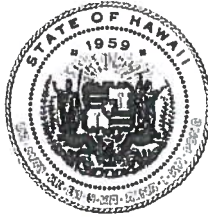


NEIL ABERCROMBIE  
GOVERNOR OF HAWAII

FILE COPY



JUL 23 2013



STATE OF HAWAII  
DEPARTMENT OF LAND AND NATURAL RESOURCES  
DIVISION OF FORESTRY AND WILDLIFE  
1151 PUNCHBOWL STREET, ROOM 325  
HONOLULU, HAWAII 96813

WILLIAM J. AILA, JR.  
CHAIRPERSON  
BOARD OF LAND AND NATURAL RESOURCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
  
ESTHER KIA'AINA  
FIRST DEPUTY  
  
WILLIAM M. TAM  
DEPUTY DIRECTOR - WATER  
  
AQUATIC RESOURCES  
BOATING AND OCEAN RECREATION  
BUREAU OF CONVEYANCES  
COMMISSION ON WATER RESOURCE MANAGEMENT  
CONSERVATION AND COASTAL LANDS  
CONSERVATION AND RESOURCES ENFORCEMENT  
ENGINEERING  
FORESTRY AND WILDLIFE  
HISTORIC PRESERVATION  
KAIKOLAWE ISLAND RESERVE COMMISSION  
LAND  
STATE PARKS

July 8, 2013

Genevieve Salmonson, Interim Director  
Office of Environmental Quality Control (OEQC)  
Department of Health, State of Hawai'i  
235 S. Beretania Street, Room 702  
Honolulu, Hawai'i 96813

RECEIVED  
13 JUL 10 PM 2:47  
OFFICE OF ENVIRONMENTAL  
QUALITY CONTROL

Dear Ms. Salmonson,

With this letter, the Department of Land and Natural Resources ("DLNR"), Division of Forestry and Wildlife ("DOFAW") hereby transmits the **notice to withdraw draft environmental assessment ("DEA")** titled *Draft Environmental Assessment for Kenai Industrial Park Project Habitat Conservation Plan*, submitted to your office by letter dated January 23, 2013, and public notice of the DEA was issued in the February 8, 2013 edition of *The Environmental Notice*. Since that time, DLNR-DOFAW has determined that the proposed Habitat Conservation Plan and Incidental Take License does not trigger any of the requirements for the preparation of an environmental assessment set forth in Hawaii Revised Statutes Chapter 343. Therefore, DLNR-DOFAW now wishes to withdraw the subject DEA and anticipated finding of no significant impact ("DEA-AFONSI") for the Kenai Industrial Park Project Habitat Conservation Plan situated at Tax Map Key No. (1) 9-1-074: 023, in the 'Ewa District on the island of O'ahu.

Enclosed is a completed OEQC Publication Form, an Adobe Acrobat PDF file of the same, and an electronic copy of the publication form in MS Word. Simultaneous with this letter, we have submitted the summary of the action in a text file by electronic mail to your office.

If there are any questions, please contact Lasha-Lynn Salbosa, DOFAW Conservation Initiatives Coordinator at (808) 587-4148.

Sincerely,

William J. Aila, Jr.  
Chairperson

Enclosures (1)

C: Applicant, CIRI Land Development Company

**APPLICANT ACTIONS**  
**SECTION 343-5(C), HRS**  
**PUBLICATION FORM (JANURARY 2013 REVISION)**

**Project Name:** Kenai Industrial Park Project

**Island:** Oahu

**District:** 'Ewa

**TMK:** (1) 9-1-074: 023 (previously incorrectly noted as 9-1-074: 030) and (1) 9-1-013: 030

**Permits:** Incidental Take Permit

**Approving Agency:** Department of Land and Natural Resources, Division of Forestry and Wildlife

1151 Punchbowl Street, Room 325, Honolulu, Hawaii 96815

**Applicant:** CIRI Land Development Company, Dave Pfeifer, Vice President, Real Estate, Cook Inlet Region, Inc. 2525 C Street, Suite 500, Anchorage, AK 99503

**Consultant:** **Prior Consultant:** AMEC Environment & Infrastructure, Inc., attention Halleh Paymard, 3049 Ualena Street, Suite 1100, Honolulu, HI 96819

**Current Consultant:** SWCA Environmental Consultants, attention Jaap Eijzenga, Bishop Square: ASB Tower, 1001 Bishop Street, Suite 2800, Honolulu, HI 96813

**Status (check one only):**

DEA-AFNSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); a 30-day comment period ensues upon publication in the periodic bulletin.

FEA-FONSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); no comment period ensues upon publication in the periodic bulletin.

FEA-EISPN

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov); a 30-day consultation period ensues upon publication in the periodic bulletin.

Act 172-12 EISPN

Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqchawaii@doh.hawaii.gov](mailto:oeqchawaii@doh.hawaii.gov). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

DEIS

The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); a 45-day comment period ensues upon publication in the periodic bulletin.

FEIS

The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

Section 11-200-23  
Determination

The approving agency simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

Statutory hammer  
Acceptance

The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

Section 11-200-27  
Determination

The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

Withdrawal (explain)

**Summary:**

CIRI Land Development Company ("CLDC") is seeking the approval of a Habitat Conservation Plan and associated Incidental Take License from the Department of Land and Natural Resources Division of Forestry and Wildlife ("DLNR-DOFAW") to allow for the "take" of the round-leaved chaff flower (*Achyranthes splendens* var. *rotundata*) located at a parcel designated by Tax Map Key No. (1) 9-1-074: 023, within the Kenai Industrial Park.

DLNR-DOFAW submitted a Draft Environmental Assessment ("DEA"), titled *Draft Environmental Assessment for Kenai Industrial Park Project Habitat Conservation Plan*, to this office by letter dated January 23, 2013, and public notice of the DEA was issued in the February 8, 2013 edition of *The Environmental Notice*. Since that time, DLNR-DOFAW has determined that the proposed Habitat Conservation Plan and Incidental Take License does not trigger any of the requirements for the preparation of an environmental assessment set forth in Hawaii Revised Statutes Chapter 343. Therefore, DLNR-DOFAW now wishes to withdraw the subject DEA.

For further information please contact Lasha-Lynn Salbosa, Conservation Initiatives Coordinator, DLNR-DOFAW, tel. (808) 587-4148 or [Lasha.H.Salbosa@hawaii.gov](mailto:Lasha.H.Salbosa@hawaii.gov)

**APPLICANT ACTIONS  
SECTION 343-5(C), HRS  
PUBLICATION FORM (JULY 2012 REVISION)**

**Project Name:** Kenai Industrial Park Project

**Island:** O'ahu

**District:** 'Ewa

**TMK:** (1) 9-1-074:030 and (1) 9-1-013:030

**Permits:** Incidental Take License

**Approving Agency:** Department of Land and Natural Resources

Division of Forestry and Wildlife (DOFAW)

1151 Punchbowl Street, Room 325

Honolulu, HI 96815

(808) 587-4148

**Applicant:** CIRI Land Development Company

Dave Pfeifer

Vice President, Real Estate

Cook Inlet Region, Inc. (CIRI)

2525 C Street, Suite 500

Anchorage, AK 99503

(907) 263-5110

**Consultant:** AMEC Environment & Infrastructure, Inc.

Halleh Paymard

3049 Ualena Street, Suite 1100

Honolulu, HI, 96819

(808) 545-2462

**Status (check one only):**

DEA-AFNSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of DEA, a completed OEQC publication form, along with an electronic word processing summary and a PDF copy (you may send both summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); a 30-day comment period ensues upon publication in the periodic bulletin.

FEA-FONSI

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and a PDF copy (send both summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

FEA-EISPN

Submit the approving agency notice of determination/transmittal on agency letterhead, a hard copy of the FEA, an OEQC publication form, along with an electronic word processing summary and PDF copy (you may send both summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); a 30-day consultation period ensues upon publication in the periodic bulletin.

Act 172-12 EISPN

Submit the approving agency notice of determination on agency letterhead, an OEQC publication form, and an electronic word processing summary (you may send the summary to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.

DEIS

The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the DEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the DEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); a 45-day comment period ensues upon publication in the periodic bulletin.

FEIS

The applicant simultaneously transmits to both the OEQC and the approving agency, a hard copy of the FEIS, a completed OEQC publication form, a distribution list, along with an electronic word processing summary and PDF copy of the FEIS (you may send both the summary and PDF to [oeqc@doh.hawaii.gov](mailto:oeqc@doh.hawaii.gov)); no comment period ensues upon publication in the periodic bulletin.

Section 11-200-23  
Determination

The approving agency simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the applicant. No comment period ensues upon publication in the periodic bulletin.

Statutory hammer  
Acceptance

The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it failed to timely make a determination on the acceptance or nonacceptance of the applicant's FEIS under Section 343-5(c), HRS, and that the applicant's FEIS is deemed accepted as a matter of law.

\_\_Section 11-200-27  
Determination

The approving agency simultaneously transmits its notice to both the applicant and the OEQC that it has reviewed (pursuant to Section 11-200-27, HAR) the previously accepted FEIS and determines that a supplemental EIS is not required. No EA is required and no comment period ensues upon publication in the periodic bulletin.

\_\_Withdrawal (explain)

\_\_Other

### **Summary:**

The Department of Land and Natural Resources (DLNR), Division of Forestry and Wildlife (DOFAW) is in receipt of a Draft Environmental Assessment (DEA) from CIRI (Cook Inlet Region, Inc.) Land Development Company. CIRI Land Development Company is requesting issuance of an incidental take license (ITL) from the DLNR for the take of two individuals of the endangered plant species round-leaved chaff flower or 'ewa hinahina (*Achyranthes splendens* var. *rotundata*), located on the subject property. The mitigation activities for the take this species are outlined in more detail within the Draft Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan (HCP) for the Kenai Industrial Park Project, prepared pursuant to HRS Chapter 195D, and published in the OEQC's Environmental Notice on May 8, 2012. A DEA has been prepared, pursuant to Hawai'i Revised Statutes (HRS) Chapter 343, for the use of state resources in implementing mitigation monitoring outlined in the HCP.

CIRI Land Development Company proposes to develop a 0.75-acre parcel located at 91-525 Malakole Street in Kapolei, Honolulu County on the island of O'ahu, Hawai'i. The proposed development is a 62-unit storage facility.

Off-site mitigation for take of this species will be at the Pearl Harbor National Wildlife Refuge, Kalaeloa Unit, and will consist of propagating and outplanting 80 individual plants from cuttings and seeds obtained from the plants at the subject property, monitoring, maintenance, and nonnative species removal over a five-year period.

The 30-day public comment period is open until March 8, 2013 and comments can be sent to the DLNR. For further information contact: Lasha Salbosa, Conservation Initiatives Coordinator, DLNR DOFAW tel. (808) 587-4148 or [Lasha.H.Salbosa@hawaii.gov](mailto:Lasha.H.Salbosa@hawaii.gov).



**DRAFT  
ENVIRONMENTAL ASSESSMENT  
FOR KENAI INDUSTRIAL PARK PROJECT  
HABITAT CONSERVATION PLAN**

**Submitted to:  
CIRI Land Development Company  
2525 C Street, Suite 500  
Anchorage, Alaska 99503**

**Submitted by:  
AMEC Environment & Infrastructure, Inc.  
San Diego, California**

**February 2013**

**AMEC Project No. 1047100002**

---



## TABLE OF CONTENTS

	<b>Page</b>
ACRONYMS AND ABBREVIATIONS.....	iv
1.0 INTRODUCTION.....	1-1
1.1 Proposed Development and Location .....	1-1
1.2 Purpose and Need for Proposed Action.....	1-4
1.3 Relevant Laws, Regulations, and Policies.....	1-4
1.3.1 Federal Regulatory Context.....	1-4
1.3.2 State and Local Regulatory Context.....	1-5
1.4 Public Involvement and Agency Coordination .....	1-7
2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION .....	2-1
2.1 Introduction.....	2-1
2.2 Proposed Action - Development of a 62-unit Self-storage Facility .....	2-1
2.3 Alternatives.....	2-4
2.3.1 Alternative 1 – Development of an Alternate Passive Industrial Use .....	2-4
2.3.2 Alternative 2 – No-Action Alternative.....	2-5
3.0 AFFECTED ENVIRONMENT .....	3-1
3.1 Climate and Air Quality.....	3-1
3.1.1 Definition of Resource .....	3-1
3.1.2 Existing Conditions .....	3-2
3.2 Geology, Topography, and Soils .....	3-4
3.2.1 Definition of Resource .....	3-4
3.2.2 Existing Conditions .....	3-5
3.3 Water Resources.....	3-8
3.3.1 Definition of Resource .....	3-8
3.3.2 Existing Conditions .....	3-8
3.4 Biological Resources .....	3-10
3.4.1 Definition of Resource .....	3-10
3.4.2 Existing Conditions .....	3-12
3.5 Visual Resources .....	3-16
3.5.1 Definition of Resource .....	3-16
3.5.2 Existing Conditions .....	3-17
3.6 Land Use .....	3-18
3.6.1 Definition of Resource .....	3-18
3.6.2 Existing Conditions .....	3-18
3.7 Transportation and Circulation .....	3-20
3.7.1 Definition of Resource .....	3-20
3.7.2 Existing Conditions .....	3-20
3.8 Noise .....	3-21
3.8.1 Definition of Resource .....	3-21
3.8.2 Existing Conditions .....	3-22
3.9 Hazards .....	3-22
3.9.1 Definition of Resource .....	3-22
3.9.2 Existing Conditions .....	3-23
3.10 Historical, Archeological, and Cultural Resources.....	3-24
3.10.1 Definition of Resource .....	3-24
3.10.2 Existing Conditions .....	3-24

**TABLE OF CONTENTS (Cont.)**

		<b>Page</b>
3.11	Socioeconomics .....	3-27
	3.11.1 Definition of Resource .....	3-27
	3.11.2 Existing Conditions .....	3-27
4.0	ENVIRONMENTAL CONSEQUENCES .....	4-1
4.1	Climate and Air Quality .....	4-2
	4.1.1 Approach to Analysis .....	4-2
	4.1.2 Impacts .....	4-2
	4.1.3 Mitigation Measures .....	4-4
4.2	Geology, Topography, and Soils .....	4-4
	4.2.1 Approach to Analysis .....	4-4
	4.2.2 Impacts .....	4-4
	4.2.3 Mitigation Measures .....	4-5
4.3	Water Resources .....	4-5
	4.3.1 Approach to Analysis .....	4-5
	4.3.2 Impacts .....	4-6
	4.3.3 Mitigation Measures .....	4-7
4.4	Biological Resources .....	4-7
	4.4.1 Approach to Analysis .....	4-7
	4.4.2 Impacts .....	4-7
4.5	Visual Resources .....	4-9
	4.5.1 Approach to Analysis .....	4-9
	4.5.2 Impacts .....	4-9
4.6	Land Use .....	4-10
	4.6.1 Approach to Analysis .....	4-10
	4.6.2 Impacts .....	4-10
4.7	Transportation and Circulation .....	4-11
	4.7.1 Approach to Analysis .....	4-11
	4.7.2 Impacts .....	4-11
4.8	Noise .....	4-12
	4.8.1 Approach to Analysis .....	4-12
	4.8.2 Impacts .....	4-12
4.9	Hazards .....	4-13
	4.9.1 Approach to Analysis .....	4-13
	4.9.2 Impacts .....	4-13
	4.9.3 Mitigation Measures .....	4-14
4.10	Historical, Archeological, and Cultural Resources .....	4-15
	4.10.1 Approach to Analysis .....	4-15
	4.10.2 Impacts .....	4-15
	4.10.3 Mitigation Measures .....	4-16
4.11	Socioeconomics .....	4-16
	4.11.1 Approach to Analysis .....	4-16
	4.11.2 Impacts .....	4-16
5.0	CUMULATIVE IMPACTS .....	5-1
5.1	Projects in the Vicinity of the Kenai Industrial Park .....	5-2
5.2	Projects in the Vicinity the Kalaeloa Unit .....	5-2





**TABLE OF CONTENTS (Cont.)**

	<b>Page</b>
6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION.....	6-1
6.1 Anticipated Determination .....	6-1
6.2 Reasons Supporting the Anticipated Determination.....	6-1
6.3 Summary .....	6-4
7.0 LIST OF PREPARERS .....	7-1
8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED .....	8-1
9.0 REFERENCES.....	9-1

**LIST OF TABLES**

Table 2-1. Summary of Proposed Self-Storage Development Components .....	2-1
Table 3-1. State and Federal Air Quality Standards.....	3-3
Table 3-2. Maximum Noise Levels for Hawai`ian Zoning Districts .....	3-22
Table 5-1. Recently Approved/Proposed Projects in the Vicinity of the Kenai Industrial Park and the Kalaeloa Unit .....	5-1

**LIST OF FIGURES**

Figure 1-1. Regional Vicinity Map.....	1-2
Figure 2-1. Kenai Industrial Park Conceptual Project Design.....	2-2
Figure 3-1. Soils and Topography in the Vicinity of the Project Area.....	3-7
Figure 3-2. Water Resources within the Vicinity of the Project Area .....	3-11
Figure 3-3. Known Locations of Endangered Species within the Vicinity of the Project Area.....	3-15
Figure 3-4. Existing Land Use in the Vicinity of the Project Area.....	3-19
Figure 3-5. Tsunami Hazard Zones .....	3-25

## ACRONYMS AND ABBREVIATIONS

---

°F	degrees Fahrenheit
µg/m <sup>3</sup>	micrograms per cubic meter
BLNR	Board of Land and Natural Resources
CAB	Clean Air Branch
CFC	chlorofluorocarbon
CFR	Code of Federal Regulations
CH <sub>4</sub>	methane
CIRI	Cook Inlet Region, Inc.
CLDC	CIRI Land Development Company
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2</sub> e	CO <sub>2</sub> equivalent
CZM	Coastal Zone Management
dB	decibels
dBA	A-weighted dB
DLNR	Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife
DOH	Department of Health
EA	Environmental Assessment
EIS	Environmental Impact Statement
ESA	Endangered Species Act
ESRC	Endangered Species Recovery Committee
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GHG	green house gas
HAR	Hawai`i Administrative Rules
HCP	Habitat Conservation Plan
HEPA	Hawai`i Environmental Policy Act
HFC	hydrochlorofluorocarbon
HRS	Hawai`i Revised Statutes

## ACRONYMS AND ABBREVIATIONS (Cont.)

---

HUC	Hydrologic Unit Code
Hz	hertz
ITL	Incidental Take License
msl	mean sea level
N <sub>2</sub> O	nitrous oxide
NAAQS	national Ambient Air Quality Standards
NAS	Naval Air Station
NAWQA	national Water-Quality Assessment Program
NO <sub>2</sub>	nitrogen dioxide
NRCS	Natural Resources conservation Service
NRHP	National Register of Historic Places
NWR	National Wildlife Refuge
O <sub>3</sub>	ozone
OR&L	O`ahu Rail & Land
Pb	lead
PFC	perfluorocarbon
PM	particulate matter
POLs	Petroleum, Oil, and Lubricants
ppb	parts per billion
ppm	parts per million
SCP	Sustainable Communities Plan
SF <sub>6</sub>	sulfur hexafluoride
SHPD	State Historic Preservation Division
SMA	Special Management Area
SO <sub>2</sub>	sulfur dioxide
TMK	Tax Map Key
USC	United States Code
USCCSP	United States Climate Change Science Program
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

## 1.0 INTRODUCTION

---

### 1.1 Proposed Development and Location

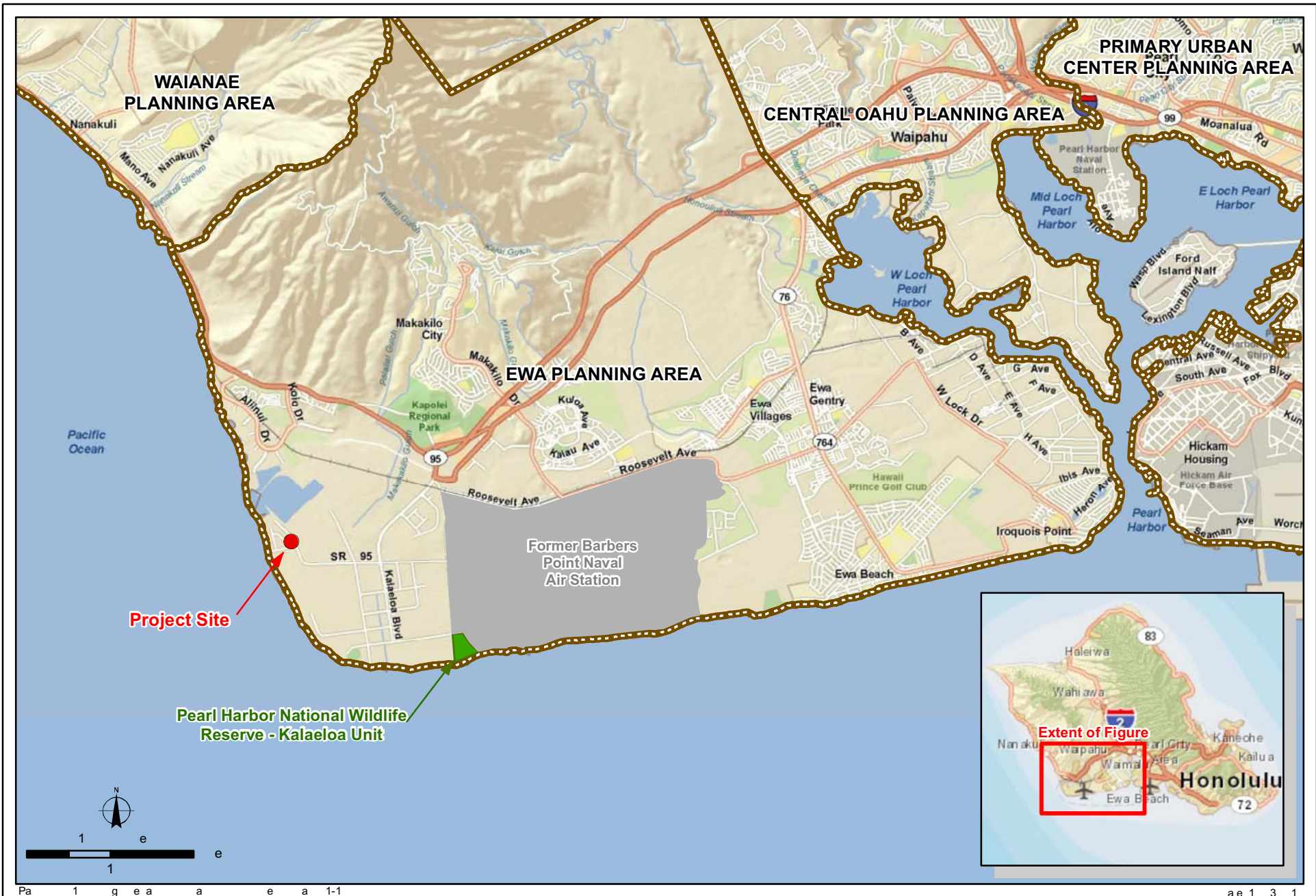
#### *Kenai Industrial Park Self-Storage Facility*

The proposed Kenai Industrial Park project site is an undeveloped 0.75 acre parcel (Tax Map Key [TMK] 9-1-074:023) located at 91-525 Malakole Street in Kapolei, Honolulu County on the Island of O`ahu, Hawai`i (see Figures 1-1 and 1-2). The project site is located within the northwestern portion of Campbell Industrial Park which located to the southwest of the Kapolei City Center. Campbell Industrial Park, which is the largest industrial park in Hawai`i, is comprised of approximately 1,380 acres occupied by nearly 250 industrial and commercial businesses. Under the City and County of Honolulu Land Use Ordinance the Kenai Industrial Park project site is designated as I-3 (i.e., waterfront industrial) (see *Section 3.6 Land Use* Figure 3-4).

CIRI (Cook Inlet Region, Inc.) Land Development Company (CLDC) is a wholly owned subsidiary of CIRI, which is one of 12 Alaska-based regional corporations established by the Alaska Native Claims Settlement Act of 1971 to benefit Alaska Natives who had ties to the Cook Inlet region. CLDC proposes to develop the 0.75 acre property for industrial purposes similar to those located in the bordering parcels of the subdivision including Precision Moving and Storage, Inc. located at 91-544 Awakumoku Street. As currently designed, the site would be developed as a 62-unit self storage facility (see Figure 2-2). Development activities associated with the development storage unit facility would likely include the following components:

- Clearing and grubbing the entire site;
- Grading the entire site;
- Installation of drainage conveyance structures;
- Installation of facility foundations and driveways;
- Construction of storage structures and office facility; and,
- Construction of protective security fencing.

Construction of the proposed facility would occur as soon as commercially practicable after all permits and authorizations have been obtained.



Regional Figure  
 EA for Kenai Industrial Park Project HCP  
 Kapolei, Hawai'i

FIGURE

1-1

### *Round-leaved Chaff Flower Habitat Conservation Plan*

In addition to the proposed industrial development, the Proposed Action also includes the implementation of the Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan (HCP) by CLDC in order to offset impacts to this plant species resulting from the construction of the proposed self-storage facility. In order to offset these impacts CLDC proposes to conduct in-kind off-site mitigation in the form of habitat restoration and creation. The proposed off-site mitigation parcel is located on the Kalaeloa Unit (TMK 9-1-013:030) of the Pearl Harbor National Wildlife Refuge (NWR), approximately 2 miles from the Kenai Industrial Park project site (see Figure 1-1).

The Kalaeloa Unit, which spans approximately 37 acres, is located on the flat coastal `Ewa Plain immediately adjacent to the east of Kalaeloa Airport. This unit supports a unique remnant of the dry coastal shrubland habitat that historically extended along the coastal coralline environment, which spanned much of the `Ewa Plain. The Kalaeloa Unit was established during Naval Air Station (NAS) Barber Point base closure proceedings in 2001 to protect and enhance the habitat for the endangered coastal dryland plants, round-leaved chaff flower and `Ewa Plains `akoko (*Chamaesyce skottsbergii* var. *skottsbergii*). Currently approximately 25 acres of the Kalaeloa Unit are under active management; additional activities, including invasive plant removal as well as native planting and habitat restoration are scheduled for the remaining 7 acres (United States Fish and Wildlife Service [USFWS] 2010).

The proposed implementation of the HCP would create new populations of round-leaved chaff flower on the Kalaeloa Unit from local stock (i.e., seeds and cuttings). CLDC would propagate round-leaved chaff flower seeds and cuttings at a Hui Ku Maoli Ola Native Plant Nursery located in Kaneohe, Hawai'i. Upon seed growth, CLDC would outplant approximately 80 individual plants (40:1 mitigation ratio) within suitable habitat located on the Kalaeloa Unit. In preparation of outplanting activities, CLDC would conduct habitat enhancement activities, including nonnative species removal within the planting sites, as necessary. CLDC would utilize educational institutions to implement habitat restoration and enhancement activities within the round-leaved chaff flower planting sites. Educational native plant restoration programs such as the Plant Bioscience Technology Program at Leeward Community College and the Wai`anae High School Hawaiian Studies Program are proposed to help with planting and habitat enhancement activities in order to provide hands-on opportunities for students to learn history and science blended with environmental stewardship.

Implementation of the HCP would occur over a 5 year period during which time all restoration, maintenance, monitoring and seed storage efforts will be funded by CLDC for the purpose of meeting the established measures of success for mitigation (see *Section 2 Alternatives Including the Proposed Action*). Assurances that adequate funding will be available to support the monitoring and mitigation measures would be provided by CLDC in the form of a performance bond in the amount of \$202,000, naming the Department of Land and Natural Resources (DLNR) as the beneficiary, which would be available to fund mitigation in the unlikely event of a revenue shortfall.

## **1.2 Purpose and Need for Proposed Action**

CLDC proposes to develop the 0.75 acre parcel in the Kenai Industrial Park for industrial use consistent with the parcel's land use designation under the City and County of Honolulu Land Use Ordinance. The development of the parcel as a 62-unit self storage facility would meet the `Ewa Development Plan goal to continue expansion of the industrial uses in the Barbers Point Industrial Area, which includes Campbell Industrial Park. The `Ewa Development Plan indicates that this area should continue to grow as one of O`ahu's and the state's most important industrial areas (Department of Planning & Permitting City & County of Honolulu 2000). Similarly, the Proposed Action would be consistent with Policy 3 of the O`ahu General Plan (2002) which encourages the continued development of Barbers Point as a major industrial center.

Additionally, the proposed implementation of the Round-leaved Chaff Flower HCP by CLDC would be necessary to offset the adverse and unavoidable impacts of the proposed development on two federally and state-endangered round-leaved chaff flower individuals, which would be removed during construction. The successful implementation of the HCP would meet Goals 2 and 4 of the Pearl Harbor NWR Comprehensive Conservation Plan (2010), as the mitigation would restore and protect coastal coralline plain habitat at the Kalaeloa Unit as well as provide interpretive and education opportunities to enhance public understanding of and appreciation for the natural and cultural resources of the Pearl Harbor NWR. The implementation of the HCP is necessary to facilitate the long-term conservation of the round-leaved chaff flower. The population trend for this species on the Kenai Industrial Park project site has been negative as over 100 individuals have been extirpated from the 0.75 acre site, which is isolated by surrounding industrial land use. In contrast, the overall population trend for the Kalaeloa Unit population has been positive following the implementation of restoration activities which included the introduction of 100 round-leaved chaff flower individuals. Successful implementation of the HCP would build upon these restoration activities and contribute to the ongoing recovery of this species (USFWS 1994).

## **1.3 Relevant Laws, Regulations, and Policies**

### **1.3.1 Federal Regulatory Context**

#### **1.3.1.1 Federal Endangered Species Act**

The Endangered Species Act (ESA) provides broad protection for plants, fish, and wildlife that have been federally listed as threatened or endangered in the United States and conserves ecosystem in which the species depend (16 United States Code [USC] § 1531-1544). Section 9 of the ESA prohibits the unauthorized "take" of any endangered or threatened species of fish or wildlife listed under the ESA. "Take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect species listed as endangered or threatened, or to attempt to engage in any such conduct (50 Code of Federal Regulations [CFR] 17.3). "Harm" has been defined by United States Fish and Wildlife Service USFWS to mean an act which actually kills or injures wildlife, and may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering (50 CFR 17.3). "Harass" has been defined to mean an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such

an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering (50 CFR 17.3). Section 10 of the ESA contains exceptions and exemptions to Section 9, if such taking is incidental to the carrying out of an otherwise lawful activity, and outlines procedures for federal agencies to follow when taking actions that may jeopardize listed species.

### **1.3.2 State and Local Regulatory Context**

#### **1.3.2.1 Hawai`i Revised Statutes, Chapter 195 D**

The purpose of Hawai`i Revised Statutes (HRS) Chapter 195D (Conservation of Aquatic Life, Wildlife, and Land Plants), is “to insure the continued perpetuation of indigenous aquatic life, wildlife, and land plants, and their habitats for human enjoyment, for scientific purposes, and as members of ecosystems ...” (§ 195D-1). Section 195D-4 states that any endangered or threatened species of fish or wildlife recognized by the ESA shall be so deemed by state statute. Like the ESA, the unauthorized “take” of such endangered or threatened species is prohibited [§ 195D-4(e)]. Under Section 195D-4(g), the Board of Land and Natural Resources (BLNR), after consultation with the state’s Endangered Species Recovery Committee (ESRC), may issue a temporary license to allow a take otherwise prohibited if the take is incidental to the carrying out of an otherwise lawful activity.

The Round-leaved Chaff Flower HCP has been prepared pursuant to HRS Chapter 195D (Sections 4 and 21) for the incidental take of round-leaved chaff flower, a federally and state-listed endangered species. It seeks to offset impacts to round-leaved chaff flower that would result from the proposed Kenai Industrial Park development by implementing measures that would protect and perpetuate the species as a whole.

#### **1.3.2.2 Hawai`i Revised Statutes, Chapter 343**

HRS Chapter 343 (Hawai`i Environmental Policy Act) was developed “to establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations” (§ 343-1). This chapter requires the development of an Environmental Assessment (EA), which is an informational document that discloses the effects of a proposed action on the environment, economic welfare, social welfare, and cultural practices, as well as mitigation measures and alternatives to the action.

This EA has been prepared pursuant to the HRS, Chapter 343 and the associated Title 11, Chapter 200, Hawai`i Administrative Rules (HAR), Department of Health, State of Hawai`i. The intent of this EA is to ensure that comprehensive and systematic consideration is given to potential impacts of the proposed action upon the natural and man-made environment. This EA is intended to serve as an environmental disclosure document which identifies the purpose of and need for the proposed action, reasonable implementation alternatives, existing environmental conditions, potential environmental impacts, and mitigation measures to avoid or minimize such impacts. The findings presented in this EA will provide the basis for determining whether an Environmental Impact Statement (EIS) is necessary, or whether a Finding of No Significant Impact (FONSI) is appropriate.



### **1.3.2.3 Hawai`i Revised Statutes, Chapter 205**

Under the State Land Use Law (Act 187), HRS Chapter 205, all lands and waters in the state are classified into one of four districts: Agriculture, Rural, Conservation, or Urban. Conservation Districts, under the jurisdiction of DLNR, are further divided into five subzones: Protective, Limited, Resource, General, and Special. The use of Conservation District lands is regulated by HRS Chapter 183C and HAR Chapter 13-5.

The Kenai Industrial Park project site and the Kalaeloa Unit are located in a state-designated Urban District. The Proposed Action is consistent with approved uses within an Urban District (subsection HRS 205-2[e]) (see *Section 3.6 Land Use*).

### **1.3.2.4 Hawai`i Coastal Zone Management Program**

Hawai`i's Coastal Zone Management (CZM) Program (HRS 205A-2) is designed to protect valuable and vulnerable coastal resources by reducing coastal hazards and improving the review process for activities proposed within the coastal zone. The CZM Program focuses on ten objectives and policies related to the following: recreational resources; historic resources; scenic and open space resources; coastal ecosystems; economic uses; coastal hazards; managing development; public participation; beach protection; and marine resources. The CZM program also includes a permit system to control development within Special Management Areas (SMAs), which include lands within 300 feet from the shoreline.

The proposed Kenai Industrial Park project site is not located within an SMA, although SMAs do occur within portions of the Kalaeloa Unit. However, the proposed project does not include development on the Kalaeloa Unit and therefore would not require an SMA permit.

### **1.3.2.5 City and County of Honolulu General Plan**

The General Plan for the City and County of Honolulu, revised in 2000, is a comprehensive document with long-range social, economic, environmental, and design objectives, as well as broad policies to facilitate the attainment of those objectives. The General Plan is divided into 11 subject areas including population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and, government operations and fiscal management (Department of Permitting & Planning City & County of Honolulu 2006). The General Plan designated the Barbers Point as an industrial area and further encourages the continued development of Barbers Point as a major industrial center.

### **1.3.2.6 `Ewa Plains Development Plan**

The county is divided into eight regional areas that are guided by Development Plans or Sustainable Communities Plans (SCP). The Kenai Industrial Park project site and the Kalaeloa Unit are located in the `Ewa Development Plan area, which is bounded to the northwest by the Wai`anae area, to the north by the Central O`ahu area, and to the east by the Primary Urban Center area (Department of Permitting & Planning City & County of Honolulu 2000). In cooperation with the General Plan, the `Ewa Development Plan is designed to guide public policy, investment, and decision making over a 20-year period. The plan states that the role of

the `Ewa Development Plan area is to provide and concentrate industrial and employment activities, to provide for residential and development, promote diversified agriculture, and relieve urban development pressures on the rural and urban fringe Development Plan areas (Department of Permitting & Planning City & County of Honolulu 2000). Land use maps within the `Ewa Development Plan area depict the Kenai Industrial Park area as Industrial land use and the Kalaeloa Unit mitigation parcel as agricultural and preservation land use (Department of Permitting & Planning City & County of Honolulu 2000).

### **1.3.2.7 County Zoning**

Land use on O`ahu is also dictated by the Land Use Ordinance from the City and County. The City and County of Honolulu zoning ordinance defines the Kenai Industrial Park project site and adjoining property as I-3 (i.e., Waterfront Industrial) while the Kalaeloa Unit is zoned as F-1 (i.e., Federal and Military Preservation) (see *Section 3.6, Land Use*)

## **1.4 Public Involvement and Agency Coordination**

Public involvement through the state's regulatory process began with the public review of the Draft Round-leaved Chaff Flower HCP which was released for public comment on August 8, 2011. Subsequently, feedback and comments on the Draft HCP were incorporated and a Revised Draft HCP was produced. The Final HCP will be reviewed by ESRC and, if approved, issuance of an incidental take license (ITL) is expected concurrent with project approval.

CLDC has met with and contacted local, state, and federal agencies during development of the Draft and Revised Draft HCP as well as the Draft EA for the Proposed Action. This includes coordination and consultation with the USFWS, Division of Forestry and Wildlife (DOFAW), ESRC, State Historic Preservation Division (SHPD), and the Department of Planning & Permitting City & County of Honolulu.

The ESRC met to discuss the HCP on June 28, 2012 and conducted a site visit on June 27, 2012. Comments regarding the HCP were provided during the June 28, 2012 meeting. The HCP was revised by the DLNR on two occasions in order to address their comments on the proposed take, avoidance and minimization, mitigation measures and monitoring protocols prior to the final submittal of the Draft to the ESRC and public. The 60-day public review was initiated by release of the draft HCP in the Office of Environmental Quality Control (OEQC) bi-monthly bulletin on May 8, 2012.

## 2.0 ALTERNATIVES INCLUDING THE PROPOSED ACTION

### 2.1 Introduction

CIRI (Cook Inlet Region, Inc.) Land Development Company (CLDC) desires to develop the 0.75 acre parcel (Tax Map Key [TMK] 9-1-074:030). The Proposed Action includes: 1) development of the property for industrial use consistent with the parcel’s land use designation under the City and County of Honolulu Land Use Ordinance; and, 2) implementation of the Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan (HCP) by CLDC in order to offset the adverse and unavoidable impacts of the proposed development on two federally and state-endangered round-leaved chaff flower individuals, which would be removed during construction.

### 2.2 Proposed Action - Development of a 62-unit Self-storage Facility

Under the Proposed Action CLDC would develop the 0.75 acre parcel at 91-525 Malakole Street as a 62-unit self-storage facility (see Figure 2-1). This would include a maximum build-out scenario under which the entire site would be cleared and graded. Drainage conveyance structures as well as facility foundations, driveways, and storage structures would be constructed within the property boundaries. Additionally an office facility as well as protective security fencing would also be constructed. The particular dimensions of these facilities are subject to subsequent design specifications; however, the Proposed Action would be consistent with the visual character of the surrounding uses within the Kenai Industrial Park. Construction of the proposed facility would occur as soon as commercially practicable after all permits and authorizations have been obtained.

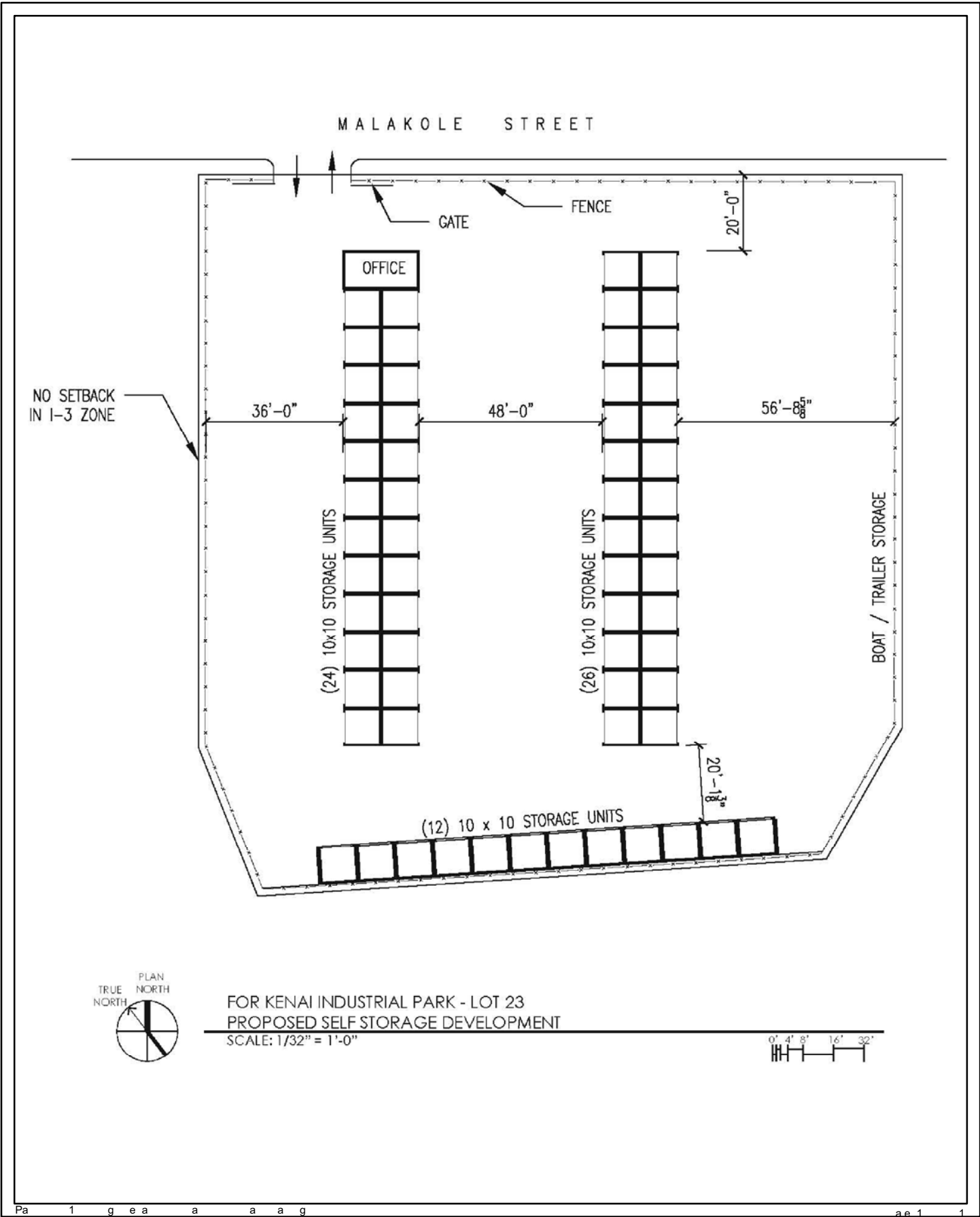


*Under the Proposed Action the 0.75 acre parcel would be developed as a 62-unit self-storage facility (example above), with a visual character that would be commensurate with the rest Kenai Industrial Park.*

**Table 2-1.  
 Summary of Proposed Self-Storage Development Components**

Facility Type	Area (sq ft)
Storage Unit	6,200
Office	200
Pavement	26,270

Notes: The described project components as well as their dimensions are conceptual.



Kenai Industrial Park Conceptual Project Design  
EA for Kenai Industrial Park Project HCP  
Kapolei, Hawai'i

FIGURE

2-1



In addition to the proposed industrial development, the Proposed Action also includes the implementation of the Round-leaved Chaff Flower HCP by CLDC in order to offset impacts to this plant species resulting from construction activities. CLDC would conduct off-site habitat restoration and creation within the Kalaeloa Unit of the Pearl Harbor National Wildlife Refuge (NWR), which is located approximately 2 miles from the Kenai Industrial Park project site (refer to Figure 1-1).

The proposed implementation of the HCP would create new populations of round-leaved chaff flower on the Kalaeloa Unit from local stock at a 40:1 mitigation ratio (i.e., 40 individuals would be replanted for each plant that would be impacted as a result of the proposed development). CLDC would also conduct habitat enhancement activities, including nonnative species removal within the planting sites, as necessary. Additionally, CLDC would utilize educational institutions to implement habitat restoration and enhancement activities within the round-leaved chaff flower planting sites.

Maintenance would be performed as a part of the HCP to ensure overall outplanting success. These activities would be conducted on a monthly basis during Year 1, bimonthly during Year 2, and on a quarterly basis during years 3 through 5. These efforts may include weed control, pest control (e.g., ants), erosion control, irrigation, soil fertility management, and dead plant replacement, as needed. A project horticulturist will oversee and supervise the planting as well as the maintenance program and work directly with maintenance personnel to ensure project success. Once the plant installation has been completed, follow-up maintenance will occur as necessary for five years for all project-related round-leaved chaff flower populations located within the Kalaeloa Unit. Maintenance activities would be performed by qualified personnel with experience in maintaining native habitat revegetation in Hawai'i and shall be coordinated with the Pearl Harbor NWR.

The implementation of the HCP would occur over a 5-year period during which time all restoration, maintenance, monitoring and seed storage efforts will be funded by CLDC for the purpose of meeting the established measures of success for mitigation:

- 1) Outplant individual survivorship
  - 100 percent of the 80 outplanted individuals shall survive by Year 1
  - 95 percent of the 80 outplanted individuals shall survive by Year 1
  - 85 percent of the 80 outplanted individuals shall survive by Year 3
  - 75 percent of the 80 outplanted individuals shall survive by Year 4
- 2) There must be (a) recruitment of seedlings that survive through the dry season, and (b) seed production by at least 25 percent of the outplanted lineages by Year 5;
- 3) The number of seedlings recruited into the mature age class must be greater than the mortality rate of existing adult plants over a five year period;
- 4) More than 80 reproducing adult plants shall be established by Year 5;
- 5) Less than 25 percent cover of herbaceous nonnative plants within planting sites by year 5;

- 6) No mature kiawe within the planting sites over the five year period; and,
- 7) Native species cover within the planting sites shall be greater than 25 percent by Year 5.

Annual monitoring reports would be submitted by CLDC each year for five years, beginning approximately one year after installation. Reports will detail project progress and remedial measures recommended and implemented during the reporting period. Reports will also include a summary and analysis of the abiotic and biotic monitoring data collected and an evaluation of project progress relative to success standards. Copies of the yearly monitoring reports will be submitted to the appropriate agencies (i.e., Pearl Harbor NWR staff and Department of Land and Natural Resources [DLNR]).

Assurances that adequate funding will be available to support the monitoring and mitigation measures would be provided by CLDC in the form of a performance bond in the amount of \$202,000, naming the DLNR as the beneficiary, which would be available to fund mitigation in the unlikely event of a revenue shortfall.

## **2.3 Alternatives**

### **2.3.1 Alternative 1 – Development of an Alternate Passive Industrial Use**

Under implementation of this alternative, the 0.75 acre parcel would be developed as an alternate passive industrial use. Consequently, while the parcel would not be developed as a 62-unit self-storage facility as it would be under the Proposed Action, it would instead be developed as an alternate benign industrial use that would not be a source of substantial traffic, air emissions, noise emissions, and/or hazardous waste. This alternative, similar to the Proposed Action, would see the parcel developed for a use similar to the surrounding uses in Campbell Industrial Park, and consistent with the parcel's land use designation under the City and County of Honolulu Land Use Ordinance. Construction activities are anticipated to be similar to the Proposed Action and would include:

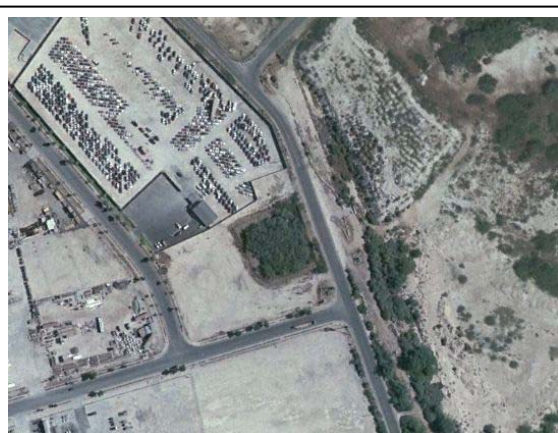
- Clearing and grubbing the entire site;
- Grading the entire site;
- Installation of drainage conveyance structures;
- Installation of facility foundations and driveways; and,
- Construction of protective security fencing.

The construction of the alternate industrial use, similar to the Proposed Action, would occur as soon as commercially practicable after all permits and authorizations have been obtained. Additionally, under this alternative the Round-leaved Chaff Flower HCP would be implemented as described under the Proposed Action.

### 2.3.2 Alternative 2 – No-Action Alternative

The No-Action Alternative is the baseline against which other alternatives, including the Proposed Action, are measured. “No-Action” refers to the future site conditions that would likely result should the proposed project not proceed.

Under the No-Action Alternative the DLNR would not issue an incidental take license (ITL) and the CLDC would not be allowed to develop the property as construction would result in the unauthorized incidental take of a federally and state-listed species. Consequently, the Round-leaved Chaff Flower HCP would not be implemented. The current stagnated use of the Kenai Industrial Park project site would continue into the future and the two round-leaved chaff flower individuals located on the parcel would likely be extirpated as the property is isolated by surrounding industrial land use, which has contributed to the negative survival trend for this subpopulation. This scenario would not contribute to the long-term recovery of the round-leaved chaff flower and further, it would not support the county’s stated goal to continue the expansion of Barbers Point as an industrial center.



*The Kenai Industrial Park project site is surrounded by industrial land uses. Consequently, if the No-Action Alternative were to be selected the two round-leaved chaff flower individuals would likely be extirpated from the isolated site over the long-term.*

This No-Action Alternative would not meet the Project’s main objectives to:

- 1) Facilitate the development of the 0.75 acre property for an industrial use consistent with the parcel’s land use designation under the City and County of Honolulu Land Use Ordinance; and,
- 2) Implement the Round-leaved Chaff Flower HCP to offset development of the parcel and contribute to the long-term recovery of the round-leaved chaff flower.

### **3.0 AFFECTED ENVIRONMENT**

---

This section describes pertinent existing environmental conditions for resources potentially affected by the Proposed Action and identified alternatives. In compliance with Hawai'i Revised Statutes (HRS) Chapter 343, the Hawai'i Environmental Policy Act (HEPA) the description of the affected environment focuses on only those aspects potentially subject to impacts.

In the case of the Proposed Action at the Kenai Industrial Park the affected environment description is limited primarily to the undeveloped parcel located at 91-525 Malakole Street (Tax Map Key [TMK] 9-1-074-023) in Kapolei as well as the mitigation parcel located at the Pearl Harbor National Wildlife Refuge (NWR) in the Kalaeloa Unit (TMK 9-1-013:030), and the `Ewa Plain District in the County of Honolulu, Hawai'i. Resource descriptions focus on the following areas: climate and air quality; geology, topography, and soils; water resources; biological resources; visual resources; land use; transportation and circulation; noise; hazards; historical, archeological, and cultural resources; and, socioeconomics.

#### **3.1 Climate and Air Quality**

##### **3.1.1 Definition of Resource**

###### **3.1.1.1 Air Quality**

Air quality in a given location is determined by the concentration of various pollutants in the atmosphere. National Ambient Air Quality Standards (NAAQS) are established by the United States Environmental Protection Agency (USEPA) for criteria pollutants, including: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter equal or less than ten microns in diameter (PM<sub>10</sub>) and 2.5 microns in diameter (PM<sub>2.5</sub>) and lead (Pb). NAAQS represent maximum levels of background pollution that are considered safe, with an adequate margin of safety, to protect public health and welfare.

The Clean Air Branch (CAB) of the Hawai'i Department of Health (DOH) is responsible for air pollution control in the State of Hawai'i. Similar to the USEPA the CAB also maintains primary and secondary air quality standards for criteria pollutants (see Table 3-1).

###### **3.1.1.2 Air Pollutants**

Air quality is affected by stationary sources (e.g., urban and industrial development) and mobile sources (e.g., motor vehicles). However, air quality at a given location is a function of several factors, including the quantity and type of pollutants emitted locally and regionally, and the dispersion rates of pollutants in the region. Primary factors affecting pollutant dispersion are wind speed and direction, atmospheric stability, temperature, the presence or absence of inversions, and topography.



### 3.1.1.3 Greenhouse Gases and Global Climate Change

Global climate change is a transformation in the average weather of the Earth which can be measured by changes in temperature, wind patterns, and precipitation. Scientific consensus has identified human-related emission of greenhouse gases above natural levels as a significant contributor to global climate change (United States Climate Change Science Program [USCCSP] 2009). Greenhouse gases (GHGs) trap heat in the atmosphere and regulate the Earth's temperature. They include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), ground-level ozone (O<sub>3</sub>), and fluorinated gases such as chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HFCs).

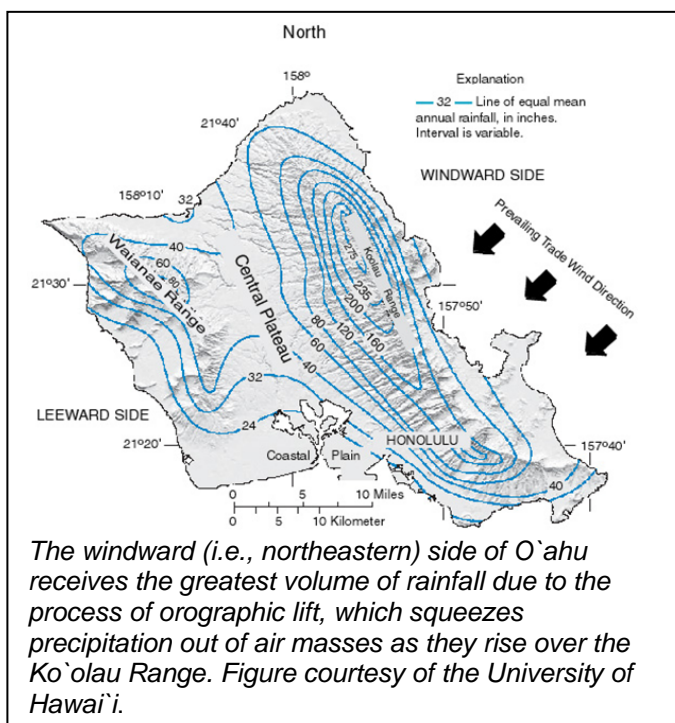
Per the direction of Act 234, Hawai'i's Global Warming Solution Law (2007) the CAB has proposed GHG rules for the state which includes regulation of CO<sub>2</sub>, N<sub>2</sub>O, CH<sub>4</sub>, HFCs, perfluorocarbons (PFCs), and sulfur hexafluoride (SF<sub>6</sub>). These rules define major GHG sources to as those that emit greater than 100,000 tons per year of CO<sub>2</sub> equivalent (CO<sub>2</sub>e). These rules would allow the CAB to monitor and enforce a GHG emission limit and would ensure that GHG reductions are permanent, quantifiable, and enforceable (State of Hawai'i 2012d).

### 3.1.2 Existing Conditions

#### 3.1.2.1 Regional Setting

##### *Climate*

The major Hawai'ian Islands lie within the tropics, but have a subtropical climate due to the cooling influence of currents from the Bering Sea. Northeasterly trade winds persist throughout most of the year, although southerly Kona winds occasionally blow for several days at a time. These light and variable southwest winds bring hot, humid weather in the summer and occasional fierce storms with high waves, wind, and rain in the winter. Average wind speeds are highest during the summer and often exceed 12 miles per hour. Areas receiving the greatest amount of rainfall are on the windward, or northeastern, sides of the islands. Humidity on the islands is typically high except along the drier (i.e., leeward) coasts and at higher elevations (National Weather Service 2012).



*Air Quality*

Because the State of Hawai'i is not impacted by pollution from neighboring states and it benefits from virtually constant ocean breezes, the islands, including O'ahu, has some of the best air quality in the nation. Fifteen monitoring stations are located across the State of Hawai'i, four of which are located in Honolulu County and are maintained by the CAB (State of Hawai'i 2012a). Data gathered from these stations indicated that the State of Hawai'i is in attainment for all state and federal criteria pollutants (State of Hawai'i 2011b).

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

Air Pollutant	Hawai'i Standard	Federal Primary Standard	Federal Secondary Standard
<b>Carbon Monoxide</b>			
1-hour average	9 ppm	35 ppm	-
8-hour average	4.4 ppm	9 ppm	-
<b>Lead</b>			
3-month average	1.5 µg/m <sup>3</sup> (calendar quarter)	0.15 µg/m <sup>3</sup> (running 3-month)	Same as primary
<b>Nitrogen Dioxide</b>			
1-hour average	-	100 ppb	-
Annual average	0.04 ppm	0.053 ppm	Same as primary
<b>Particulate Matter (PM<sub>10</sub>)</b>			
24-hour block average	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>	Same as primary
Annual average	50 µg/m <sup>3</sup>	-	-
<b>Particulate Matter (PM<sub>2.5</sub>)</b>			
24-hour block average	-	35 µg/m <sup>3</sup>	Same as primary
Annual average	-	15 µg/m <sup>3</sup>	Same as primary
<b>Ozone</b>			
8-hour rolling average	0.08 ppm	0.075 ppm	Same as primary
<b>Sulfur Dioxide</b>			
1-hour average	-	75 ppb	-
3-hour block average	0.5 ppm	-	0.5 ppm
24-hour block average	0.14 ppm	0.14 ppm	-
Annual average	0.03 ppm	0.03 ppm	-
<b>Hydrogen Sulfide</b>			
1-hour average	25 ppb	-	-

Notes:

- ppb - parts per billion by volume
  - ppm - parts per million by volume
  - µg/m<sup>3</sup> - micrograms per cubic meter of air
- Source: State of Hawai'i 2011c.

### **3.1.2.2 Project Area Setting**

#### *Climate*

The Kenai Industrial Park project site as well as the Kalaeloa Unit mitigation parcel are located on the leeward physiographic zone of O`ahu. This location is characterized by lower rainfall volume, larger drainage basins, and more intermittent streams than those regions that are more exposed to the trade winds. During the dry season, day temperatures are between 87 and 89 degrees Fahrenheit (°F) and night temperatures between 72 and 76 °F. Wet season temperatures are slightly lower with daytime temperatures ranging between 76 and 78 °F. The mean annual precipitation in the area is approximately 20 inches, with the majority of the rainfall occurring during the winter months (United States Fish and Wildlife Service [USFWS] 2010).

#### *Air Quality*

The Kenai Industrial Park project site is located within the northern extent of the Campbell Industrial Park while the Kalaeloa Unit mitigation parcel is located immediately adjacent to the east. The Campbell Industrial Park is zoned for industrial purposes and is heavily used, primarily for power generation (see *Section 3.6 Land Use*). The Campbell Industrial Park Generating Station is a 110-megawatt generator designed to be fueled exclusively with 100 percent, renewable biodiesel. In addition, Covanta Honolulu, also known as the HPOWER facility, processes up to 2,160 tons per day of municipal solid waste into refuse derived fuel, generating up to 57 megawatts of energy for Hawai`ian Electric Company, enough to meet approximately 4.5 percent of O`ahu's energy needs. Consequently, the air quality in this region would be expected to be slightly poorer relative to the rest of the island; however emissions tend to be carried seaward by the prevailing winds, and therefore air quality measured locally tends to range from good to moderate (Hawai`ian Electric Company 2009, 2012).

## **3.2 Geology, Topography, and Soils**

### **3.2.1 Definition of Resource**

Geological resources consist of surface and subsurface materials and their properties. Principal geologic factors affecting the ability to support structural development are seismic properties (i.e., potential for subsurface shifting, faulting, or crustal disturbance), soil stability, and topography. The term *soil*, in general, refers to unconsolidated materials overlying bedrock or other parent material. Soil structure, elasticity, strength, shrink-swell potential, and erodibility all determine the ability for the ground to support man-made structures. Soils typically are described in terms of their complex type, slope, physical characteristics, and relative compatibility or constraining properties with regard to particular construction activities and types of land use. Topography is the change in elevation over the surface of a land area. An area's topography is influenced by many factors, including human activity, underlying geologic material, seismic activity, climatic conditions, and erosion. A discussion of topography typically encompasses a description of surface elevations, slope, and distinct physiographic features (e.g., mountains) and their influence on human activities.

## 3.2.2 Existing Conditions

### 3.2.2.1 Regional Setting

#### *Geology*

The Island of O`ahu was created by the extrusion of basaltic lavas from two shield volcanoes, Wai`anae and Ko`olau. The older volcano, Wai`anae, is estimated to be middle to late Pliocene in age and forms the bulk of the western one-third of the island. The younger shield, Ko`olau, is estimated to be late Pliocene to early Pleistocene in age and forms the majority of the eastern two-thirds of the island (Stearns and Vaksvik 1935). Wai`anae became extinct while Ko`olau was still active, and its eastern flank was partially buried below Ko`olau lavas banking against its eastern flank and forming a broad plateau, now known as the Schofield Plateau. The exposed part of the older lava is nearly 2,000 feet thick and consists largely of thin-bedded pahoehoe (i.e., lava characterized by a smooth and billowy surface). The Wai`anae Volcano, like other Hawai`ian volcanoes, produced only small amounts of ash, and the lava was primarily extruded from fissure a few feet wide, which now occupied by dikes (Stearns and Vaksvik 1935).

The Wai`anae Range, which is approximately 20 miles wide and forms the western part of O`ahu, is made up of three groups of lavas erupted in Tertiary and possibly in early Pleistocene era. The striking features of the Wai`anae Range are the great flat-floored valleys that indent its western slope. The Ko`olau Range, which makes up the eastern part of the island, is made up of beds of basalt which in general dip away from its crest.

#### *Topography*

Both the Wai`anae and Ko`olau Ranges are extinct basaltic volcanoes deeply dissected by erosion. Great amounts of both the Wai`anae and Ko`olau Ranges were removed by fluvial and marine erosion during the Pleistocene era. After this erosion cycle the island was submerged more than 1,200 feet, and these great valleys were drowned and alleviated (Stearns and Vaksvik 1935). Today the topography of O`ahu is characterized by broad central valleys in the interior portions of the island and tall steep slopes on the coastal areas as a result of erosion from wind, rain, and sea (Moore and Brennan 1974).

#### *Soils*

Various soil types have developed throughout the Island of O`ahu as the basaltic lavas and volcanic ash from the volcanoes have weathered and decomposed. The Schofield Plateau, which lies between the two mountain ranges, is characterized by soils which are well suited to cultivation. Consequently, a large acreage was used for sugarcane and pineapple farming. The coastal plains adjacent to the ocean formed from coral reefs and alluvial sediments. They are used mostly for farming and ranching or for urban development. There are also



*Pahoehoe characterized the Ko`olau lavas on the eastern side of O`ahu. This lava appears smooth and billowy with rounded surfaces. Photograph courtesy of the USGS.*

several volcanic cones throughout the island. O`ahu is dominated by seven soil associations which are generally well-drained and occur on moderate slopes (Natural Resources Conservation Service [NRCS] 1972).

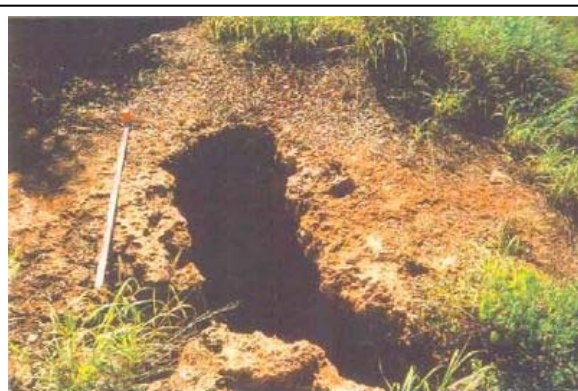
### 3.2.2.2 Project Area Setting

#### *Geology*

The Kenai Industrial Park project site and the Kalaeloa Unit mitigation parcel are located on the coastal `Ewa Plain, which encompasses the southwestern portion of the O`ahu. The physiographic region was formed by sea level change during the Pleistocene era and is underlain by a broad platform of elevated limestone reef material and partially covered by accumulated alluvium from the Wai`anae Range. The raised coralline limestone within the `Ewa Plain was partially caused by upward seafloor warping and tilting of the larger islands of Maui and Hawai`i (USFWS 2010).

#### *Topography*

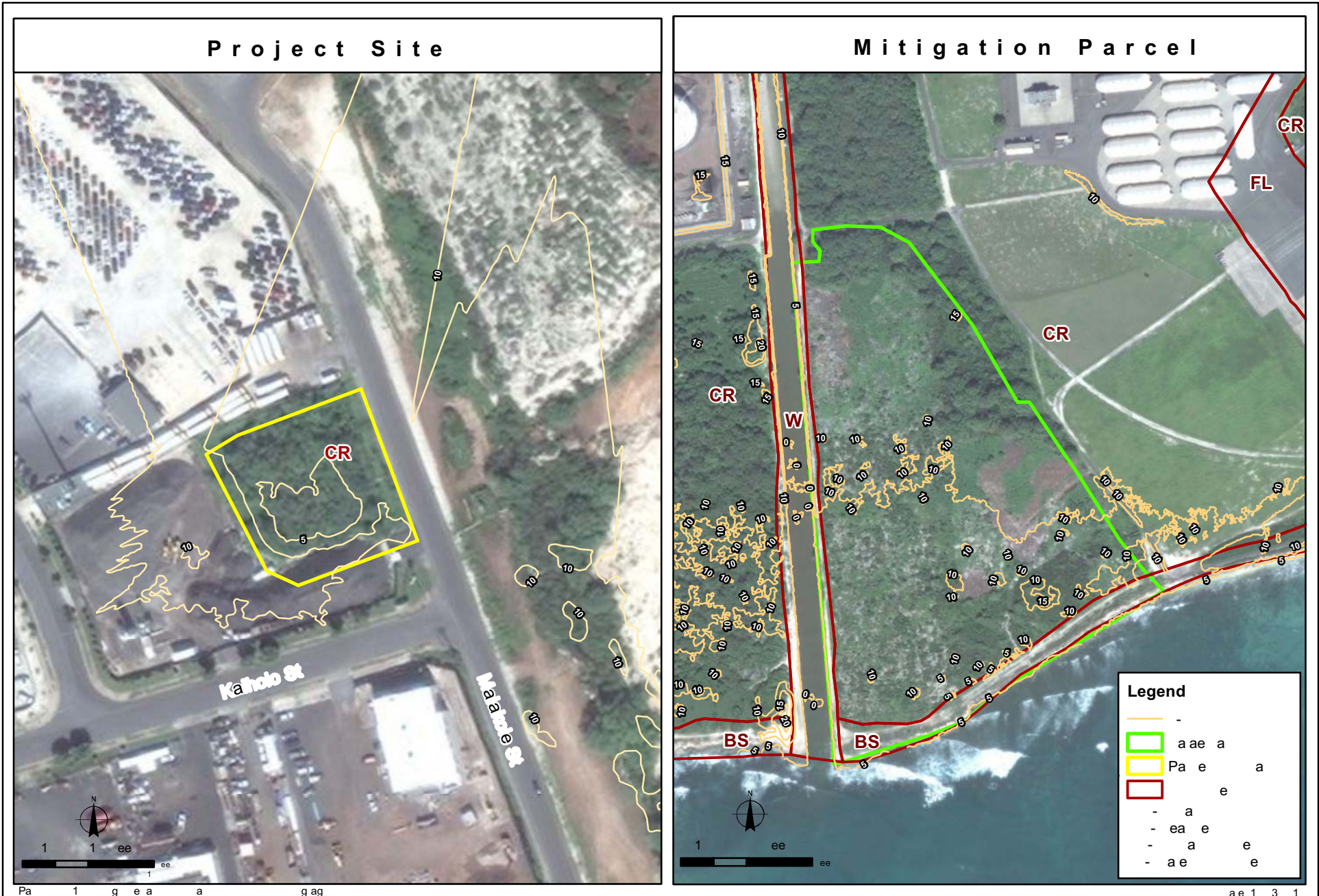
Karst topography and solution sinkholes or anchialine pools are characteristic of the `Ewa Plain. Sinkholes are a type of karstic structure that is formed by the dissolution of the consolidated and cemented hard limestone. The elevation of the Kenai Industrial Park project site is approximately 3 feet above mean sea level (msl). The surrounding area is approximately 3 feet higher in elevation than the project site. The erosion hazard in this region is slight (United States Geological Survey [USGS] 2012). Elevations near the Kalaeloa Unit mitigation parcel are similar, ranging from 10 feet above msl along the northern boundary to sea level at the southern boundary.



*Karstic structures occur throughout the `Ewa Plain, which is underlain by a broad platform of elevated limestone reef material. These sinkholes are formed by the dissolution of the limestone. Photograph courtesy of McDermott et al. 2006.*

#### *Soils*

Soils within the project sites, including the Kenai Industrial Park project site and the Kalaeloa Unit mitigation parcel, are classified as coral outcrop, which is comprised of coral or cemented calcareous sand and can generally be found on O`ahu between 0 and 100 feet in elevation. This soil association is geographically associated with Jaucas, Kea`au, and Mokolē`ia soils. Additionally, a red thin friable layer of soil material can be found within the cracks, crevices and depressions of the coral outcrop (NRCS 1972). For specific soil types occurring within the project area see Figure 3-1.



**Soils and Topography**  
**EA for Kenai Industrial Park Project HCP**  
**Kapolei, Hawai'i**

**FIGURE**

**3-1**

### **3.3 Water Resources**

#### **3.3.1 Definition of Resource**

Water resources analyzed in this Environmental Assessment (EA) include surface water and groundwater resources. The quality and availability of surface and groundwater and potential for flooding are addressed in this section; however tsunami hazards are addressed in *Section 3.9 Hazards*. Surface water resources comprise lakes, rivers, and streams and are important for a variety of reasons including ecological, economic, recreational, aesthetic, and human health. Groundwater comprises subsurface hydrologic resources and is an essential resource in many areas; groundwater is commonly used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater properties are often described in terms of depth to aquifer, aquifer or well capacity, water quality, and surrounding geologic composition.

Other issues relevant to water resources include watershed areas affected by existing and potential runoff and hazards associated with 100-year floodplains. Floodplains are belts of low, level ground present on one or both sides of a stream channel and are subject to either periodic or infrequent inundation by flood water. Inundation dangers associated with floodplains have prompted federal, state, and local legislation that largely limits development in these areas largely to recreation and preservation activities.

#### **3.3.2 Existing Conditions**

##### **3.3.2.1 Regional Setting**

###### *Groundwater*

O`ahu has a vast amount of groundwater, divided into seven major areas, which supplies most of the domestic water supply (Oki et al. 1999). Volcanic rocks ranging in age from Pliocene to Holocene, make up most of O`ahu and compose the most important aquifers. Quaternary-age consolidated sedimentary deposits, which are principally coralline limestone, form productive aquifers in the lowlands and near shore areas but generally contain brackish water or saltwater and are not suitable for drinking. Water levels in the freshwater lens of the southeastern O`ahu area generally are less than 10 feet above sea level near the western boundary; however, the levels decrease to the east. Water levels in the southern O`ahu groundwater area generally range from about 25 to 30 feet above sea level inland to about 15 to 20 feet above sea level near the shore where the water is under artesian pressure because it is confined by caprock. In the north-central O`ahu groundwater area water levels in the freshwater lens range from more than 20 feet above sea level in the southwestern part where the caprock is thick, to less than 3 feet above sea level near shore in the northern part where the caprock is thin (Oki et al. 1999).

### *Surface Water*

Hydrologic processes in Hawai'i are highly dependent on the climatic and geological features and stream flow is influenced by rainfall and wind patterns (State of Hawai'i 2011a). Annual average rainfall on O`ahu ranges from less than 20 inches on the leeward coast to almost 300 inches near the central crest of the Ko`olau Range. Such a marked difference over a distance of less than 15 miles has a significant effect upon water resources (Department of General Planning City & County of Honolulu 1990). Additionally, permeable underlying rock may cause some streams of O`ahu to have lengthy dry reaches under natural conditions. The majority of perennial streams on O`ahu are located in the windward Ko`olau Range which produces a larger amount of orographic precipitation compared to the leeward side (State of Hawai'i 2011a). These streams on the leeward side of the Ko`olau Range are generally sustained by leakage from high-level dike compartments as well as from springs and seeps (Department of General Planning City & County of Honolulu 1990).

### *Water Quality*

Urban and agricultural land use greatly influence the water quality of O`ahu streams (Anthony et al. 2004). Guidelines established to protect freshwater aquatic life and fish-eating wildlife were exceeded for several organic compounds, nutrients, and trace elements, in the period between 1999-2001 during which O`ahu water quality was monitored by the USGS as a part of the National Water-Quality Assessment Program (NAWQA). Major influences on stream water quality in the region include contaminants in runoff from urban and agricultural land, pesticides and nutrients in ground-water-fed base flow, and degraded stream habitat in urban and agricultural areas. Ground water, which provides virtually all drinking water on O`ahu is USEPA designated sole-source aquifer (Anthony et al. 2004). The most common chemicals detected in untreated water from public-supply and monitor wells were fumigants, solvents, herbicides, and elevated concentrations of nutrients. However, few chemicals exceeded drinking-water standards in ground water between 1999 and 2001 (Anthony et al. 2004).

### **3.3.2.2 Project Area Setting**

#### *Groundwater*

The Kenai Industrial Park project site as well as the Kalaeloa Unit mitigation parcel are located within the southern O`ahu ground-water areas. Water levels in this area near the shore generally range from about 15 to 20 feet above sea level; the water confined by caprock, which impedes the seaward movement of fresh ground water. Withdrawals from this groundwater area are greater than those throughout any other groundwater area in O`ahu. Withdrawals reached their maximum during the period between 1971 and 1980; however, the volume of annual withdrawal has since decreased as sugarcane is no longer cultivated on the island. In addition to withdrawals, an unknown quantity of groundwater is discharged into the ocean by natural mechanisms such as submarine springs and seeps (Oki et al. 1999).



## *Surface Water*

The Kenai Industrial Park project site is located in the Waimanalo Gulch sub watershed (Hydrologic Unit Code [HUC] 200600000506) and the Kalaeloa Unit mitigation parcel is located in the Kaloi Gulch subwatershed (HUC 200600000401). There are no perennial streams, drainages, or significant surface water features within the boundaries of the Kalaeloa Unit. A canal ditch, which occurs approximately 0.75 miles to the east, is the nearest designated surface water feature (USEPA 2012), however, there is another unnamed artificial drainage immediately to the adjacent to the unit, which may serve as an industrial discharge point for the Campbell Industrial Park. Similarly, a drainage ditch occurs to the northeast of the Kenai Industrial Park approximately 0.65 mile to the northeast of the project site. Additionally, Kalaeloa Barbers Point Harbor is located immediately to the north of the Kenai Industrial Park (see Figure 3-2).

Both the Kenai Industrial Park project site and the Kalaeloa Unit mitigation parcel are located in Zone D on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs) (Panel 15003C0304G and 15003C0316G, effective January 19, 2011). Flood hazard has not been determined for these areas; however, the potential for significant flooding may still exist. Flood elevations have been determined for the areas immediately adjacent to the west and south of the Kalaeloa Unit mitigation parcel. The canal to the east is located in Zone AE and has a flood elevation of approximately 6 feet. Additionally, the coastal area to the south of the unit is located in Zone VE, which is subject to velocity (i.e., wave) hazards, and has a base flood elevation of approximately 9 feet (see Figure 3-2).

## **3.4 Biological Resources**

### **3.4.1 Definition of Resource**

Biological resources include native or naturalized plants and animals and the habitats in which they occur. Sensitive biological resources are defined as those plant and animal species listed as threatened or endangered, or proposed as such, by the USFWS. The *Federal Endangered Species Act* (ESA) of 1973 protects listed species against killing, harming, harassment, or any action that may damage their habitat. Additionally, these species are also protected under HRS 195D, which grants state protection for all federally listed species.



Water Resources Within the Vicinity of the Project Area  
 EA for Kenai Industrial Park Project HCP  
 Kapolei, Hawai'i

FIGURE

3-2

## 3.4.2 Existing Conditions

### 3.4.2.1 Regional Setting

#### *Vegetation*

Due to their isolation, the Hawai`ian Islands have unique vegetation communities and plant species, many of which were endemic before human settlement. O`ahu is dominated by native plants that form a variety of community types, including shrubland, forest, and areas of bog as well as moss-lichen. Most shrubland lies in coastal lowlands on the leeward side of the Ko`olau Range, extending to considerable altitudes where rainfall is minimal. Forest communities grow above the shrubland communities on the leeward sides of mountains, extending to sea level on the windward sides. Wetter areas up to approximately 6,000 feet support forest communities that include Ohi`a lehua (*Metrosideros polymorpha*) as well as tree-like fern species. Additionally, shrubs mixed with scattered trees grow on the upper slopes of the high mountains, above the forest zone (Bailey et al. 1995).

#### *Wetlands*

Wetlands occur across the Island of O`ahu (USFWS 2012b); however, these habitat types are concentrated on the windward side of the Ko`olau Range, which receives more rainfall due to orographic lift (Bailey et al. 1995).

#### *Wildlife*

Due to their isolation, the Hawai`ian Islands feature a small number of wildlife species; however, the species that do occur are unique and often endemic (Bailey et al. 1995). Additionally, as a consequence of their isolation the Hawai`ian Islands have no native snakes and few other reptiles (Bailey et al. 1995). Introduced mammals include the axis deer (*Axis axis*), feral pig (*Sus scrofa*), feral sheep (*Ovis aries*), and goats (*Capra hircus*). In addition, there are large populations of such water birds as terns, tropicbirds, boobies (*Sula* spp.), shearwaters, and other petrels. Native land birds include hawks, owls, crows, warblers, and thrushes. However, several species, including the crested honey creeper (*Palmeria dolei*) and `o`u, are near extinction (USFWS 2012a).

#### *Threatened and Endangered Species*

There are 63 federally and state-listed threatened or endangered wildlife species that occur on the Island of O`ahu, 41 of which are members of the genus *Achatinella*, O`ahu tree snails. Additionally, there are 121 federally and state-listed threatened or endangered wildlife species, that occur on O`ahu. Further, over 90 percent of the federally listed plant species have federally designated critical habitat on the island (USFWS 2012a).

### 3.4.2.2 Project Area Setting

#### *Vegetation*

The primary vegetation community within the Kenai Industrial Park project site consists of a dry coastal shrubland community. The dominant over story species within the site is the non-native kiawe (*Prosopis pallid*), a federally listed noxious species. Associated species along the northeast side of the parcel include sourbush (*Pluchea carolinensis*) and other grasses such as guinea grass (*Panicum maximum*). Pickleweed (*Batis maritima*), a succulent-leaf shrub common to saline soils and brackish water, is also common within the understory of the southeast portion of the property (Moden & Associates 2008).

The Kalaeloa Unit mitigation parcel also contains dry coastal shrubland habitat that once extended along most of the `Ewa Plain. This area supports small remnant populations of a number of rare native plant species, such as an endemic subspecies of naio (*Myoporum sandwicense* ssp. *stellatum*). The Kalaeloa Unit also contains native woody species such as kou (*Cordia subcordata*), `ilima (*Sida fallax*), beach naupaka (*Scaevola sericea*), pilo (*Copromsma* spp.), wiliwili (*Erythrina sandwicensis*).

#### *Wetlands*

No wetlands are known to occur within the boundaries of the Kenai Industrial Park project site. However, a number of wetlands may occur within the Campbell Industrial Park as indicated on the USFWS National Wetlands Inventory (2012), including a 1.66-acre estuarine and marine wetland located just 500 feet to the south of the project site as well as a 1.55 acre freshwater forested/shrub wetland located approximately 0.25 miles to the east of the project site.

Similarly, according to the National Wetland Inventory (USFWS 2012b) no wetlands are known to occur within the boundaries of the Kalaeloa Unit mitigation parcel. However, a 5.09 acre estuarine and marine deepwater wetland may occur immediately adjacent to the unit (USFWS 2012b). Additionally, 14 anchialine pools (i.e., landlocked bodies of water with a connection to the ocean) are known to occur with the boundaries of the unit (USFWS 2010); however no formal wetland delineations were available for the Kalaeloa Unit or its surrounding vicinity.

### *Wildlife*

Formal wildlife surveys have not been conducted on the Kenai Industrial Park project site or on the Kalaeloa Unit mitigation parcel. It is expected that rodents, small mammals, as well as bird species which are accustomed to disturbance and prefer coastal shrubland habitat would occur in both of these areas. Additionally, as the Kalaeloa Unit contains shoreline to the south, it is likely that this area also attracts a number of shorebird species. Further, two shrimp species have been documented in the anchialine pool, including the Hawaiian red shrimp (*Halocaridina rubra*) and anchialine pool shrimp (*Metabetaeus lohena*), both of which are candidates for federal and state listing (USFWS 2010).



*Anchialine pool shrimp occur in landlocked pools that are fed by subsurface seawater. These pools provide critical habitat for a number of rare invertebrate species including shrimp (above) as well as snails and damselflies. Photograph courtesy of USFWS)*

### *Threatened and Endangered Species*

The federally and state-listed round-leaved chaff flower (*Achyranthes splendens* var. *rotundata*) has been documented within the Kenai Industrial Park project site boundaries (see Figure 3-3). Approximately 116 individuals were recorded at various stages of growth within the property during 1985 (Morden & Associates 2005); however more recently only two individuals have been documented, as well as several smaller seedlings that have since been extirpated (Morden & Associates 2008). No other sensitive plant or wildlife species are known to occur on the property.

Two endangered plant species are known to occur on the Kalaeloa Unit mitigation parcel, including the round-leaved chaff flower and the `Ewa Plains `Akoko (*Chamaesyce skottsbergii* var. *skottsbergii*) (see Figure 3-3). However, similar to the Kenai Industrial Park project area, no federally or state-listed threatened or endangered wildlife species are known to occur on the unit (USFWS 2010).



Round-leaved Chaff Flower Location on the Project Site  
 EA for Kenai Industrial Park Project HCP  
 Kapolei, Hawai'i

**FIGURE**  
**3-3**



**Round-leaved chaff flower:** Round-leaved chaff flower or `Ewa hinahina is a shrub of the Amaranth family that grows to a height ranging between 2 and 6 feet. The elliptic leaves of this species have dense, light-colored hairs that produce a silvery color. The tiny flowers are closely spaced on long, unbranched spikes. The shrub is characterized from the other variety of this species (*Achyranthes splendens* var. *splendens*) by shorter sepals and bracts. Most vegetative growth occurs during the wet winter season and, as the dry summer months approach, vegetative growth slows and flowering occurs. Its seeds are dispersed by wind and gravity during the summer (USWS 1994).



*Two federally and state-endangered round-leaved chaff flower plants (above) are located on the western end of the Kenai Industrial Park project site. Additional individuals occur in 3 locations within the Campbell Industrial Park and at one location within the Kalaeloa Unit.*

**`Ewa Plains `Akoko:** The stems of `Ewa Plains `Akoko are prostrate or erect, reaching a maximum height of approximately 6.5 feet. This species' elliptic leaves are generally less than one inch long with a hairless upper surface. Additionally, each flower cluster is situated separately. This species can be distinguished from a closely related variety on Moloka`i (*Chamaesyce skottsbergii* var. *skottsbergii*) by its smaller size and wider, often toothed leaves (USFWS 2010).

### 3.5 Visual Resources

#### 3.5.1 Definition of Resource

Visual resources are defined as the natural and manufactured features that comprise the aesthetic qualities of an area. These features form the overall impressions that an observer receives of an area or its landscape character. Landforms, water surfaces, vegetation, and manufactured features are considered characteristic of an area if they are inherent to the structure and function of a landscape.

The significance of a change in visual character is influenced by social considerations including public value placed on the resource, public awareness of the area, and general community concern for visual resources in the area. These social considerations are addressed as visual sensitivity and are defined as the degree of public interest in a visual resource and concern over potential adverse changes in the quality of that resource.

## 3.5.2 Existing Conditions

### 3.5.2.1 Regional Setting



*Nimitz Beach affords visitors a panoramic vista of the south shore of O`ahu. This site is listed as a scenic viewpoint in the `Ewa Development Plan Review (2011). Photograph courtesy of the Department of Permitting & Planning City & County of Hawai`i.*

The `Ewa Plain in Honolulu County includes approximately 15 miles of coastline as well as the southern end of the Wai`anae Range. The region has a number of visual landmarks, primarily along the H-1 Freeway, which provides distant shoreline vistas above the `Ewa Plain as well as mountain views between Kunia Road and Kaloι Gulch. Additionally, scenic coastal views are provided along the region's southern extent at Nimitz Beach as well as `Ewa Beach and panoramic views of the West Loch are provided at Laulauniui Island. The `Ewa Development Plan (2000) has established goals to preserve and enhance these views from public streets and thoroughfares wherever possible, particularly in those scenic corridors with views between the mountains and sea.

### 3.5.2.2 Project Area Setting

The Kenai Industrial Park project site is located in the industrial area in the southwestern corner of O`ahu. The 0.75 acre site is surrounded by an industrial setting, which includes roadways to the south, east, and west, as well as a 4.25-acre parking lot to the north. Within the greater vicinity to the north is the Kalaeloa Barbers Point Harbor and further, to the south is the Campbell Industrial Park, which includes power production facilities as well as recycling, distribution, and storage facilities. While the site is in close proximity to the Pacific Ocean, which can be viewed from Kaiholo Street, immediately south of the project area, the visual environment of the Kenai Industrial Park site is generally typical of an industrially zoned area, as the surrounding area is either paved or consists of barren open space.

The Kalaeloa Unit to the southeast of the Kenai Industrial Park project site is located immediately to the west of the Kalaeloa Airport along the southwestern coastline of O`ahu. This site is located immediately adjacent to Kalaeloa Regional Park, which provides open space, recreational opportunities, and access to the beach (Department of Planning & Permitting City & County of Honolulu 2011). Additionally, this unit is located less than 0.25 miles from Nimitz Beach to the east, which was included as a scenic view in the `Ewa Development Plan Review (2011). The views afforded by the Kalaeloa Unit are general similar to those provided by Kalaeloa Regional Park and Nimitz Beach with industrial views to the north and pristine coastal views to the south.



## **3.6 Land Use**

### **3.6.1 Definition of Resource**

Land use comprises natural conditions or human-modified activities occurring at a particular location. Management plans and zoning regulations determine the type and extent of land use allowable in specific areas and are often intended to protect specially designated or environmentally sensitive areas.

Under Act 183, State Land Use Law, HRS Chapter 2005, all lands and waters in the state are classified into four districts: Agriculture, Rural, Conservation, and Urban. Land use is also dictated by zoning ordinances from the City and County of Honolulu.

### **3.6.2 Existing Conditions**

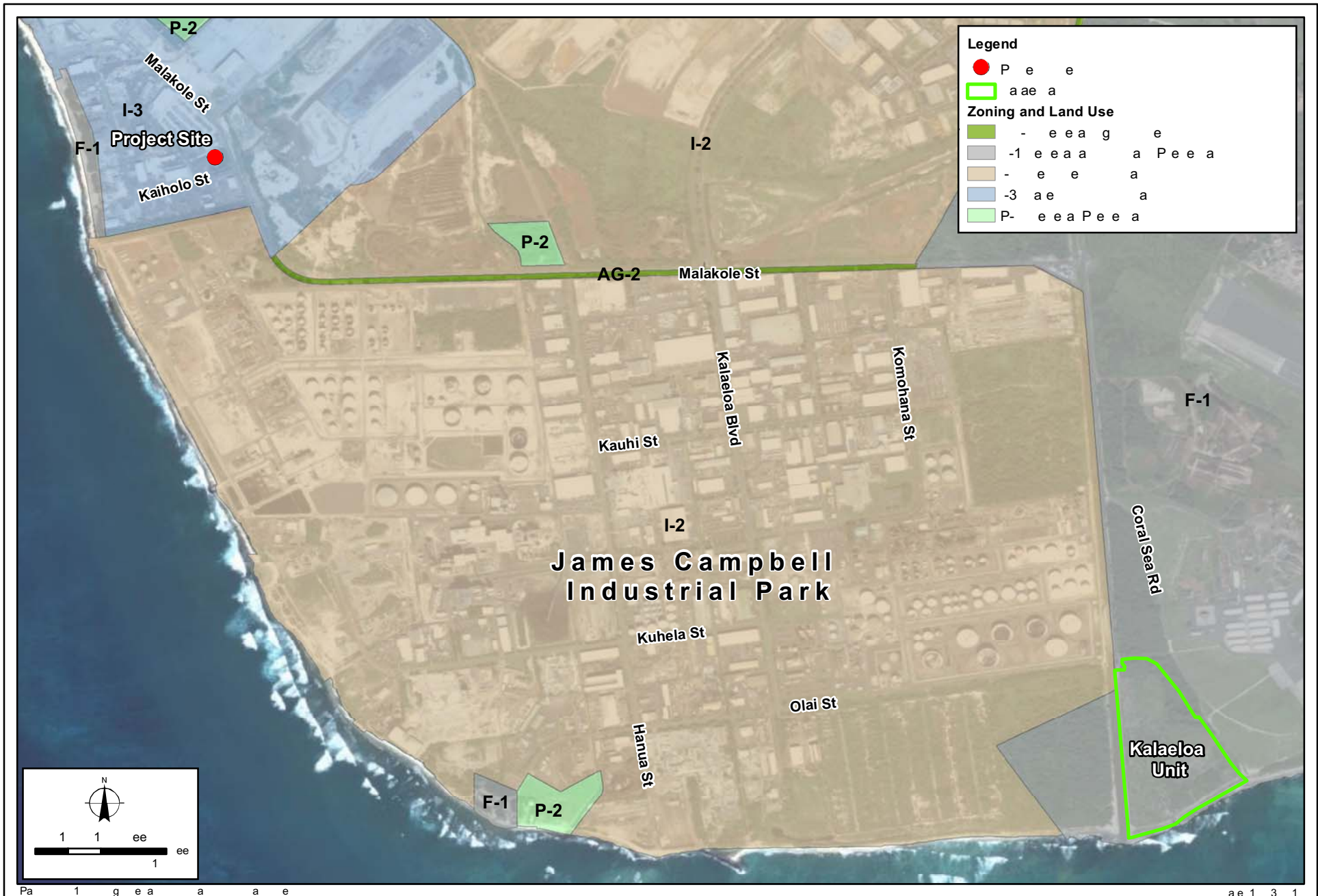
#### **3.6.2.1 Regional Setting**

While the lands and waters of the state are classified into four planning districts, planning is further divided into eight regional areas that are guided by Development Plans or Sustainable Communities Plans (Department of Planning & Permitting City & County of Honolulu 2011). The City of Kapolei, Hawai'i is included within the `Ewa Development Plan area which is dominated by Industrial (e.g., I-2, Intensive Industrial) and Military (e.g., F-1, Federal and Military Preservation) land uses to the south. However, to the north and west the `Ewa Development Plan area is characterized and business and residential land uses (e.g., B-2, Community Business and R-20, Residential). In addition, the City of Kapolei, located just north of the industrial zone, in the center of the `Ewa Development Plan area is zoned as high density BMX-3, Community Business Mixed Use. Additional land uses in the `Ewa Development Plan area include, preservation, agricultural, apartment, and resort districts (Department of Planning & Permitting City & County of Honolulu 2012).

#### **3.6.2.2 Project Area Setting**

As defined in the `Ewa Development Plan (2000) the Barbers Point Industrial Area includes Campbell Industrial Park, Barbers Point Harbor, Kenai Industrial Park, and Kapolei Business Park. The `Ewa Development Plan indicates that this area should continue to grow as it is one of O`ahu's most important industrial areas. The 0.75-acre Kenai Industrial Park project site (TMK Number 9-1-074:023) is located in an area zoned as I-3 under the Land Use Ordinance (i.e., Waterfront Industrial). Additionally, the property is surrounded on all sides by properties which are also zoned for Waterfront Industrial uses (see Figure 3-4).

The Kalaeloa Unit mitigation parcel is also located in the `Ewa Development Plan area (USFWS 2010), were it is located at the former Barbers Point Naval Air Station (NAS), once considered the largest naval air station in the Pacific. The unit (TMK 9-1-013:030) is designated as F-1 under the Land Use Ordinance (i.e., Federal and Military Preservation). Additionally, this area is surrounding by property to the east which is also designated for Federal and Military Preservation. However, to the northwest and the west unit is surrounded by industrially zoned property (see Figure 3-4).



Existing Land Use in the Vicinity of the Project Area  
 EA for Kenai Industrial Park Project HCP  
 Kapolei, Hawai'i

FIGURE

3-4

## **3.7 Transportation and Circulation**

### **3.7.1 Definition of Resource**

Transportation and circulation refer to the movement of vehicles throughout a road and highway network. Primary roads are principal arterials, such as major interstates, designed to move traffic and not necessarily to provide access to all adjacent areas. Secondary roads are arterials such as rural routes and major surface streets which provide access to residential and commercial areas, hospitals, and schools.

### **3.7.2 Existing Conditions**

#### **3.7.2.1 Regional Setting**

As development has occurred within the `Ewa Plain, traffic and circulation have become a major issue in the area. This has been caused both by the rate of development and by the lack of transportation infrastructure and lack of transportation connectivity in the `Ewa plain, as development often precludes the ability to construct a comprehensively linked roadway network (Department of Planning & Permitting City & County of Honolulu 2009).

The arterial roadway network in the area provides mobility within the Ewa Plain. However, the existing arterial roadway network is discontinuous, and many arterials still have predominately rural configurations. Major arterial roads include Fort Weaver Road, which is the key access for the `Ewa and `Ewa Beach communities, the H-1 freeway, which provides access to the northeastern region of the `Ewa plain, and Roosevelt Avenue which provides mobility between the Kapolei and `Ewa Beach communities (Department of Planning & Permitting City & County of Honolulu 2009).

Major collector roadways distribute traffic and provide access to major land parcels. Ideally, these roadways should also provide interconnectivity between major developments, so that vehicles have an alternative to the arterial network; however this is not always the case in the `Ewa Plain. Major collector roadways in the area include Kolowaka Drive, which provides access to residential development both west and east of Fort Weaver Road. Kolowaka Drive is a primary point of access onto the arterial network both east and west of Fort Weaver Road and Kapolei Parkway. Kamaaha Avenue provides primarily east-west circulation within the Villages of Kapolei Development. Additionally, this collector road provides another access path into the City of Kapolei. Malakole Street is a collector that provides east-west circulation within Campbell Industrial Park and access to Barbers Point Harbor. Hanua Street also functions as a collector roadway providing circulation within Campbell Industrial Park between Malakole Street and Olai Street (Department of Planning & Permitting City & County of Honolulu 2009).

The existing bicycle and pedestrian network is comprised of corridors along major roadways and improvements associated with specific developments. Fort Weaver Road has an off-road bicycle/pedestrian path located on its east side that extends from Geiger Road to Farrington Highway. Bicycle routes are designated on segments of Kapolei Park, Kamaaha Avenue and Kealanani Avenue (Department of Planning & Permitting City & County of Honolulu 2009).

### **3.7.2.2 Project Area Setting**

The Kenai Industrial Park project site is located within the Campbell Industrial Park which includes a network of collector streets linking its facilities. Kalaeloa Boulevard provides primary access into the Campbell Industrial Park, with east-west circulation provided by Malakole Street Kahi Street, Komohana Street, Kuhela Street, Kaomi Loop, Olai Street, and Oihana Street are similar collector roadways that facilitate access to parcels and provide access to the arterial network (Department of Planning & Permitting City & County of Honolulu 2009).

The Kalaeloa Unit mitigation parcel which is located to the southeast of the Kenai Industrial Park project site and east of Campbell Industrial Park is accessed by Saratoga Street, a paved road which intersects with Renton Road to the north. Point Cruz Road to the north of the parcel provides east-west paved access across the northern boundary of the unit. While there are no roads intersecting the parcel the interior and southern margins of the unit can be accessed by West Perimeter Road, a small, gravel service road that transverses the western and southern portion of the unit (USFWS 2010).

## **3.8 Noise**

### **3.8.1 Definition of Resource**

Noise is defined as unwanted sound or, more specifically, as any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise annoying. Human response to noise can vary according to the type and characteristics of the noise source, the distance between the noise source and the receptor, the sensitivity of the receptor, and the time of day.

Due to the wide range in sound levels, sound is expressed in decibels (dB), a unit of measure based on a logarithmic scale. A 10 dB increase in noise level corresponds to a 100-percent increase (or doubling) in perceived loudness. As a general rule, a 3 dB change is necessary for noise increases to be noticeable to humans (Bies and Hansen 1988). Sound measurement is further refined by using an A-weighted decibel scale that emphasizes the range of sound frequencies that are most audible to the human ear (i.e., between 1,000 and 8,000 cycles per second). Sound frequency is measured in terms of hertz (Hz), and the normal human ear can detect sounds ranging from about 20 to 15,000 Hz. However, because all sounds in this wide range of frequencies are not heard equally well by the human ear, which is most sensitive to frequencies in the 1000 to 4000 Hz range, the very high and very low frequencies are adjusted to approximate the human ear's lower sensitivity to those frequencies. This is called "A-weighting" and is commonly used in measurement of community environmental noise. Unless otherwise noted, all decibel measurements presented in the following noise analysis are A-weighted (dBA).

The State of Hawai'i regulates noise levels through the DOH regulations (Hawai'i Administrative Rules [HAR] Title 11, Chapter 46, Community Noise Control). These regulations are also intended to protect public health and welfare, and to prevent significant degradation of the environment and quality of life. Maximum permissible sound levels are dependent on zoning designations, time of day, and apply to sound levels at the property boundary (Table 3-2).

**Table 3-2.  
 Maximum Noise Levels for Hawai`ian Zoning Districts**

Zoning Districts	Daytime (7 AM to 10 PM)	Nighttime (10 PM to 7 AM)
<b>Class A</b> (Residential, Conservation, Preservation, Public Space, Open Space)	55	45
<b>Class B</b> (Multi-family Dwellings, Apartment, Business, Commercial, Hotel, Resort)	60	50
<b>Class C</b> (Agriculture, County, Industrial, Similar)	70	70

Notes:  
 Noise levels are presented in dBA  
 Source: HAR Title 11, Chapter 46, Community Noise Control

### 3.8.2 Existing Conditions

#### 3.8.2.1 Regional Setting

As described *Section 3.6 Land Use*, the `Ewa Plain is dominated by Industrial Land Uses to the south as well as residential, business, and agricultural land uses to the north. Consequentially, noise levels generally decrease from the southern to northern region of the `Ewa Plain.

#### 3.8.2.2 Project Area Setting

The Kenai Industrial Park project site is located within Campbell Industrial Park, which, as described in *Section 3.6 Land Use*, is designated for industrial uses, including power generation, as well as light industrial uses such as distribution and storage facilities. Consequently, this area is impacted by high levels of operational noise, primarily from heavy industrial facilities, which include the operation of generators and large heavy equipment (e.g., conveyers). Within the industrial park localized noise can exceed 70 dBA in the vicinity of power generation facilities (Hawai`ian Electric Company, Inc. 2006).

The Kalaeloa Unit mitigation parcel is located just outside of the Campbell Industrial Park to the east. Consequently, this site is not as heavily affected by noise sources within the industrial park as the Kenai Industrial Park project site. However, the Kalaeloa Unit is located directly to the west of the Kalaeloa Airport. The unit is located within the 55 and 65 dBA noise contours, and therefore currently exceeds the standard for Class A noise standards during both the daytime and nighttime hours (State of Hawai`i 2010b).

### 3.9 Hazards

#### 3.9.1 Definition of Resource

Environmental hazards are defined as natural hazards such earthquakes and tsunami events or as the presence of hazardous materials that may pose a substantial threat to human health. Hazardous wastes are defined as any liquid, solid, contained gas, or sludge waste with properties that are dangerous or potentially harmful to human health or the environment. Issues associated natural hazards on the Island of O`ahu typically center around tsunamis or flooding,

while issues associated with hazardous materials typically involve storage tanks and the transport as well as the use of pesticides, bulk fuel, and petroleum, oil, and lubricants (POLs).

### **3.9.2 Existing Conditions**

#### **3.9.2.1 Regional Setting**

While it is removed from the active volcanism and seismicity of the Island of Hawai`i, natural hazards associated with high waves, storms, and flooding annually threaten O`ahu's coastal inhabitants and infrastructure. The primary difference between the nature of coastal hazards on O`ahu and the rest of the Hawai`ian Islands is the magnitude of the risk due to extensive shoreline development. The Island of O`ahu, particularly in its southern region is highly vulnerable to tsunami hazards. Consequently, a tsunami hazard zone has been designated around the perimeter of the island, generally at least 100 feet away from inland waterways and marinas and up to 0.75 mile inland of the Pacific Ocean (i.e., in the vicinity of Malli Beach Park). The overall hazard assessment for the Barbers Point coast is moderate, primarily due to these hazards as well as the high storm hazards. The low coastal slope of Barbers Point makes this region vulnerable to inundation and flooding associated with both high waves and tsunamis. Hazards associated with stream flooding are moderately low as this region is arid and far removed from the drainages of the Ko`olau and Wai`anae Ranges. While O`ahu is far less active than the Island of Hawai`i, the volcanic/seismic hazards on O`ahu are ranked moderately high in the southern half of the island, due to a history of occasional significant seismic activity (USGS 2012).

In addition to natural hazards, the `Ewa Plain planning area of O`ahu is also subject to environmental hazards resulting from the presence of hazardous materials. The southern region of the `Ewa Plain is dominated by industrial uses, including the Kalaeloa Airport and power generation facilities located in the Campbell Industrial Park. Additionally, the northern region of the `Ewa Plain is dominated by agricultural use. Consequently, while the southern margin of this planning region is at risk of contamination from hazardous materials including bulk fuel and POLs, the northern region is primarily at risk for pesticide contamination.

#### **3.9.2.2 Project Area Setting**

The Kenai Industrial Park project site is located within a Tsunami Evacuation Zone (Map 17: Kahe Point; City and County of Honolulu 2010) (see Figure 3-5). Additionally, as this area is located within the vicinity of Barbers Point, it is also subject to moderate coastal hazards and moderately high volcanic/seismic hazards. Further, the Kenai Industrial Park project area also may be subject to environmental hazards associated with the presence of hazardous materials. A Phase I Environmental Site Assessment has not been conducted for this property; consequently, as the property is located within the Campbell Industrial Park, it may be impacted by contaminants from adjacent industrial uses. However, due to the concern about the large concentrations of industrial and commercial activities at Campbell Industrial Park, a Campbell Local Emergency Action Network (CLEAN) Emergency Management Plan (1997) has been developed to identify and address and environmental contamination issues (USFWS 2010).

The Kalaeloa Unit mitigation parcel is also located within a Tsunami Evacuation Zone (Map 17: Kahe Point; City and County of Honolulu 2010) (see Figure 3-5). Additionally, similar to the Kenai Industrial Park project areas, the Kalaeloa Unit is also located within the vicinity of Barbers Point and is subject to the same coastal and volcanic/seismic hazards. Additionally, the Kalaeloa Unit is located adjacent to an active airfield, and adjoins two large petroleum refineries and other heavy industrial activities at the neighboring Campbell Industrial Park. However, contaminants surveys conducted by the Navy and Phase I surveys by the USFWS did not detect any evidence of contaminants within the Kalaeloa Unit (USFWS 2010).

### **3.10 Historical, Archeological, and Cultural Resources**

#### **3.10.1 Definition of Resource**

Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area. Depending on their conditions and historic use, these resources may provide insight to living conditions in previous civilizations and may retain cultural and religious significance to modern groups.

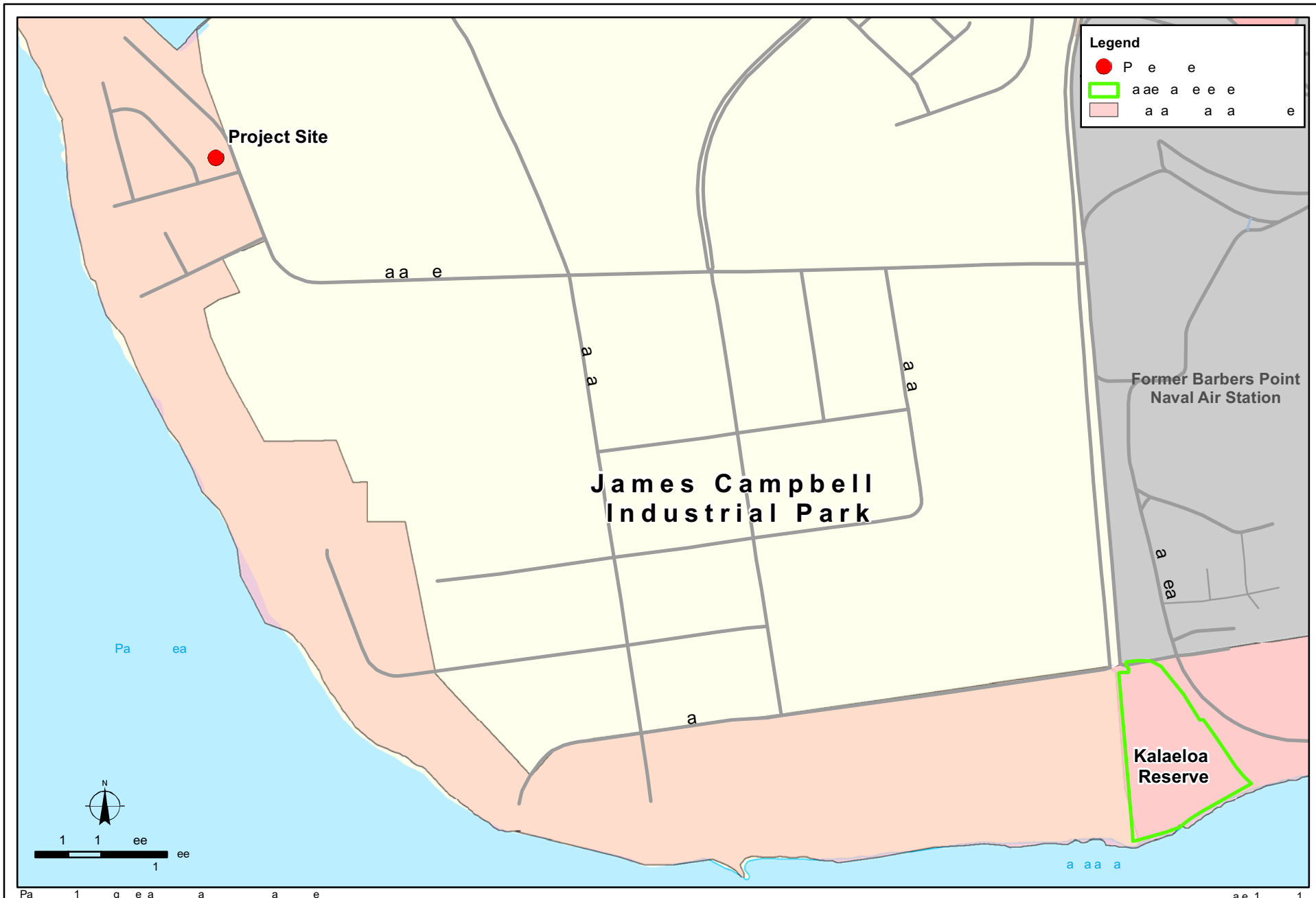
Archaeological resources comprise areas where prehistoric or historic activity measurably altered the environment or deposits of physical remains discovered therein. Architectural resources include standing buildings, districts, bridges, dams, and other structures of historic or aesthetic significance. Architectural resources generally must be more than 50 years old to be considered for inclusion in the National Register of Historic Places (NRHP), an inventory of culturally significant resources identified in the United States. Traditional cultural resources can include archaeological resources, structures, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that Native Hawaiians or other groups consider essential for the persistence of traditional culture. These resources are protected by the state under HRS Chapter 6E, Historic Preservation.

#### **3.10.2 Existing Conditions**

##### **3.10.2.1 Regional Setting**

Current models of Hawaiian history indicate that permanent settlement on the Island of Oahu occurred on the windward side of the island beginning sometime between 0 and 900 AD. During those years, residents often visited the leeward sides of the island to exploit various resources such as fishing areas, bird colonies, and shellfish bays. Small campsites associated with those visits are thought to exist throughout the leeward area. Native Hawaiian archaeological sites include the Barbers Point Archaeologist District and One`ula Archaeological District.

Oahu has 151 state historic sites and 68 sites on the NRHP. Historic features of recreational interest in the `Ewa Region include Lanikuhonua Oahu Rail & Land Company (OR&L) Historic Railway, `Ewa Villages, and the Pearl Harbor National Historic Landmark.



**Tsunami Hazard Zones  
EA for Kenai Industrial Park Project HCP  
Kapolei, Hawai'i**

**FIGURE**

**3-5**



### 3.10.2.2 Project Area Setting

The Kenai Industrial Park project site is located in the Barbers Point region, named after Captain Henry Barber, whose ship ran aground on 31 October 1796. The project site occurs within the Honouliuli Ahupua`a in the `Ewa District of O`ahu. Additionally, this site occurs within the Barbers Point Archaeological District (SIHP 50-80-12-2888), which was established in the 1970's to facilitate the archaeological review of Kalaeloa Barbers Point Harbor's construction. A number of archeological surveys have occurred in the `Ewa Plain, and have documented cultural resources in the region. However, a letter dated 22 December 1987 indicated that there were no significant archeological resources in the adjacent site (TMK 9-1-014:028), located to the east of Malakole Street and to the east of the project site (State of Hawai`i 2010a). Further no archeological resources were identified further east of the property due to quarrying activities, which would have destroyed these resources if present (McDermott et al. 2006). Additionally, an archaeological reconnaissance survey was conducted on the site in 1977 as part of the environmental analysis for the deep draft harbor (Cook Inlet Region, Inc. 1986). This survey indicated that the site had been bulldozed in the past by the military, and as a result, no archaeological remains were found (Cook Inlet Region, Inc. 1986).

Cultural resources on Pearl Harbor NWR lands receive protection and consideration in accordance with federal cultural resources laws, executive orders, and regulations, as well as policies and procedures established by the Department of the Interior and the USFWS. Refuge management activities support the State Historic Preservation Plan (2010-2014) to promote the use and conservation of historic and cultural resources for the education, inspiration, pleasure and environment of the public in a spirit of stewardship and trusteeship for future generations (USFWS 2010). The Kalaeloa Unit mitigation parcel is located on the former NAS Barbers Point. NAS Barbers Point was established on 15 April 1942 and became a hub of aviation activity as the Navy amassed forces in Hawai`i to carry the World War II across the Pacific before it was disestablished in July 1999. During restoration work on the Kalaeloa Unit, the USFWS discovered several military concrete structures from the World War II era that had been hidden by a dense thicket of invasive kiawe trees. Refuge management activities will continue to preserve these artifacts (USFWS 2010). In order to



*Concrete World War II structures, including pillboxes (above), were discovered within the Kalaeloa Unit during restoration activities. The USFWS continues to conduct activities, plans, and programs aimed at preserving and enhancing these resources as well as all historic and cultural properties. Photograph courtesy of the USFWS.*

protect the World War II structures at Kalaeloa Unit the USFWS continues to maintain fence and native plant screening as well as site-closure to the public. Although no Hawai`ian cultural resource sites have been identified within the Kalaeloa Unit, 3 sites have been identified immediately to the west of the property including a short-term habitation complex, a lime manufacturing area, and eight paleontological sinkhole features (Dye et al. 2008). The USFWS will to conduct activities, plans, and programs, in a manner that is consistent with the preservation and enhancement of all historic and cultural properties (USFWS 2010).

### **3.11 Socioeconomics**

#### **3.11.1 Definition of Resource**

Socioeconomics is defined as the basic attributes and resources associated with the human environment, particularly population and economic activity. Human population is affected by regional birth and death rates as well as net in- or out-migration. Economic activity typically comprises employment, personal income, and industrial growth. Impacts on these two fundamental socioeconomic indicators can also influence other components such as housing availability and public services provision.

Socioeconomic data shown in this section are presented at the county, state, and national level to analyze baseline socioeconomic conditions in the context of regional, state, and national trends. Data have been collected from previously published documents issued by federal, state, and local agencies (e.g., United States Census Bureau) and from state and national databases.

#### **3.11.2 Existing Conditions**

##### **3.11.2.1 Regional Setting**

###### *Population*

The Kenai Industrial Park project site and the Kalaeloa Unit mitigation site are located in Honolulu County, the most populous county in the State of Hawai`i. The 2010 population of Honolulu County was 953,207 people, an increase of 77,051 people, or 8.8 percent, since 2000. This increase is less than the population increases of 12.3 percent for the State of Hawai`i and 9.7 percent for the nation during that same period (United States Census Bureau 2010). Residents of Honolulu County are concentrated in the City Honolulu on the southern side of the island, which is also the primary tourist destination on the island.

###### *Job Growth and Unemployment*

In the years between 2006 and 2010 the median household income for Honolulu County was \$70,093 and the poverty level was 8.8 percent (United States Census Bureau 2010). Additionally, unemployment rates in Honolulu County are currently the lowest in the State of Hawai`i at 5.8 percent (State of Hawai`i 2012b). The tourism industry, which is the state's largest industry cluster, is a chief generator of employment in Honolulu (State of Hawai`i 2005). During 2010, approximately 56,912 total wage and salary workers were employed in the services sector, while the retail trade sector provided jobs for approximately 56,606 people. However, government and government enterprises is the largest jobs sector, employing approximately 151,064 people, with schools, hospitals, and county offices accounting for most of the jobs (United States Bureau of Economic Analysis 2010).

### **3.11.2.2 Project Area Setting**

The most heavily populated area in the `Ewa District is the City of Kapolei with approximately 15,186 people (U.S. Census Bureau 2010). In the years between 2006 and 2010 the median household income in Kapolei was \$91,528, while the poverty level was 3.4 percent.

## 4.0 ENVIRONMENTAL CONSEQUENCES

---

Environmental impacts which would result from implementation of the Proposed Action, including the development of 91-525 Malakole Street (Tax Map Key [TMK] 9-1-074:023) and the implementation of the associated Round-leaved Chaff Flower (*Achyranthes splendens* var. *rotundata*) Habitat Conservation Plan (HCP) are evaluated in this section. Analyses are presented by resource area, as described in Section 3, *Affected Environment*.

This Environmental Assessment (EA) has been prepared pursuant to the Hawai'i Revised Statutes (HRS) Chapter 343 and the associated Hawai'i Administrative Rules (HAR) Title 11, Chapter 200. The intent of this EA is to ensure that comprehensive and systematic consideration is given to potential impacts of the proposed action upon the natural and man-made environment. This EA is intended to assess the potential environmental impacts of passive light industrial uses at the Kenai Industrial Park project site, as discussed in *Section 2 Alternatives Including the Proposed Action*. Additional environmental analysis and documentation would be required for any proposed use that would generate substantial traffic, air emissions, noise emissions, and/or hazardous waste.

The assessment provided below is based on an evaluation of potential impacts relative to the "Significance Criteria" specified in HAR 11-200-12 9(b).

- a) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;
- b) Curtails the range of beneficial uses of the environment;
- c) Conflicts with the state's long-term environmental policies or goals and guidelines as expressed in [Chapter] 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;
- d) Substantially affects the economic or social welfare of the community or State;
- e) Substantially affects public health;
- f) Involves substantial secondary impacts, such as population changes or effects on public facilities;
- g) Involves a substantial degradation of environmental quality;
- h) Is individually limited by cumulatively has considerable effect upon the environment or involves a commitment for larger actions;
- i) Substantially affects a rare, threatened, or endangered species, or its habitat;
- j) Detrimentally affects air or water quality or ambient noise levels;
- k) Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water or coastal waters;
- l) Substantially affects scenic vistas and view planes identified in county or state plan or studies; or,
- m) Requires substantial energy consumption.

## **4.1 Climate and Air Quality**

### **4.1.1 Approach to Analysis**

The following climate and air quality impacts discussion will be focused on the Proposed Action and alternatives in terms of federal and state air pollutant standards and emissions (see Table 3-1 in *Section 3.1 Climate and Air Quality*). An air quality impact would be significant if it would: 1) increase concentrations of ambient criteria pollutants or ozone precursors to levels exceeding federal or state standards; 2) increase concentrations of pollutants already at nonattainment levels; 3) lead to establishment of a new nonattainment area; or 4) delay achievement of attainment in accordance with Hawai'i's State Implementation Plan (SIP).

### **4.1.2 Impacts**

#### **4.1.2.1 Proposed Action**

##### *Construction-related Emissions*

Combustion emissions associated with construction-related vehicles and equipment would be negligible due to the small area of construction and because most construction-related vehicles would be driven to and kept at the Kenai Industrial Park project site for the duration of grading and construction activities. Further, emissions generated by construction equipment would be temporary and short-term. Due to the relatively small scope of the project, extensive heavy equipment operation would not be necessary. Consequently, no significant impacts to air quality would occur as a result of the use and maintenance of construction-related vehicles or equipment.

Additionally, no heavy equipment would be necessary for the proposed implementation of the Round-leaved Chaff Flower HCP. Further, combustion emissions associated with maintenance personnel vehicles would be negligible.

##### *Fugitive Dust Emissions*

Daily fugitive dust emissions can vary substantially depending on levels of activity, specific operations, and prevailing meteorological conditions. Using conservatively high estimates (based on moderate levels of activity, moderate silt content in soils, and semi-arid climates), the standard dust emission factor for construction activity is estimated to be 0.19 tons of dust generated per acre per month of activity (Midwest Research Institute [MRI] 1999).<sup>1</sup>

Under implementation of the Proposed Action, the majority of dust (i.e., particulate matter less than 10 micrometers in diameter [PM<sub>10</sub>], a criteria pollutant) generated from construction activities would occur from facility construction, which would generate approximately 0.14 ton of dust per month.

---

<sup>1</sup> The area-based emission factor of 0.19 ton PM<sub>10</sub>/acre-month for construction activities is based on a study completed for the USEPA by MRI, Estimating Particulate Matter Emissions from Construction Operations (1999).

Ultimately, increased PM<sub>10</sub> emissions resulting from proposed construction activities would be short-term adverse impacts that could be mitigated through standard dust minimization practices such as regularly watering exposed soils, soil stockpiling, and soil stabilization, which would reduce fugitive dust emissions by up to 50 percent (MRI 1999). Consequently, impacts to air quality due to short-term fugitive dust emissions at the Kenai Industrial Park project site would not be significant. Further, as no construction active would occur on the Kalaeloa Unit there would be no additional fugitive dust emissions as a result of the proposed implementation of the HCP.

#### *Operational Emissions*

Following the completion of construction-related activities there would be no substantial operational air emissions. Negligible operational emissions are expected from the vehicle trips to the proposed storage facilities; however, these emissions would result in less than significant impacts to air quality.

#### **4.1.2.2 Alternative 1: Alternate Passive Industrial Use**

##### *Combustion Emissions*

Under this alternative, similar to the Proposed Action, combustion emissions associated with construction-related vehicles and equipment would be also negligible. Although the specific facility design would change, the scope of construction would remain similar. Consequently, because emissions generated by construction equipment would be temporary and short-term, no significant impacts to air quality would occur as a result of the use and/or maintenance of construction-related vehicles or equipment.

Additionally, similar to the Proposed Action, no heavy equipment would be necessary for the proposed implementation of the Round-leaved Chaff Flower HCP. Therefore, it would not result in short-term impacts to air quality.

##### *Fugitive Dust Emissions*

Under the implementation of this alternative, which would affect the same acreage as the Proposed Action, fugitive dust emissions would remain the same as those described under the Proposed Action, approximately 0.14 ton of dust per month. Consequently, impacts to air quality due to short-term fugitive dust emissions would not be significant.

##### *Operational Emissions*

Following the completion of construction-related activities there would be no substantial operational air emissions. Negligible operational emissions are expected from the vehicle trips to the proposed development; however, these emissions would not result in any significant impacts to air quality.

#### **4.1.2.3 Alternative 2: No-Action Alternative**

Climate and air quality, as described in *Section 3.1*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to these resources would occur under implementation of the No-Action Alternative.

#### **4.1.3 Mitigation Measures**

State of Hawai'i Air Pollution Control regulations (HAR Title 11 Chapter 60.1) prohibit visible emissions from construction activities at the property line. Therefore a dust control program would be implemented to control dust from construction activities. The construction contractors would be required to control fugitive dust emission through mitigation measures such as watering active work areas, using wind screens, keeping adjacent paved roads clean, covering open-bodied trucks, and limiting the area to be disturbed at any given time.

### **4.2 Geology, Topography, and Soils**

#### **4.2.1 Approach to Analysis**

Protection of unique geological features, minimization of soil erosion, and the siting of facilities in relation to potential geologic hazards are considered when evaluating impacts of a proposed action on geological resources. Generally, such impacts can be avoided or minimized if proper construction techniques, erosion control measures, and structural engineering designs are incorporated into project development.

Analysis of potential impacts to geological resources typically includes: 1) identification and description of resources that could potentially be affected; 2) examination of the proposed action and the potential effects this action may have on the resource; 3) assessment of the significance of potential impacts; and 4) provision of mitigation measures in the event that potentially significant impacts are identified.

#### **4.2.2 Impacts**

##### **4.2.2.1 Proposed Action**

Potential geologic impacts associated with the Proposed Action at the Kenai Industrial Park project site would occur from ground-disturbing activities (i.e., grubbing and grading activities as well as construction of facilities and paved areas). However, Coral Outcrop, the naturally occurring soil type at the project site, regularly supports urban and industrial development on the Island of O`ahu, as is evidenced by the surrounding land uses. Consequently, impacts to the proposed development related to soil hazards would be less than significant.

While, construction activities (e.g., grading) on the project site would not impact the underlying geology of the property, it would eliminate any topographic irregularities on the site including any gullies and/or mounds that are currently present. However, these impacts would be less than significant as the topography of the Kenai Industrial Park project site is generally uniform across the 0.75 acre parcel.

The implementation of the HCP would have no impact on the geology, soils, or topography at the Kalaeloa Unit as planting and maintenance activities would not include substantial disturbance of the ground surface.

#### **4.2.2.2 Alternative 1: Alternate Passive Industrial Use**

Under this alternative, potential impacts to geological resources at the Kenai Industrial Park project site would be similar to those described under the proposed action. Although the specific facility type may vary, the development would require grading and trenching which would have a less than significant impact on geology, topography, and soils.

Similarly, under this alternative the implementation of the HCP would have no impact on the geology, soils, or topography at the Kalaeloa Unit as planting and maintenance activities would not include substantial disturbance of the ground surface.

#### **4.2.2.3 Alternative 2: No-Action Alternative**

Geological resources, as described in *Section 3.2*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to geology, topography, or soils would occur under implementation of the No-Action Alternative.

### **4.2.3 Mitigation Measures**

Implementation of best management practices (BMPs) during construction would limit impacts to soils that might result from construction activities. Such practices include silt fencing, sediment traps, application of water sprays, and revegetation of disturbed areas. Dust from construction activities would be minimized by watering and soil stockpiling, thereby reducing the total amount of soil exposed to wind or water. Implementation of such practices is a common procedure, would be localized, and would not have significant impacts on sensitive or regional geologic resources, topography, or physiographic features.

## **4.3 Water Resources**

### **4.3.1 Approach to Analysis**

Determination of the significance of potential impacts to water resources is based on water availability, quality, and use; existence of floodplains and wetlands; and associated regulations. An impact to water resources would be significant if it would: 1) reduce water availability to or interfere with the supply of existing users; 2) create or contribute to overdraft of groundwater basins or exceed safe annual yield of water supply sources; 3) adversely affect water quality or endanger public health by creating or worsening adverse health hazard conditions; 4) threaten or damage unique hydrologic characteristics; or 5) violate established laws or regulations that have been adopted to protect or manage water resources of an area. Impacts of flood hazards on proposed actions are significant if such actions are proposed in areas with high probabilities of flooding.



## **4.3.2 Impacts**

### **4.3.2.1 Proposed Action**

New construction and paving associated with the Proposed Action would reduce the overall surface area available for groundwater recharge in Campbell Industrial Park; however, this would have a negligible impact on groundwater resources as the project site represents a negligible percentage (i.e., < 0.0 percent) of the total area of Campbell Industrial Park. Further, groundwater beneath the project site is not used for water supply due to its salinity content. Consequently, impacts to groundwater would be less than significant.

Construction activities may have short-term effects on surface water quality in the vicinity of the property; however these impacts would be mitigated as described below. Long-term stormwater from the proposed self-storage development would be conveyed via drainage conveyance structures which would be constructed as a part of the development. This drainage system would be designed to prevent potential increases in erosion and sedimentation associated with the slight increase in stormwater flow from the property. However, because the property is located in the leeward region of the island significant stormwater runoff is not expected. Consequently, no significant impacts to surface water resources or water quality would be anticipated upon implementation of the Proposed Action. Further, the proposed development would not be significantly impacted by flooding as the property is not located within a designated 100-year flood zone; however, it may be impacted by tsunami events as described in *Section 4.9*.

While the Kalaeloa Unit is located adjacent to a canal drainage as well as the southern coast of O`ahu, no significant impacts to water resources would result from the implementation of the HCP, as surface disturbance would be minimal. Further, the unit is not located within a designated 100-year flood zone.

### **4.3.2.2 Alternative 1: Alternate Passive Industrial Use**

Under this alternative, new construction and paving would be similar in its extent to that described in the Proposed Action. Consequently, it would negligibly reduce the surface area available for groundwater recharge in Campbell Industrial Park, resulting in less than significant impacts to groundwater and groundwater quality. Similarly, construction activities may have short-term effects on surface water quality in the vicinity of the property; however these impacts would be mitigated as described below. Under this alternative, similar to the Proposed Action stormwater would be conveyed via drainage conveyance structures. Consequently, no significant impacts to surface water resources or surface water quality would be anticipated. Further, the proposed development would not be significantly impacted by flooding as the property is not located within a designated 100-year flood zone; however, it may be impacted by tsunami events as described in *Section 4.9*.

While the Kalaeloa Unit is located adjacent to a canal drainage as well as the southern coast of O`ahu, no significant impacts to water resources would result from the implementation of the HCP, as surface disturbance would be minimal. Further, the unit is not located within a designated 100-year flood zone.

### **4.3.2.3 Alternative 2: No-Action Alternative**

Water resources, as described in *Section 3.3*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to ground water or surface water resources would occur under implementation of the No-Action Alternative.

### **4.3.3 Mitigation Measures**

Because the area to be disturbed is less than one acre, the Cook Inlet Regional, Inc. (CIRI) Land Use Development Company (CLDC) would not be required to prepare a Notice of Intent (NOI) for construction-related stormwater runoff pursuant to National Pollutant Discharge Elimination System (NPDES) regulations. However, the construction contractors would utilize silt fences, construction entrance stabilization, geotextile mats, and watering for dust control in order to retain or contain sediment within the project area, thereby reducing the amount of sediment discharged into nearby water bodies. Control measures would be inspected and repaired as needed within 24 hours after a rainfall event of 0.5 inches or greater over a 24-hour period. Additionally, regular inspection and maintenance of vehicles and equipment, as well as proper containment and storage of potential pollutants, would also to the maximum extent feasible minimize the potential for pollution of stormwater runoff.

## **4.4 Biological Resources**

### **4.4.1 Approach to Analysis**

Determination of the significance of potential impacts to biological resources is based on: 1) the importance (i.e., legal, commercial, ecological, or scientific) of the resource; 2) the proportion of the resource that would be affected relative to its occurrence in the region; 3) sensitivity of the resource to proposed activities; and 4) the duration of ecological ramifications. Impacts to biological resources are significant if species or habitats of concern are adversely affected over relatively large areas, or disturbances cause reductions in population size or distribution of a species of concern.

Representatives of the United States Fish and Wildlife Service (USFWS) and the Department of Land and Natural Resources (DLNR) were contacted to determine the presence or potential occurrence of sensitive species and habitats in the study area. Potential physical impacts such as habitat loss and impacts to surface water were evaluated to assess potential impacts to biological resources resulting from implementation of the proposed action and identified alternatives.

### **4.4.2 Impacts**

#### **4.4.2.1 Proposed Action**

As described in *Section 3.6 Biological Resources* while the majority of the vegetation at the Kenai Industrial Park project site is characterized by nonnative kiawe (*Prosopis pallid*) two federally and state-listed round-leaved chaff flower individuals have been recently documented along the western margin of the property. The proposed development of the parcel would require grubbing (i.e., removal of vegetation) and grading throughout the extent of the property

boundaries. Consequently, the two documented round-leaved chaff flowers would be removed and their habitat on the 0.75 acre parcel would be made unsuitable for future recolonization. This would constitute a significant environmental impact to biological resources on the project site. However, the implementation of the Proposed Action would also result in the implementation of the Round-leaved Chaff Flower HCP, which would see this species replanted off-site at 40:1 mitigation ratio (i.e., 40 individuals would be replanted for every 1 that is removed). Mitigation, monitoring, and maintenance activities in the HCP have been prepared compliant to HRS 195D, which requires explicit identification of the steps that would be taken to minimize and mitigate all negative impacts to the affected species, consistent with the goals and objects of any approved recovery plan. CLDC would fund all mitigation, monitoring, and maintenance activities for a period of no less than five year to meet the 7 established success criteria listed in *Section 2*. The implementation of the HCP would off-set the significant impacts to biological resources resulting from the proposed action, and would potentially result in a net increase to the round-leaved chaff flower population. Consequently, impacts to biological resources at the Kenai Industrial Park would be less than significant following mitigation.

Further, impacts to biological resources at the Kalaeloa Unit mitigation parcel would likely be beneficial under the Proposed Action as CLDC would fund restoration activities (e.g., invasive species removal) as necessary to achieve the success criteria listed in *Section 2.0*. Further, the implementation of the Proposed Action would not result in significant impacts, adverse or otherwise, to anchialine pools or wildlife occurring at the Kalaeloa Unit.

#### **4.4.2.2 Alternative 1: Alternate Passive Industrial Use**

While the specific development under this alternative would differ from that described in the Proposed Action, the proposed alternative development of the parcel would still require grubbing and grading throughout the extent of the property boundaries. Consequently, the two documented round-leaved chaff flower individuals would still be removed and their habitat at the 0.75 acre parcel would still be made unsuitable for future recolonization. Consequently, the implementation of this alternative would also constitute a significant environmental impact to biological resources on the project site. However, the implementation of this alternative would also result in the implementation of the Round-leaved Chaff Flower HCP, as described in the Proposed Action. The implementation of the HCP would off-set the significant impacts to biological resources resulting from the Proposed Action, and would potentially result in a net increase to the round-leaved chaff flower population. Consequently, impacts to biological resources at the Kenai Industrial Park would be less than significant following mitigation.

Additionally, impacts to biological resources at the Kalaeloa Unit mitigation parcel would be similar to those described under the Proposed Action.

#### **4.4.2.3 Alternative 2: No-Action Alternative**

Biological resources, as described in *Section 3.4*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to flora or fauna would occur under implementation of the No-Action Alternative.

However, the two round-leaved chaff flower individuals that presently occur on the Kenai Industrial Park project site are in competition with invasive species and are isolated by surrounding industrial land use. Further, this subpopulation has experienced a negative survival trend as it has lost over 98 percent of the individuals documented in 1985. Consequently, it is likely that the 2 remaining documented individuals would be extirpated from the Kenai Industrial Park project site over the long-term. Under this alternative the Round-leaved Chaff Flower HCP would not be implemented and consequently, the potential increase in round-leaved chaff flower, which would occur under the Proposed Action and the Alternative Passive Industrial Use Alternative, would not be actualized.

## **4.5 Visual Resources**

### **4.5.1 Approach to Analysis**

Determination of the significance of impacts to visual resources is based on the level of visual sensitivity in the area. Visual sensitivity is defined as the degree of public interest in a visual resource and concern over adverse changes in the quality of that resource. In general, an impact to a visual resource is significant if implementation of the proposed action would result in substantial alteration to an existing sensitive visual setting.

### **4.5.2 Impacts**

#### **4.5.2.1 Proposed Action**

The implementation of the Proposed Action would result in short-term impacts to visual resources at the Kenai Industrial Park project site due to presence of construction equipment and materials. However, the proposed project site is located within the Campbell Industrial Park, the largest industrial park on the O`ahu and within the state of Hawai`i. Consequently, construction activities would not result in significant impacts to the surrounding visual resources.

Additionally, although the plans for the self-storage facility are currently limited to conceptual designs, the proposed development would be consistent with the visual character of the surrounding industrial land uses. Further, the proposed development would comply with the zoning map height limit which would limit the height of the proposed facility to 60 feet. Therefore, there would be no significant impacts to the surrounding visual resources.

Further, under the Proposed Action the proposed implementation of the Round-leaved Chaff Flower HCP would not result in significant impacts to the open space visual character of the Kalaeloa Unit. Further, mitigation, monitoring, and maintenance the HCP would not impact the scenic view points along O`ahu's southern coast, described in *Section 3.5 Visual Resources*.

#### **4.5.2.2 Alternative 1: Alternate Passive Industrial Use**

Similar to the Proposed Action, under this alternative the proposed alternate passive industrial development would also result in short-term impacts to visual resources at the Kenai Industrial Park project site due to presence of construction equipment and materials. However, as described under the Proposed Alternative, construction activities would not result in significant impacts to the surrounding visual resources.

Additionally, under this alternative the proposed development would be consistent with the visual character of the surrounding industrial land uses and would comply with the zoning map height limit. Therefore, there would be no significant impacts to the surrounding visual resources.

Further, the implementation of the HCP would not result in significant impacts to the open space visual character of the Kalaeloa Unit. Further, the implementation of the HCP would not impact the scenic view points along O`ahu's southern coast, described in *Section 3.5 Visual Resources*.

#### **4.5.2.3 Alternative 2: No-Action Alternative**

Visual resources, as described in *Section 3.7*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts would occur under implementation of the No-Action Alternative.

### **4.6 Land Use**

#### **4.6.1 Approach to Analysis**

Significance of potential land use impacts is based on the level of land use sensitivity in areas affected by a proposed action. In general, land use impacts would be significant if they would: 1) be inconsistent or in noncompliance with applicable state or county land use plans and policies; 2) preclude the viability of existing land use; 3) preclude continued use or occupation of an area; or 4) be incompatible with adjacent or vicinity land use to the extent that public health or safety is threatened.

Proposed construction on the Island of O`ahu is required to conform to the requirements of the City and County of Honolulu Land Use Ordinance. The City and County of Honolulu Planning and Permitting Department recommends tentative plans be submitted for all proposed projects for Plan Approval Review to ensure compliance prior to the development of final construction drawings.

#### **4.6.2 Impacts**

##### **4.6.2.1 Proposed Action**

Under the Proposed Action the proposed 62-unit self-storage facility would be located on property that is zoned for industrial use by the state, as well as by the city and county of Honolulu. Consequently, the proposed use as a self-storage facility would be consistent with the land use designation for this parcel. Further, the surrounding land uses are also designated for industrial use, and therefore, the Proposed Action would also be consistent with the adjacent uses. As a result there would be no significant impacts to land use at Kenai Industrial Park project site.

Additionally, as described in *Section 3.6* the Kalaeloa Unit mitigation parcel is zoned for urban land use by the state and for federal and military preservation by the city and county of Honolulu. Consequently, the proposed implementation of the Round-leaved Chaff Flower HCP would be consistent with the parcel's land use designation. Further, the implementation of the HCP would also not have an impact on the surrounding land use.

#### **4.6.2.2 Alternative 1: Alternate Passive Industrial Use**

Under this alternative the Kenai Industrial Park project site would be developed for an alternate benign industrial that would be consistent with the state as well as the city and county of Honolulu land use designations. Further, the implementation of the HCP would be consistent with the Kalaeloa Unit land use designations, as described under the Proposed Action. Therefore, there would be no significant impacts to land use under the implementation of this alternative

#### **4.6.2.3 Alternative 2: No-Action Alternative**

Land use, as described in *Section 3.6*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to this resource would occur under implementation of the No-Action Alternative. However, the implementation of this alternative would not be consistent with the county's stated goal to continue the expansion of Barbers Point as an industrial center.

### **4.7 Transportation and Circulation**

#### **4.7.1 Approach to Analysis**

Potential impacts to transportation and circulation are assessed with respect to anticipated disruption or improvement of current transportation patterns and systems; deterioration or improvement of existing levels of service; and changes in existing levels of transportation safety. Impacts (i.e., beneficial or adverse) may arise from physical changes to circulation (e.g., closing, rerouting, or creating roads), construction activity, introduction of construction-related traffic on local roads, or changes in daily or peak-hour traffic volumes created by either direct or indirect workforce and population changes related to installation activities. Adverse impacts on roadway capacities would be significant if roads with no history of capacity exceedances were forced to operate at or above their full design capacity.

#### **4.7.2 Impacts**

##### **4.7.2.1 Proposed Action**

The implementation of the Proposed Action would not be anticipated to result in significant impacts to the traffic volumes or circulation within the Kenai Industrial Park road network nor the greater Campbell Industrial Park road network. Traffic counts collected in 2004 revealed that the average peak traffic volume during a 15 minute period on Malakole Street in the eastbound direction was approximately 100 vehicles between the hours of 7:00 and 7:15 AM. Similarly, the average peak traffic volume in the westbound direct was slightly more than 100 vehicles between hours of 4:00 and 4:15 PM (Hawaiian Electric Company 2006).

Consequently, the number of vehicle trips generated during the construction and operation of the proposed development would be too small to have a significant effect on the level of service of roadways within the vicinity of the property. While heavy equipment and materials delivery may result in small delays to vehicles, such construction-related trips would be timed to avoid peak hour traffic and to minimize interference with other nearby businesses.

Similarly, Saratoga Street would likely receive additional traffic as result of the implementation of the Round-leaved Chaff Flower HCP. However, the trips generated by mitigation, monitoring, and maintenance activities would be negligible and would have a less than significant impact on transportation in the area.

#### **4.7.2.2 Alternative 1: Alternate Passive Industrial Use**

Under this alternative the impacts to transportation and circulation would be similar to the Proposed Action as the number of vehicle trips generated during the construction and operation of the proposed development would be too small to have a significant effect on the level of service of roadways within the vicinity of the property. Further, the implementation of the HCP would also result in less than significant impacts to transportation in the vicinity of the Kalaeloa Unit.

#### **4.7.2.3 Alternative 2: No-Action Alternative**

Transportation and circulation, as described in *Section 3.7*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to this resource would occur under implementation of the No-Action Alternative.

### **4.8 Noise**

#### **4.8.1 Approach to Analysis**

Noise impact analyses typically evaluate potential changes to existing noise environments that would result from implementation of a proposed action. Potential changes to the noise environment can be beneficial (e.g., if they reduce the number of sensitive receptors exposed to unacceptable noise levels), negligible (e.g., if the total area exposed to unacceptable noise levels is essentially unchanged), or adverse (e.g., if they result in increased exposure to unacceptable noise levels).

#### **4.8.2 Impacts**

##### **4.8.2.1 Proposed Action**

As described in *Section 3.8 Noise*, the Kenai Industrial Park project site is located within an industrial environment which is impacted by associated industrial operational noise. The implementation of the Proposed Action would introduce a source of short-term construction-related noise to the Kenai Industrial Park; however, this additional noise would be negligible within the noise context of Campbell Industrial Park, which experiences noise levels exceeding 70 dBA near heavy industrial facilities. Additionally, all construction-related activities would be

limited to daylight working hours and would comply with HAR Chapter 11-46. Further, no significant long term noise impacts would be anticipated with the operation of the self-storage facilities as additional vehicular traffic generated by the development would be negligible and would not be expected to cause an increase in the overall noise levels.

Additionally, the implementation of the Round-leaved Chaff Flower HCP would have no impact on the noise environment of the Kalaeloa Unit mitigation parcel as this area is dominated by noise originating from the Kalaeloa Airport.

#### **4.8.2.2 Alternative 1: Alternate Passive Industrial Use**

Similar to the Proposed Action, under this alternative development would introduce a source of negligible short-term construction-related noise to the project site. However, no significant long-term noise impacts would be anticipated with the operation of the development as additional vehicular traffic would be negligible and would not be expected to cause an increase in the overall noise levels.

#### **4.8.2.3 Alternative 2: No-Action Alternative**

Noise, as described in *Section 3.8*, would not change if the No-Action Alternative were selected. Therefore, no significant impacts would occur under implementation of the No-Action Alternative.

### **4.9 Hazards**

#### **4.9.1 Approach to Analysis**

Numerous local, state, and federal laws and policies regulate hazardous materials and wastes as well as development within designated potentially hazardous areas (e.g., tsunami zones); the primary purpose of these laws is to protect public health and the environment. Impacts associated with hazardous materials and wastes are significant if the storage, use, transportation, or disposal of hazardous substances substantially increases the human health risk or environmental exposure. Additionally, a development is considered to have a significant impact if it affects or is likely to suffer damage by being located in an environmentally sensitive area such as a tsunami zone or geologically hazardous area.

#### **4.9.2 Impacts**

##### **4.9.2.1 Proposed Action**

As described in *Section 4.9 Hazards* a recent Phase I Environmental Site Assessment has not been conducted for the Kenai Industrial Park project site. Therefore, the potential for environmental contamination from nearby industrial activity cannot be ruled out. However, an environmental assessment conducted in 1991 for the Camp Malakole property found no subsurface or surface evidence of hazardous chemical materials or waste (CIRI 1991). Additionally, the proposed self-storage facility would not be a generator of hazardous waste.



The Kenai Industrial Park project site is located within a Tsunami Evacuation Zone (City and County of Honolulu 2010). Consequently, development within this area constitutes a potentially significant environmental impact. However, the proposed self-storage facility would be consistent with the State Building Code and would comply with O`ahu General Plan (2002) Objective B, Policy 2 which requires that all developments in areas subject to floods and tsunamis are located and constructed in a manner that will not create any health or safety hazard. The Proposed Action would not be a generator of hazardous materials and/or wastes; therefore tsunami-related flooding would not introduce contaminants that would be an environmental or public safety hazard. Further, the proposed self-storage facility would not introduce a substantial number of new people to additional natural hazard risks since the development would require only minimal staffing. Consequentially, the proposed development would not be significantly impacted by natural hazards.

Further, the proposed implementation of the Round-leaved Chaff Flower HCP would not be significantly impacted by natural hazards as it would not introduce new sources of contamination to the Kalaeloa Unit nor would it introduce new development into a hazardous area.

#### **4.9.2.2 Alternative 1: Alternate Passive Industrial Use**

Similar to the Proposed Action, under this alternative the proposed development would not be a generator of hazardous waste. However, as the Kenai Industrial Park project site is located within a Tsunami Evacuation Zone (City and County of Honolulu 2010), it would be subject to potentially significant impacts resulting from tsunami events. Under this alternative the proposed self-storage facility would be consistent with the State Building Code. However, because the specific type of development is unknown this alternative may introduce a larger population to tsunami hazards relative to the Proposed Action. Therefore it is unknown as to the extent that this alternative would comply with O`ahu General Plan (2002) Objective B, Policy 2.

Similar to the Proposed Action, under this alternative the proposed implementation of the Round-leaved Chaff Flower HCP would not be significantly impacted by natural hazards as it would not introduce new sources of contamination to the Kalaeloa Unit nor would it introduce new development into a hazardous area.

#### **4.9.2.3 Alternative 2: No-Action Alternative**

Hazardous substances and materials, as described in *Section 3.9*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to would occur under implementation of the No-Action Alternative.

#### **4.9.3 Mitigation Measures**

In the event that the proposed facility under the Alternate Passive Industrial Use Alternative would require a significantly larger number of staff or would attract a significantly greater number of facility users, the developer would be required to post tsunami evacuation signage to mitigate the associated risk to public safety.

## **4.10 Historical, Archeological, and Cultural Resources**

### **4.10.1 Approach to Analysis**

Cultural resources are subject to review under both federal and state laws and regulations. Section 106 of the National Historic Preservation Act of 1966 empowers the Advisory Council on Historic Preservation to comment on federally initiated, licensed, or permitted projects affecting cultural sites listed or eligible for inclusion on the National Register of Historic Places (NRHP).

Once cultural resources have been identified, significance evaluation is the process by which resources are assessed relative to significance criteria for scientific or historic research, for the general public, and for traditional cultural groups. Only cultural resources determined to be significant (i.e., eligible for the NRHP) are protected under the National Historic Preservation Act.

Analysis of potential impacts to cultural resources considers both direct and indirect impacts. Direct impacts may occur by 1) physically altering, damaging, or destroying all or part of a resource; 2) altering characteristics of the surrounding environment that contribute to resource significance; 3) introducing visual, audible, or atmospheric elements that are out of character with the property or alter its setting; or 4) neglecting the resource to the extent that it deteriorates or is destroyed.

Direct impacts can be assessed by identifying the types and locations of proposed actions and determining the exact locations of cultural resources that could be affected. Indirect impacts primarily result from the effects of project-induced population increases and the resultant need to develop new housing areas, utilities services, and other support functions necessary to accommodate population growth. These activities and facilities' subsequent use can disturb or destroy cultural resources.

### **4.10.2 Impacts**

#### **4.10.2.1 Proposed Action**

As described in *Section 3.10 Historical, Archeological, and Cultural Resources*, an archeological survey conducted in 1977 indicated that due to past land use there are no archeological resources present on the Kenai Industrial Park project site. However, historical resources dating back to World War II have been documented on the Kalaeloa Unit. The proposed implementation of the Round-leaved Chaff Flower HCP would not impact these resources. Additionally, under the Proposed Alternative, the USFWS would continue to protect these resources as described in the Pearl Harbor National Wildlife Refuge (NWR) Comprehensive Conservation Plan (2010).

#### **4.10.2.2 Alternative 1: Alternate Passive Industrial Use**

Under the implementation of this alternative historical, archeological, and cultural resources would not be impacted as they do not occur on the Kenai Industrial Park project site and would not be impacted on the Kalaeloa Unit.

#### **4.10.2.3 Alternative 2: No-Action Alternative**

Potential historical, archeological, and cultural resources, as described in *Section 3.10*, would not be affected if the No-Action Alternative were selected. Therefore, no significant impacts to these resources would occur under implementation of the No-Action Alternative.

#### **4.10.3 Mitigation Measures**

While impacts to historical, archeological, and cultural resources would not be expected under any of the alternative discussed above, in the unlikely event that Native Hawai`ian cultural deposits, cultural artifacts, subsurface human remains, or other indications of human activity 50 years or older are inadvertently discovered during the course of the project, work would cease immediately until the State Historic Preservation Division (SHPD), and other appropriate government agencies have been contacted for further instruction. The treatment of any human remain encountered would be determined, and conducted in accordance with the applicable requirements of HRS Chapter 6E and HAR Chapter 13-300.

### **4.11 Socioeconomics**

#### **4.11.1 Approach to Analysis**

Significance of population and expenditure impacts are assessed in terms of their direct effects on the local economy and related effects on other socioeconomic resources (e.g., housing). The magnitude of potential impacts varies depending on the location of a Proposed Action; for example, an action that creates 20 employment positions may be unnoticed in an urban area but may have significant impacts in a more rural region. If potential socioeconomic impacts would result in substantial shifts in population trends, or adversely affect regional spending and earning patterns, they would be significant.

#### **4.11.2 Impacts**

##### **4.11.2.1 Proposed Action**

The implementation of the Proposed Action would result in the development of 62-unit self-storage facility which would provide nominal short-term construction-related jobs within the Island of O`ahu. Additionally, under the Proposed Action nominal long-term jobs would be provided in order to staff the facility. Consequently, the Proposed Action would not result in substantial shifts in population or employment trends within the region. The Proposed Action would therefore not result in a significant impact, adverse or otherwise to socioeconomics.

#### **4.11.2.2 Alternative 1: Alternate Passive Industrial Use**

Similar to the Proposed Action, the implementation of this alternative would result in the development of relatively small benign industrial facility which would provide nominal short-term construction-related jobs within the Island of O`ahu. Additionally, under this alternative, long-term jobs would be provided in order to staff the facility; however the number of such jobs would be commensurate with the type of facility. While the potential exists for substantial increases in employment, the relatively small size of the parcel as well as the constraints on emissions and waste would likely limit large scale operations that would require significant staffing. Consequently, similar to the Proposed Action, this alternative is not likely to result in substantial shifts in population or employment trends within the region and would therefore have a less than significant impact to socioeconomics.

#### **4.11.2.3 Alternative 2: No-Action Alternative**

If the No-Action Alternative were selected, no change to regional socioeconomic characteristics would occur. Socioeconomic conditions would remain as described in *Section 3.11*, and no significant impacts would occur.



## 5.0 CUMULATIVE IMPACTS

Cumulative impacts on environmental resources result from incremental impacts of the Proposed Action when combined with other past, present, and reasonably foreseeable future projects in an affected area. Cumulative impacts can result from minor, but collectively substantial, actions undertaken over a period of time by various agencies (i.e., federal, state, or local) or persons. In accordance with Hawai'i Revised Statutes (HRS) Chapter 343, a discussion of cumulative impacts resulting from projects which are proposed, under construction, recently completed, or anticipated to be implemented in the near future is required.

Activities under the Proposed Action would be consistent with the O`ahu General Plan (2002) as well as the `Ewa Development Plan (2000) both of which encourage the continued development of Barbers Point as a major industrial center. All activities under the Proposed Action would be confined to the Kenai Industrial Park project site and the Kalaeloa Unit mitigation parcel and would be consistent with the surrounding land use designations. Consequently, the Proposed Action would be expected to have no significant cumulative impacts on the surrounding area.

**Table 5-1.  
 Recently Approved/Proposed Projects in the Vicinity of the Kenai Industrial Park and the Kalaeloa Unit**

Project Name	Description	TMK (Proximity to Site)
<b>Recently Approved/Proposed Projects near Kenai Industrial Park</b>		
Western Kapolei Regional Drainage System	Aina Nui Corporation will design and construct a regional drainage system in accordance with the Western Kapolei Regional Drainage Plan. The regional drainage system will collect the runoff from multiple individual drainage systems located within the drainage contributing area.	9-1-014:002, 26, 27; 9-1-15:002, 004, 020; 9-1-74:036 (0.15 mile south)
Solid Waste to Energy Truck Receiving Station for Sewage Sludge	The Solid Waste to Energy Truck Receiving Station for Sewage Sludge will provide the HPOWER Expansion Project the ability to accept and process dewatered sewage sludge from all wastewater treatment plants for final disposal.	9-1-026:030 (1.0 mile south)
<b>Recently Approved/Proposed Projects near Kalaeloa Unit, Pearl Harbor NWR</b>		
Kalaeloa Unit Habitat Management	Additional management activities, including invasive plant removal as well as native planting and habitat restoration are scheduled for the 7 acres of the unit which are not currently under active management.	9-1-013:030 (0.0 mile)
5.0 MW Photovoltaic Park	Kalaeloa Home Lands Solar LLC, The photovoltaic system will be a series of ground supported flat panels with three control/cabinet enclosures and transformers. The site is laid out to maximize the number of installed solar panels. Each panel is approximately 39 inches wide and 66 inches long, dark in color, and stand between 6 and 8 feet above ground level. Approximately 17,000 panels will be required to produce an average of 5.0 MW of peak power. The total annual output from the facility will be approximately 8,400 MWh/Year	9-1-013:029 (0.60 mile north)

**Table 5-1.  
 Recently Approved/Proposed Projects in the Vicinity of the Kenai Industrial Park and the  
 Kalaeloa Unit (Cont.)**

Project Name	Description	TMK (Proximity to Site)
University of Hawai'i Health Research Lab	The proposed facility would consist of a one-story, approximately 31,179-gross square foot standalone structure and would include BSL-2, BSL-3, and ABSL3 laboratories, a small lab animal facility for primarily rodents, an insectary, physical plant, and support space for research administration, and building operation.	9-1-013:045 (1.75 miles northeast)

Source: OEQC 2012; USFWS 2010.

### 5.1 Projects in the Vicinity of the Kenai Industrial Park

A search of the Office of Environmental and Quality Control (OEQC) Online Library revealed that 2 projects proposed in the immediate vicinity of the Kenai Industrial Park project site recently each received a Finding of No Significant Impact (FONSI). Consequently, it is expected that these projects will be implemented in the immediate future, potentially concurrent with the implementation of the Proposed Action. Construction associated with these projects, listed in Table 5-1, would mainly occur on previously disturbed land, and it is not expected that either of these projects would affect or be affected by implementation of the Proposed Action at the Kenai Industrial Park. Additionally, neither of these projects would affect known populations of round-leaved chaff flower (*Achyranthes splendens* var. *rotundata*). Consequently, due to its negligible contribution to construction-related impacts (e.g., traffic, air quality, noise, etc.) implementation of the Proposed Action would not be cumulatively significant.

### 5.2 Projects in the Vicinity the Kalaeloa Unit

A search of the OEQC Online Library revealed that one project proposed in the immediate vicinity of the Kalaeloa Unit recently received a FONSI. This search also revealed that another project was proposed approximately 1.75 miles to the northeast of the Kalaeloa Unit. Further, the Pearl Harbor National Wildlife Refuge (NWR) Comprehensive Conservation Plan indicated that additional management activities are expected to be carried out on the Kalaeloa Unit.

The two construction projects, listed in Table 5-1, would mainly occur on previously disturbed land, and it is not expected that either of these projects would affect or be affected by implementation of the Proposed Action at the Kenai Industrial Park. Additionally, neither of these projects would affect known populations of round-leaved chaff flower (*Achyranthes splendens* var. *rotundata*). While the additional management activities at the Kalaeloa Unit would be expected to impact the round-leaved chaff flower, they would generally have beneficial impacts on this species as well as on the additional biological resources present on the Kalaeloa Unit. Consequently, due to its negligible contribution to construction-related impacts (e.g., traffic, air quality, noise, etc.) implementation of the Proposed Action would not be cumulatively significant.

## **6.0 FINDINGS SUPPORTING ANTICIPATED DETERMINATION**

---

### **6.1 Anticipated Determination**

After reviewing the significance criteria outlined in Hawai`i Revised Statutes (HRS) Chapter 343 and Hawai`i Administrative Rules (HAR) Section 11-200-12, the Proposed Action has been determined to result in less than significant adverse effects on the natural and human environment. Consequently, a Finding of No Significant Impact (FONSI) is anticipated.

### **6.2 Reasons Supporting the Anticipated Determination**

The potential impacts of the Proposed Action, including the development of a 62-unit self-storage facility and the implementation of the Round-leaved Chaff Flower Habitat Conservation Plan (HCP), have been fully examined and discussed in this Environmental Assessment (EA). As previously stated in *Section 4* and *Section 5*, no significant environmental impacts are anticipated as result of the implementation of the Proposed Action. This determination is based on the assessments as summarized below for criterion (1) to (13).

1) *Involve an irrevocable loss or destruction of any natural or cultural resources*

As described in *Section 3.10*, an archeological survey conducted in 1977 indicated that due to past land use there are no archeological resources present on the Kenai Industrial Park project site (Cook Inlet Region, Inc. 1986). Additionally, mitigation measures compliant with HRS Chapter 6E and HAR Chapter 13-300, would be employed in the unlikely event that Native Hawai`ian cultural deposits, cultural artifacts, subsurface human remains, or other indications of human activity 50 years or older are inadvertently discovered during the course of the project. Therefore, there would be no impact to or destruction of natural or cultural resources on the project site.

While, historical resources dating back to World War II have been documented on the Kalaeloa Unit, the proposed implementation of the Round-leaved Chaff Flower HCP would not impact these resources. Under the Proposed Alternative, the United States Fish and Wildlife Service (USFWS) would continue to protect these resources as described in the Pearl Harbor National Wildlife Refuge (NWR) Comprehensive Conservation Plan (2010).

2) *Curtail the range of beneficial uses of the environment*

The Proposed Action would not curtail the range of beneficial uses of the environment, as the development would be consistent with existing state as well as city and county land use designations. The proposed industrial use is supported by the O`ahu General Plan (2002) and the `Ewa Development Plan which both encourage the continued development of Barbers Point as an industrial center.

3) *Conflict with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decision, or executive orders*

The proposed project is consistent with state's policies and guidelines outlined in HRS Chapter 344. The Proposed Action specifically meets the goals of HRS Chapter 344-3(b) which encourages the planting of native as well as other trees, shrubs, and flowering plants compatible to the enhancement of our environment. It also fulfills the goals of HRS 344-5(a) which encourages industries in Hawai'i to be compatible with the environment.

4) *Substantially affects the economic or social welfare of the community or State*

Short-term economic benefits anticipated during construction would include nominal construction-related employment opportunities. Additionally, the operation of the proposed self-storage facility would also likely result in nominal long-term employment opportunities associated with facility staffing. However, the Proposed Action would have a less than significant impact on the economic and/or social welfare of the Island of O`ahu.

5) *Substantially affects public health*

The Proposed Action is consistent with existing land uses surrounding the project site. Additionally, the proposed self-storage facility would constitute a passive industrial use and would therefore, by definition, not have significant impacts to public health as it would not result in an additional point source for air pollution or hazardous waste.

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

Although the Proposed Action would introduce new industrial uses to a vacant site, the proposed self-storage facility would not be anticipated to result in substantial population changes and/or additional uses of public facilities.

7) *Involves a substantial degradation of environmental quality*

The Proposed Action would not involve a substantial degradation of environmental quality. The project design is a low-impact industrial development with no long-term impacts to traffic, air quality, noise, or hazardous materials. The use of the property is consistent with the allowed uses for an industrial district and all applicable regulations would be met throughout the construction of the proposed development. Additionally, the use of the Kalaeloa site for the implementation of the Round-leaved Chaff Flower HCP would have benefit impacts to the environmental quality at that location.

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

As described in *Section 5.0*, the Proposed Action would not contribute to a considerable cumulative effect on the environment. Further, the Proposed Action is limited to the Kenai Industrial Park project site and the Kalaeloa Unit mitigation parcel; therefore it would not result in a commitment for larger or more extensive actions.



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

As described in *Section 3.6*, two federally and state-listed round-leaved chaff flower individuals have recently been documented along the western margin of the Kenai Industrial Park project site. The proposed development of the parcel would require grubbing (i.e., removal of vegetation) and grading throughout the extent of the property boundaries, which would remove these individuals and their habitat on the 0.75 acre parcel.

However, the implementation of the Proposed Action would also result in the implementation of the Round-leaved Chaff Flower HCP, which would see this species replanted off-site at 40:1 mitigation ratio (i.e., 40 individuals would be replanted for every 1 that is removed). The Cook Inlet Region, Inc. (CIRC) Land Development Company (CLDC) would fund all mitigation, monitoring, and maintenance activities for a period of no less than five year to meet the 7 established success criteria listed in *Section 2*. The implementation of the HCP would off-set the significant impacts to biological resources resulting from the Proposed Action, and would potentially result in a net increase to the round-leaved chaff flower population. Consequently, impacts to biological resources at the Kenai Industrial Park would be less than significant following mitigation.

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

The implementation of the Proposed Action would result in short-term construction related impacts to air quality and noise at the Kenai Industrial Park. However, due to the relatively small scope of construction and the environmental context of the project site, these impacts would be less than significant. Further, as described in *Section 4.1* and *Section 4.8*, the proposed self-storage facility and Round-leaved Chaff Flower HCP would not directly or indirectly involve long-term impacts to air quality or noise at either the Kenai Industrial Park project site or the Kalaeloa Unit.

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

The Kenai Industrial Park project site is located within a Tsunami Evacuation Zone (City and County of Honolulu 2010). However, the proposed self-storage facility would be consistent with the State Building Code and would comply with O`ahu General Plan (2002) Objective B, Policy 2 which requires that all developments in areas subject to floods and tsunamis are located and constructed in a manner that will not create any health or safety hazard. The proposed development would not introduce contaminants that would be an environmental or public safety hazard. Further, the proposed self-storage facility would not introduce a substantial number of new people to additional natural hazard risks since the development would require only minimal staffing.

Additionally, the proposed implementation of the Round-leaved Chaff Flower HCP would not be significantly impacted by natural hazards as it would not introduce new sources of contamination to the Kalaeloa Unit nor would it introduce new development into a hazardous area.

*12) Substantially affects scenic vistas and view planes identified in county or state plans or studies*

The implementation of the Proposed Action would result in short-term impacts to visual resources at the Kenai Industrial Park project site due to presence of construction equipment and materials. However, these impacts would not affect the overall visual character of the surrounding vicinity as the proposed project site is located within the Campbell Industrial Park, the largest industrial park on the O`ahu and within the state of Hawai`i. Additionally, although the plans for the self-storage facility are currently limited to conceptual designs, the proposed development would be consistent with the visual character of the surrounding industrial land uses. Therefore, there would be no significant impacts to the surrounding visual resources.

Further, the proposed implementation of the Round-leaved Chaff Flower HCP would not result in significant impacts to the open space visual character of the Kalaeloa Unit nor would it impact the scenic view points along O`ahu's southern coast.

*13) Require substantial energy consumption*

Following construction, the implementation of the Proposed Action would not require substantial energy consumption, beyond that necessary for lighting of the grounds as well as lighting and heating of the office. Therefore, these impacts would be considered less than significant.

### **6.3 Summary**

Based on the above findings, it is anticipated that the Proposed Action will not generate significant adverse environmental or socioeconomic impacts. Additionally, the EA recommends mitigation measures to alleviate potential impacts where such impacts are identified. Consequently, the Proposed Action is consistent with the Hawai`i State Land Use District Boundaries; the City and County of Honolulu Land Use Ordinance; the O`ahu General Plan; the `Ewa Development Plan; and the Hawai`i Coastal Zone Management Plan.

## **7.0 LIST OF PREPARERS**

---

This report was prepared for the Cook Inlet Region, Inc. (CIRI) Land Development Company (CLDC) by AMEC Environment & Infrastructure, Inc. Members of the professional staff are listed below.

### Project Management

Halleh Paymard, Botanist  
*B.S. Botany*

### Technical Analyst

Nicholas Meisinger, Environmental Analyst  
*B.S. Environmental Science*

### Graphics

Morgan Aagesen, GIS Technician  
*B.A. Geography*

### Production

Gerrie Gomez

## **8.0 LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS CONTACTED**

---

This list includes agencies, organizations, and persons contacted during the preparation of the Round-leaved Habitat Conservation Plant (HCP) as well as this Environmental Assessment (EA).

### Federal Agencies

United States Fish and Wildlife Service (USFWS)

### State Agencies

Department of Land and Natural Resources (DLNR)  
*Division of Forestry and Wildlife (DOFAW)*  
*State Historic Preservation Division (SHPD)*

### City and County Agency's

Department of Planning and Permitting

## 9.0 REFERENCES

---

- Anthony, S., S. Hunt, D. Charles, A.M. Brasher, L.D. Miller, and M.S. Tomlinson. 2004. Water Quality on the Island of O`ahu Hawai`i, 1999-2001. United States Geological Survey, Honolulu, Hawai`i.
- Bailey, R.G., P.E. Avers, T. King, and W.H. McNab. 1995. Ecoregions and Subregions of the United States (Supplementary Table of Map Unit Descriptions Compiled and Edited by W.H. McNab and R.G. Bailey). United States Forest Service, Washington D.C. Available at: <http://www.fs.fed.us/land/ecosysmgmt/> [Accessed October 16, 2012].
- Bies, D., and C. Hansen. 1988. Engineering Noise Control.
- City and County of Honolulu. 2010. Map 17: Kahe Point. Available at: <http://static.pdc.org/tsunami/> [Accessed October 15, 2012].
- Cook Inlet Region, Inc. 1986. Camp Malakole Industrial Subdivision.
- Department of General Planning City & County of Honolulu. 2002. General Plan Objectives and Policies.
- Department of General Planning City & County of Honolulu. 1990. O`ahu Water Management Plan. Available at: <http://hawaii.gov/dlnr/cworm/planning/wudpoa1990.pdf> [Accessed October 10, 2012].
- Department of Planning & Permitting City & County of Honolulu. 2000. `Ewa Development Plan.
- Department of Planning & Permitting City & County of Honolulu. 2011. `Ewa Development Plan Review Report 1997-2010 Volume 2 of 2. Available at: <http://www.honoluluodpp.org/Planning> [Accessed October 12, 2012].
- Department of Planning & Permitting City & County of Honolulu. 2009. `Ewa Roadway Connectivity Study. Available at: <http://honoluluodpp.org/Planning/EwaConnect/Connectivity.pdf> [Accessed October 12, 2012].
- Department of Planning & Permitting City & County of Honolulu. 2012. Honolulu Land Information System (HoLIS). *Interactive maps Overview - Parcels & Zoning Information*. Available at: <http://gis.hicentral.com/maps.html#1> [Accessed October 12, 2012].
- Dye, T.S., K.M. Macak, and E.H. Jourdane. 2008. Historic Properties Assessment for the Pearl Harbor National Wildlife Refuge: Waiawa, Honouliuli and Kalaeloa Units, Waiawa and Honouliuli Ahupua`a, `Ewa District, O`ahu Island TMK: (1) 9-6-001:001, 9-1-010:004, 9-1-007:012, and 9-1-013:030. Available at: [http://www.tsdye2.com/reports/090/phnwr\\_revised\\_2.pdf](http://www.tsdye2.com/reports/090/phnwr_revised_2.pdf) [Accessed October 16, 2012].

FEMA. 2011a. Flood Insurance Rate Map City of Kapolei, Honolulu County, Panel 15003C0304G, Effective 19 January 2011. Federal Emergency Management Agency, Washington D.C. Available at: <https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1> [Accessed October 10, 2012].

FEMA. 2011b. Flood Insurance Rate Map City of Kapolei, Honolulu County, Panel 15003C0316G, Effective 19 January 2011. Federal Emergency Management Agency, Washington D.C. Available at: <https://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1> [Accessed October 10, 2012].

Hawai`ian Electric Company. 2006. Final Environmental Impact Statement Campbell Industrial Park Generating Station & Transmission Additions.

Hawai`ian Electric Company. 2009. Hawai`ian Electric Debuts Air Quality Monitoring Website. Available at: <http://www.heco.com/portal/site/heco/menuitem.508576f78baa14340b4c0610c510b1ca/?vgnnextoid=bce101a62d7e2210VgnVCM1000005c011bacRCRD&vgnnextfmt=default&cpsextcurrchannel=1> [Accessed October 9, 2012].

Hawai`ian Electric Company. 2012. West O`ahu Air Quality Monitoring Program. Available at: <http://www.westoahuair.com/> [Accessed October 9, 2012].

McDermott, M., O.L. O`Leary, T. Tulchin, and D.W. Shideler. 2006. Archaeological Inventory Survey for the Proposed 345-acre Kapolei Harborside Center, Honouliuli Ahupua`a, `Ewa District, O`ahu Island TMK (1) 9-1-14:027, 034, 035 & 9-1-15:001. Kailua, Hawai`i. Available at: <http://luc.state.hi.us/dockets/a06-763kapolei/01192007a1/exhibit30a.pdf> [Accessed October 15, 2012].

Moore, J.K., and L. Brennan. 1974. Archaeological Survey of Lower Waimea Valley, O`ahu.

Morden & Associates. 2005. Botanical Survey of Malakole Street Property.

Morden & Associates. 2008. Botanical Survey of Malakole Street Property.

MRI. 1999. Estimating Particulate matter Emissions from Construction Operations.

National Weather Service. 2012. Climate of Hawai`i. Available at: [http://www.prh.noaa.gov/hnl/pages/climate\\_summary.php](http://www.prh.noaa.gov/hnl/pages/climate_summary.php) [Accessed October 9, 2012].

NRCS. 1972. Soil Survey of Islands of Kauai, O`ahu, Maui, Molokai, and Lanai, State of Hawai`i. Available at: [http://soils.usda.gov/survey/printed\\_surveys/state.asp?state=Hawaii&abbr=HI](http://soils.usda.gov/survey/printed_surveys/state.asp?state=Hawaii&abbr=HI) [Accessed October 10, 2012].

OEQC. 2012. EA and EIS Online Library. Available at: [http://oeqc.doh.hawaii.gov/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fShared%20Documents%2fEA\\_and\\_EIS\\_Online\\_Library](http://oeqc.doh.hawaii.gov/Shared%20Documents/Forms/AllItems.aspx?RootFolder=%2fShared%20Documents%2fEA_and_EIS_Online_Library) [Accessed October 19, 2012].

Oki, D.S., S.B. Gingerich, and R.L. Whitehead. 1999. Ground Water Atlas of the United States Alaska, Hawaii, Puerto Rico, and the United States Virgin Islands HA 730-N. Available at: [http://pubs.usgs.gov/ha/ha730/ch\\_n/index.html](http://pubs.usgs.gov/ha/ha730/ch_n/index.html) [Accessed October 10, 2012].

State of Hawai'i. 2010a. Acquisition of Land for the Expansion of Kalaeloa Barbers Point Harbor. Hawai'i Department of Transportation, `Ewa, O`ahu, Hawai'i. Available at: [http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\\_and\\_EIS\\_Online\\_Library/Oahu/2010s/2010-09-23-OA-DEA-Kalaeloa-Barbers-Point-Land-Acq.pdf](http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Oahu/2010s/2010-09-23-OA-DEA-Kalaeloa-Barbers-Point-Land-Acq.pdf) [Accessed October 15, 2012].

State of Hawai'i. 2012a. Air Monitoring Network Plan. Department of Health Clean Air Branch. Available at: [http://hawaii.gov/health/environmental/air/cab/cab\\_monitoring/monitoring\\_pdf/2012\\_Air\\_Monitoring\\_Network\\_Plan.pdf](http://hawaii.gov/health/environmental/air/cab/cab_monitoring/monitoring_pdf/2012_Air_Monitoring_Network_Plan.pdf) [Accessed October 9, 2012].

State of Hawai'i. 2012b. County Economic Conditions 3rd Quarter 2012. Available at: [http://hawaii.gov/dbedt/info/economic/data\\_reports/qser/county](http://hawaii.gov/dbedt/info/economic/data_reports/qser/county) [Accessed October 15, 2012].

State of Hawai'i. 2011a. Environmental Assessment Kawaihoa Wind Power Facility Habitat Conservation Plan. Department of Land and Natural Resources Division of Forestry and Wildlife, Honolulu, Hawai'i.

State of Hawai'i. 2012c. Federal and State Ambient Air Quality Standards. Available at: [http://hawaii.gov/health/environmental/air/cab/cab\\_misc\\_pdf/naaqs\\_sep\\_2010.pdf](http://hawaii.gov/health/environmental/air/cab/cab_misc_pdf/naaqs_sep_2010.pdf) [Accessed October 9, 2012].

State of Hawai'i. 2010b. Final Environmental Assessment/Finding of No Significant Impact Kalaeloa Airport Development Plan Improvements. Available at: [http://oeqc.doh.hawaii.gov/Shared%20Documents/EA\\_and\\_EIS\\_Online\\_Library/Oahu/2010s/2010-06-08-OA-FEA-Kalaeloa-Airport.pdf](http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Oahu/2010s/2010-06-08-OA-FEA-Kalaeloa-Airport.pdf) [Accessed October 15, 2012].

State of Hawai'i. 2005. Hawai'i Statewide Comprehensive Economic Development Strategy. Available at: [http://hawaii.gov/dbedt/op/projects/ceds\\_final\\_report.pdf](http://hawaii.gov/dbedt/op/projects/ceds_final_report.pdf) [Accessed October 15, 2012].

State of Hawai'i. 2012d. Hawai'i's Greenhouse Gas Proposed Rules. Available at: [http://hawaii.gov/health/environmental/env-planning/HEF/5\\_GhG\\_rules.pdf](http://hawaii.gov/health/environmental/env-planning/HEF/5_GhG_rules.pdf) [Accessed October 9, 2012].

State of Hawai'i. 2011b. State of Hawai'i Annual Summary 2011 Air Quality Data. Department of Health Clean Air Branch, Honolulu, Hawai'i. Available at: [http://hawaii.gov/health/environmental/air/cab/cabmaps/pdf/2011\\_aqbook.pdf](http://hawaii.gov/health/environmental/air/cab/cabmaps/pdf/2011_aqbook.pdf) [Accessed October 9, 2012].

Stearns, H.T., and K.N. Vaksvik. 1935. Geology and Groundwater Resources of the Island of O`ahu, Hawai'i. *United States Geological Survey Division of Hydrography Bulletin* 1: p.479.

United States Bureau of Economic Analysis. 2010. Regional Data GDP & Personal Income. Available at: <http://www.bea.gov/iTable/iTable.cfm?ReqID=70&step=1&isuri=1&acrdn=5> [Accessed October 15, 2012].

United States Census Bureau. 2010. 2010 Census: Population Finder. Available at: <http://2010.census.gov/2010census/> [Accessed October 15, 2012].

USCCP. 2009. Climate Literacy, The Essential Principles of Climate Sciences. A Guide for Individuals and Communities. Available at: <http://www.climatescience.gov/Library/Literacy/> [Accessed October 16, 2012].

USEPA. 2012. My WATERS Mapper. Available at: <http://map24.epa.gov/mwm/mwm.html?fromUrl=02010003> [Accessed October 16, 2012].

USFWS. 1994a. Draft Recovery Plan for *Chamaesyce skottsbergii* var. *kalaeloana* and *Achyranthes splendens* var. *rotundata*. United States Fish and Wildlife Service, Portland, OR.

USFWS. 1994b. Draft Recovery Plan for *Chamaesyce skottsbergii* var. *kalaeloana* and *Achyranthes splendens* var. *rotundata*. United States Fish and Wildlife Service, Portland, OR.

USFWS. 2012a. Endangered Species. Available at: <http://www.fws.gov/pacificislands/species.html> [Accessed October 11, 2012].

USFWS. 2012b. National Wetlands Inventory, Wetlands Mapper. Available at: <http://www.fws.gov/wetlands/Data/Mapper.html> [Accessed July 23, 2012].

USFWS. 2010. Pearl Harbor National Wildlife Refuge Comprehensive Conservation Plan. United States Fish and Wildlife Service.

USGS. 2012. USGS Geological Investigations Series I-2761, Oahu. Available at: [pubs.usgs.gov/imap/i2761/sections/3\\_Oahu.pdf](http://pubs.usgs.gov/imap/i2761/sections/3_Oahu.pdf) [Accessed October 10, 2012].