis*), western cattle egret (*Ardea ibis*), and African silverbill (*Euodice cantans*).

One non-native terrestrial mammalian species was detected in the Project Area during the surveys; an unknown species of rat (R*attus* spp.) (Tetra Tech 2026c). Rats have also been reported in the office buildings by facility staff, and dogs (*Canis familiaris*) occasionally come into the fenced facility (George Hichborn, personal communication, February 2026). Although not observed during the surveys, other introduced mammals, such as feral cats (*Felix catus*), are likely to occur within the Project Area. Hawaiʻi's only native, extant terrestrial mammal—the endangered Hawaiian hoary bat—has been documented nearby at PMRF Barking Sands (Department of Navy 2017, NAVFAC 2023) and may transit, roost, or forage in portions of the Project Area.

Tetra Tech (2026c) documented large and conspicuous invertebrates incidentally observed during the surveys. All of the invertebrates observed were non-native to the Hawaiian Islands, except the two common native dragonfly species, the globe skimmer (*Pantala flavescens*) and green darner (*Anax junius*).

Listed species with the potential to occur in the Project Area are summarized in Table 3-5 and are discussed in further detail below.

Table 3-5. Federally or State-listed Species with the Potential to Occur in the Project Area

Common/ Hawaiian Name(s)	Scientific Name	Listing Status[1/]	Potential Occurrence in Project Area
Birds			
Hawaiian common gallinule/ ʻalae ʻula	*Gallinula galeata sandvicensis*	SE, FE	Could forage/loaf within and adjacent to the Project Area and could nest in the vicinity.
Hawaiian coot/ ʻalae keʻo keʻo	*Fulica alai*	SE, FE	Likely to forage/loaf within and adjacent to the Project Area and could nest in the vicinity.
Hawaiian duck/ koloa	*Anas wyvilliana*	SE, FE	Known to forage/loaf within and adjacent to the Project Area and could nest in the vicinity.
Hawaiian stilt/ aeʻo	*Himantopus mexicanus knudseni*	SE, FE	Known to forage/loaf within and adjacent to the Project Area and could nest within the leachate pond in the Project Area.
Hawaiian goose/ nēnē	*Branta sandvicensis*	SE, FT	Known to forage/loaf and nest within the Project Area.
Band-rumped storm-petrel/ ʻakēʻakē	*Hydrobates castro*	SE, FE	No suitable nesting habitat but could fly over the Project Area at night when traveling between the ocean and upland areas during the breeding, nesting, and fledging seasons (between March and December).
Hawaiian petrel/ ʻuaʻu	*Pterodroma sandwichensis*	SE, FE	No suitable nesting habitat but could fly over the Project Area at night when traveling between the ocean and upland areas during the breeding, nesting, and fledging seasons (between March and December).
Newell's shearwater/ ʻaʻo	*Puffinus auricularis newelli*	ST, FT	No suitable nesting habitat but could fly over the Project Area at night when traveling between the ocean and upland areas during the breeding, nesting, and fledging seasons (between March and December).
Terrestrial Mammals			
Hawaiian hoary bat/ ʻōpeʻapeʻa	Lasiurus semotus	SE, FE	Could traverse or forage in the Project Area or roost in vegetation > 15 feet in height.

1/ FE = Federally endangered; SE = State endangered; FT = Federally threatened; ST = State threatened.

Source: Tetra Tech 2026c

Hawaiian Goose/ Nēnē: The federally threatened/ state endangered nēnē was observed at various locations during the surveys. At least 16 adults, 3 fledglings, and 8 goslings were observed in the makai portion of the Project Area around and within the infiltration basin, leachate pond, grassy lawns around the operations buildings, and along the perimeter road (Tetra Tech 2026c). Nēnē use various habitat types ranging from coastal to subalpine environments including beach strand, shrubland, grasslands, and lava rock (Banko 1988, Banko et al. 2020). They are also known to use landscaped/ maintained areas, such as golf courses, grazed agricultural areas, playing fields, and lawns. Although they are not obligate waterbirds, nēnē also use surface waters, such as wetlands, reservoirs, and streams (USFWS 2021). Nesting occurs in a variety of habitats, but typically nests are well concealed under shrubs (Banko et al. 2020). Suitable nesting habitat is present throughout the Project Area in grasslands. According to the facility manager, nēnē are suspected to nest in several grassy areas within the Project Area (George Hichborn, personal communication, February 2026).

Listed Waterbirds: During the 2026 Tetra Tech survey, five Hawaiian ducks (assumed to be pure, not hybrids) were observed loafing along the edges of the leachate pond within the Project Area. Hawaiian ducks occur in a variety of wetland types, including freshwater marshes, coastal ponds, streams, flooded fields, taro fields, ditches, reservoirs, and sewage treatment ponds (Engilis et al. 2020, Uyehara et al. 2008). Hawaiian ducks have previously been recorded at the Kawai'ele State Waterbird Sanctuary and at numerous nearby locations along Kaumuali'i Highway (eBird 2021). On Kaua'i, nesting has been reported along streams and ditches (Engilis et al. 2020); thus, although suitable nesting habitat is present within the Project Area at the leachate pond, the ephemeral water levels of the leachate pond would likely not support Hawaiian duck nesting. Nesting may occur in the immediate vicinity in the ponds and ditches to the northwest.

Three Hawaiian stilt individuals were observed loafing and foraging in the leachate pond within the Project Area during the 2026 survey (Tetra Tech 2026c). Hawaiian stilts have previously been recorded at the Kawai'ele State Waterbird Sanctuary, MacArthur Park, and numerous nearby locations along Kaumuali'i Highway (eBird 2021). Hawaiian stilts typically forage in a variety of fresh to saline wetlands and along shallow ponds, mudflats, salt ponds, rice and taro fields, and impoundments. Hawaiian stilts nest in exposed mudflats, shallow freshwater or brackish wetlands, or other low-lying areas with sparse vegetation cover (Robinson et al. 2020, USFWS 2020); thus, suitable nesting habitat is present within the Project Area near the leachate pond and nesting may also occur in the immediate vicinity in ponds and ditches to the northwest.

No endangered Hawaiian coots were observed during the surveys; however, this species has previously been observed in the leachate pond within the Project Area (George Hichborn, personal communication, February 2026) and also occurs in the Kawai'ele State Waterbird Sanctuary and at numerous nearby locations along Kaumuali'i Highway (eBird 2021). Hawaiian coots breed in freshwater ponds, flooded taro fields, reservoirs, concrete-lined sewage-treatment ponds, and brackish fishponds. Nests are often adjacent to relatively deep bodies of water and on the margin of emergent vegetation or anchored to floating mats (Pratt and Brisbin 2020); thus, while Hawaiian coots may occasionally occur at the pond when water is present, this species is unlikely to nest within the Project Area due to the lack of emergent vegetation and ephemeral water levels in the leachate pond. Nesting may occur in the immediate vicinity in ponds and ditches to the northwest.

No endangered Hawaiian common gallinule were observed during the surveys; however, this species occurs in the nearby Kawai'ele State Waterbird Sanctuary and at numerous nearby locations along Kaumuali'i Highway (eBird 2021). Hawaiian common gallinules typically nest in freshwater marshes, wetland agricultural areas (lotus, rice, and taro patches), or on the banks of streams, irrigation ditches, or reservoirs. Nests are often in dense emergent vegetation, on floating or barely emergent mats of vegetation, near open water less than 3.3 feet deep (USFWS 2011, Bannor and Kiviat 2020); thus, while Hawaiian gallinules may occasionally occur at the pond when water is present, this species is unlikely to nest within the Project Area due to the lack of emergent vegetation and ephemeral water levels in the pond. Nesting may occur in the immediate vicinity in nearby ponds and ditches to the northwest.

Listed Seabirds: The endangered Hawaiian petrel, threatened Newell's shearwater, and endangered band-rumped storm-petrel (collectively referred to as listed seabirds) have not been documented in the Project Area, and suitable nesting habitat does not occur in the Project Area. However, these birds have the potential to fly over the Project Area at night between March and December while transiting between nest sites in upper elevations of the island and the ocean. These listed seabirds are known to be attracted to outdoor lighting at night; after circling the lights, they can become exhausted and collide with nearby structures or fall to the ground (USFWS 2023).

Hawaiian Short-eared Owl/Pueo: The Hawaiian short-eared owl/pueo is a culturally significant endemic subspecies of the widespread short-eared owl (*Asio flammeus*). The State of Hawai'i lists pueo as endangered only on the island of O'ahu. The species is not ESA-listed but is protected by the MBTA. Pueo were not seen during the 2026 survey; however, evening or early morning surveys were not conducted. Pueo were observed at the landfill during bi-monthly wildlife surveys in 2014 to 2015 (SWCA 2016) and have been observed in the general vicinity (eBird 2021). Suitable hunting, roosting, and nesting habitat for pueo is present within the Study Area.

Hawaiian Hoary Bat: No endangered Hawaiian hoary bats were observed during the surveys; however, this species has been documented nearby at PMRF Barking Sands (Department of Navy 2017, NAVFAC 2023). Recent studies have found the endangered Hawaiian hoary bat is more abundant across the Hawaiian Islands than previously understood (Gorresen et al. 2013, Bonaccorso et al. 2015, USGS 2019). This species forages in open and semi-cluttered landscapes in a wide range of habitats and vegetation types, such as in open areas, at forest edges or within gaps, and over open water bodies including streams, ponds, and along shorelines (Jacobs 1994, Jacobs 1999, Bonaccorso et al. 2015, Pinzari et al. 2019). Hawaiian hoary bats are tree-roosting bats and roost in various native and non-native trees (USFWS 1998, Gorresen et al. 2013, Montoya-Aiona et al. 2023). Trees within the Project Area (e.g., 'opiuma, monkeypod) are over 15 feet tall and have the potential to function as bat roost trees. Thus, Hawaiian hoary bats may transit, roost, or forage in portions of the Study Area.

3.6 Natural Hazards

A natural hazard is a naturally occurring event that could negatively affect people, infrastructure, and/or the environment. Flooding, tsunamis, hurricanes and tropical storms, earthquakes, wildfire, and sea level rise are hazards that have the potential to occur on Kaua'i and could impact the Project. The ROI for natural hazards is the Project Area and the immediate vicinity around the Project Area.

3.6.1 Floods

Flooding can occur from stream overflow, storm events, and coastal inundation (e.g., tsunamis, storm surge, large waves, sea level rise). Flood hazard areas are identified by the Federal Emergency Management Agency (FEMA) National Flood Insurance Program (NFIP) and are mapped on the Flood Insurance Rate Maps. The maps classify land into zones according to the potential for flood inundation. According to NFIP data, the Project Area lies within Flood Zone X, an area of minimal flood hazard

outside both the 100-year and 500-year floodplains (DLNR 2025; Figure 37). The Project Area is approximately 1,700 ft from the shoreline and is outside coastal high hazard areas, which have a 1 percent annual chance of flooding with additional storm-induced velocity wave action.

Excess surface water from overland flow can cause localized flooding in poorly drained areas. However, the Kekaha region has low annual rainfall (see Section 3.1) and the soils beneath Kekaha Landfill are permeable, which reduces the potential for surface ponding and runoff (see Section 3.3). Stormwater at the landfill is managed through controlled surface grading and an engineered drainage system of ditches, channels, pipes, and basins (see Section 1.8.3). Runoff from facility areas (e.g., parking, scale house, drop-off area, maintenance building) is directed via site drainage features to either the infiltration basin or the leachate evaporation lagoon. The stormwater system was designed to convey runoff from a 25-year, 24-hour storm in accordance with the solid waste regulations (HAR § 1158.115(g)).

Site personnel perform ongoing inspections and maintenance to preserve drainage integrity. Routine monthly inspections monitor ditches, basins, pipes, and discharge structures; excessive silt is removed and damaged components are repaired (Geosyntec 2025a). Before forecasted storms, all onsite drainage structures are inspected and verified to be operational. Additionally, after all major rainstorm events (i.e., greater than 1 inch of rainfall), post-event inspections of the drainage system, infiltration basin, and erosion and sediment controls are conducted to identify and correct failures, breaches, or sediment deposition (Geosyntec 2025a). With these measures in place, the potential for flood-related damage at the site is low.

3.6.2 Tsunamis

A tsunami is a series of ocean waves generated by sudden seafloor displacement, landslides, or volcanic activity, including those caused by disturbances locally or events around the Pacific Rim. Hazards include powerful waves, floating debris, and inundation of low-lying areas.

Since 1811, 32 tsunamis with runup greater than 3.3 feet have occurred in Hawai‘i (USGS 2020). NOAA run-up data show three recorded tsunamis near Kekaha (about 1.2 miles southeast of Kekaha Landfill), with maximum run-up heights of 9.8, 6.9, and 6.6 ft (3.0, 2.1, and 2.0 m) in 1946, 1957, and 1960, respectively (NOAA 2022). Run-up height refers to the maximum elevation reached by the wave at its furthest inland penetration.

Tsunami and extreme tsunami evacuation zones are defined using Hawai‘i Emergency Management Agency (HI-EMA) and NOAA Office for Coastal Management maps (HI-EMA 2026). These zones are based on tsunamis that have affected Hawai‘i during the past 100 years; the “extreme” evacuation zones account for events that could exceed historic events. As shown in Figure 3-8, the Project Area is within the Tsunami Evacuation Zone.

Under HAR § 1158.113(g), new municipal solid waste landfills and lateral expansions cannot be sited in possible tsunami inundation areas “as delineated in a report entitled Hawai‘i Tsunami Inundation Evacuation Map Project by George D. Curtis … dated April 19, 1991.” The 1991 Curtis report does not

include mapped inundation zones for the Kekaha area. The University of Hawai‘i (UH) indicated that Kaua‘i inundation maps were completed but have since been lost (AECOM 2013a).

HDOH intends to revise HAR §11-58.1-13(g) to reference the *Hawai‘i Tsunami Mapping Project Final Report* prepared for HI-EMA in 2015 (Cheung 2015). The 2015 report models two extreme tsunamis scenarios (generated by a magnitude 9.3 and 9.6 earthquake) from the Aleutian Islands to Hawai‘i's coastlines.[31] The two Aleutian events represent the probable maximum tsunami scenarios for the state.

The modeled inundation depths within the Project Area range from 0 ft to 16.4 ft (0 to 5 meters) above ground level (Figure 3-8). As shown in Figure 3-8, the majority of the waste disposal area is above the tsunami inundation depths; however, the landfill's auxiliary facilities (i.e., office, scale house, public convenience center, leachate evaporation pond, stormwater infiltration basin, landfill gas flare, and maintenance shop) fall within the modelled inundation depths. The HI-IEMA modeling used high-resolution LiDAR topography from 2007 and 2008 (Cheung 2015). Since 2008, Phase II has continued to be filled, and Cell 1 and Cell 2 of the landfill have been constructed and filled with refuse; as a result, much of the permitted landfill area is likely now above the modeled inundation depths.

The American Society of Civil Engineers Tsunami Hazard Design Tool (ASCE 2021), which was developed to implement American Society of Civil Engineers Standard 7-22, Minimum Design Loads and Associated Criteria for Buildings and Other Structures and is based on more current existing topography, indicates tsunami run-up elevations ranging from 13.43 ft amsl (along the mauka side of the KLF in the vicinity of the KLF entrance facilities) to 19.18 ft amsl (at a point on the makai side of the KLF Phase I landfill area). These run-up elevations indicate that inundation depths near the KLF are in the low end of the range indicated by Cheung (2015), and that the active areas of the landfill itself are outside of the inundation limits.

3.6.3 Hurricanes and Severe Storms

The Hawaiian Islands are seasonally affected by Pacific tropical cyclones (hurricanes, tropical storms, and tropical depressions)[32] from June to November, although severe storms can occur year-round.

These events can cause substantial damage from high winds, heavy rainfall, and marine overwash. Even storms that do not make landfall can produce strong winds and swells (Fletcher et al. 2002).

Tropical cyclones are uncommon and generally approach the islands from the south or southeast. Historical records indicate an average of four to five hurricanes form each year in the central Pacific region (Fletcher et al. 2002; Schroeder 1993), but only four hurricanes have significantly impacted the Hawaiian Islands in the past 63 years (WRCC 2026). The most destructive twentieth century storm was

[31] In 2013, the Tsunami Inundation Mapping Project provided inundation modeling based on the five most destructive tsunamis to Hawai‘i during the last two centuries and calibration with the respective runup records. However, the devastating impact of the 2011 Tohoku tsunami to Japan (generated by the magnitude 9.0 Tohoku earthquake) prompted the development of an extreme inundation scenario for Hawai‘i beyond what can be inferred from historical data (Cheung 2015).

[32] A hurricane is a tropical cyclone that develops over warm tropical oceans and has sustained winds that exceed 74 mph; tropical storms are similar to hurricanes but have sustained winds less than 74 mph.

Hurricane Iniki in 1992, which produced estimated peak winds of 130–160 mph over Kaua‘i (Tetra Tech 2021). Tropical storms are more frequent than hurricanes and typically pass close enough to affect some part of the islands approximately every one to two years (WRCC 2026).

Kekaha Landfill's *Emergency Action Plan* (Geosyntec 2023d) describes site procedures to protect against erosion, flooding, and wind damage before, during, and after severe storms. Before a forecasted storm, personnel inspect onsite drainage structures and ensure they are functioning. As needed, diversion berms are built around the active disposal area to prevent run-on and to contain runoff. Interim cover is applied to exposed waste at the end of the workday prior to the forecasted start of a severe storm. Site management may elect to close the facility during storm periods. During prolonged heavy rain, staff periodically inspect drainage systems to identify and repair damage or conditions that could threaten onsite or offsite facilities. After major rain events, post-storm inspections are conducted for drainage systems, infiltration basins, and erosion and sediment controls (Geosyntec 2025a).

3.6.4 Earthquakes and Seismicity

Seismicity describes the geographic and historical occurrence of earthquakes. In Hawai‘i, earthquakes are generally associated with volcanic activity. Kaua‘i is one of the older Hawaiian islands with dormant volcanism and low seismic activity.

Seismic Design Category (SDC) ratings are based on seismic hazard maps from FEMA and USGS and guide building design to resist earthquake forces (FEMA 2024). SDC ranges from Category A (lowest seismic risk) to Category E (highest seismic risk). West Kaua‘i is assigned SDC A, indicating a very low probability of damaging earthquake effects (FEMA 2025). Kekaha Landfill is not located within a seismic impact zone as defined by HAR § 11-58.1-13(e) and the Subtitle D regulations for municipal solid waste landfills (40 CFR Part 258.14).

In the unlikely event of a significant earthquake, Kekaha Landfill would suspend or limit operations and, when it is safe to do so, perform a prompt visual survey to identify slope failures, downed power lines, gas or water leaks, tank leaks or spills, landfill gas collection system damage, or other conditions that could threaten employee or public safety (Geosyntec 2023d).

3.6.5 Wildfires

Wildfires occur throughout Hawai‘i and have been on the rise in recent years due to increased ignition events. Human activity is the primary cause of wildfires, but they may also be caused by natural events such as lightning strikes. Wildfire risk maps on the Hawai'i Climate Data Portal use past and present climate data to identify the daily probability of large (8+ acre) fire ignitions based on current and past climate (HCDP 2026). The Project Area is in an area with low to moderate ignition probability.

Kekaha Landfill implements a *Fire Prevention Plan* (Geosyntec 2023d) that establishes housekeeping practices, controls for potential ignition sources, and procedures for the safe handling and storage of combustible materials. The site also maintains a comprehensive fire response plan covering structure

and surface fires, buffer zone/ brush fires, incoming waste and disposal area fires, vehicle/ equipment fires, and subsurface fires. On-site firefighting resources available 24/ 7 include a 4,000-gallon water truck, loader, bulldozer, and portable extinguishers. Trained personnel assess fires, attempt to extinguish small, accessible incidents with appropriate equipment, isolate and remove fuel sources, and evacuate and contact emergency responders for larger or uncontrollable fires. Subsurface fires, typically caused by smoldering buried waste or excess oxygen, are primarily controlled by smothering with fine soil or, under experienced supervision, by excavation and removal of burning material.

3.6.6 Disaster Response

Kekaha Landfill has historically provided, and would continue to provide, disposal capacity for debris and other solid waste generated by a natural disaster. Local authorities and emergency coordinators rely on the landfill to support a prioritized, coordinated cleanup immediately following an event and during early recovery. The *Emergency Action Plan* (Geosyntec 2023d) includes procedures for accepting and managing disaster debris. Demand on the landfill is greatest immediately after an event and during the early recovery phase. Some disaster debris may be contaminated or otherwise atypical and therefore require special handling, processing, or disposal beyond the facility permit; such wastes require approval from HDOH.

3.6.7 Sea Level Rise

Sea level rise increases coastal hazards, such as flooding, storm surge, and coastal erosion, and places coastal communities at greater risk. The Hawai‘i State Climate Commission’s Sea Level Rise Vulnerability and Adaptation Report provides a statewide assessment of Hawai‘i’s vulnerability to sea level rise (Hawai‘i State Climate Commission 2022).

The State of Hawai‘i Sea Level Rise Viewer (Hawai‘i Climate Change Mitigation and Adaptation Commission 2025) and the NOAA Sea Level Rise Viewer (NOAA 2025) publish mapped extents of potential sea level rise. The Hawai‘i viewer defines the Sea Level Rise Exposure Area (SLR-XA) using composite mapping of projected chronic inundation from: 1) passive (high tide) flooding, 2) annual high-wave flooding, and 3) coastal erosion. The modeling uses four sea level rise scenarios based on the Intergovernmental Panel on Climate Change (IPCC) Fifth Assessment Report (2014): 0.5 ft, 1.1 ft, 2.0 ft, and 3.2 ft. The NOAA viewer maps passive flooding scenarios from 4 to 8 ft of sea level rise for long-term planning.

State guidance from the 2022 Hawai‘i Sea Level Rise Vulnerability and Adaptation Report recommends evaluating two sea level rise scenarios depending on tolerance for risk:

1. 4 ft of sea level rise should be considered as the minimum scenario for *all planning and design*. This is following the latest NOAA interagency sea level rise report (Sweet et al. 2022) based on the report’s Intermediate (mid-range) scenario for Hawai‘i of 3.9 ft of sea level rise by 2100.

2. 6 ft of sea level rise should be considered for planning and design of public infrastructure projects and other projects with low tolerance for risk. This is based on the NOAA 2022 report's Intermediate-High scenario for Hawai'i of 5.9 ft of sea level rise by 2100 (Sweet et al. 2022).

Figure 3-9 displays the SLRXA for the 1.1 ft, 2.0 ft, and 3.2 ft scenarios and the NOAA 6 ft passive flooding scenario for the Project Area. Kekaha Landfill lies outside the 3.2 ft SLRXA and the NOAA 6 ft passive flooding extent. A recent vulnerability assessment of west Kaua'i's coastline notes anticipated impacts to community roadways and possible temporary loss of vehicular access to the landfill, but it does not anticipate direct effects to the landfill itself (UH Sea Grant Program 2020). Accordingly, sea level rise currently poses a low risk to Kekaha Landfill.

3.6.8 Potential Climate Change Impact on Hazards

The Multi-hazard Mitigation and Resilience Plan (Tetra Tech 2021) provides projections of future climate change for Kaua'i. A summary of how climate change is anticipated to affect natural hazards is provided below.

- *Floods:* Changing precipitation and runoff patterns would increase the uncertainty for flood management. Extreme climatic events would become more frequent, necessitating improvement in flood protection and emergency response. High frequency flood events (e.g., 10-year floods) would likely increase with a changing climate. Additionally, rising sea levels, coupled with high water levels caused by tropical storms, would incrementally increase coastal flooding and erosion.
- *Tsunamis:* Sea level rise could cause oceanic waves and surge to reach farther inland and increase the risk that coastal communities would be exposed to a tsunami hazard.
- *Hurricanes:* Hawai'i is expected to see an increase in tropical cyclone events as the storm track may shift north toward the central north Pacific. The projected increases in sea level rise and temperatures also have the potential to increase risk of storm surge-related flooding along the coast.
- *Earthquakes:* The impacts of global climate change on Kaua'i's earthquake probability are unknown.
- *Sea level rise*: Sea level rise would exacerbate coastal inundation, erosion, and coastal hazards (e.g., more frequent high surf events and storm surge).

3.7 Archeological Resources and Historic Properties

Archaeological resources refer to archaeological sites, features and historic properties that can include visible surface features and/or buried deposits without surface features. The ROI for archeological and historic resources is the Project Area and areas surrounding the Project Area.

Data on the archeological and historic resources within the ROI was obtained from Cultural Surveys Hawai'i's (CSH) 2023 literature review of previous archaeological studies within and in the vicinity of the

Kekaha Landfill. A Project-specific Archeological Field Inspection and Literature Review report will be provided in the Draft EIS.

3.7.1 Previous Archaeological Studies

Twenty-two archaeological investigations have examined areas overlapping with or adjacent to the Project Area. Previous archaeological studies in and in the vicinity of the Kekaha Landfill are summarized in Table 3-6 and shown in Figure 3-10.

Table 3-6. Previous Archaeological Studies in the Vicinity of Kekaha Landfill

Reference	Type of Study	Location	Results
Bordner 1977	Reconnaissance survey	Kekaha Beach Park	No significant findings
Ching 1982	Reconnaissance survey	Proposed landfill near Barking Sands	No significant findings
McMahon 1988	Field inspection	Mānā near landfill; TMK: (4) 1-2-002:040	No significant findings
González et al. 1990	Archaeological inventory survey with subsurface testing	Kaua'i Test Facility at PMRF	Recent trash scatter, bone fragments of unknown species, porcelain fragments, and one Cypraea sp. discovered
Walker and Rosendahl 1990	Archaeological inventory survey	Three areas at PMRF and four areas in Kōke'e Park Geophysical Observatory	No significant findings
Kennedy 1991a	Archaeological subsurface testing	Family housing area at PMRF	No significant findings
Kennedy 1991b	Supplemental to archaeological subsurface testing	Family housing area at PMRF	Further discussion of historic ditch (SIHP # 50-30-05-00754) and testing of low sand mounds discussed in Kennedy 1991a
Spear 1992	Archaeological monitoring	West of Kekaha Town	No significant findings
Folk and Hammatt 1993	Inventory survey with subsurface testing	Proposed landfill expansion near Barking Sands; TMK: (4) 1-2-002:009	No significant findings
Hammatt and Ida 1993	Archaeological assessment	Two separate parcels; makai (seaward) of Kaumuali'i Highway and mauka (inland) parcel located on Kaleinamanu Ridge in Kekaha	No significant findings
Folk and Hammatt 1994	Archaeological inventory survey with subsurface testing	National Guard Rifle Range, Barking Sands	No significant findings
Masterson et al. 1994	Inventory survey with subsurface testing	Proposed agricultural park near Barking Sands	SIHP # 50-30-05-03650, two human burials identified
Drolet et al. 1999	Archaeological monitoring	Site of Project H-134 in PMRF	No significant findings
Dye and Dye 2008	Archaeological monitoring	PMRF makai of Kekaha Landfill	No significant findings

Reference	Type of Study	Location	Results
Engineering-environmental Management 2009	Survey and evaluation of historic buildings	Hanapēpē Armory and adjacent to southeast boundary of PMRF	TS Kekaha WETS at PMRF, a single building (Building 00001) documented; Hanapēpē Armory is modern with exception of one building: flammable material storage building (Building 29) built in 1963
Altizer and Hammatt 2010	Archaeological inventory survey	Access roads from Mānā Road northeast through agricultural fields and encompasses portions of New and Old Government roads	Eight historic properties identified: SHIP#s 50-30-05-02107, portions of New and Old Government Road and associated structural remnants; -02108 and -02112, habitation terraces;-02109, wall remnant; -02110 and -02111, mounds; -02113, historic house site; and -02114, heiau (temple structure)
Coward and Hammatt 2011	Archaeological literature review and field inspection	10-acre Agricultural Field Office, TMK: (4) 1-2-002:001	No significant findings
Hammatt and Shideler 2011	Literature review	Eight possible locations for Kaua'i Municipal Solid Waste Landfill: Kekaha-Mauka, TMK: (4) 1-2-002	Discusses history of area, previous archaeological studies, and historic properties identified during previous studies
Fong 2012	Archaeological monitoring	Central and southern segments of PMRF	No significant findings
Hammatt and Shideler 2013	Archaeological monitoring	Kaumuali'i Highway, Vicinity of Kekaha, Mile Post 27	No significant findings
Watanabe et al. 2014	Archaeological monitoring	Mānā Drag Racing Strip, TMKs: (4) 1-2-002:001, 009, 035, 036, 040	No significant findings
Clark et al. 2015	Archaeological inventory survey with subsurface testing	Mānā Drag Racing Strip, TMKs: (4) 1-2-0-2:009, 036, and 040	No significant findings

PMRF = Pacific Missile Range Facility; SIHP = State Inventory of Historic Places; TMK = Tax Map Key
Source: CSH 2023

Table 3-7 lists the historic properties documented in the vicinity of the Project Area and shown in Figure 3-11. A description of the two archaeological studies conducted for Kekaha Landfill follows.

Table 3-7. Historic Properties Identified in the Vicinity of the Kekaha Landfill

State Inventory of Historic Places Number (SIHP) # 50-30-05-	Type	Reference
00754	Drainage ditch	Kennedy 1991a; Kennedy 1991b
02107	Portions of New and Old Government Road and associated structural remnants	Altizer and Hammatt 2010
02109	Basalt stacked wall remnants	Altizer and Hammatt 2010
03650	Human skeletal remains	Masterson et al. 1994
Site 14	Heiau	Bennett 1931
No SIHP	Kekaha ditch	Thrum 1908; 1910 USGS topo map; 1963 USGS topo map; 1970 USGS topo map; 1991 USGS topo map; Altizer and Hammatt 2010; Lyman and Dega 2015
No SIHP	Bone fragments of unknown origin	González et al. 1990

USGS = U.S. Geological Survey

Source: CSH 2023

Archaeological research of Kekaha Landfill and its surrounding area indicates the land was extensively used by commercial agriculture and other operations and much of the physical evidence of the traditional settlement pattern has been destroyed (Hammatt and Shideler 2011). The foothills and wetland areas of the Mānā Plain were extensively planted in sugar cane, gulches were impacted by livestock, and the beach areas have been disturbed by massive shoreline stabilization projects. Historical and archeological resources have also been disturbed by the development of the PMRF, Kaua'i Raceway Park, and Kekaha Landfill.

3.7.2 Historic Properties within the Project Area

Two archaeological surveys were conducted for the existing Kekaha Landfill facility:

- Ching (1982) conducted an archaeological reconnaissance survey for the original Phase I landfill site in 1982 and determined no historic properties were present. At the time of the reconnaissance, part of the area was already utilized as a "sanitary landfill", and the other part was used as a dump site for bagasse[33] for Kekaha Plantation (Ching 1982). Prior to being a landfill and a dump site, the area was owned by Kekaha Plantation and utilized as pasture lands, including holding pens for cattle and horses. According to Ching (1982), the area had "been bulldozed countless of times." There were no historic properties present.
- In 1993, CHS (Folk and Hammatt 1993) conducted an Archaeological Inventory Survey (AIS) with subsurface testing of 63.2 acres within TMK 1-2-002:009 prior to construction of the Phase II landfill. Extensive subsurface testing was conducted throughout the Phase II area. A total of 55 backhoe test trenches were distributed, approximately 1 per acre, and excavated. The typical

[33] Bagasse is the fibrous, pulpy residue left after extracting juice from sugarcane.

profile revealed that the area, once a place of sand dunes, was modified by destroying the upper portions for plantation purposes. During the surface survey, an abandoned irrigation canal and a low, linear sand mound were observed (Folk and Hammatt 1993). The linear mound and canal were excavated and revealed that stratigraphically, both features post-date the removal of the sand dunes. Oral resources, such as residents and plantation employees, revealed the features were constructed in the 1950s for experimental farming (Folk and Hammatt 1993).

As described in Section 1.8.2, Phase II was permitted for a vertical expansion in 2013. As part of that permitting process, the State Historic Preservation Division (SHPD) requested additional information (SHPD Doc. No. 1309SL06) on two historic properties within Phase II area that were recorded (but not assigned site numbers) in the 1993 CSH AIS (Folk and Hammatt 1993): an irrigation canal and a low, linear sand mound (oriented perpendicular to the canal) for irrigation control. In response to the SHPD's request, AECOM conducted a document review and field inspection, which confirmed the two historic properties are no longer present (AECOM 2013b). Based on this information, the SHPD determined that no historic properties would be affected because no historic properties exist within the Phase II area (SHPD Doc. No. 1310SL09).

Subsequently, the County requested SHPD concurrence of "no historic properties affected" for the vertical expansion of Phase II to 171.5 ft amsl. Based on findings from the previous AIS and that the Phase II vertical expansion did not involve construction and would not affect the original ground surface, SHPD concurred with the County's project effect determination (SHPD Doc. No. 2305DB01).

3.8 Cultural Resources

Cultural resources include historic archaeological districts, landscapes, sites, or objects, traditional cultural properties, human remains, and/or historic built environment resources that include districts, buildings, structures, landscapes, sites, and objects or places of importance to a culture or community for scientific, traditional, religious, or other reasons. The ROI for cultural resources encompasses the Waimea Ahupua'a, the Project Area, and the area surrounding the Project Area. This broad ROI is appropriate because a comprehensive understanding of the ahupua'a in which the Project Area is located is needed to assess the cultural significance of the Project Area. Furthermore, some cultural resources require consideration of a broader region and island landscape to assess cultural significance.

Data on the cultural resources within the ROI was obtained from the Cultural Impact Assessment (CIA) completed by CSH for the proposed vertical expansion of the Phase II landfill area to 171.5 ft. amsl (Baculpo and Hammatt 2023). Pursuant to the requirements of HRS Chapter 343, a Project-specific CIA will be conducted and included in the Draft EIS. The CIA will be prepared pursuant to Act 50 and in accordance with the Environmental Review Program (formerly the Office of Environmental Quality Control) Guidelines for Assessing Cultural Impacts (Environmental Council 1997). The CIA will also include a Ka Pa'akai Analysis that specifically addresses the preservation and protection of customary and traditional native practices specific to Hawaiian communities pursuant to *Ka Pa'akai O Ka 'Āina v. Land Use Commission*.

3.8.1 Cultural History of the Waimea Ahupua‘a

The Waimea Ahupua‘a is composed of several regions which are very different in climate and terrain (Figure 1-1). These differences dictated the kinds of resources that were available and how the ahupua‘a was settled by pre-Contact Hawaiians. On the southwestern leeward coast, the broad, flat Mānā Plain stretches between the Waimea River delta and Polihale to the west. It is here that the villages of Kekaha, Pōki‘i, Wai‘awa, and Mānā are located, backed on the mauka side by steep low cliffs and a series of small valleys and gulches. Just below, makai of the ridges and valleys, lies the Kekaha Ditch, which winds its way down from the Waimea River in the mountains. Between the villages were intermittent homes, with the Old and New Government roads to Mānā (now referred to as the Mānā Road) linking each community between Mānā and Kekaha. Kekaha Landfill is located near the center of the Mānā Plain, makai of the Kekaha Ditch.

Traditional accounts of the Waimea Ahupua‘a are told through Nā ka‘ao a me nā Mo‘olelo (Legends and Stories), Nā Wahi Pana (Storied Places), Oli (Chants), Nā Mele (Songs), and Nā ‘Ōlelo No‘eau (Proverbs). These oral accounts provide important insight into a specific geographical area. There are many legends associated with the Waimea Ahupua‘a, many of which relate to the Hawaiian gods, such as Pele and her siblings, and ali‘i (chiefly class), such as Ola‘a. Hawaiian legends concerning Waimea also focus on the engineering feats that made the agricultural abundance of the ahupua‘a possible, such as the Kīkīola Ditch, also known as the “Menehune Ditch.” Waimea, Kaua‘i was also a site of great significance for po‘e kuhikuhi pu‘uone (site experts) and po‘e kilo hoku holo moana (navigators) of the pre-contact time. Po‘e kilo hoku (astronomers) of O‘ahu and Kaua‘i also gathered in Waimea, Kaua‘i to make their observations.

By the time of western contact in 1778, the Waimea Ahupua‘a had long been a focus of settlement, agriculture, and ali‘i residence on Kaua‘i. However, by the early 1800’s, the Hawaiian population was in significant decline. The people of the ahupua‘a were struck in May 1826 by an influenza epidemic and a great flood that wreaked havoc upon taro lo‘i and damaged structures built by the missionaries. In 1833, censuses taken by Protestant missionaries estimated a population of 3,883 persons within 6 miles of the Waimea station. Subsequent missionary station reports from Waimea recorded the continuing diminishment of the district’s population. In 1838 the total population was 3,272, in 1840 it was 2,819, and in 1841 it was 2,779. The Organic Acts of 1845 and 1846 initiated the process of the Māhele—the division of Hawaiian lands—that introduced private property into Hawaiian society. Over 150 kuleana awards were granted in Waimea; however, only three claims were made in and nearby Kekaha.

In 1850, Waimea was designated a government port, opening it to foreign commerce. At the time, Waimea was exporting a variety of agricultural goods and livestock. Rice cultivation by Chinese farmers began in Waimea Valley in the 1860s. At Waimea, as in other locales, groups of Chinese began leasing former taro lands for conversion to rice farming. Though rice continued to be grown at Waimea and Makaweli into the 1930s, many of the rice fields were being reclaimed for sugar planting.

During the last decade of the nineteenth century, the population of Waimea rebounded, growing from a total of 2,739 in 1890 to 4,595 in 1896, and 5,886 in 1900. That growth was spurred by the

establishment of commercial sugarcane planting at Waimea. The Waimea Sugar Mill was founded in 1884, and the railroad line was built in about 1884, which was used to transport sugar from the mills to the pier at Waimea Landing. The fate of plantation agriculture in the arid zones of Waimea Ahupua'a depended upon water supply development in the twentieth century. Construction of the Kekaha Ditch from 1906 to 1907 brought water from the Waimea River to irrigate the sugar cane plantations. From 1923 to 1926, the construction of the Koke'e Ditch was undertaken by the Kekaha Sugar Company to further irrigate plantation lands. Kekaha Sugar Company continued to produce sugar until 2000. In 2003, land situated in Kekaha, Kaua'i was transferred through executive order No. 4007 to the Agribusiness Development Corporation for agricultural and related purposes.

3.8.2 Previous Cultural Studies

The CIA reviewed previous CIAs conducted within the vicinity of Kekaha Landfill (Table 3-8; Figure 3-12). Previous CIA projects (Chiogioji et al. 2003, Fernandes et al. 2010, Walden and Collins 2015) and a cultural study (Flores and Kaohi 1993) in close proximity to Kekaha Landfill identified several traditional cultural practices in the region including: agricultural practices, marine resources, burial practices, gathering practices, hula, mele, recreational activities, and wahi pana. A CIA was conducted in 2007 for the initial Kekaha Landfill Phase II Lateral Expansion; however, no report was produced. The 2007 Final EA did state that no cultural practices were identified during consultation (AECOM 2007).

Table 3-8. Previous Archaeological Studies in the Vicinity of the Kekaha Landfill

Reference	Project/Location	Community Participants	Traditional Cultural Practices Identified
Flores and Kaohi 1993	Nohili, Mānā	Anderson Kilauano, Margaret Aipoalani, Julia Smith Chandler, and Patrick Malama	Agricultural practices; marine resources; burial practices; gathering practices; hula
Chiogioji et al. 2003	Sandwich Isles Fiber Optic Cable Landing; TMK: (4) 1-3-001:999	Kaipo Akana, Aletha Goodwin-Kaohi, and Teruo Oshiro	Agricultural practices; marine resources; burial practices; mele
Fernandez-Farias et al. 2010	Along New and Old Government Roads; TMK: (4) 1-2-002:001	Louis Parrage III, Antonio "Tony" Wong, Isabel Takekawa, Carolyn Uluwehi Kilauano, Osamu Ashiro, and Clisson Kunane Aipoalani	Burial practices; religious practices; marine resources; agricultural practices; recreational activities
Walden and Collins 2015	Mānā Drag Racing Strip; TMKs: (4) 1-2- 002:009, 036, 040	Aletha Kaohi, Kunane Aipoalani, and Debbie Ruiz	Wahi pana

TMK = Tax Map Key

Source: Baculpo and Hammatt 2023

3.8.3 Cultural Resources within Waimea Ahupua‘a and Project Area

As discussed in Section 3.7, CSH conducted a literature review of previous archaeological studies within and in the vicinity of Kekaha Landfill and identified two historic properties within Kekaha Landfill. These two 1950s historic properties were identified as an abandoned irrigation canal and a low, linear sand mound for irrigation control, both of which are no longer present (AECOM 2013b). No traditional cultural properties or designated significant historic properties under Hawai‘i significance Criterion “e,”[34] were identified within Project Area.

Based on the results of community consultation and background research conducted as part of the 2023 CIA (Baculpo and Hammatt 2023), CSH identified the following cultural practices within Waimea Ahupua‘a: fishing, farming (kalo [taro], rice, and sugarcane), limu (seaweed) gathering, hunting, salt production, canoe production, recreational activities, weaving practices, hula, mo‘olelo (stories), wahi pana (storied places), mele (songs), and religious activities and burial practices. No ongoing cultural practices were identified within Project Area during background research and community consultation. However, Kekaha Landfill is in the general vicinity of ongoing cultural practices such as burial practices, fishing, and recreational activities.

3.9 Visual Resources

Visual resources include both the natural and constructed elements of the landscape that enhance the public’s enjoyment and appreciation of the environment. Visual or scenic impacts are assessed based on a project's physical features, visibility, and how it might alter the visual character and scenic quality of its surroundings, particularly any scenic vistas and view planes identified in relevant county general and community plans. The ROI for visual resources includes the Project Area and areas in which the Proposed Action may be visible to the public.

As described in Section 1.8.1, the Project Area lies within the Mānā Plain, extending from the ancient sea cliffs to the shoreline. Kekaha Landfill is adjacent to Kaumuali‘i Highway and is approximately 1,700 feet from the shoreline. The primary land use surrounding the landfill is agricultural and agriculture related commercial activity, located to the west, north, and east of the Project Area. Other nearby uses include federal reserve lands (PMRF and U.S. Lighthouse Service) to the south and west, land leased by the Hawai‘i National Guard to the south, and Kaua‘i Raceway Park to the southeast. The visual setting is dominated by agricultural landscapes, with intermittent views of the sea cliffs and the Pacific Ocean.

HAR § 11-200.1-13 requires applicants to identify potential adverse impacts on scenic vistas and view planes identified in county or state plans or studies. Although neither the Kaua‘i County General Plan (County of Kaua‘i 2018) nor the West Kaua‘i Community Plan (County of Kaua‘i 2020) designates specific scenic views or corridors at or adjacent to the Project Area, both plans include policies to preserve

[34] Criterion “e” refers to historic properties that “have an important value to the native Hawaiian people or to another ethnic group of the state due to associations with cultural practices once carried out, or still carried out, at the property or due to associations with traditional beliefs, events or oral accounts—these associations being important to the group’s history and cultural identity” (HAR § 13-275-6(b)(5) and § 13-284-6(b)(5)).

scenic resources and public views. These policies call for preserving mountain and ocean views, landmarks and scenic resources of historical or cultural importance, and scenic views along roadways. The Heritage Resource Maps in the Kauaʻi General Plan and the Natural Landscape Maps in the West Kauaʻi Community Plan depict landforms and natural resources that the County intends to conserve. From mauka to makai, natural and heritage resources near the Project Area include the Kekaha Game Management Area (comprising the Kolo, Ohaiʻula, Mānā, Kahelu, Kaunalewa, and Pulehu ridges), the wetlands and traditional cultivation areas of the Mānā Plain, and the sandy shoreline, including Kekaha Beach Park located about 0.8 miles east of the Project Area.

Where visible, Kekaha Landfill appears as an earthen mound (Appendix B,. Photo Log). Phase I is naturally vegetated with grass, while Phase II receives daily landfill cover and is partially vegetated. The earth-tone color of the daily cover is generally consistent with surrounding agricultural areas. Public views of Kekaha Landfill are mainly from Kaumualiʻi Highway. Phase II is partially visible from the highway where vegetation does not block the line of sight; Phase I is not visible from the highway because the Phase II mound obstructs its view. Views from the nearby shoreline are largely blocked by coastal dunes and an earthen berm associated with the National Guard Rifle Range.

3.10 Noise

Noise is generally defined as an unwanted or disturbing sound that interferes with normal hearing, communication, or the enjoyment of a quiet environment. The degree to which sound can be heard is dependent upon the relative level of sound in the existing acoustic environment. The ROI for noise is the Project Area, parcels adjacent to the Project Area, and noise sensitive receptors in the vicinity of the Project Area.

Existing noise sources in the vicinity of the Project Area include existing Kekaha Landfill operations, agricultural activities, air traffic associated with PMRF, vehicular traffic along Kaumualiʻi Highway, the Hawaiʻi National Guard rifle range and the Kauaʻi Raceway Park to the south, and ocean and other environmental sounds. Sensitive noise receptors in the vicinity of the Project Area include Kekaha Beach Park (approximately 0.8 miles southeast of the Project Area), the Kekaha Wildlife Management Area (approximately 1.25 miles northeast of the Project Area), and the shoreline and nearshore waters (approximately 0.3 miles south of the Project Area). There are no nearby residential properties in the vicinity of the Project Area; the closest residential area is 1.3 miles southeast of Kekaha Landfill.

3.10.1 Hawaiʻi Noise Standards

The State of Hawaiʻi has adopted statewide noise standards, set forth in HAR § 11-46; these are administered by the Indoor and Radiological Health Branch of HDOH. The stated purpose of the standards is to "provide for the prevention, control, and abatement of noise pollution in the state from the following noise sources: stationary noise sources (such as air-conditioning units, exhaust systems, generators, compressors, and pumps); and equipment related to agricultural, construction, and industrial activities." The noise standards are the maximum permissible sound levels, as measured at the property line, and vary according to underlying zoning district. The daytime and nighttime maximum

permissible sound levels for the three classes of receiving zoning districts, provided in A-weighted decibels (dBA), are summarized in Table 3-9. Zoning districts are determined by ordinances adopted by the applicable local, county, or state government agencies.

Table 3-9. State of Hawai'i Maximum Permissible Sound Levels by Zoning District

Receiving Zoning District	Daytime Maximum (7:00 am–10:00 pm)	Nighttime Maximum (10:00 pm–7:00 am)
Class A Zoning District (includes all areas equivalent to land zoned residential, conservation, preservation, public space, or similar type)	55 dBA	45 dBA
Class B Zoning District (includes all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type	60 dBA	50 dBA
Class C Zoning District (includes all areas equivalent to lands zoned agriculture, country, industrial, or similar type)	70 dBA	70 dBA

dBA = A-weighted decibel

Source: HAR § 11-46, Community Noise Control

Pursuant to HAR § 11-46-4(b), compliance is assessed relative to the noise limits at any point at or beyond (past) the property line based on the zoning class district of the parcel where the noise is generated. Because a portion of the Project Area is in the State Conservation District, compliance is assessed relative to the maximum permissible sound levels for Class A Zoning districts. Therefore, the maximum permissible sound levels for stationary noise sources and equipment at the property line is 55 dBA during the day and 45dBA at night. Noise levels may not exceed the maximum permissible sound levels for more than ten percent of the time within any 20-minute period, except with issuance of a permit or variance.

Pursuant to HAR § 11-46-7, a permit may be granted by the director of HDOH for operation of an excessive noise source beyond the maximum permissible sound levels. Under HAR § 11-46-7(j), noise permits for construction allow for activities emitting noise in excess of the limits but restrict these activities to the hours of 7:00 a.m. to 6:00 p.m. during weekdays and 9:00 a.m. to 6:00 p.m. on Saturdays (no exceedances allowed on Sundays or holidays). Pursuant to HAR § 11-46-8, a variance may be obtained for operation of an excessive noise source beyond the maximum permissible sound levels outside of permitted construction hours. Factors that are considered in granting of such variances include whether the activity is in public interest and whether the best available noise control technology is being employed.

The Hawai'i Occupational Safety and Health Division sets the permissible occupational noise exposure at 90 dBA for a duration of 8 hours per day. Permissible noise exposures for shorter periods are higher, with a maximum exposure of 115 dBA permissible for a duration of 15 minutes or less (HAR § 12-8-2). If workers may experience noise exceeding these standards, appropriate administrative or engineering controls are implemented and hearing protection equipment, such as earplugs or safety earmuffs, are required.

3.10.2 Noise Generated by Kekaha Landfill Operations

The Kekaha Landfill's current operating hours are 8:00 a.m. to 4:00 p.m., 7 days per week. Kekaha Landfill operations may generate noise that exceeds the local ambient noise levels and affect nearby areas, including the noise-sensitive receptors described above. Kekaha Landfill operations require use of heavy equipment as described in Section 1.8.3. Noise levels resulting from operational activities would vary depending on the type of equipment, the specific equipment model, the operations being performed, and the overall condition of the equipment. Table 3-10 lists the type of equipment typically used at Kekaha Landfill and the anticipated noise levels associated with the equipment based on reference information from the EPA and the Federal Highway Administration Construction Noise Handbook (FHWA 2006). It is assumed that Kekaha Landfill's equipment would have similar sound profiles as those considered in this assessment; however, it is possible that the final equipment manufacturers, models, and therefore expected sound profiles may vary. Noise from operational activities decreases with increasing distance from the noise source, at a minimum of a 6-dB decrease each time the distance from the noise source is doubled (OSHA 2022a). Actual received sound levels fluctuate, depending on the operational activity, equipment type, and separation distances between source and receiver.

Table 3-10. Summary of Kekaha Landfill Operational Noise

Landfill Equipment (Number)	Maximum Equipment Noise Level at 50 ft (dBA, slow)
Mobile Equipment	
Compactors (2)	80
Dozer (1)	85
Drum Roller (1)	85
Dump Truck (1)	84
Excavator (2)	85
Front End Loader (1)	80
Grader (1)	85
Pickup Truck (1)	55
Roll-off Truck (1)[35]	84
Water Truck (1)	84
Stationary Equipment	
Enclosed Landfill Gas Flare (1)	85[1/]
Emergency Generator (1)	82[2/]

1/ Noise level at 3 ft. Noise level sourced from ZEECO 30 MMBTU flare operations manual.

2/ Emergency generator used intermittently in the event of power failure.

dBA = A-weighted decibels

Source: FHWA 2006

[35] Noise specification for a roll-off truck was not available; assumes noise levels from comparable equipment (i.e., flatbed truck)

Operation-related traffic, such as trucks traveling to and from the Project Area on public roads, would also generate noise and contribute to overall sound levels; however, traffic noise is not regulated under HAR § 11-46.

Based on the equipment noise levels listed in Table 3-8, Kekaha Landfill may exceed HAR §11-46 Class A maximum permissible daytime sound limits of 55 dBA when landfill equipment is used near the property boundary. However, noise levels are comparable to noise produced by other adjacent land uses and Kekaha Landfill has received no community noise complaints (A. Fraley, DPW, personal communication, May 5, 2026).

Reasonable efforts are made to minimize the noise levels at Kekaha Landfill to the extent practicable, including:

- Operational activities occur between 7:00 a.m. to 4:00 p.m.
- Speed limits are established and enforced at 15 mph.
- The use of noise-producing signals, including horns, whistles, alarms, and bells are used for safety warning purposes only.
- All noise-producing equipment and vehicles using internal combustion engines are equipped with mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features in good operating condition that meet or exceed original factory specification.
- Mobile or fixed “package” equipment are equipped with shrouds and noise control features that are readily available for that type of equipment.
- Hearing protection is required when working in close proximity to heavy equipment, the level of noise interferes with communications or the sound level exceeds 85 decibels.

3.11 Human Health and Safety

The human health and safety resource includes a discussion of specific safety and health concerns related to landfill operation including: heavy equipment operation, vector control, flammable and combustible gas, exposure to special and hazardous wastes, petroleum products, landfill subsurface fire, and injuries (from heavy lifting; slips, trips, and falls; exposure to heat; and biological exposure such as bites, stings, and allergens). Related health and safety topics addressed elsewhere in this EISPN include fugitive dust (Section 3.2), natural hazards (Section 3.6), and occupational noise (Section 3.10). Human health and safety aims to protect people from injuries and illnesses by identifying, managing, and eliminating risks. The ROI for human health and safety is the Project Area and the areas surrounding the Project Area.

3.11.1 Refuse Trucks and Heavy Equipment Operation

As discussed in Section 1.8.3, refuse trucks and heavy equipment are used for daily operations at Kekaha Landfill. The County provides training and enforces landfill safety rules to protect customers and

employees around equipment operations (Geosyntec 2023c). Routine safety and traffic control measures include:

- The site is secured by perimeter chain link fencing and a gated entrance on Kaumualiʻi Highway; the gate is locked outside operating hours.
- Access routes are clearly marked, and customers are directed to offloading locations by spotters or the bulldozer operator.
- Signs, barricades, cones, and traffic controllers are used to manage traffic within the landfill site.
- An on-site speed limit of 15 mph is enforced, and seatbelts are required while driving on site.
- Truck and heavy equipment operators must maintain safe separation between vehicles.
- While in the offloading area, only the driver and one helper may exit the vehicle; both must remain within 6 ft of the vehicle.
- Employees, government drivers, and commercial drivers must wear a high visibility safety vest or shirt and safety boots when outside their vehicles in the offloading area.
- Hard hats are recommended.

3.11.2 Vector Control

Vectors are organisms (e.g., rodents, flies, mosquitoes) capable of transmitting disease to humans. The Kekaha Landfill *Vector Control Plan* (Geosyntec 2023e) complies with the operating criteria for MSW landfills in 40 C.F.R. § 258.22 and HAR § 11-58.1-15(c). Under HAR § 11-58.1-15(c), owners or operators of all MSW landfill units must prevent or control on site populations of disease vectors using techniques appropriate for the protection of human health and the environment. To meet this requirement, Kekaha Landfill personnel are trained to prevent, detect, and manage on-site vector populations. Routine measures include:

- Monthly inspections and prompt control/abatement actions as needed.
- Minimizing the size of the active working face to reduce vector access to waste.
- Placement of a minimum of 6 inches of daily cover or approved alternative daily cover on the active working face.
- Placement of a minimum of 12 inches of intermediate cover on inactive portions of the landfill.
- Regular emptying of roll-off bins used for residential drop-off to prevent vector attraction.

Kekaha Landfill has not received any vector violations (A. Fraley, DPW, personal communication, May 5, 2026). If vectors are identified, the County would develop and implement a site-specific plan to control or eradicate the on-site populations.

3.11.3 Explosive Gas

Methane is generated at landfills as a byproduct of the decomposition of organic waste. Kekaha Landfill implements a *Perimeter Gas Monitoring Plan* (Geosyntec 2023h) to comply with RCRA Subtitle D (40 CFR § 258.23) and HAR § 11-58.1-15(d) for on-site explosive-gas control. Quarterly monitoring is performed using 12 permanent gas probes located around the landfill perimeter to detect any gas migration. If methane is measured at or above 5 percent by volume in any probe, a response action is initiated to protect worker safety and return concentrations to acceptable levels. With these measures in place, the risk of explosive-gas hazards to the community and landfill personnel is negligible. See Section 1.8.3 and Section 3.2 for additional information on landfill gas and Kekaha Landfill's existing GCCS.

3.11.4 Special Waste

The term "special waste" refers to non-hazardous waste that requires special processing and handling/disposal techniques due to the quantity or volume of the material, or its unique physical, chemical, or biological characteristics. Types of special wastes that are accepted at Kekaha Landfill include, but are not limited to: asbestos-containing waste (friable and non-friable[36]); treated medical wastes that have been rendered non-infectious (sterilized or incinerated); biosolids from wastewater treatment plants, soils, debris, and other materials contaminated with petroleum or other chemical products; PCB-contaminated waste;[37] and dead animals/offal. All special waste materials must be pre-approved before acceptance are subject to additional screening and handling requirements, and must be scheduled ahead of time, per Kekaha Landfill's *Waste Acceptance/Hazardous Waste Exclusion Program* (Geosyntec 2023b) and *Operations Plan* (Geosyntec 2023e). The waste generator is responsible for providing a special waste profile form that must be reviewed and approved, and ensuring the load of special waste is properly contained in accordance with federal, state, and county regulations and does not create air emission problems (e.g., dust). Disposal of special wastes does not occur during excessive winds and, if necessary, a water truck provides dust control during unloading. Landfill employees may reject loads of special waste if they do not meet regulatory requirements or may pose a risk to workers or the public.

Kekaha Landfill also implements an *Asbestos Management and Disposal Plan* (Geosyntec 2023b) to provide site-specific guidelines for the safe management and disposal of asbestos-containing materials and describe procedures utilized to minimize potential exposure to asbestos or asbestos-containing materials at the site. Past air monitoring activities at Kekaha Landfill demonstrated that disposal of

[36] There are two general forms of asbestos. Friable asbestos materials contain more than 1 percent asbestos and when dry, can be crumbled, pulverized, or reduced to powder by hand. Dry, friable asbestos becomes an inhalation hazard when it is broken up or damaged because asbestos fibers are released into the air. Non-friable asbestos-containing materials contain more than 1% asbestos and when dry, cannot be crumbled, pulverized, or reduced to powder by hand. Dry, non-friable asbestos materials are not likely to release asbestos fibers because the fibers have been bound in a tight matrix. Only sanding or cutting this type of material could release asbestos fibers.

[37] PCB-contaminated solid waste can be accepted for disposal at Kekaha Landfill Phase II following verification that the waste contains less than 50 ppm PCBs.

asbestos-containing materials do not result in exposures to airborne concentrations of asbestos fibers at or above the permissible exposure limit or excursion limit.[38] Landfill personnel do not handle or offload asbestos-containing materials; handling and uploading is performed by the hauler. The County also institutes a medical surveillance program for landfill personnel. This program consists of pre-employment, post-employment, and annual physical medical examinations.

3.11.5 Hazardous Waste

Kekaha Landfill does not accept materials designated as regulated hazardous waste as defined in HAR 11-261 through 268, radioactive materials, regulated PCB waste as defined in 40 CFR Part 761, explosive materials, insecticides and poisons, untreated infectious waste, or any other waste that may pose a threat to health and safety. Operating procedures currently in place to prevent, detect, and manage wastes not acceptable for disposal at the facility are outlined in Kekaha Landfill's *Waste Acceptance/Hazardous Waste Exclusion Program* (Geosyntec 2023b) and *Operations Plan* (Geosyntec 2023e). The Hazardous Waste Exclusion Program procedures include customer notification, scale house monitoring and inspection, random load checks, and landfill working face inspections. If hazardous wastes are discovered during inspections, landfill personnel reject the load, document the incident, and notify HDOH. If hazardous waste has been unloaded, landfill personnel segregate or cordon off the material, document the incident, notify HDOH, and contact a licensed contractor to transport the waste off site for proper disposal, as required by federal and state regulations (Geosyntec 2023b).

As discussed in Section 1.8.2 above, due to the age of Phase I, the refuse within this landfill area may have hazardous materials.

Kekaha Landfill is classified as a conditionally exempt, small-quantity generator of hazardous waste and is allowed to store such wastes, provided they follow procedures required by 40 CFR § 261 (Geosyntec 2023b). Wastes that are generated on-site at Kekaha Landfill include, but are not limited to, used filters, oils, solvents, and paints, spent lead acid batteries, empty paint, aerosol, and other containers, used tires, scrap metal, welding slag, and leachate. Kekaha Landfill utilizes third-party contractors for transportation, recycling, and disposal of site-generated waste. Wastes are properly managed on-site according to applicable regulations until properly disposed.

3.11.6 Petroleum Products

Kekaha Landfill stores and uses petroleum products such as diesel fuel, lubricating oils, and waste oil. Kekaha Landfill maintains a *Spill Prevention, Control, and Countermeasure Plan* (Geosyntec 2023j), as

[38] The permissible exposure limit is the 8-hour time weighted average airborne concentration of asbestos (0.1 fiber per cubic centimeter) above which no employee shall be exposed. The excursion limit is the 30-minute time weighted average airborne concentration of asbestos (1 fiber per cubic centimeter) to which no employee shall be exposed.

required by 40 CFR Part 112, to prevent and manage spills of oil and petroleum-based products in the event of a discharge.

Table 3-11 details the various types of petroleum products stored at the Landfill. Oil storage areas are listed and described by location, container type, contents, storage device, oil amount and whether it is an above or a below ground container. Routine handling of oil products occurs primarily at the maintenance shop area and areas over the landfill liner system.

Table 3-11. Petroleum Products Stored at Kekaha Landfill

Storage Tank Type (Tank ID)[1/]	Tank Size/ Type	Contents	Secondary Containment	Overfill/Spill Protection
Mobile refueling service truck (Mobile #1)	115 gallon/ steel horizontal	Diesel fuel	Spill kit	Visual inspections and attended transfers
Stationary aboveground storage tank (AST #1)	2,000 gallon/ doubled-walled horizontal	Diesel fuel	Containment structure (dual wall)	Visual inspections, visual gauge, attended transfers, and tertiary containment dike structure (1,475 gallon)
Drum area	55 gallon/ single wall drums (11)	Miscellaneous hydrocarbons	Spill pallets and garage	Spill kits

1/ Only containers that have a capacity of 55-gallons and greater are listed.

Source: Geosyntec 2023j

One mobile refueling service truck is used for daily fueling and servicing of Landfill equipment (Geosyntec 2023j). When not in use, the mobile refueling service truck is maintained and parked near the Maintenance Building wash rack that is equipped with an oil water separator. A spill kit for minor spills is located on/near the mobile refueling service truck.

The facility also houses a 2,000-gallon diesel fuel aboveground storage tank. The diesel fuel tank is located in the equipment fueling area and includes a reinforced concrete secondary containment structure that can contain 100 percent of the tank's rated capacity (Geosyntec 2023j). In addition to this concrete structure, there is a tertiary containment system that consists of a low concrete dike built around the perimeter of the tank; this containment system is capable of holding 1,475 gallons. The entire fueling area is protected from accidental traffic collisions by high-visibility yellow traffic bollards spaced at approximately 6-ft intervals (Geosyntec 2023j).

The maintenance shop area contains 55-gallon drums and other small containers holding various types of oils. All drums inside the shop are stored on spill containment pallets capable of containing the full contents of a 55-gallon drum (Geosyntec 2023j). The maintenance building has an impervious concrete floor. Kekaha Landfill maintains spill kits and absorbent materials in the maintenance shop.

Visual inspections occur at Kekaha Landfill daily and consist of a complete walkthrough of the facility property to examine perimeter fences for unauthorized entry and locked gates, test leak alarms, and look for tank/piping damage or leakage, stained or discolored pavement, or excessive accumulation of water in the storm drain. Tanks are also inspected for signs of deterioration and discharges. The County

performs monthly inspections for permit compliance. Kekaha Landfill has had no reportable spills in the previous 10 years (A. Fraley, DPW, personal communication, May 5, 2026).

3.11.7 Landfill Fires

Heat generated by rapid waste decomposition can ignite subsurface fires when oxygen is present. Subsurface fires may start when smoldering material is buried at the working face or when excess oxygen intrudes into the waste mass. Kekaha Landfill minimizes the risk of subsurface ignition through careful incoming-waste monitoring and by daily compaction and placement of cover on the active disposal area to reduce air space and limit oxygen intrusion.

If a subsurface fire is detected, Kekaha Landfill implements the following response methods (Geosyntec 2023d):

- Cutting off the oxygen supply by smothering the fire with fine-grained soil and/or the use of plastic membranes; or
- Physically extinguishing the fire by excavating down to the fire, removing and putting out burning material, confirming that the burning material is extinguished, and placing waste back into the excavation area.

Fire extinguishers are available in all buildings and on-site vehicles for small fires. For larger incidents, the Kekaha Landfill *Emergency Action Plan* establishes response procedures, including building evacuation to a designated assembly area and notification of the local fire department by calling 911 (Geosyntec 2023d).

3.11.8 Injury and Illness

Kekaha Landfill personnel may be exposed to occupational hazards including heavy lifting, slips, trips and falls, heat stress, and biological risks (e.g., bites, stings, and allergens). To minimize the frequency and severity of workplace injuries and to comply with applicable health and safety laws, Kekaha Landfill has implemented a comprehensive *Injury and Illness Prevention Program* (Geosyntec 2023c).

The program includes policies and procedures to:

- Eliminate physical hazards where feasible.
- Identify, assess, and control hazards that cannot be eliminated.
- Train employees in safe work practices.
- Conduct monthly site safety inspections.
- Enforce safety procedures and require timely reporting of injuries or illnesses.

Key BMPs include, but are not limited to:

- Keeping work areas clean and free of slip and trip hazards.

- Ensuring adequate lighting and ventilation.
- Maintaining first aid and emergency wash stations in good working order.
- Requiring appropriate personal protective equipment.
- Implementing safe procedures for use of tools and equipment.
- Following established emergency response procedures.

3.12 Public Infrastructure and Services

Public infrastructure and services include electric service, telecommunications, water and wastewater systems, stormwater drainage, solid waste disposal, emergency responders, educational facilities, and recreational facilities. The ROI for public infrastructure and services is the Project Area and the surrounding area serviced by utility providers on Kaua‘i.

3.12.1 Electric Service

Electricity for on-site use is supplied by Kaua‘i Island Utility Cooperative. A 105-kilowatt, diesel-powered, emergency standby generator automatically operates when normal power is interrupted.

3.12.2 Telecommunications

Telephone service to Kekaha Landfill is provided by Hawaiian telecom via non-fiber optic telephone landlines. Internet service is provided via fiber optic cable.

3.12.3 Water and Wastewater

Potable water supplied to the office, scale house, and maintenance shop is obtained from the County water system serving the town of Kekaha and then piped into the facility via a U.S. Navy owned water main that serves federal reserve lands. In accordance with the "Three Party Service Agreement" executed in 1994 between the County of Kaua`i Department of Public Works, PMRF, and County of Kaua`i Department of Water, water use from the existing landfill water meter is limited to 31,000 gallons per month (County of Kauai 1994).

Non-potable water for dust control and fire protection is obtained from a former Kekaha Sugar Company irrigation ditch and transported to the site using a 4,000-gallon capacity water truck.

Wastewater from the office and maintenance shop is handled by an on-site septic system. Other wastewater, such as wash down water from the maintenance shop, is treated via an oil and water separator system.

3.12.4 Stormwater

As described in Kekaha Landfill’s *Surface Water Management Plan* (Geosyntec 2025a) and Section 1.8.3 above, stormwater is managed at Kekaha Landfill by controlled grading on the surface of the landfill and

by maintaining an engineered system of drainage ditches, channels, pipes, and basins. The facility does not discharge water to off-site areas or into the municipal drainage system.

3.12.5 Solid Waste

Solid waste generated on site is either recycled or deposited in the active cell of the Phase II landfill. Kekaha Landfill maintains a *Litter Control Plan* (Geosyntec 2023e) and uses multiple strategies to confine litter to the working face, prevent on-site accumulation, and stop litter from leaving the premises. Measures include:

- Managing the landfill working face to minimize exposed refuse and reduce wind entrainment.
- Using portable litter fences and deploying staff to collect litter.
- Conducting daily inspections and litter cleanup around the site and along Kaumualiʻi Highway in front of the landfill.
- Cleaning adjacent properties as needed, subject to landowner permission.
- Implementing supplementary cleanup measures during high wind conditions.
- Routinely monitoring waste-hauling trucks for litter along haul routes and taking immediate corrective action if a vehicle is found to be contributing to litter.

These practices minimize windblown debris and help keep the landfill and surrounding areas clean and safe.

3.12.6 Police, Medical, and Fire Protection Service

The Kekaha Landfill *Emergency Action Plan* (Geosyntec 2023d) establishes BMPs to prevent and respond to fires, medical emergencies, spills and releases, and other security threats. In an emergency, site personnel would assess hazards, initiate evacuations, provide or arrange medical care, implement shutdown procedures as needed, notify adjacent property owners or tenants when appropriate, and coordinate with external emergency responders.

As described in Section 3.6, on-site resources available 24 hours a day to assist with firefighting include a 4,000-gallon water truck, a loader, and a bulldozer. Fire extinguishers are located in all buildings and site vehicles for small fires. Routine maintenance (inspection, servicing, and repair) of mechanical, electrical, and fuel systems is performed to reduce the likelihood of incidents, including fires.

Emergency services are available and adequate to meet the needs of the landfill.

The nearest fire station is the Waimea Fire Station located at 9835 Kaumualiʻi Highway, Waimea, Hawaiʻi 96796, approximately 5.3 miles southeast of Kekaha Landfill. The nearest police station is located at 4564 Ola Road, Waimea, Hawaiʻi 96796, approximately 5.3 miles southeast of Kekaha Landfill. Additional fire and police support is available from the Hanapēpē Fire Station and Kōloa Police Substation, located 11 miles and 19 miles southeast of Kekaha Landfill, respectively. The West Kauaʻi Medical Center,

formerly known as the Kaua‘i Veterans Memorial Hospital, is located at 4643 Waimea Canyon Drive, Waimea, Hawai‘i 96796, approximately 5 miles southeast of Kekaha Landfill. West Kaua‘i Medical Center is a Critical Access Hospital with 25 acute care beds and a distinct 20-bed long-term care wing, with 24-hour emergency services (HHSC 2026).

3.12.7 Educational Facilities

There are no education facilities within or in the immediate vicinity of Kekaha Landfill. The nearest education facilities are located approximately 2 miles southeast of Kekaha Landfill in the nearby town of Kekaha. The Kekaha Elementary School (8140 Kekaha Road, Kekaha, Hawai‘i 96752), St. Teresa Catholic School (8311 Kaumuali‘i Highway, Kekaha, Hawai‘i 96752), Kekaha Head Start (8563 Elepaio Road, Kekaha, Hawai‘i 96752), Ke Kula Ni‘ihau O Kekaha PCS (8135 Kekaha Road, Kekaha, Hawai‘i 96752) and Kula Aupuni Niihau A Kahelelani Aloha (KANAKA) Public Charter School (8315 Kekaha Road # K, Kekaha, Hawai‘i 96752) are located in Kekaha.

3.12.8 Recreational Facilities

There are no recreational facilities or uses within the Project Area. Recreational facilities in the vicinity of Kekaha Landfill include hiking trails, beaches, and historic sites. In the immediate vicinity of Kekaha Landfill are Kokole Point and the Kaua‘i Raceway Park. The nearby Barking Sands Beach Park and Kekaha Beach Park offer many recreational activities including swimming, surfing, fishing, diving, and boating. North of Kekaha Landfill, there are hiking trails within the Kekaha Game Management Area and Waimea Canyon State Park.

3.13 Transportation and Traffic

This section addresses public and privately owned transportation infrastructure, including highways and roadways, harbors, and airports. The ROI for transportation and traffic is the Project Area, access routes leading to the Project Area (e.g., Kaumuali‘i Highway), and the major harbor and airports servicing the Project Area (e.g., PMRF Barking Sands Airport, Līhu‘e International Airport, and Nāwiliwili Small Boat Harbor).

3.13.1 Roadways and Traffic

Kekaha Landfill is accessed via Kaumuali‘i Highway, which is owned and maintained by the HDOT Highways Division. The average annual daily traffic count[39] for Kaumuali‘i Highway near Kekaha Landfill is approximately 3,500 vehicles per day (HDOT 2024). Daily vehicle traffic to and from Kekaha Landfill includes 14 employee vehicles[40] and waste loads from 37 commercial vehicles and 114 non-commercial vehicles (A. Fraley, DPW, personal communication, May 5, 2026). Therefore, on average, landfill-related

[39] The annual average daily traffic number represents a typical traffic volume number for any day of the year on the segment of interest.

[40] The total number of landfill employees is 20, 14 or fewer people work at the landfill on any given day.

traffic accounts for approximately 5 percent of the traffic volume on Kaumualiʻi Highway in the vicinity of Kekaha Landfill. As described in Section 2.3.3, heavy vehicles delivering equipment and materials are expected to travel from Līhuʻe (Nāwiliwili Harbor) to the Project Area using Nāwiliwili Road and Kaumualiʻi Highway. The average annual daily traffic count for Nāwiliwili Road ranges from approximately 12,600 to 13,000 vehicles per day (HDOT 2024). In Līhuʻe, the average annual daily traffic count of Kaumualiʻi Highway is approximately 27,700 vehicles per day; traffic volume on Kaumualiʻi Highway decreases as the highway travels west (HDOT 2024).

3.13.2 Airports

The PMRF Barking Sands Airport is approximately 3 miles northwest of Kekaha Landfill. Due to the facility's proximity to the airport, the FAA and PMRF have evaluated Kekaha Landfill multiple times with no concerns noted (Tetra Tech 2024). Līhuʻe International Airport is a state-owned public-use airport located in Līhuʻe approximately 30 miles east of Kekaha Landfill (HDOT 2026).

As described in Section 1.3.2, above the FAA must be notified of any construction that may affect the National Airspace System under provisions of 14 CFR 77. A "Determination of No Hazard" was obtained for the Proposed Action.[41]

3.13.3 Harbors

Nāwiliwili Small Boat Harbor is a state-owned harbor located in Līhuʻe, approximately 30 miles east of Kekaha Landfill and is the main harbor on Kauaʻi (DLNR DOBOR 2026).

3.14 Land Use

State and county plans, policies, and zoning regulations determine the type and extent of land uses allowable in specific areas. Land use impacts typically result from actions that negatively affect or displace an existing use or affect the suitability of an area for its current, designated, or formally planned use. The land use and ownership ROI is the Kekaha Landfill facility and adjacent properties.

3.14.1 Land Ownership

Kekaha Landfill is located on land owned by the State of Hawaiʻi and administered by the DLNR. Executive Order 1558 (signed April 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996) place the control and management of the lands underlying Kekaha Landfill with the County of Kauaʻi.

[41] Aeronautical Study Number 2024-AWP-10977-OE, 2024-AWP-10978-OE, 2024-AWP-10979-OE, 2024-AWP-10980-OE, 2024-AWP-10982-OE, 2024-AWP-10983-OE, 2024-AWP-10985-OE, 2024-AWP-10986-OE, 2024-AWP-10987-OE, 2024-AWP-10988-OE.

3.14.2 Existing Land Uses

Kekaha Landfill site has been used as a landfill since the early 1950s. Kekaha Landfill is located on the coastal Mānā Plain historically used for agriculture, portions of which are still in active agricultural use. The primary land use in the vicinity of Kekaha Landfill is agricultural and agriculture-related commercial activity occurring to the north, northwest, and east of the Project Area. Other land uses in the vicinity of Kekaha Landfill include federal reserve lands (PMRF and U.S. Lighthouse Service) to the south and west, land leased by the Hawai'i National Guard to the south, and a drag racing park (Kaua'i Raceway Park) to the southeast. The landownership of the surrounding area is shown in Figure 1-5 (see also Appendix B, Photo Log).

3.14.3 State and County Land Use Designations

The State of Hawai'i Land Use Law (HRS Chapter 205) established the State LUC and authorizes the LUC to designate all lands across the state into one of four land use districts – urban, rural, agricultural, or conservation – based on the general activities and uses of the land. As shown in Figure 1-3, the portion of the Kekaha Landfill located on TMK (4) 1-2-002:009 (i.e., the majority of Phase I and a small portion of Phase II, Cell 2) is within the state conservation land use district. The portion of the Kekaha Landfill located on TMK (4) 1-2-002:001(por.) (i.e., the majority of Phase II and a small portion of Phase I) is within the state agriculture land use district.

HRS Chapter 205-5 specifies that conservation districts shall be governed by DLNR pursuant to HRS Chapter 183C. Based on the implementing rules set forth in HAR Chapter 13-5, the conservation district is classified into five subzones: protective, limited, resource, general, and special. The portion of the Kekaha Landfill that is within the state conservation land use district is within the limited subzone. The objective of this subzone is to limit uses where natural conditions suggest constraints on human activities. Under HAR § 13-5-22, P-6 - Public Purpose Uses are not for profit land uses undertaken in support of a public service by an agency of the county. P-6 - Public Purpose Uses are permitted within the state conservation district (limited subzone) with issuance of a CDUP. As described in Table 1-1, BLNR issued CDUP KA-3625 in August 2012 to permit the expansion of the landfill area into Cells 1, 2, and 3 within the conservation district. The permit was subsequently modified in April 2014, May 2016, and December 2024 to extend construction completion deadline to August 24, 2031. CDUP KA-3625 also limits the maximum landfill elevation within the state conservation district to 85 ft amsl.

Land uses within the state agricultural land use district are subject to the requirements of HRS Chapter 205. Permissible uses within the state agricultural land use district are listed in HRS § 205-4.5. Landfills and solid waste management operations at landfills are not listed in this section; however, pursuant to HRS § 205-6, the Kaua'i County Planning Commission and LUC[42] may permit certain unusual and reasonable uses, other than those for which the district is classified, through the issuance of a Special Use Permit (SUP). As described in Table 1-1, the Kaua'i County Planning Commission issued SUP SP-93-9

[42] Per HRS § 205-6(d), special permits for land the area of which is greater than 15 acres shall be subject to approval by the LUC.

in July 1993 to allow 63.18 acres of land within the state agricultural district to be used for landfill purposes (for Kekaha Landfill Phase II). Since the area is over 15 acres, its SUP was also approved by the LUC (Petition Docket No. SP93-384).

As shown in Figure 1-4, the Project Area [TMK (4) 1-2-002:009 and TMK (4) 1-2-002:001(por.)] is also located within the Kaua‘i County agriculture district and is subject to the requirements of the Kaua‘i Comprehensive Zoning Ordinance (Kaua‘i County Code Chapter 8). Pursuant to HRS §205-5, zoning within the state conservation land use district is governed by DLNR rather than the county in which the land use is located. Therefore, the portion of Kekaha Landfill located in the state conservation district (i.e., Phase I and a small portion of Phase II, Cell 2) is governed by DLNR; county zoning regulations do not apply. As described in Table 1-1, the Kaua‘i County Planning Commission issued Use Permit U-93-56 and Class IV Zoning Permit Z-IV-93-64 in May 1993 to allow for the construction and operation of the Phase II landfill within the county agriculture district (and outside the state conservation district).

As shown in Figure 1-4, the portion of the Kekaha Landfill located on TMK (4) 1-2-002:009 is also within the SMA. Land uses within the SMA are regulated under HRS Chapter 205A and the SMA Rules and Regulations of the County of Kaua‘i (SMA Rules). Per the SMA Rules, any use, activity, or operation proposed within the SMA defined as a “development” requires an SMA permit. The Kaua‘i Planning Commission issued SMA Use Permit SMA(U)2012-4 in July 2012 for the expansion of Phase II into Cells 2 and 3 within the SMA.

The existing Kekaha Landfill operates in compliance with CDUP KA-3625, SUP SP-93-9, Use Permit U-93-56, Class IV Zoning Permit Z-IV-93-64, and SMA Use Permit SMA(U)2012-4.

3.15 Socioeconomic Resources

The existing socioeconomic resources in the affected environment include a description of the population and economic conditions of the effected ROI. Population data include the number of residents in the area, recent changes in population growth, and demographics. Data on employment, labor force, unemployment trends, income, and industrial earnings describe the economic health of a region. The ROI for population and demographic is the Kekaha-Waimea Census County Division (CCD), within which Kekaha Landfill is situated, and represents the population residing in the vicinity of the Proposed Action. Data for the State of Hawai‘i and Kaua‘i County is provided for comparison, as appropriate. The ROI for direct, indirect, and induced economic benefits of Kekaha Landfill is the Island of Kaua‘i.

Data used in this analysis comes from the 2020 to 2024 American Community Survey (ACS; U.S. Census Bureau 2025) and the State of Hawai‘i Department of Business, Economic Development and Tourism (DBEDT) population and economic projections for the State of Hawai‘i to 2050 (DBEDT 2024).

3.15.1 Population and Demographics

Table 3-12 summarizes select demographics characteristics of the State of Hawai‘i, Kaua‘i County, and Kekaha-Waimea CCD including population, ethnicity, and age. The State of Hawai‘i had a total estimated

population of 1.45 million in 2024, with the County of Kaua‘i accounting for only 5 percent of the total. From 2010 to 2024, the state experienced an estimated net gain of almost 86,000 residents, with much of this increase in Kaua‘i (10 percent increase or approximately 6,800-person net increase) (U.S. Census Bureau 2025). The estimated population of the Kekaha-Waimea CCD is 5,649 people, which comprises approximately 8 percent of the population of Kaua‘i County (U.S. Census Bureau 2025). The population within the Kekaha-Waimea CCD relative to the State and Kaua‘i County population demographics consists of a larger percent of Native Hawaiian and Other Pacific Islander population and a smaller percent of White population. The Kekaha-Waimea CCD also has a larger percent of young population (19 years and under) compared to the State and Kaua‘i County.

Table 3-12. Demographic Characteristics, 2024 ACS 5-Year Estimates

Characteristic	State of Hawai‘i	Kaua‘i County	Kekaha-Waimea CCD
Population	1,445,235	73,731	5,649
Race alone or in combination with one or more other races			
White	620,912 (43 percent)	37,694 (51.1 percent)	2,457 (43.5 percent)
Black or African American	53,836 (3.7 percent)	1,218 (1.7 percent)	4 (0.1 percent)
American Indian and Alaska Native	40,220 (2.8 percent)	2,816 (3.8 percent)	208 (3.7 percent)
Asian	823,999 (57 percent)	38,256 (51.9 percent)	2,953 (52.3 percent)
Native Hawaiian and Other Pacific Islander	391,656 (27.1 percent)	20,222 (27.4 percent)	2,815 (49.8 percent)
Some Other Race	74,389 (5.1 percent)	3,228 (4.4 percent)	111 (2 percent)
Age, percent of total population			
Under 5 years old	5.5 percent	5.4 percent	5.2 percent
5 to 19 years	17.2 percent	17.7 percent	22.8 percent
20 to 65 years	56.8 percent	54.5 percent	52.1 percent
65 years and older	20.5 percent	22.4 percent	19.9 percent

CCD = Census County Division

Source: U.S. Census Bureau 2025

The resident population of Hawai‘i, is projected to increase from 1.45 million in 2020 to 1.56 million in 2050, an average growth rate of 0.24 percent per year over the projection period (DBEDT 2024). Comparatively, the resident population of Kaua‘i County is projected to grow to 85,180 by 2050 at an annual rate of 0.5 percent (DBEDT 2024).

3.15.2 Economic Conditions

Table 3-13 summarizes select employment and income characteristics of the State of Hawai‘i, Kaua‘i County, and Kekaha-Waimea CCD. Kekaha-Waimea CCD has a slightly smaller percentage of their population in the labor force but a slightly lower unemployment rates compared to the State and Kaua‘i County. However, the average per capita income within the Kekaha-Waimea CCD is $35,158, which equates to 76 percent of the State and 80 percent of the County average per capita income (U.S. Census Bureau 2025). The percentage of families and individuals below the poverty level is also higher in the Kekaha-Waimea CCD compared to the State and County of Kaua‘i. The top three occupation types in all

three geographic areas were management, business, science, and art occupations; service occupations; and sales and other occupations (U.S. Census Bureau 2025).

Table 3-13. Selected Economic Characteristics, 2024 ACS 5-Year Estimates

Characteristic	State of Hawai'i	Kaua'i County	Kekaha-Waimea CCD
Labor Force	750,762 (63.7 percent)	38,421 (64.3 percent)	2,688 (63 percent)
Unemployment Rate	4.9 percent	3.8 percent	2.8 percent
Average Per Capita Income	$46,005 (103 percent of the U.S. average of $44,673)	$43,836 (95 percent of the State average)	$35,158 (80 percent of the County average)
Poverty Level			
Percent of families below poverty level	6.8 percent	7.1 percent	15.1 percent
Percent of individuals below poverty level	10 percent	9.1 percent	15.5 percent
Occupation, percent of civilian employed population			
Management, business, science, and art occupations	39.3 percent	32.5 percent	30.6 percent
Service occupations	21.9 percent	28.1 percent	25.7 percent
Sales and other occupations	21.2 percent	21.2 percent	17.5 percent
Natural resources, construction, and maintenance occupations	8.8 percent	9.5 percent	14.5 percent
Production, transportation, and material moving occupations	8.8 percent	8.7 percent	11.7 percent

CCD = Census County Division

Source: U.S. Census Bureau 2025

Statewide, the number of jobs is projected to increase by 15 percent (126,000 jobs) from 2022 to 2050, with approximately 7 percent of this increase (8,700 jobs) expected to take place in Kaua'i County (DBEDT 2024). Jobs are expected to grow at an average annual rate of 0.5 percent per year statewide and 0.6 percent per year in Kaua'i County (DBEDT 2024). The health care sector is projected to have the largest job growth over the projection period, followed by the professional services sector, with technology-based innovation anticipated to be an important driver of future economic growth (DBEDT 2024).

3.15.3 Economic Contribution of Kekaha Landfill

Kekaha Landfill has direct, indirect, and induced economic benefits to the Kaua'i economy. Direct effects represent actual and estimated employee compensation and other expenditures of Kekaha Landfill as well as the economic value of services from Kekaha Landfill operations. Kekaha Landfill also provides direct benefits to community of Kekaha through the host community benefits fund (see Section 2.5). Kekaha Landfill has provided employment opportunities in the region since 1953. In 2026, Kekaha Landfill employed 20 full-time employees and provided approximately $1.4 million in wages, plus a fringe benefit rate of over 80%.

Kekaha Landfill also had indirect economic effects from purchasing goods and services from other local industries in the Kaua‘i County economy, including equipment, professional and technical services, and supplies. Induced effects reflect changes in local spending that were generated from income changes in directly and indirectly affected industry sectors. As the only permitted MSW landfill for the island of Kaua‘i, Kekaha Landfill has induced impacts on all major industries of the Kaua‘i economy, including, but not limited to, construction, tourism, service and retail, and agriculture.

3.15.4 Host Community Benefits

As noted above, the Kekaha Landfill's host community (Kekaha-Waimea CCD) has a larger percent of Native Hawaiian and Other Pacific Islander in its demographic characteristics than the statewide or county wide population. The Kekaha host community also has a slightly lower per capita average income than the state and county wide average. In recognition of the disproportionate impacts of hosting the island's only landfill on the Kekaha community, the Kekaha Host Community Benefit Fund was founded in 2008 as "a place-based reinvestment model, transforming environmental burden into long-term social, economic, and cultural benefit" (Kekaha HCB 2026). Projects funded by the Kekaha Host Community Benefit fund directly benefit the Kekaha Community and include community improvements, economic revitalization, and various environmental sustainability, educational, cultural, art, and health and wellness programs (see Section 2.5).

4.0 Alternatives to the Proposed Action

HAR § 11-200.1-24(h) requires a Draft EIS to "describe in a separate and distinct section discussion of the alternative of no action as well as reasonable alternatives that could attain the objectives of the action." Although "reasonable alternative" is not defined in HAR § 11-200.1, the State of Hawai‘i Environmental Council considered 40 CFR 1502.14(a) when they developed this language (see OEQC 2019, page 57). Under 40 CFR 1508.1 "reasonable alternatives means a reasonable range of alternatives that are technically and economically feasible, and meet the purpose and need for the proposed action." The purpose of the Proposed Action is to prolong the life of the Kekaha Landfill prior to exhausting the island's only permitted landfill airspace and to provide safe disposal capacity of municipal solid waste in Kaua‘i County while a new landfill can be sited, permitted, designed, and constructed outside of Kekaha. The need arises because the currently permitted Kekaha Landfill is projected to reach capacity in 2030.

HAR § 11-200.1-24(h) provides guidance on what reasonable action alternatives should be considered in an EIS:

> HAR § 11-200.1-24(h): "*Particular attention shall be given to alternatives that might enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, and risks of the action. Examples of alternatives include:*

(1) Alternatives requiring actions of a significantly different nature that would provide similar benefits with different environmental impacts;

(2) Alternatives related to different designs or details of the proposed action that would present different environmental impacts; and

(3) Alternative locations for the proposed action. In each case, the analysis shall be sufficiently detailed to allow the comparative evaluation of the environmental benefits, costs, and risks of the proposed action and each reasonable alternative."

Therefore, in the context of HAR § 11-200.1-24(h), a "*reasonable alternative"* must meet the purpose and need of the Proposed Action and be technically and economically feasible, but also that particular attention shall be given to alternatives that are significantly different in nature from the proposed action, result in different environmental impacts from the Proposed Action, and/or involved alternative locations from the Proposed Action and would allow for comparative evaluation of environmental benefits, costs, and risks between the alternative and the Proposed Action.

In addition to the Proposed Action, the no action alternative will be analyzed in the EIS. The following possible action alternatives were considered by the Proposing Agency but were evaluated as not meeting the Project purpose and need.

4.1 No Action Alternative

HRS Chapter 343 and HAR § 11-200.1-24(h) requires consideration of the No Action Alternative as a baseline against which other potential actions can be measured.

Under the No Action Alternative, Cell 3 would not be vertically expanded, and Kekaha Landfill would reach its permitted capacity and close in 2030 (i.e. the anticipated year current Kekaha Landfill capacity will be reached). The Island of Kaua'i would then lack a permitted facility for the safe disposal of MSW, and the Project's purpose—to provide for the proper disposal of MSW that cannot be reused, recycled, or otherwise recovered while a replacement facility is developed—would not be met. The landfill currently manages approximately 90,000 tons of MSW per year. Without a permitted MSW landfill waste would accumulate quickly, and there would be an urgent need for alternative MSW disposal methods. Without available and affordable waste disposal options, widespread illegal dumping may occur within Kaua'i County and could cause significant environmental contamination of soil, surface water, groundwater, and marine areas and threaten human health and wildlife. Uncontrolled dumping also raises the risk of fires that degrade air quality and could increase potential for vector problems (e.g. rats, mice, flies, and other pests) that may endanger health, safety, and property.

Failing to address the pending closure of Kekaha Landfill would leave the island without a viable MSW disposal solution on Kaua'i, producing serious public health, social, and economic impacts and substantially diminishing quality of life. The County's ability to maintain public health and safety and to prevent the spread of disease would be severely compromised.

4.2 Alternatives Considered but not Carried Forward

Other alternatives considered by the County but dismissed from further evaluation in the Draft EIS are summarized below.

4.2.1 Alternative Designs

Cell 3 Maximum Elevation of 208 ft amsl

This alternative would build Cell 3 to a maximum elevation of 208 ft amsl, which is the maximum achievable capacity under current engineering constraints. Under this design alternative, the maximum elevation within the State Conservation District would be approximately 200 ft amsl, which exceeds the 85 ft amsl limit established by the existing CDUP No. KA-3625. OCCL confirmed that this alternative is not allowable under the existing CDUP and that a new CDUP could not be obtained under the current state law (DLNR OCCL Corr KA-25-194 dated July 24, 2025). The County could pursue a District Boundary Amendment to remove the Project Area from the State Conservation District and create a potential permitting pathway. However, a District Boundary Amendment is discretionary and lengthy, adding about two years to the permitting timeline. Because this alternative would not provide permitted landfill airspace before the existing permitted capacity is exhausted, it does not meet the Project purpose and need.

Phase I Mining

Mining the unlined Phase I landfill to reconstruct a modern lined landfill within the same footprint is technically feasible, but extensive evaluations found it would be a long, complex process that would not generate airspace in time to meet Project purpose and need. Mining would require handling all Phase I waste, large staging and processing areas, significant soil import or groundwater-level excavation, and would increase the risk of environmental releases. It would also consume much of the remaining Phase II airspace. Additionally, CDUP KA-3625 does not authorize mining of Phase I so the County would need to seek a District Boundary Amendment to remove the Phase I area from the Conservation District. The District Boundary Amendment process would add to the overall timeline of the mining alternative. This alternative would not provide permitted landfill airspace before the existing permitted capacity is exhausted, it does not meet the Project purpose and need.

4.2.2 Alterative Locations

Siting and Constructing a New Landfill Facility

As described in Section 1.7, the County has long pursued siting and permitting a new MSW landfill elsewhere on the island and is currently planning a facility at Ma‘alo. However, permitting, design, and construction involve multiple steps and substantial time; the County expects a new landfill would not be operational for at least 10 years and could take considerably longer if significant regulatory, technical, or community issues arise. Because this alternative would not provide permitted landfill airspace before

existing capacity is exhausted, it does not satisfy the Project's purpose and need. The County will continue long-term planning to site a new landfill and will prepare a separate HRS Chapter 343 environmental review document prior to implementing any new site.

Siting and Constructing Distributed Waste Disposal Facilities Throughout the County

This alternative would distribute MSW disposal across the island at an ahupua'a, moku, or other community level. Any alternative involving one or multiple new landfill sites would require the same lengthy permitting, design, and construction steps described previously. The County estimates that siting and bringing a new single landfill, or multiple new landfills, into operation would take over 10 years. Because this approach would not provide permitted landfill airspace before the existing capacity is exhausted, it was dismissed from further consideration.

In addition, siting a new landfill in each ahupua'a or moku is constrained by federal and state location restrictions. Relevant statutory and regulatory constraints include 40 CFR 258 (Location Restrictions), HAR §11-58.1-13 (MSW Landfills – Site Analysis), Section 183C-4 (Conservation District, Zoning), and HRS Section 342H-52 (Solid Waste Pollution, Prohibitions). As a result, landfill units cannot be sited in the following areas:

- Within 10,000 ft of a runway used by turbojet aircraft or 5,000 ft of a runway used by piston type aircraft;
- Within a 100-year FEMA floodplain;
- In or adjacent to wetlands (as defined by USFWS and applicable state rules);
- Within 200 ft of a fault that has shown Holocene displacement;
- In seismic impact zones or other known geologic hazard areas (unstable areas);
- Within tsunami hazard zones or floodways (per HAR §11-58.1-13(g)(1));
- Within the State Conservation District; and
- Within one-half mile of the nearest residential, school, or hospital property line.

Given these regulatory constraints, it may not be feasible to site a landfill in each ahupua'a or moku.

Additionally, the passage of Subtitle D regulations (40 CRF § 258) in 1993 established minimum standards for landfill design, operation, groundwater monitoring, closure and post-closure care. As a result, this made landfill operation more expensive and technically demanding, so many small local landfills closed or were replaced by fewer, larger regional landfills. Larger regional landfills can spread compliance costs across more waste, so they are often more economical than many small local sites. It would be financially infeasible to fund the infrastructure needed to be compliant with the requirements of Subtitle D with the small volumes of waste that would be generated in each ahupua'a or moku.

Off-island Disposal

MSW could be shipped from Kaua‘i to off-island landfills, such as H-POWER on O‘ahu, West Hawai‘i Sanitary Landfill on Hawai‘i island, or to a landfill facility in the continental U.S. Both H-POWER and the West Hawai‘i Sanitary Landfill have capacity by volume to accept waste from off-island sources, providing a possible technically feasible option for disposing of MSW from Kaua‘i (Jacobs 2021). Outside of the local waste export options inter-island, the next most feasible waste export destinations are located on the mainland’s west coast. There are a few large landfills on the west coast with projected closure dates outside of the long-term planning horizon of 30 years.

Despite the apparent availability of capacity at these facilities, exporting waste off-island would be complex logistically and substantially increase solid waste management costs to residents and businesses. Exporting approximately 90,000 tons of MSW annually would require major long-term shipping, container handling, transfer, and disposal infrastructure. Off-island disposal is also exorbitantly more expensive than on-island disposal, which would raise disposal fees and could incentivize illegal dumping across rural Kaua‘i. Reliance on an off-island receiving facility would also place the County’s waste management on facilities outside its control; acceptance could be interrupted by natural disasters, policy changes, contract disputes, or labor issues. Any disruption in shipping, processing capacity, labor availability, or funding could rapidly result in waste accumulation across the island due to the continuous generation of MSW.

Further, modifications to permits or other official variance or agreements will likely be needed before waste export can occur to either facility. For example, Honolulu's County’s charter does not allow off-island waste to be sent to H-POWER, and the permit for H-POWER does not allow the disposal of waste from other islands (Jacobs 2021). There are significant barriers that would need to be overcome to make this option a reality. It should also be noted that waste export to H-POWER would still require landfilling for the disposal of ash and bypass MSW and currently there is very little available landfill capacity on O‘ahu. State and federal restrictions also prohibit transshipment of certain waste types to the mainland (for example loads with >3 percent yard or agricultural waste, industrial waste, infectious waste, predominantly C&D loads, and hazardous waste) (Jacobs 2021).

Transshipment would also not eliminate the need for on-island landfill capacity. On-island capacity would also be necessary for disaster response (e.g., following events like Hurricane Iniki). Transshipment to an off-island receiving facility could offer some environmental benefit and could extend the life of the current landfill, but it is not a long-term solution and only delays the time when the County would eventually require additional on-island landfill capacity.

Off-island disposal does not meet the Project’s purpose and need of providing MSW disposal capacity on Kaua‘i prior to 2030.

4.2.3 Alternative Technologies

In 2023, the County initiated a *Study of Feasible Technologies for Long-Term Management of MSW on the Island of Kaua'i* (HDR 2023) to address the critical need to limit disposal capacity at the Kekaha Landfill. The objective of the study was to evaluate alternative MSW sorting and processing technologies and help determine which of those technologies (or combinations of technologies) could be integrated into the County's solid waste management system.

The feasibility study evaluated several waste processing and conversion technology classes:

- **Thermal**, which use high temperatures to convert the combustible materials in MSW feedstocks into a gas, liquid, and other solid by-products;
- **Biological**, which use bacteria in the process to consume the decomposable content of the waste feedstock;
- **Chemical**, which use physical chemistry processes to break down or transform various components of a processed waste into building blocks that can be used for chemical feedstock, transportation fuels, or thermal energy; and
- **Mechanical**, which use front-end processing equipment to sort, shred, and size waste into recyclable materials and fuels for use in thermal conversion technologies.

Several of the conversion technologies rely on a combination of two or more technology classes to be operated efficiently and economically as "turnkey" solutions to managing MSW.

The 2023 report identified several potentially feasible diversion and waste-to-energy technologies; however, the study concluded that these technologies are medium- to long-term strategies that would require substantial procurement, permitting, financing, infrastructure development, and operational integration before implementation. The technologies evaluated are not immediate replacements for existing disposal capacity and would not eliminate the continued need for landfill disposal for ash, residue, bypass waste, and emergency conditions. Therefore, they do not meet the purpose of the Proposed Action.

However, the County continues to pursue technologies that increase waste diversion and lessen the reliance on landfilling. The County is currently conducting a cost-competitive, two-stage Request for Proposal process for project developers to offer integrated solutions based, in part or in whole, on the technologies identified in the HDR (2023) feasibility study. The County has issued the first of a two-step procurement process to determine if there is an operator who can provide services. The solicitation is ongoing.

5.0 Coordination and Consultation

5.1 Agency Consultation and Community Outreach

The Project team also has begun consultation with State and County agencies with jurisdiction related to the Project. The list of parties consulted to date is summarized in Table 5-1. The County has also conducted public outreach to solicit feedback from the broader community. In addition, a dedicated webpage for the Cell 3 Vertical Expansion Project was published on the County's website (www.kauai.gov/Cell-3Expansion), which includes a field and contact information for community feedback

Community outreach and consultation efforts are anticipated to continue through the Project development and approval process. Key issues and concerns identified through community outreach and agency coordination for the Proposed Action will be integrate into the EIS.

Table 5-1. Summary of Agency Consultation and Community Outreach

Entity	Dates (Type of Correspondence)	Description
Community Outreach		
Kekaha Community Meeting	May 27, 2026 (Meeting)	Informational public meeting to discuss Project and request input.
Agency Consultation		
Federal Aviation Administration (FAA)	February 26, 2026 (Letter)	The Federal Aviation Administration must be notified of any construction that may affect the National Airspace System under provisions of 14 Code of Federal Regulations (CFR) 77. A "Determination of No Hazard" was obtained for the Proposed Action.
State of Hawai'i, Department of Health (HDOH), Solid and Hazardous Waste Branch	May 30, 2025 (Meeting)	Virtual meeting. Provided an overview of the Cell 3 expansion and requested input on Tsunami mitigation.
	August 5, 2025 (Site Visit)	HDOH site visit of Kekaha Landfill.
	August 7, 2025 (Email)	Email from the County to HDOH confirming that HDOH is in the process of amending the Solid Waste Administrative Rules and that, under the new rules, the Cell 3 expansion would be allowable within the Tsunami inundation zone, provided that there is a design to mitigate tsunami impacts.
State of Hawai'i, Department of Land and Natural Resources, Office of Conservation and Coastal Lands	April 23, 2025 (Meeting)	Virtual meeting. Provided an overview of the Cell 3 expansion, Kekaha Landfill's existing Conservation District Use Permit (CDUP), and requested guidance on applicable conservation district regulatory requirements for the Proposed Action.
	May 15, 2025 (Letter)	Letter from Tetra Tech to OCCL Director Cain requesting guidance regarding conservation district regulatory requirements for the Cell 3 vertical expansion.
	May 20, 2025 (Email)	Email from OCCL Director Cain regarding the department's interpretation of non-conforming use.

Entity	Dates (Type of Correspondence)	Description
	May 24, 2025 (Letter)	Response Letter from OCCL Director Cain confirming that the Cell 3 expansion is permitted under the existing CDUP, as long as the height of the landfill does not exceed 85 ft amsl within the conservation district.
County of Kaua'i Department of Planning	August 18, 2025 (Meeting)	Virtual meeting. Provided an overview of the Cell 3 expansion, Kekaha Landfill's existing SUP, use permit, and Class IV zoning permit, and SMA use permit, and requested guidance on the land use permit requirements for the Proposed Action.
	September 5, 2025 (Letter)	Letter from County to Department of Planning Director Hull to request a determination regarding the County land use permit requirements for the Cell 3 vertical expansion.
	September 18, 2025 (Letter)	Response Letter from Department of Planning Director Hull confirming that the Cell 3 vertical expansion would require an amendment to an amendment to Kekaha Landfill's existing SUP, use permit, and Class IV zoning Permit and SMA use permit.

5.2 Cultural Impact Assessment Consultation

Additional stakeholder engagement efforts will include consultation specifically for the CIA and Ka Pa'akai Analysis. This process will include issuing a public notice on the Ka Wai Ola website and mailing a detailed consultation letter to local community organizations, advisory councils, government agencies, and knowledgeable individuals to obtain input regarding present and past land uses, cultural sites, traditional gathering practices, cultural association and any associated cultural concerns. Additional information regarding the CIA consultation process and feedback received will be included in the Draft EIS.

5.3 HRS Chapter 343 Scoping and Public Review Process

In addition to the general community outreach and agency coordination described above, additional consultation will be conducted specifically for the environmental review process in accordance with the requirements of HRS Chapter 343 and HAR § 11-200.1. The various agencies, elected officials, community organizations, and interested individuals contacted as part of the HRS Chapter 343 public review process are listed in Table 5-2.

5.3.1 EISPN Distribution

This EISPN was prepared in compliance with HRS Chapter 343 and HAR § 11-200.1 Subchapter 10 and submitted to the Environmental Review Program for publication in the June 8, 2026 edition of the *Environmental Notice*. Pursuant to HAR §11-200.l-23(c), publication of the EISPN in *The Environmental Notice* initiates a 30-day public comment period for parties to provide comments regarding potential

effects of the Proposed Action. Information collected during the scoping process will be incorporated into the Draft EIS to identify important issues and provide guidance. Copies of all comment letters received during the EISPN consultation period, and the County's responses to the substantive comment letters will also be provided in the Draft EIS.

Notice of the EISPN publication was distributed to over 70 stakeholders via the United States Postal Service and electronic mail, including community groups, government agencies, and elected officials (see Table 5-2). Information about the EISPN and scoping meeting were also published on the County's website: www.kauai.gov/Cell-3Expansion.

Table 5-2. Agencies, Organizations and Individuals Involved in HRS Chapter 343 Public Review Process

Stakeholder	EISPN		Draft EIS		Final EIS
	Notice of Availability	Comment Received	Notice of Availability	Comment Received	Notice of Availability
Federal Agencies					
Department of the Navy, Pacific Missile Range Facility	•				
Federal Aviation Administration	•				
National Marine Fisheries Service, Pacific Islands Regional Office	•				
National Resources Conservation Service, Pacific Islands Area Office	•				
U.S. Army Corps of Engineers, Honolulu District	•				
U.S. Environmental Protection Agency	•				
U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office	•				
U.S. Geological Survey, Pacific Islands Water Science Center	•				
State Agencies					
Department of Accounting and General Services (DAGS)	•				
Department of Agriculture	•				
Department of Business, Economic Development and Tourism (DBEDT)	•				
DBEDT Agriculture Development Corporation	•				
DBEDT Land Use Commission	•				
DBEDT Office of Planning and Sustainable Development	•				
DBEDT Research and Economic Analysis Division	•				
Department of Defense (DOD), Hawai'i Emergency Management Agency	•				
DOD Hawai'i National Guard	•				

Stakeholder	EISPN		Draft EIS		Final EIS
	Notice of Availability	Comment Received	Notice of Availability	Comment Received	Notice of Availability
Department of Education	●				
Department of Hawaiian Homelands	●				
Department of Health (HDOH) Environmental Health Administration	●				
HDOH Clear Air Branch	●				
HDOH Clean Water Branch	●				
HDOH Solid and Hazardous Waste Branch	●				
Department of Land and Natural Resources (DLNR), Commission on Water Resource Management	●				
DLNR Division of Aquatics	●				
DLNR Division of Forestry and Wildlife	●				
DLNR Division of Forestry and Wildlife – Kaua`i District	●				
DLNR Engineering Division	●				
DLNR Land Division – Kaua`i District	●				
DLNR Office of Conservation and Coastal Lands	●				
DLNR State Historic Preservation Division	●				
Department of Transportation (HDOT), Administration	●				
HDOT Airports Division	●				
HDOT Highways Division – Kaua`i District	●				
Office of Hawaiian Affairs	●				
County of Kaua`i Agencies					
Department of Parks and Recreation	●				
Department of Planning	●				
Department of Public Works	●				
Department of Water	●				
Fire Department	●				
Police Department	●				
Transportation Agency	●				
Utilities					
Kaua'i Island Utility Cooperative	●				
Elected Officials					
State Senator Ronald Kouchi	●				
State Representative Dee Morikawa	●				
Mayor Derek Kawakami	●				

Stakeholder	EISPN		Draft EIS		Final EIS
	Notice of Availability	Comment Received	Notice of Availability	Comment Received	Notice of Availability
Kaua'i County Council	●				
Organizations and Interested Individual					
Earthjustice	●				
E Ola Mau Na Leo O Kekaha	●				
Kaua'i Watershed Alliance	●				
Kekaha Agriculture Association	●				
Kekaha Elementary School	●				
Kekaha Hawaiian Homes Association	●				
Kekaha Landfill Host Community Benefits Citizen's Advisory Committee	●				
Kekaha Raceway Park	●				
St. Theresa Catholic School Kaua'i	●				
Sunrise Capital Inc (Adjacent Lessee)	●				
Syngenta Seeds, Inc. c/o Hartung Brothers, Inc. (Adjacent Lessee)	●				
West Kaua'i Business and Professional Association	●				
West Kaua'i Watershed Council	●				
Zero Waste Kaua'i	●				
Libraries					
Hawai'i State Library, Hawai'i Documents Center (Hard Copy)	●				
Hawai'i State Library, Waimea Public Library (Hard Copy)	●				
News Media					
Honolulu Star Advertiser	●				
The Garden Island	●				
Honolulu Civil Beat	●				
Hawai'i Public Radio	●				

5.3.2 Scoping Meeting and Comments

In accordance with HAR §11-200.1-23, a public scoping meeting will be held on Wednesday, June 24, 2026 during the 30-day EISPN comment period. The public is invited and encouraged to attend the scoping meeting to provide oral and written comments on the Project and the scope of the EIS. The public scoping meeting information is as follows:

Date/Time: June 24, 2026, 5:30 p.m. – 7:00 p.m.

Location: Kekaha Neighborhood Center, 8130 Elepaio Road, Kekaha

Publication of the EISPN in *The Environmental Notice* starts a 30-day public review and comment period, within which agencies, groups, and individuals have an opportunity to provide written comments on the potential impacts of the Project and the scope of the EIS. Information collected during the scoping process will be incorporated into the Draft EIS.

Comments must be postmarked on or before July 8, 2026 (30-day comment period). All comments received are a part of the public record. All personal identifying information (e.g., name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information. Please submit written comments to the party listed below.

Proposing Agency: County of Kauaʻi, Department of Public Works, Solid Waste Division
Attn: Allison Fraley
4444 Rice Street, Moʻikeha Building, Suite 275, Līhuʻe, HI, 96766
AFraley@kauai.gov

EIS Consultant: Tetra Tech
Attn: Kayla Yost
737 Bishop Street, Suite 2000, Honolulu, Hawaiʻi 96813
kayla.yost@tetratech.com

Please send comments with the subject line of "Kekaha Landfill Cell 3 Vertical Expansion EISPN". Transmission of comments may be via email, U.S. Postal Service mail, or through the Project website (www.kauai.gov/Cell-3Expansion). However, attachments to electronic comments will be accepted in Microsoft Word, Excel, or Adobe PDF file formats only.

FOR FURTHER INFORMATION CONTACT:

Allison Fraley
County of Kauaʻi, Department of Public Works, Solid Waste Division
4444 Rice Street, Moʻikeha Building, Suite 275, Līhuʻe, HI 96766
(808) 241-4837
AFraley@kauai.gov
Project Website: www.kauai.gov/Cell-3Expansion

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Figures

Kekaha Landfill Cell 3 Vertical Expansion

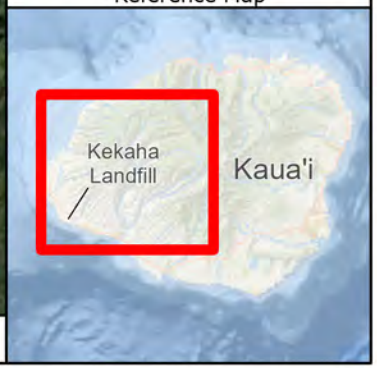
Figure 1-1
Regional Map

KAUA'I COUNTY, HI

- Project Area
- Moku
- Waimea Ahupua'a
- State Highway

TETRA TECH

Reference Map



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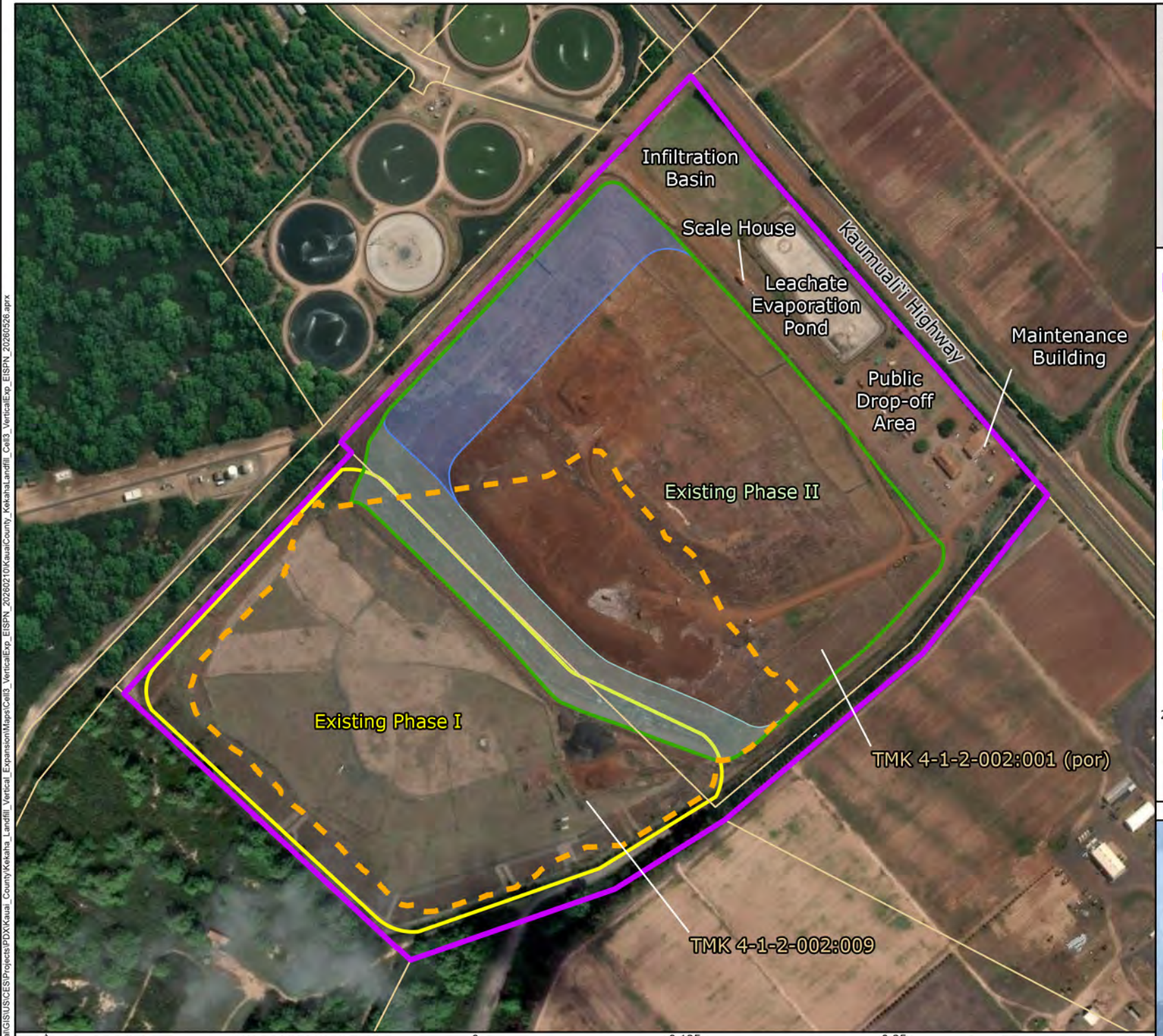

Kekaha Landfill Cell 3 Vertical Expansion

Figure 1-2
Project Area

KAUAʻI COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- TMK Parcel Boundary
- Phase I Operations
- Phase II Operations
- Cell 1 Operations
- Cell 2 Operations

TMK boundary data are approximate based on State of Hawaii Survey Division map C.S.F. No. 11589, Executive Order 1558 (signed April, 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996).

TETRA TECH

Reference Map

1:5,000

WGS 1984 UTM Zone 4N

0 0.125 0.25 Miles

NOT FOR CONSTRUCTION

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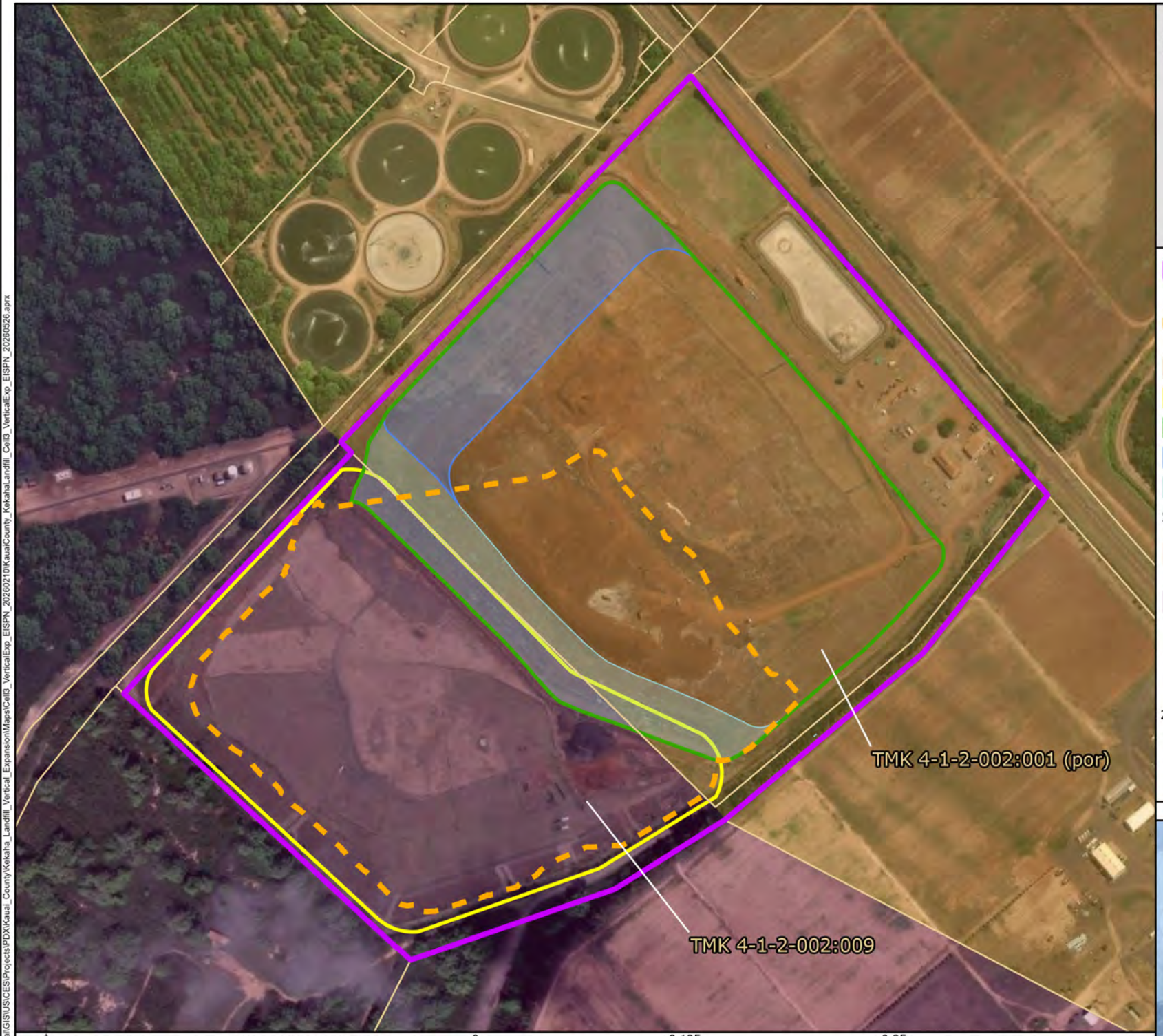

Kekaha Landfill Cell 3 Vertical Expansion

Figure 1-3 State Land Use Districts

KAUA'I COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- TMK Parcel Boundary
- Phase I Operations
- Phase II Operations
- Cell 1 Operations
- Cell 2 Operations

State Land Use

- Agricultural Land Use District
- Conservation Land Use District

TMK boundary data are approximate based on State of Hawaii Survey Division map C.S.F. No. 11589, Executive Order 1558 (signed April, 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996).

TETRA TECH

Reference Map

1:5,000

WGS 1984 UTM Zone 4N

0 0.125 0.25 Miles

NOT FOR CONSTRUCTION

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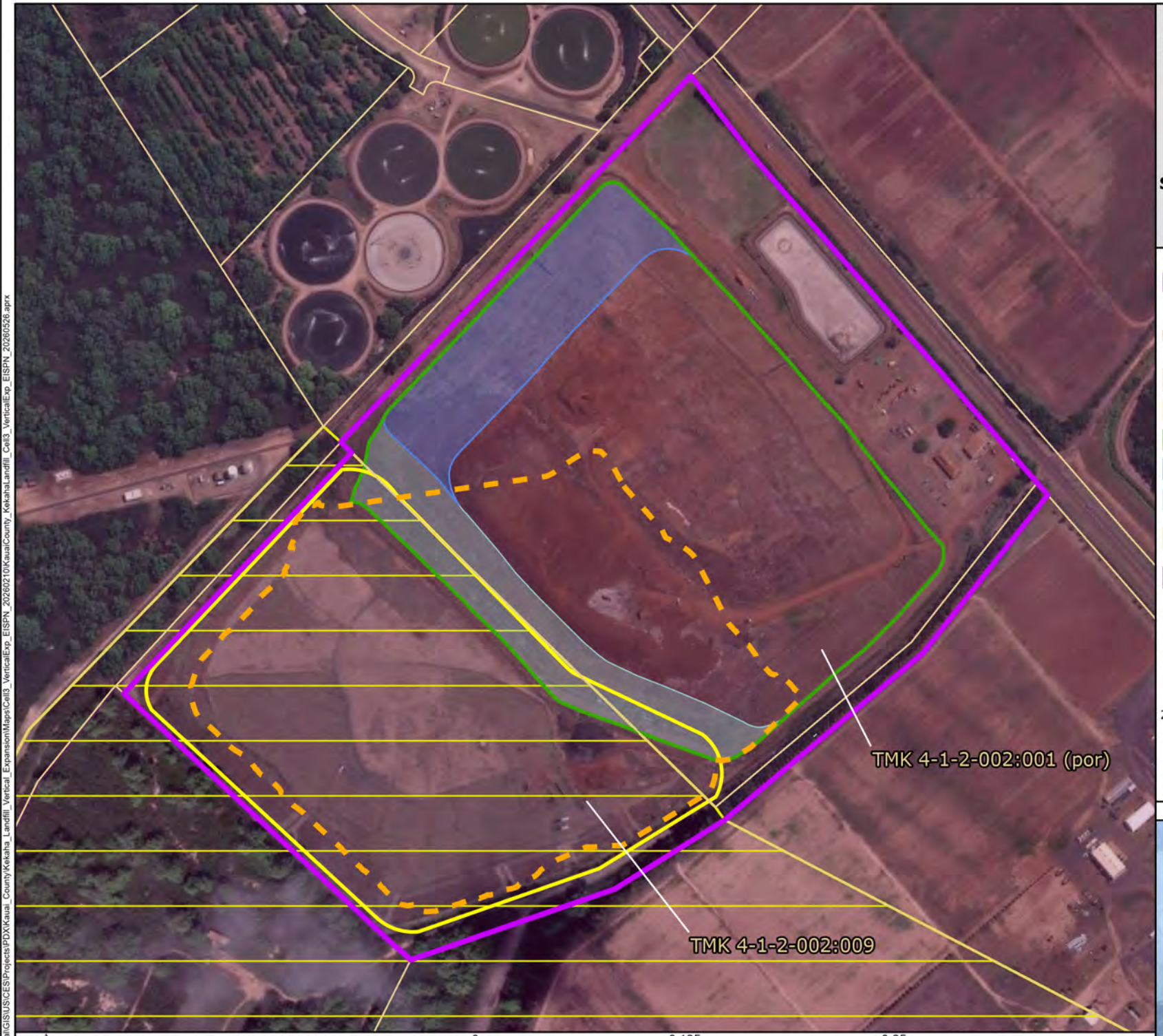

Kekaha Landfill Cell 3 Vertical Expansion

Figure 1-4
County Zoning and Special Management Area

KAUA'I COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- TMK Parcel Boundary
- Phase I Operations
- Phase II Operations
- Cell 1 Operations
- Cell 2 Operations
- Special Management Area
- County Agriculture Zone

TMK boundary data are approximate based on State of Hawaii Survey Division map C.S.F. No. 11589, Executive Order 1558 (signed April, 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996).

TETRA TECH

Reference Map

1:5,000

WGS 1984 UTM Zone 4N

0 0.125 0.25 Miles

NOT FOR CONSTRUCTION

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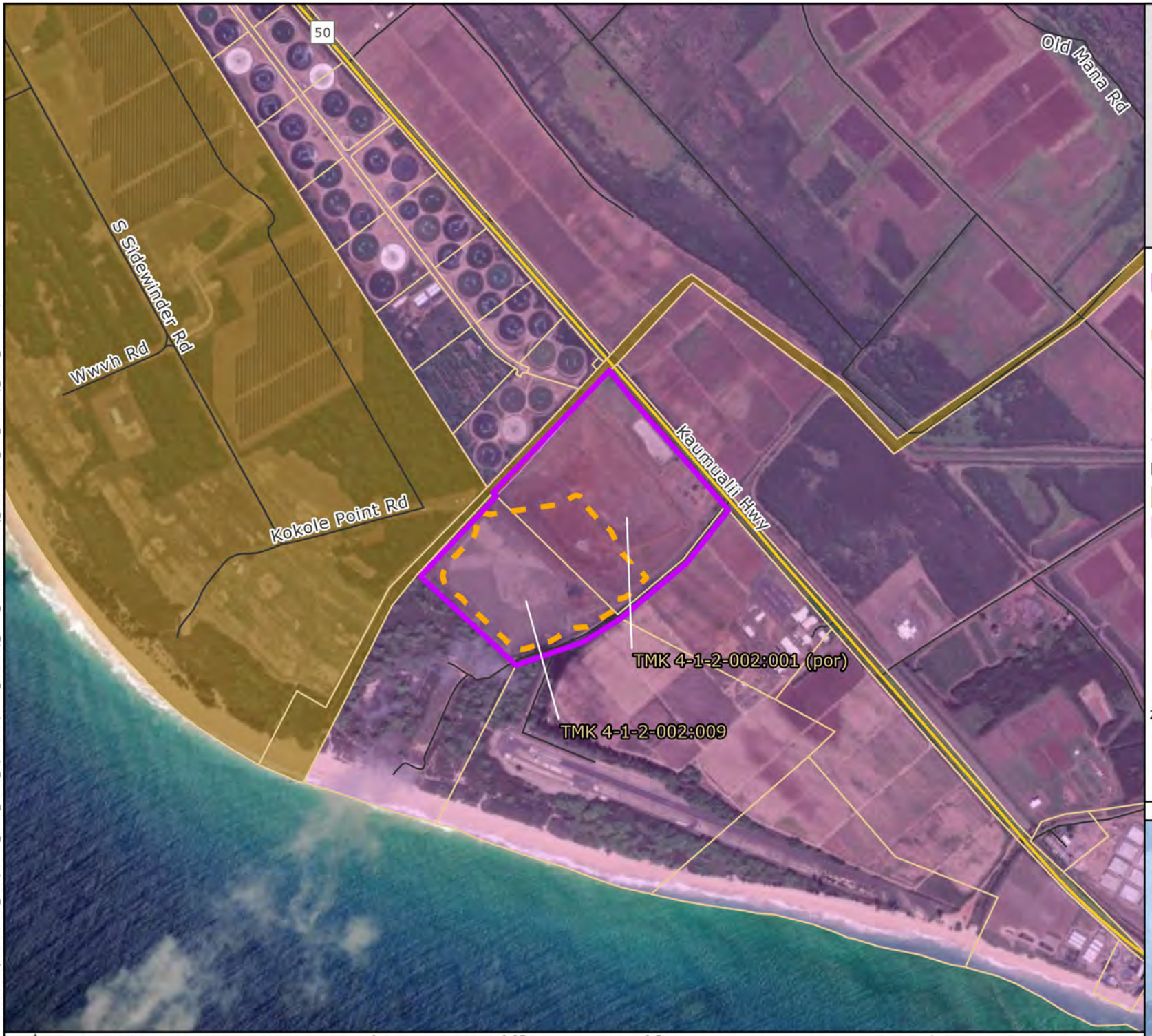

Kekaha Landfill Cell 3 Vertical Expansion

Figure 1-5
Land Ownership

KAUA'I COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- TMK Parcel Boundary
- State Highway
- Local Roads

Land Ownership

- Federal
- State

TMK boundary data are approximate based on State of Hawaii Survey Division map C.S.F. No. 11589, Executive Order 1558 (signed April, 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996).

TETRA TECH

Reference Map

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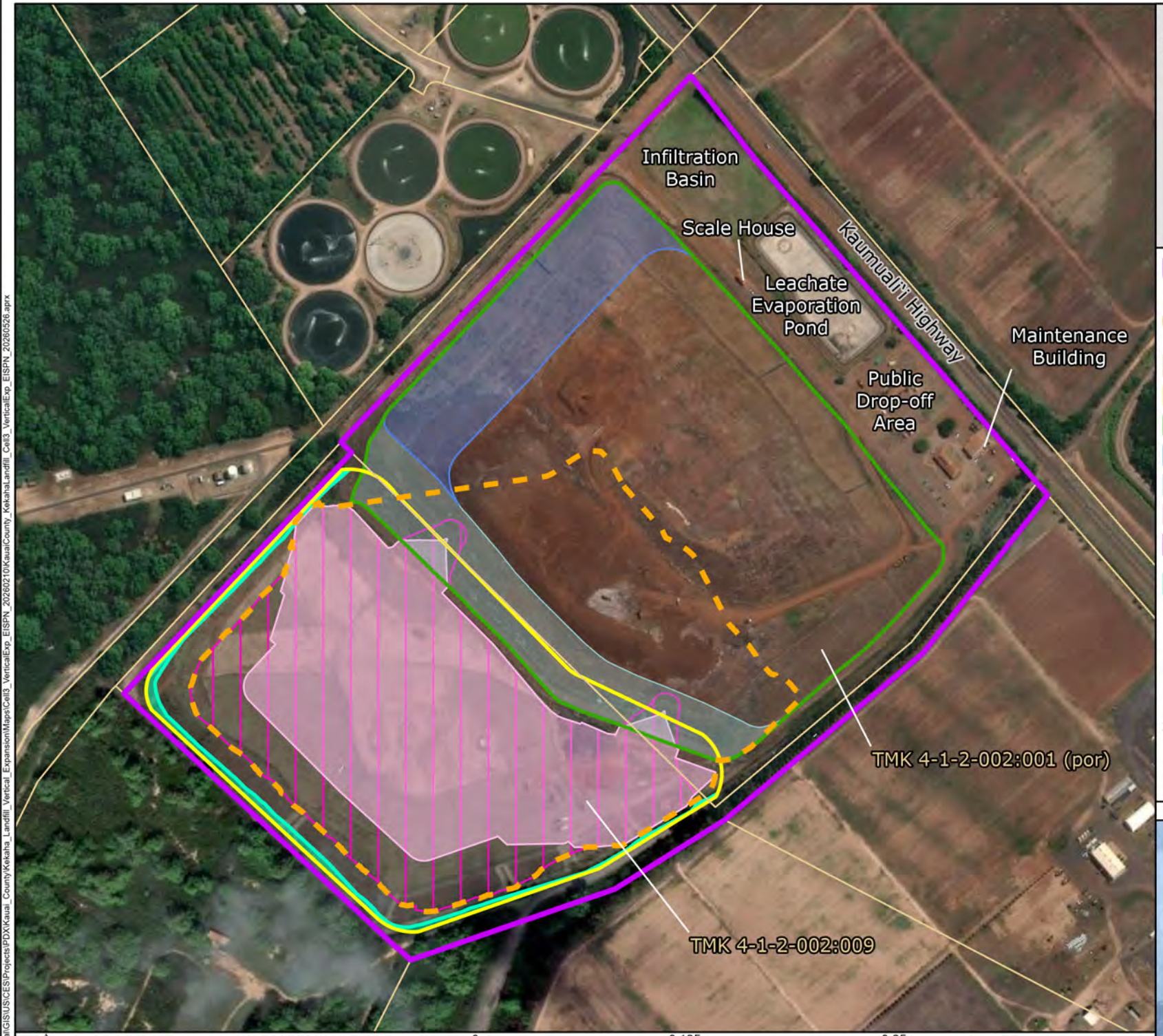

Kekaha Landfill Cell 3 Vertical Expansion

Figure 2-1
Project Components

KAUAʻI COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- TMK Parcel Boundary
- Phase I Operations
- Phase II Operations
- Cell 1 Operations
- Cell 2 Operations
- Phase I Overliner
- Phase I Relocation
- Tsunami Inundation Armoring

For illustrative purposes only; subject to final engineering design.

TMK boundary data are approximate based on State of Hawaii Survey Division map C.S.F. No. 11589, Executive Order 1558 (signed April, 27, 1953), Executive Order 2872 (signed October 6, 1977), and Executive Order 3695 (signed December 2, 1996).

TETRA TECH

Reference Map

1:5,000

WGS 1984 UTM Zone 4N

0 0.125 0.25 Miles

NOT FOR CONSTRUCTION

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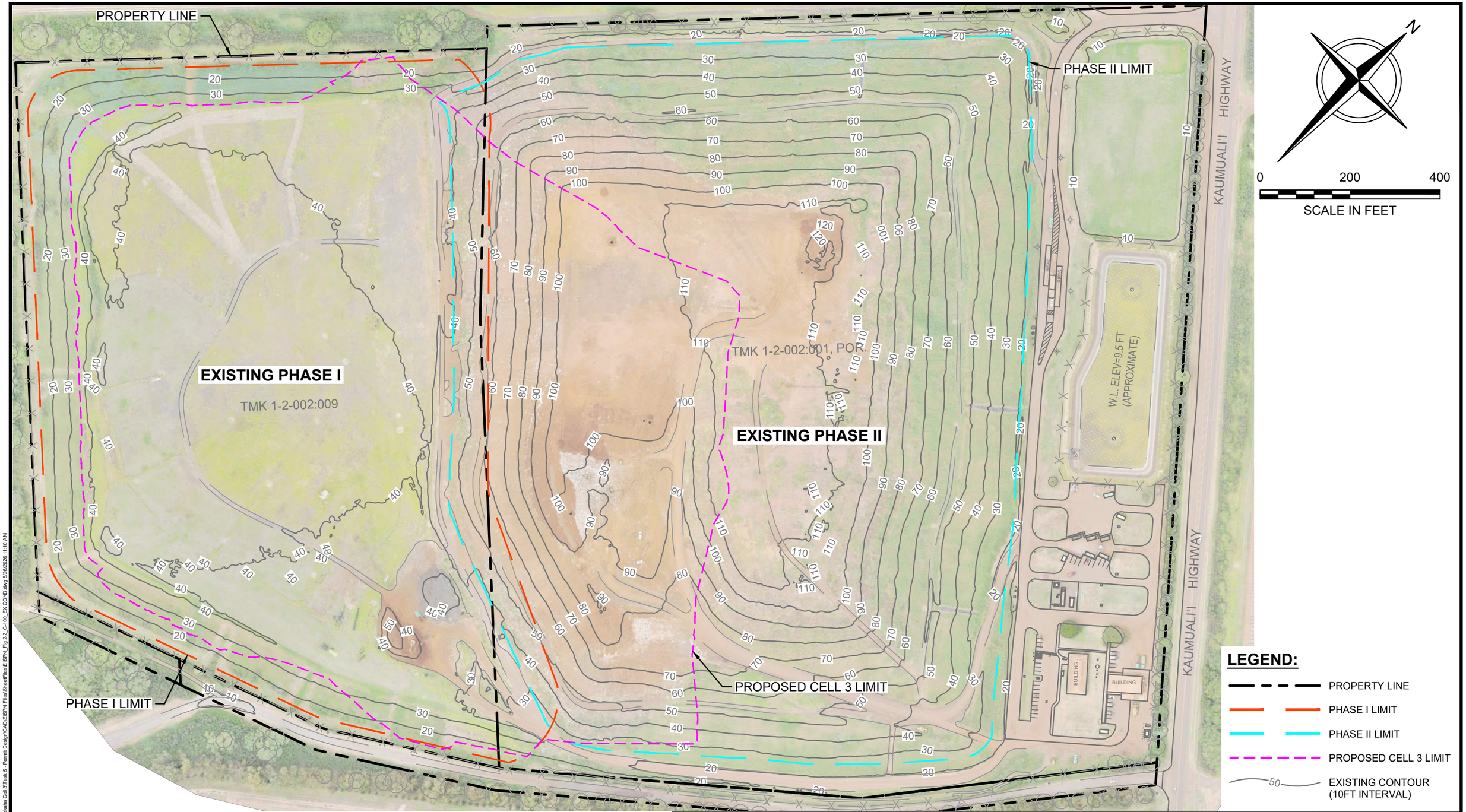

NOTES:

1. THIS DRAWING HAS BEEN MODIFIED FOR USE IN THE EISPN. DETAILED DESIGN DRAWINGS WILL BE SUBMITTED WITH THE SOLID WASTE MANAGEMENT PERMIT APPLICATION.
2. EXISTING TOPOGRAPHIC CONTOURS BASED ON DRONE SURVEY BY BOWERS + KUBOTA CONSULTING ON FEBRUARY 21, 2026.

TETRA TECH
21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

KEKAHA MUNICIPAL SOLID WASTE LANDFILL

CELL 3 VERTICAL EXPANSION
FIGURE 2-2
EXISTING CONDITIONS

DESIGNED BY : ADL	CHECKED BY : GRB	DATE : MAY 2026
DRAWN BY : ADL	APPROVED BY : GRB	FILE : EISPN_Fig 2-2_C-100_EX COND.dwg

SHEET
C-100

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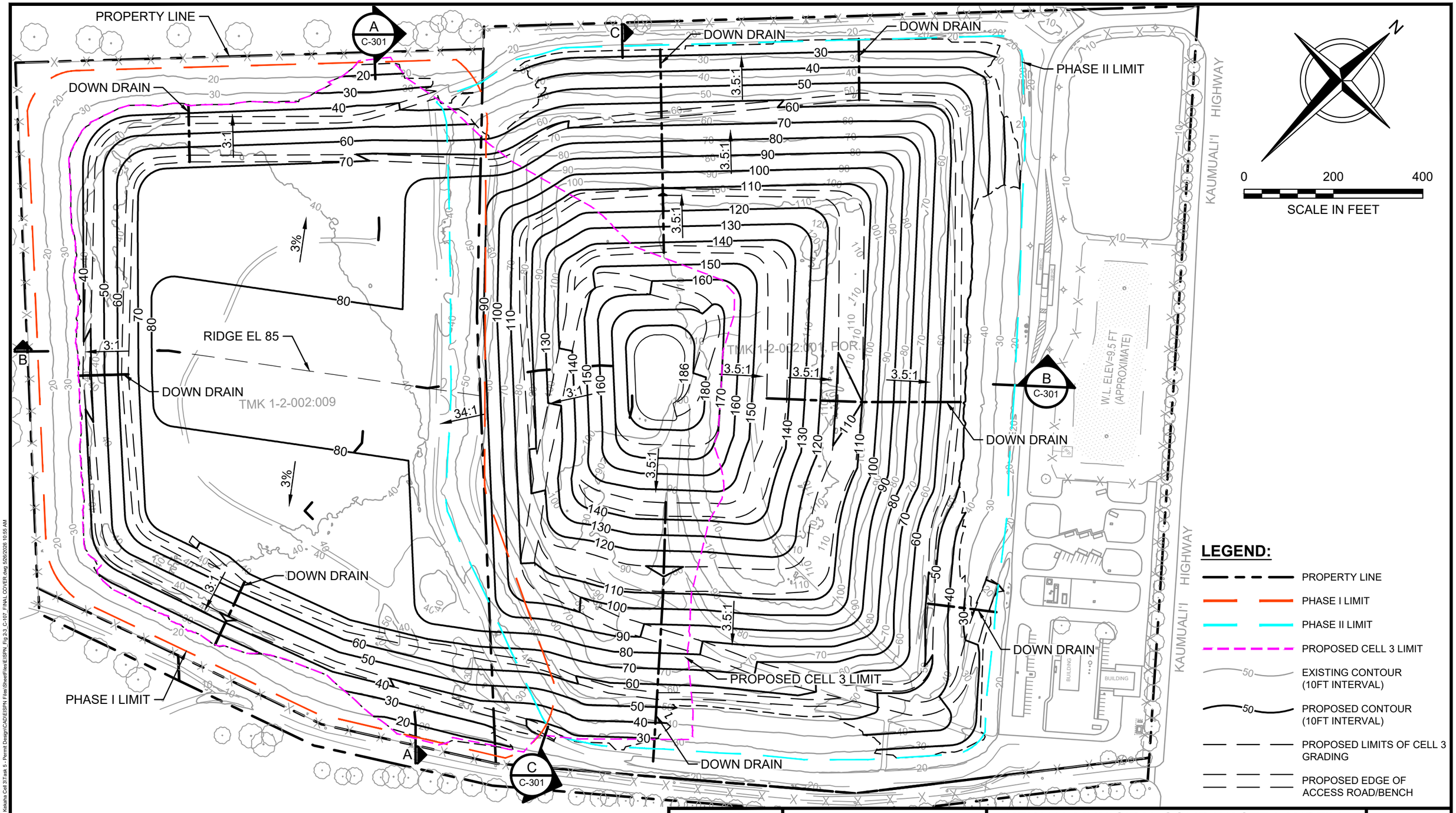

LEGEND:

- PROPERTY LINE
- PHASE I LIMIT
- PHASE II LIMIT
- PROPOSED CELL 3 LIMIT
- 50 EXISTING CONTOUR (10FT INTERVAL)
- 50 PROPOSED CONTOUR (10FT INTERVAL)
- PROPOSED LIMITS OF CELL 3 GRADING
- PROPOSED EDGE OF ACCESS ROAD/BENCH

TETRA TECH
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KEKAHA MUNICIPAL SOLID WASTE LANDFILL

CELL 3 VERTICAL EXPANSION
FIGURE 2-3
FINAL COVER GRADING PLAN

DESIGNED BY : ADL	CHECKED BY : GRB	DATE : MAY 2026
DRAWN BY : ADL	APPROVED BY : GRB	FILE : EISPN_Fig 2-3_C-107_FINAL COVER.dwg

SHEET
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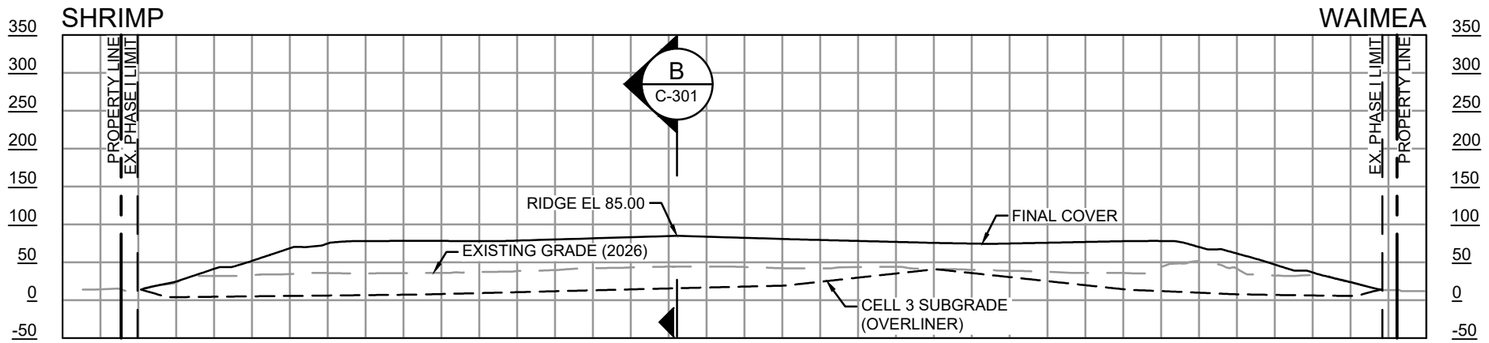

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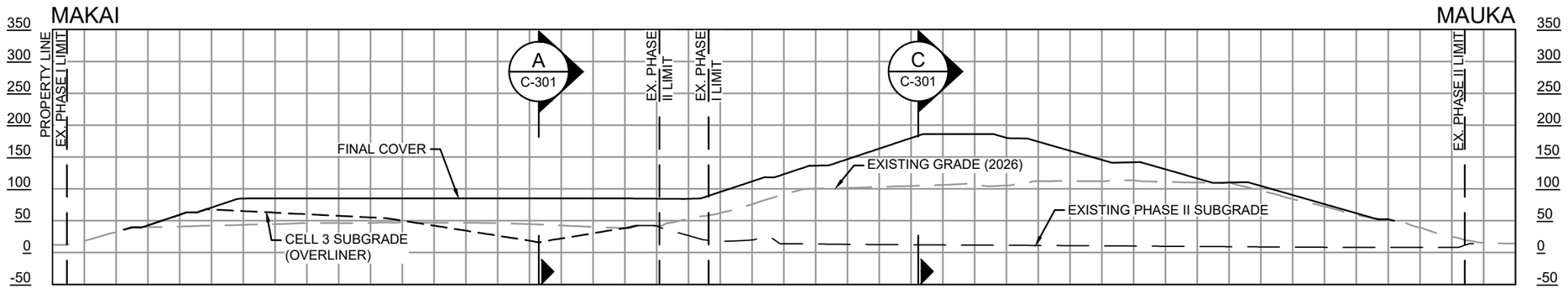
A C-107 **SECTION**
SCALE: 1"=200'



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B C-107 **SECTION**
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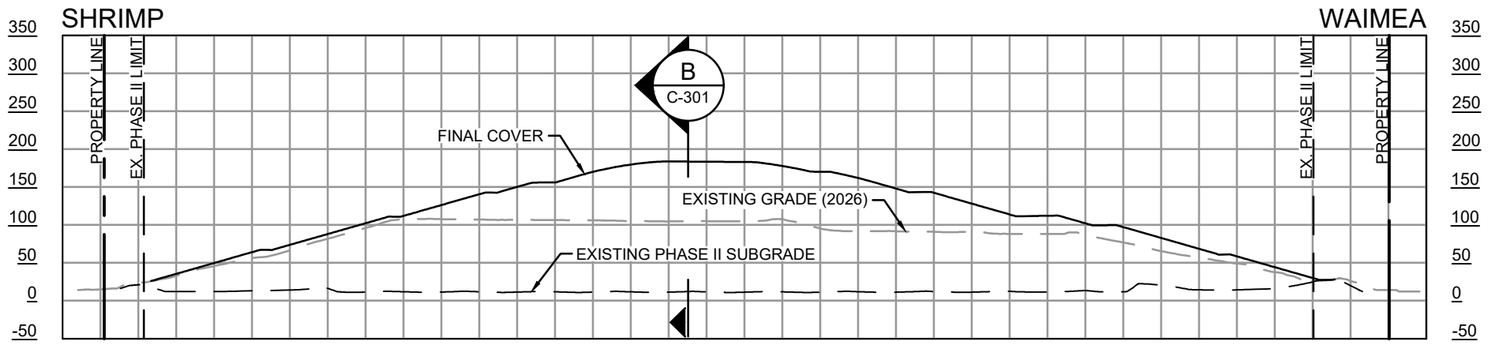

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C C-107 **SECTION**
SCALE: 1"=200'

NOTES:

1. LINER SUBGRADE TOPO FROM GEOSYNTEC (2022), PREPARED FROM BEST AVAILABLE RECORD DATA FOR PHASE II (1993); PHASE II, CELL 1 (2013); AND PHASE II, CELL 2 (2019).
2. SECTION A IS CUT ALONG THE CENTERLINE OF THE PROPOSED LEACHATE COLLECTION PIPE, THEREFORE DIMENSIONS AND SLOPES SHOWN ON THE FINAL COVER SURFACE PROFILE ARE SKEWED.

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21700 Copley Drive, Suite 200
Diamond Bar, CA 91765
TEL 909.860.7777 FAX 909.860.8017

KEKAHA MUNICIPAL SOLID WASTE LANDFILL
CELL 3 VERTICAL EXPANSION
FIGURE 2-4
PROFILE VIEWS

DESIGNED BY : ADL	CHECKED BY : GRB	DATE : MAY 2026
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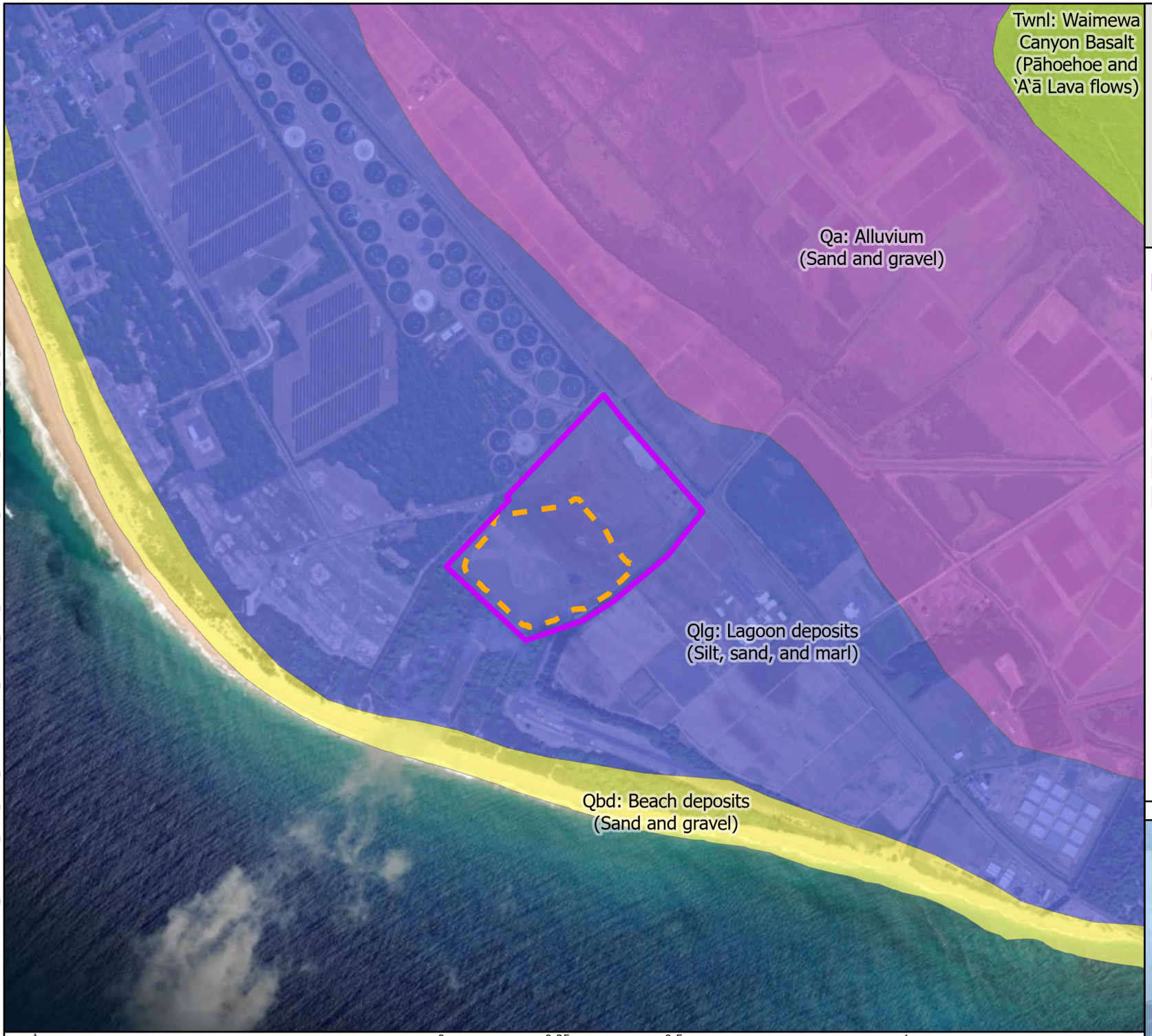
C-301



Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-1 Regional Geology

KAUAʻI COUNTY, HI

Project Area

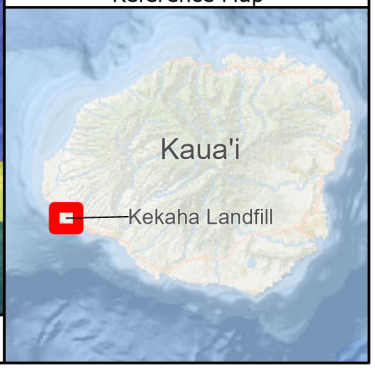
Approximate Extent of the Proposed Cell 3 Vertical Expansion

Geologic Units

- Beach deposits
- Lava flows
- Alluvium
- Lagoon deposits

TETRA TECH

Reference Map



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WGS 1984 UTM Zone 4N

0 0.25 0.5 1 Miles

NOT FOR CONSTRUCTION

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Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-2
USGS Topographic Map

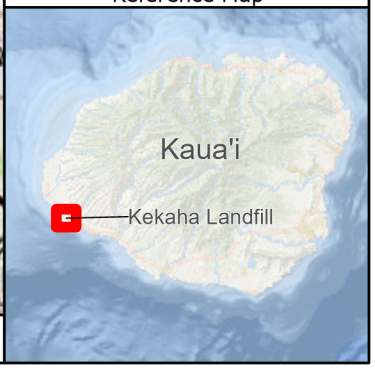
KAUA'I COUNTY, HI

Project Area

Approximate Extent of the Proposed Cell 3 Vertical Expansion

TETRA TECH

Reference Map



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Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-3
NRCS Soils

KAUA'I COUNTY, HI

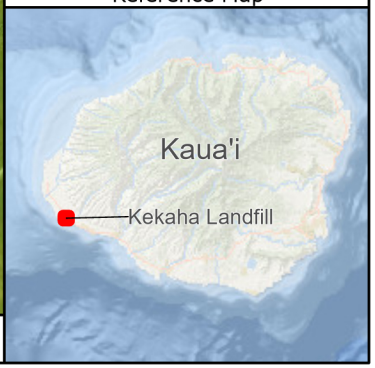
- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion

NRCS Soils

- Fd - Fill land
- JfB - Jaucas loamy fine sand

TETRA TECH

Reference Map



1:5,000

WGS 1984 UTM Zone 4N

0 0.125 0.25 Miles

NOT FOR CONSTRUCTION

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Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-4
Groundwater Aquifers

KAUA'I COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion
- Underground Injection Control (UIC) Line

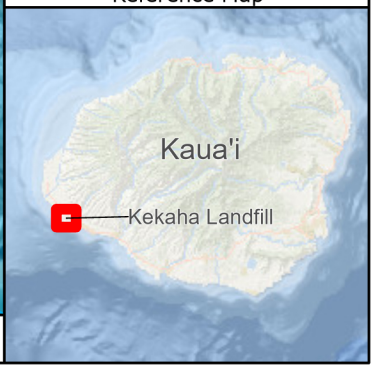
DLNR Aquifers

Sector; System

- Waimea Sector; Kekaha (20301) Basal Aquifer overlaid by sedimentary caprock along the coast

TETRA TECH

Reference Map



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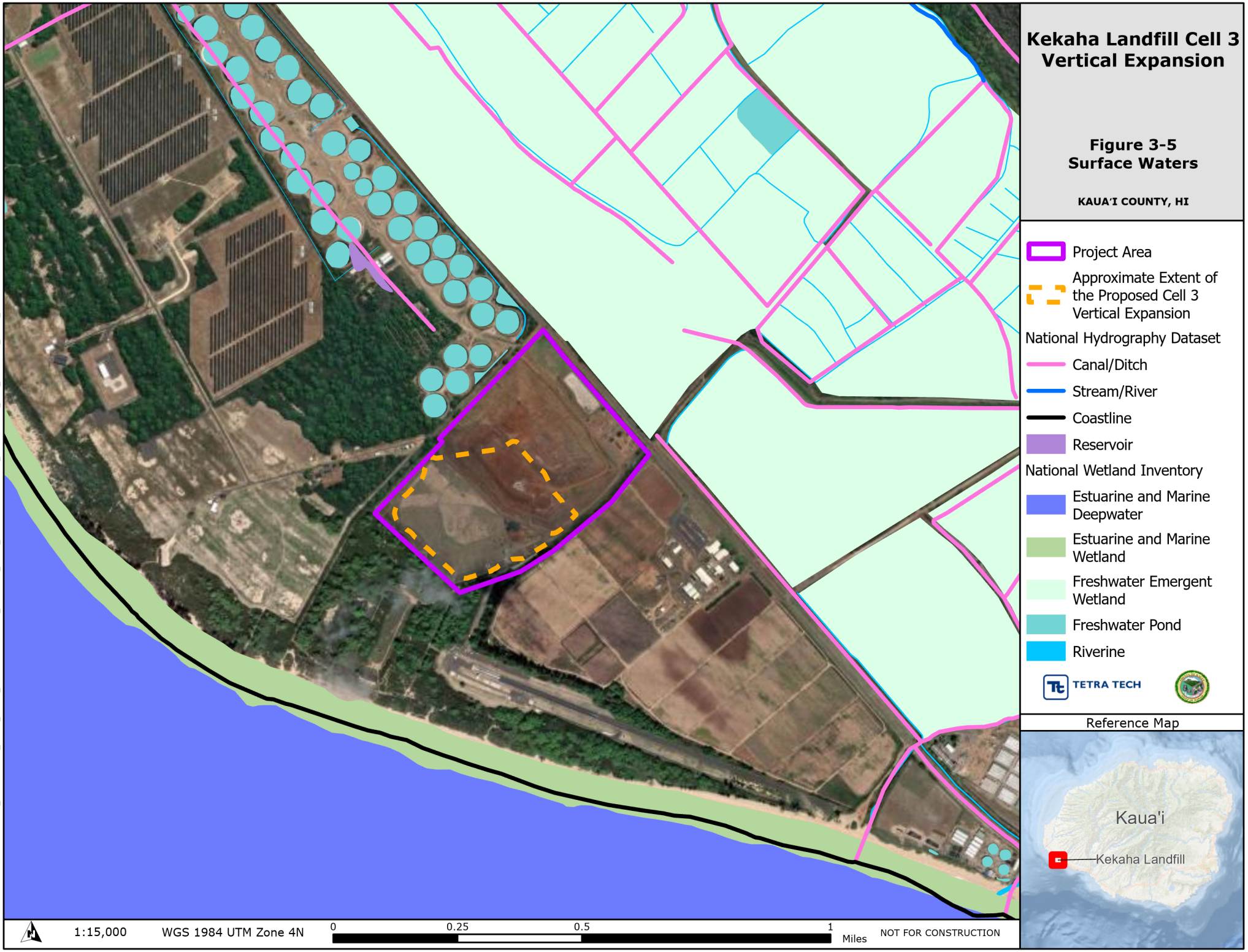
Kekaha Landfill Cell 3 Vertical Expansion
Figure 3-5
Surface Waters
KAUA'I COUNTY, HI
Project Area
Approximate Extent of the Proposed Cell 3 Vertical Expansion
National Hydrography Dataset
Canal/Ditch
Stream/River
Coastline
Reservoir
National Wetland Inventory
Estuarine and Marine Deepwater
Estuarine and Marine Wetland
Freshwater Emergent Wetland
Freshwater Pond
Riverine
TETRA TECH
Reference Map
Kaua'i
Kekaha Landfill
1:15,000
WGS 1984 UTM Zone 4N
0
0.25
0.5
1
Miles
NOT FOR CONSTRUCTION
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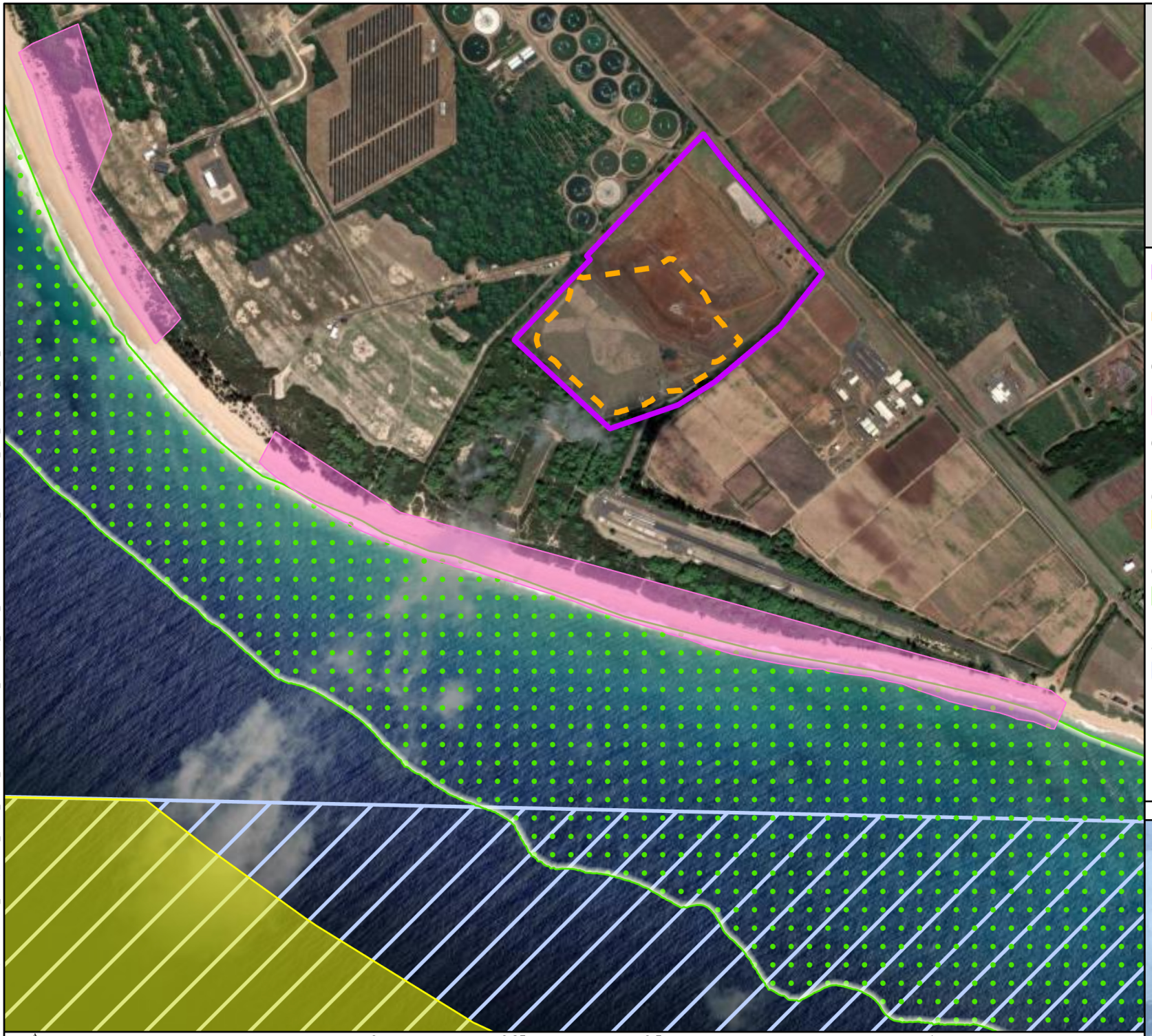

Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-6
Critical Habitat

KAUA'I COUNTY, HI

Project Area

Approximate Extent of the Proposed Cell 3 Vertical Expansion

Critical Habitat - Plants

Lau `ehu *(Panicum niihauense)*

Critical Habitat - Animals

False Killer Whale *(Pseudorca crassidens)*

Marine

Proposed Green Sea Turtule *(Cleonia mydas)*

Marine

Monk Seal *(Neomonachus schauinslandi)*

Marine

TETRA TECH

Reference Map

1:15,000 WGS 1984 UTM Zone 4N 0 0.25 0.5 1 Miles NOT FOR CONSTRUCTION

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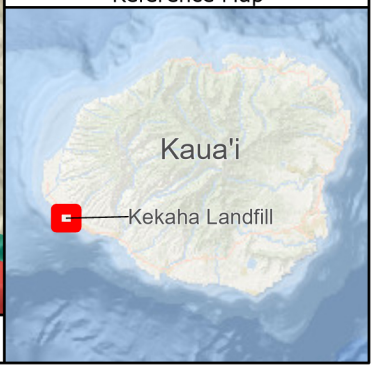
Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-7
Flood Zones

KAUA'I COUNTY, HI

TETRA TECH

Reference Map



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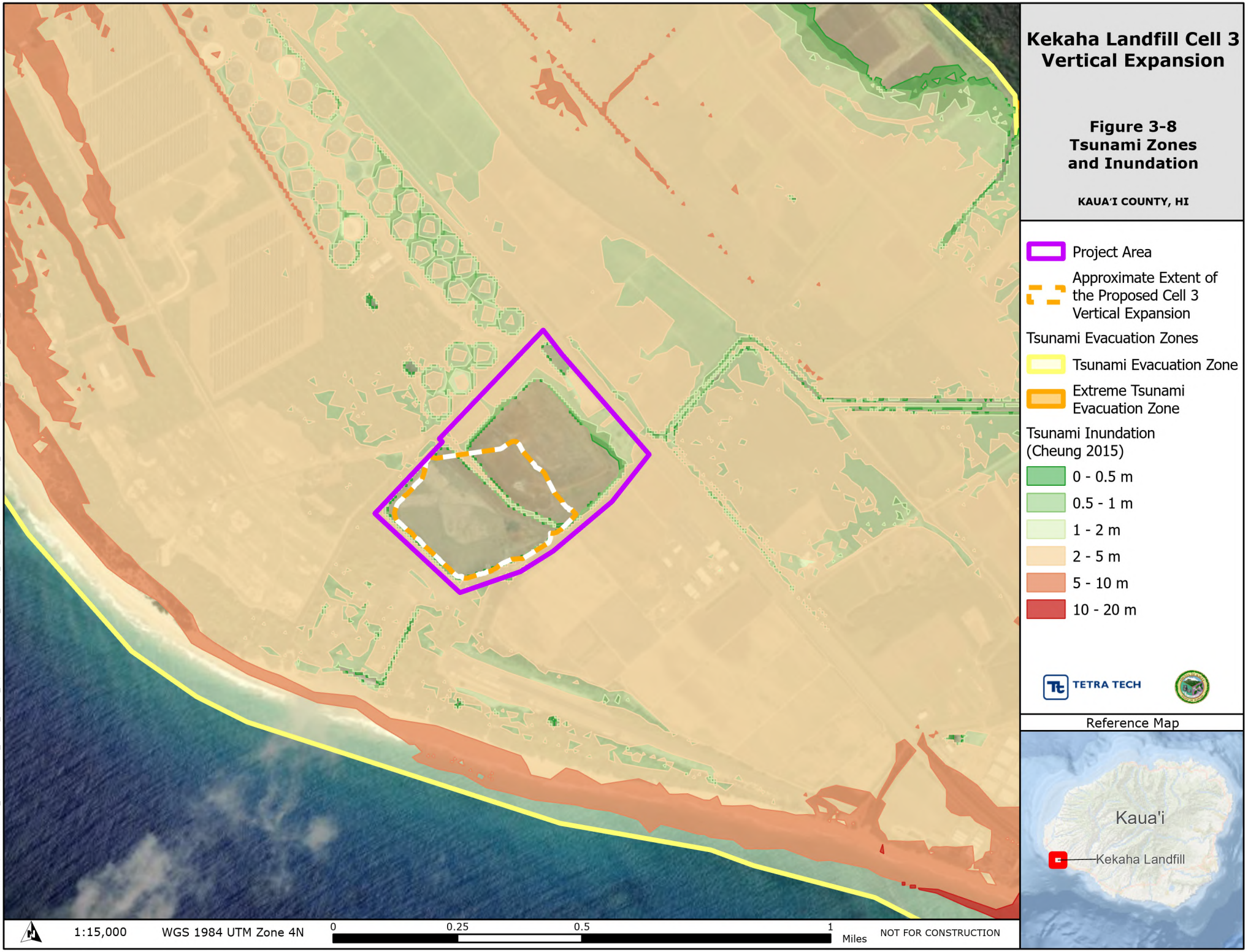
Kekaha Landfill Cell 3
Vertical Expansion
Figure 3-8
Tsunami Zones
and Inundation
KAUA'I COUNTY, HI
Project Area
Approximate Extent of the Proposed Cell 3 Vertical Expansion
Tsunami Evacuation Zones
Tsunami Evacuation Zone
Extreme Tsunami Evacuation Zone
Tsunami Inundation (Cheung 2015)
0 - 0.5 m
0.5 - 1 m
1 - 2 m
2 - 5 m
5 - 10 m
10 - 20 m
TETRA TECH
Reference Map
Kaua'i
Kekaha Landfill
1:15,000
WGS 1984 UTM Zone 4N
0
0.25
0.5
1
Miles
NOT FOR CONSTRUCTION
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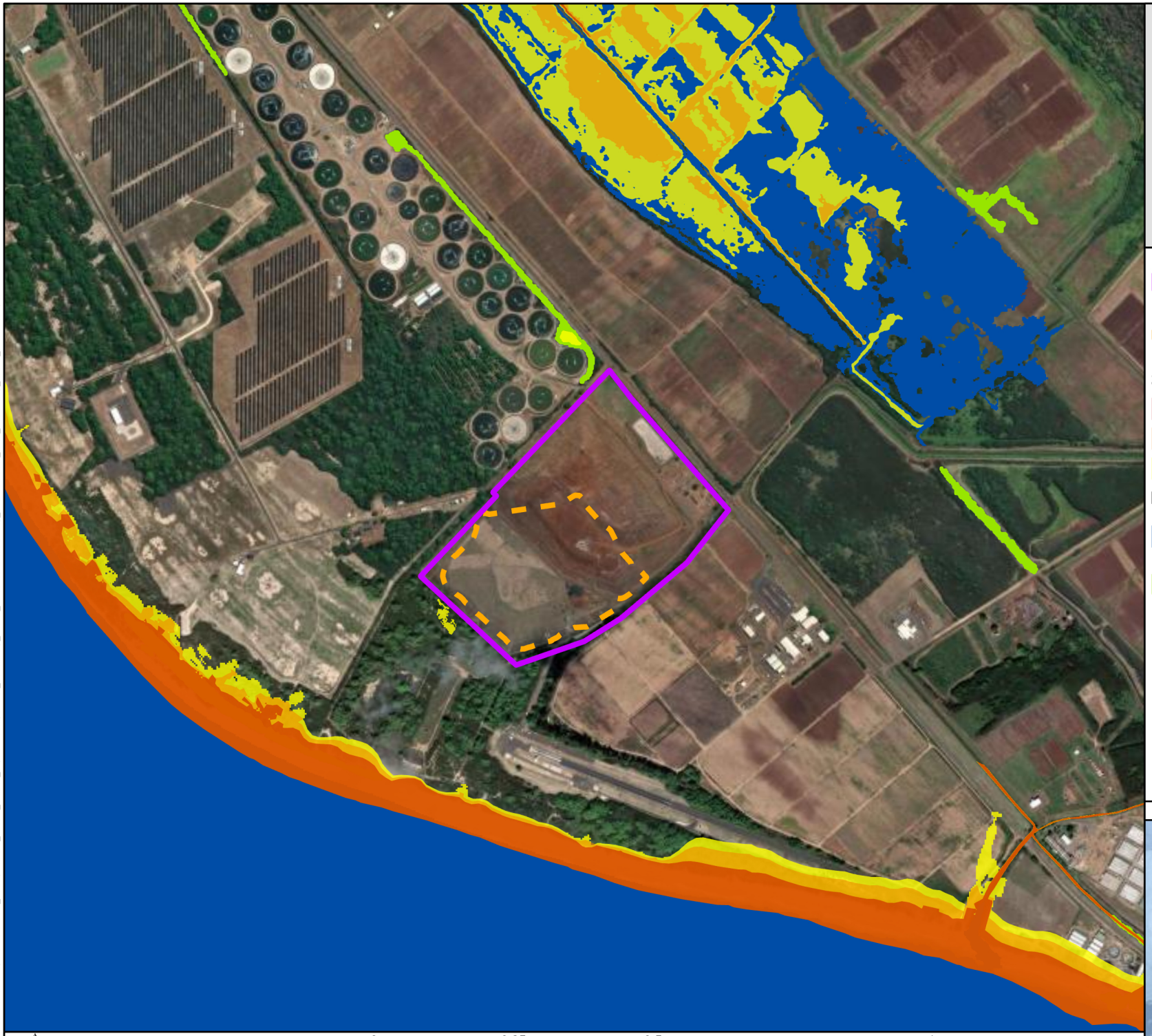


Kekaha Landfill Cell 3 Vertical Expansion

Figure 3-9
Sea Level Rise

KAUA'I COUNTY, HI

- Project Area
- Approximate Extent of the Proposed Cell 3 Vertical Expansion

Sea Level Rise Exposure Area

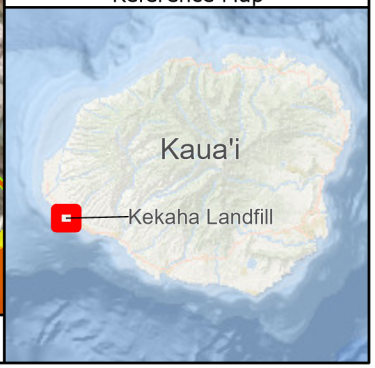
- 0.5 Foot Scenario
- 2.0 Foot Scenario
- 3.2 Foot Scenario

NOAA Passive (High Tide)

- 6 Foot Scenario Inundation
- 6 Foot Scenario Low Lying Areas

TETRA TECH

Reference Map



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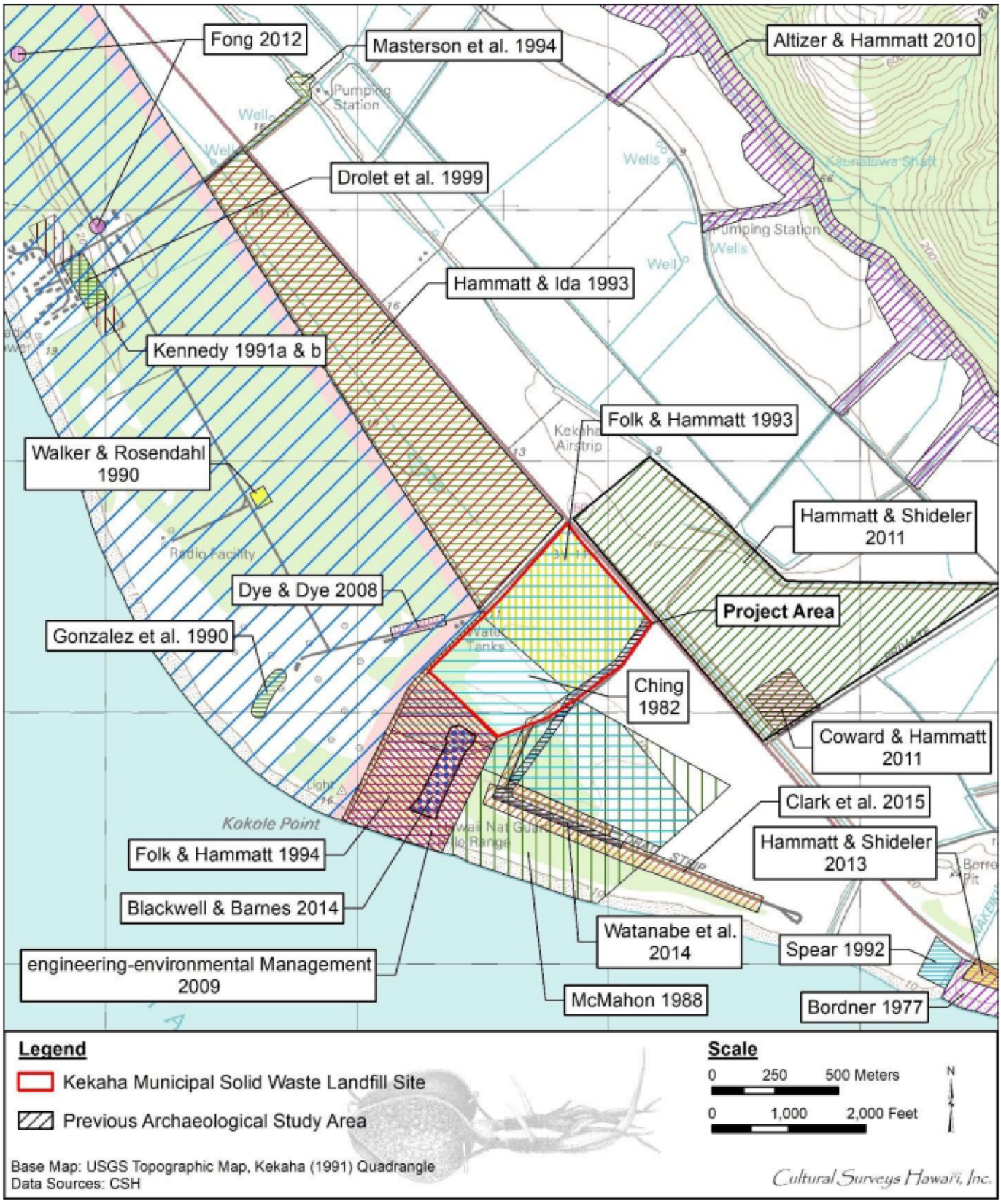

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Kekaha Landfill Cell 3 Vertical Expansion

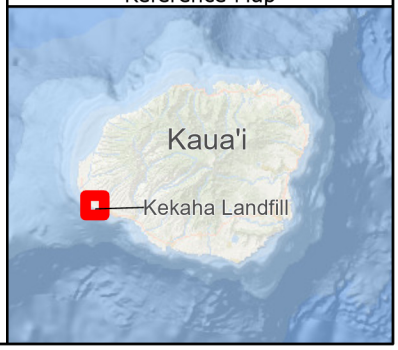
Figure 3-10
Previous Archaeological Studies in the Vicinity of Kekaha Landfill

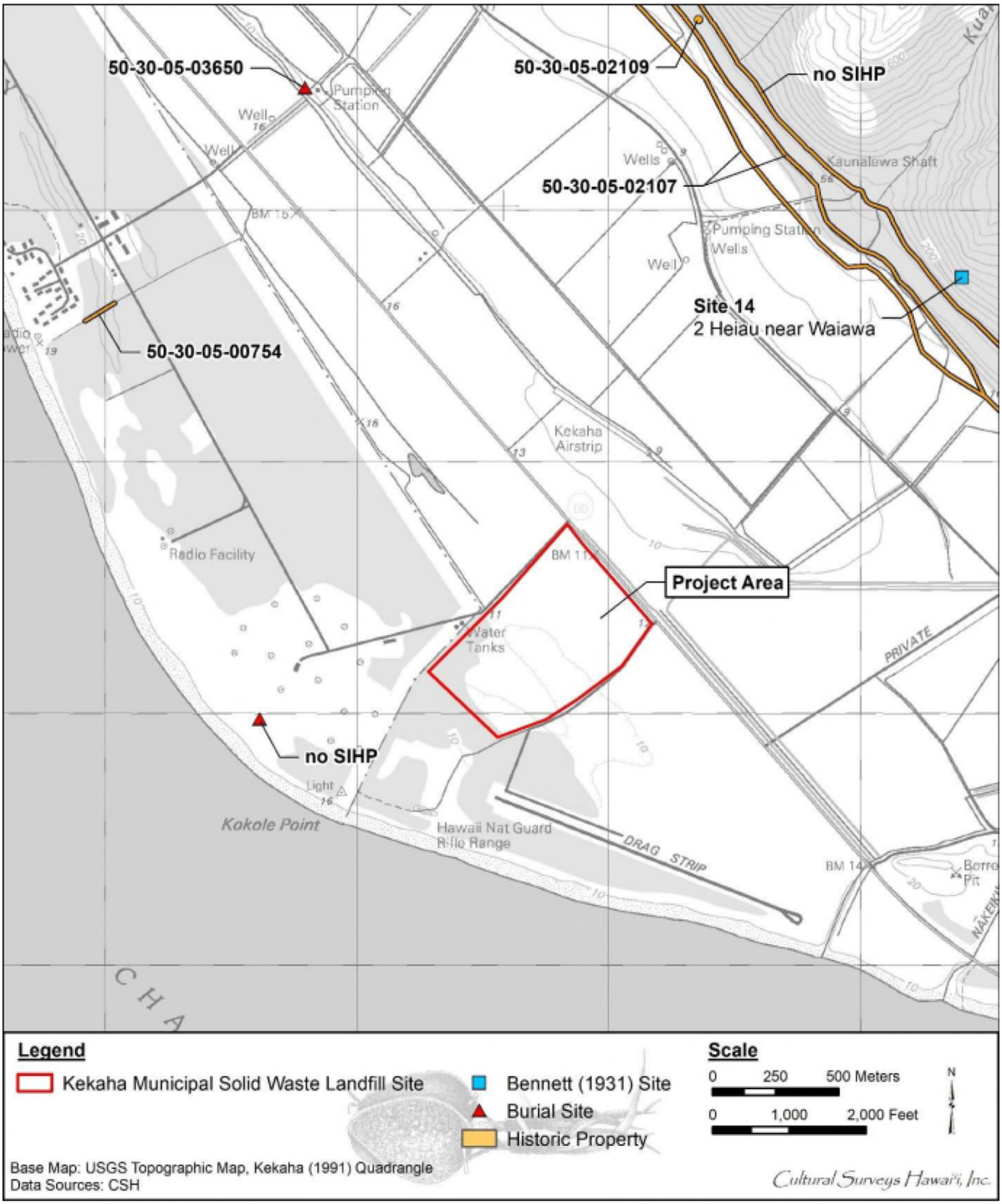
KAUA'I COUNTY, HI

NOT FOR CONSTRUCTION

TETRA TECH

Reference Map





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Kekaha Landfill Cell 3 Vertical Expansion

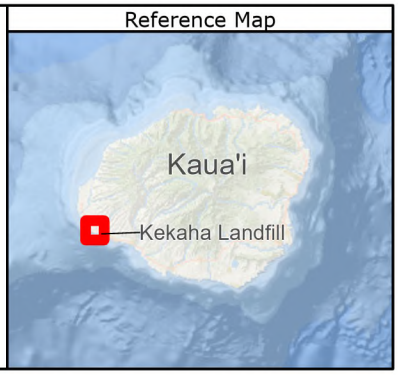
Figure 3-11
Historic Properties in the Vicinity of Kekaha Landfill

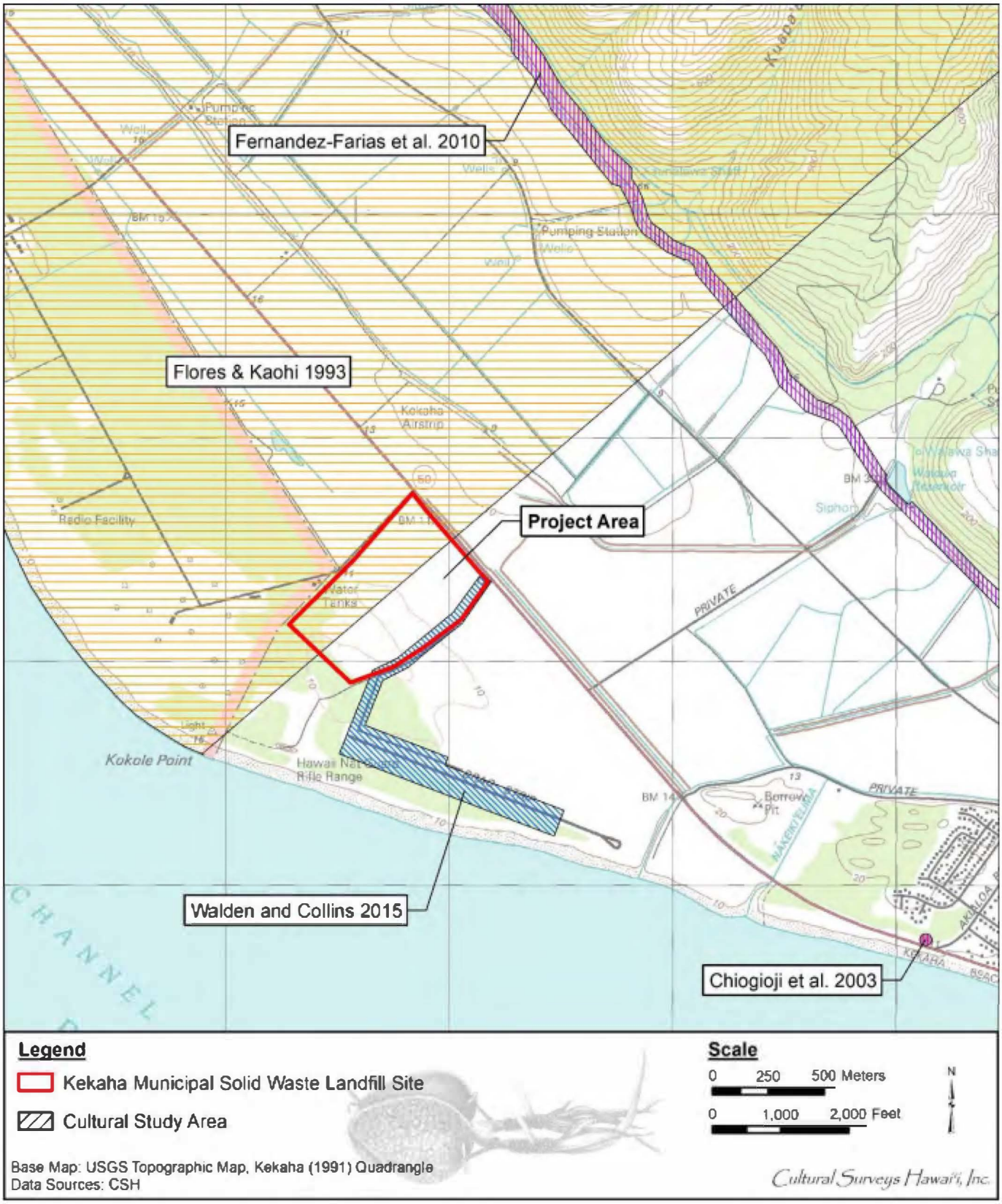
KAUA'I COUNTY, HI

NOT FOR CONSTRUCTION

TETRA TECH

Reference Map





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Kekaha Landfill Cell 3 Vertical Expansion

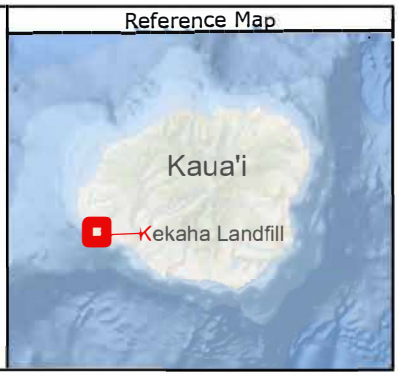
Figure 3-12
Previous Cultural Studies in the Vicinity of Kekaha Landfill

KAUA'I COUNTY, HI

NOT FOR CONSTRUCTION

TETRA TECH

Reference Map



Appendix A. Letter from Governor Green Delegating Accepting Authority to the Mayor of Kaua‘i

JOSH GREEN, M.D.
GOVERNOR
KE KIA‘ĀINA

EXECUTIVE CHAMBERS
KE KE‘ENA O KE KIA‘ĀINA

May 18, 2026

The Honorable Derek S.K. Kawakami
Mayor, County of Kaua‘i
4444 Rice Street, Suite 235
Līhu‘e, Hawai‘i 96766-1340

Aloha Mayor Kawakami:

Thank you for your April 13, 2026 letter requesting that I designate the Mayor of the County of Kaua‘i as the authorized representative and accepting authority for the Chapter 343 Environmental Impact Statement (EIS) associated with the proposed Kekaha Landfill Cell 3 Vertical Expansion Project.

Pursuant to Hawai‘i Administrative Rules § 11-200.1-7(b), and following consultation with the Office of Planning and Sustainable Development’s (OPSD) Environmental Review Program (ERP), I hereby designate you, in your capacity as Mayor of the County of Kaua‘i, as my authorized representative and the accepting authority for the proposed project’s EIS process under Hawai‘i Revised Statutes, Chapter 343.

As accepting authority, you may oversee the review process and determine the acceptability of the EIS in accordance with applicable provisions of Hawai‘i Revised Statutes Chapter 343 and Hawai‘i Administrative Rules Chapter 11-200.1.

Mahalo for your continued leadership and commitment to ensuring Kaua‘i maintains safe and reliable municipal solid waste capacity while advancing the appropriate environmental review process.

Mahalo,

Josh Green M.D.

Josh Green, M.D.
Governor, State of Hawai‘i

Appendix B. Photo Log

Appendix B - Photo Log

Photo 1. Kehaha Landfill entranceway from Kaumuali`i Highway.

Photo 2. Nēnē crossing sign at Kekaha Landfill entrance.

Photo 3. Kekaha Landfill scale house.

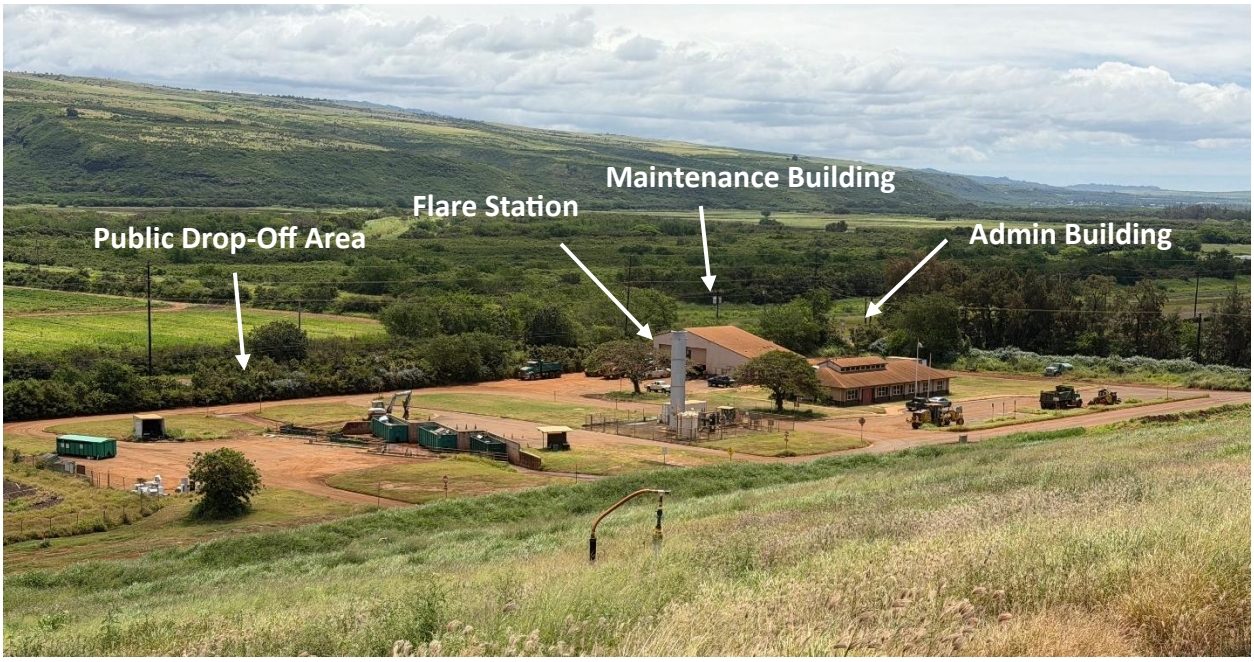


Photo 4. View from the top of the Phase II landfill looking northeast. In the midground is Kekaha Landfill's public drop-off area, flare station, maintenance building, and administrative building. In the background are agricultural lands / uses managed by the Kekaha Agriculture Association.

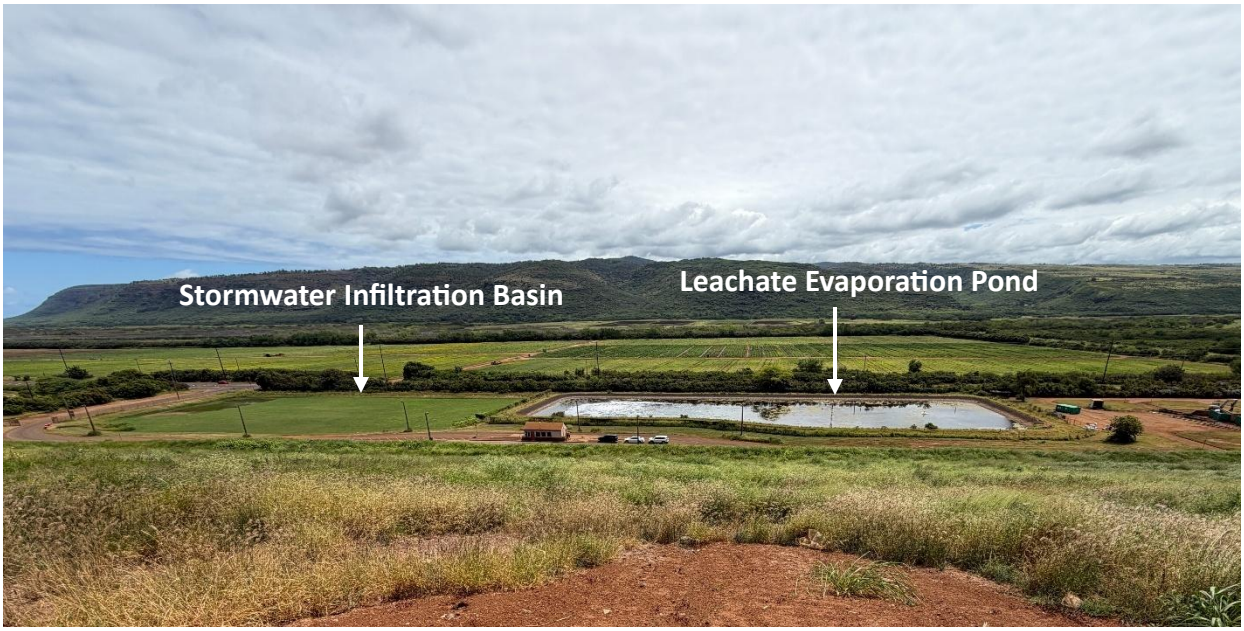


Photo 5. View from the top of the Phase II landfill looking north. In the midground is the stormwater infiltration basin on the left (no water present) and the leachate evaporation pond on the right. In the background are agricultural lands / uses managed by the Kekaha Agriculture Association.

Photo 6. View from top of Phase II landfill looking south. The Phase I landfill is in the midground. Vegetation obstructs views of Kaua`i Raceway Park (not shown, left of Phase I landfill).

Photo 7. View from top of the Phase II landfill looking west. Shows agricultural lands / uses west and northwest of Kekaha Landfill. In the midground are shrimp farms in the Kekaha Agricultural Park.

Photo 8. View from top of Phase II landfill looking east. The Hartung Brothers Hawai`i facility is shown in the midground.

Photos of Kekaha Landfill from Public Viewpoints

Photo 9. View of Kekaha Landfill from Kaumuali`i Highway at the entrance to Kekaha Beach Park/ McArthur Park.

Photo 10. View of Kekaha Landfill from grassy area of Kekaha Beach Park/ McArthur Park.

Photo 11. View toward Kekaha Landfill (not shown) from shoreline at Kekaha Beach Park/ McArthur Park. Earthen berm and vegetation blocks views of Kekaha Landfill.

Photo 12. View of Kekaha Landfill from Kaumuali`i Highway near the Hartung Brothers Hawai`i facility.

Photo 13. View of Kekaha Landfill from Kaumuali`i Highway near the Kekaha Agricultural Park shrimp farms.

Photo 14. Upland view of Kekaha Landfill from Kokee Road.