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IN REPLY REFER TO:

HAR-E
2345.13

September 12, 2012

TO: GARY L. HOOSER, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH

FROM: GLENN M. OKIMOTO, Ph.D.
DIRECTOR OF TRANSPORTATION

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT FOR ORACLE TEAM USA TEMPORARY FACILITIES AT KAUMALAPAU HARBOR, ISLAND OF LANAI

RECEIVED
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OFC. OF ENVIRONMENTAL QUALITY CONTROL

With this letter, the State of Hawaii Department of Transportation hereby transmits the Draft Environmental Assessment and Anticipated Finding of No Significant Impact (DEA-AFONSI) for the Oracle Team USA Temporary Facilities at Kaumalapau Harbor situated at TMK Number (2) 4-9-03: 26 on the island of Lanai for publication in the next available edition of the Environmental Notice.

Enclosed is a completed OEQC Publication Form, two copies of the DEA-AFONSI, 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 Carter Luke,P. E., Engineering Program Manager, of the Harbors Division Engineering Branch at 587-1862. In responding to this letter, please reference HAR-E 2345.13 with attention to Mr. Luke.

Enc.

AGENCY ACTIONS
SECTION 343-5(B), HRS
PUBLICATION FORM (JULY 2012 REVISION)

Project Name ORACLE Team USA Temporary Facilities at Kaumalapau Harbor
Island: Lānaʻi
District: Lānaʻi
TMK: (2) 4-9-03: 26
Permits: HRS, Chapter 343 Documentation; Rivers and Harbors Act Section 10 Permit; Coastal Zone Management Federal Consistence Review; County of Maui Building Permit; Special Management Area Use Permit - Minor

Proposing/Determination Agency:

State of Hawaiʻi
Department of Transportation, Harbors Division
79 South Nimitz Highway, 2nd Floor
Honolulu, Hawaiʻi, 96813
Contact: Randy Grune, Deputy Director, Harbors Division
attention: Carter Luke, Engineering Program Manager, (808) 587-1862

Consultant:

R. M. Towill Corporation
2024 North King Street, Suite 200
Honolulu, Hawaiʻi, 96819
Contact: Jim Niermann, Senior Planner, (808) 842-1133

Status (check one only):

_x_DEA-AFNSI	Submit the proposing 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); a 30-day comment period ensues upon publication in the periodic bulletin.
__FEA-FONSI	Submit the proposing 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); no comment period ensues upon publication in the periodic bulletin.
__FEA-EISPN	Submit the proposing 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); a 30-day consultation period ensues upon publication in the periodic bulletin.
__Act 172-12 EISPN	Submit the proposing 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). NO environmental assessment is required and a 30-day consultation period upon publication in the periodic bulletin.
__DEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting authority, 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); a 45-day comment period ensues upon publication in the periodic bulletin.
__FEIS	The proposing agency simultaneously transmits to both the OEQC and the accepting authority, 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); no comment period ensues upon publication in the periodic bulletin.
__ Section 11-200-23 Determination	The accepting authority simultaneously transmits its determination of acceptance or nonacceptance (pursuant to Section 11-200-23, HAR) of the FEIS to both OEQC and the proposing agency. No comment period ensues upon publication in the periodic bulletin.
__Section 11-200-27	

Determination	The accepting authority simultaneously transmits its notice to both the proposing agency 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 (Provide proposed action and purpose/need in less than 200 words. Please keep the summary brief and on this one page)**:**

The applicant, ORACLE Team USA (OTUSA) requires a temporary winter base of operations to conduct sea trials, testing, training, research and data collection to support development and enhancement of its maritime sailing methods and technologies. During the winter period, conditions at OTUSA's home port in San Francisco are not optimal for research and training, and OTUSA must relocate to an alternate location during those months to continue its work. OTUSA proposes to utilize the existing Kaumalapau Harbor on the Island of Lānaʻi as a temporary base of operations. Portions of the harbor wharf will be used to stage temporary facilities comprised of eleven standard 40-foot shipping containers containing tools, material and equipment; three office trailers; and three tents. In addition, two or three temporary moorings will be placed within the harbor. All planned uses will be temporary for a limited duration of approximately four months including set up and pack up. Sea trials and research activities will be approximately six weeks. Upon the completion of training, research and data collection activities, all materials used for the project will be removed from the site and the area will be restored to pre-existing conditions.

Draft Environmental Assessment
per Hawai‘i Revised Statutes (HRS), Chapter 343

ORACLE Team USA Temporary Facilities at Kaumalapau Harbor Island of Lāna‘i, Hawai‘i

September 2012

Applicant:
ORACLE Team USA
999 Marin Street
San Francisco, CA 94124

Approving Agency:
State of Hawai‘i
Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, Hawai‘i 96813

Draft Environmental Assessment
per HRS, Chapter 343

ORACLE Team USA Temporary Facilities at Kaumalapau Harbor Island of Lānaʻi, Hawaiʻi

September 2012

Prepared for:
ORACLE Team USA
999 Marin Street
San Francisco, CA 94124

For approval by:
State of Hawaiʻi
Department of Transportation
Harbors Division
79 South Nimitz Highway
Honolulu, Hawaiʻi

Prepared by:
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Honolulu, HI 96819-3494

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ACRONYMS AND ABBREVIATIONS

BMPs	Best Management Practices
CDUP	Conservation District Use Permit
CWA	Clean Water Act of 1972, as amended
CWB	Clean Water Branch, State Department of Health
CZM	Coastal Zone Management
DA	Department of the Army
DLNR	State Department of Land and Natural Resources
DOBOR	Division of Boating and Ocean Recreation, DLNR
DOCARE	Division of Conservation and Resource Enforcement, DLNR
DOFAW	Division of Forestry and Wildlife, DLNR
DOH	State Department of Health
DOH-CWB	DOH Clean Water Branch
DOT	State Department of Transportation
DOT-A	DOT Airports Division
DOT-HAR	DOT Harbors Division
DOW	Department of Water, County of Maui
DPW	Department of Public Works, County of Maui
EA	Environmental Assessment
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
HAR	Hawaii Administrative Rules
HRS	Hawaii Revised Statutes
IT	Information Technology
MECO	Maui Electric Company
MLLW	Mean Lower Low Water
NEPA	National Environmental Policy Act
NOAA	National Oceanographic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
OHA	Office of Hawaiian Affairs

ACRONYMS AND ABBREVIATIONS

OHWM	Ordinary High Water Mark
OSP	Operations Safety Plan
OTUSA	ORACLE Team USA
SBH	Small Boat Harbor
SHPD	State Historic Preservation Division, DLNR
SMA	Special Management Area
USACE	U.S. Army Corps of Engineers
USCG	U.S. Coast Guard
USFWS	U.S. Fish & Wildlife Service
YB	Young Brothers, Ltd.

Note: Spelling of Hawaiian place names follows Pukui et al. *Place Names of Hawaii* [1974].

1.0 Project Summary

Project:	ORACLE Team USA Temporary Facilities at Kaumalapau Harbor Island of Lānaʻi, Hawaiʻi
Applicant:	ORACLE Team USA (OTUSA) 999 Marin Street San Francisco California 94124
Approving Agency:	State of Hawaiʻi Department of Transportation, Harbors Division 79 South Nimitz Highway Honolulu, Hawaiʻi 96813
Agent:	R. M. Towill Corporation 2024 North King Street, Suite 200 Honolulu, Hawaiʻi 96819
Tax Map Key(s):	(2) 4-9-03: 26
Proposed Action:	The applicant proposes to utilize the existing Kaumalapau Harbor on the Island of Lānaʻi as a temporary base of operations for sea trials, training, and related research and data collection to support development of a high-performance sail boat. Portions of the harbor wharf will be used to stage temporary facilities comprised of eleven standard 40-foot shipping containers containing tools, material and equipment; three office trailers; and two tents. In addition, two or three temporary moorings will be placed within the harbor. All planned uses will be temporary for a limited duration of approximately four months including set up and pack up. Sea trials and research activities will be approximately six weeks. Upon the completion of training, research and data collection activities, all materials used for the project will be removed from the site and the area will be restored to pre-existing conditions.
Land Area:	Harbor land area (excluding breakwater): 2.3 acres Portion occupied by OTUSA temporary facilities: 0.4 acres
State Land Use District:	Urban
Existing Land Use:	State of Hawaiʻi Commercial Harbor
Present Zoning:	Waterfront Industrial
Special Management Area:	Yes
Permits That May be Required:	HRS, Chapter 343 Documentation; Rivers and Harbors Act Section 10 Permit; Coastal Zone Management Federal Consistency Review; Special Management Area Use Permit – Minor, Building Permit, County of Maui

2.0 Introduction

2.1 Project Location and Area of Use

ORACLE Team USA (OTUSA) proposes to use the existing Kaumalapau Harbor on the Island of Lānaʻi as a temporary base of operations for sea trials, training, and related research and data collection to support the development of a high-performance sail boat. Kaumalapau Harbor is a small commercial harbor located in a natural embayment on the southwest coast of the Island of Lānaʻi (**Figure 2-1**), approximately 6 miles from Lānaʻi City. The improved harbor facility is owned by the State of Hawaiʻi and under the jurisdiction and management of the DOT Harbors Division (DOT-HAR). The Tax Map Key is (2) 4-9-003: 026 (**Figure 2-2**).

2.2 Purpose of the Environmental Assessment

In accordance with Chapter 343, Section 5, Hawaiʻi Revised Statutes (HRS), this project involves the following actions that require the preparation of an Environmental Assessment (EA):

(1) Propose the use of state or county lands or the use of state or county funds;
(2) Propose use within a shoreline area as defined in section 205A-41 HRS

In addition, the project is located within the Special Management Area (SMA), therefore the proposed activity is subject to the preparation of an EA per the requirements of Chapter 12-402, Maui County Code, and Chapter 205A, HRS.

In accordance with Chapter 343, Section 5, HRS, the applicant for this EA is OTUSA and the approving agency is the State of Hawaiʻi, Department of Transportation (DOT).

Pursuant to the requirements of Chapter 343, HRS, and Chapter 11-200, Hawaiʻi Administrative Rules (HAR), and based on analysis and review of environmental conditions, project effects, and proposed mitigation measures, it is anticipated that the proposed project will not have significant environmental effects and that a Finding of No Significant Impact (FONSI) will be issued for this project.

2.3 Purpose and Need for Proposed Project

OTUSA requires a temporary winter base of operations to conduct sea trials, testing, training, research and data collection to support development and enhancement of its maritime sailing methods and technologies. During the winter period, conditions at OTUSA's home port in San Francisco are not optimal for research and training activities, and OTUSA must relocate to an alternate location during those months to continue its work.

The temporary base of operations must possess a unique combination of sea and weather conditions, logistics, and infrastructure. The location must offer excellent wind and sailing conditions and good weather during the winter months. The location must be a reasonable distance from OTUSA's home port in San Francisco to minimize travel and shipping days. Logistical requirements include ample space on shore for support facilities and direct access to water for boat and equipment staging and crew

operations. Infrastructure requirements include port facilities that can accommodate barge delivery of the sail boat, support boats, equipment and storage containers.

After conducting an extensive search of potential sites, OTUSA identified Kaumalapau Harbor as the preferred alternative for its temporary winter sailing base. The location possesses the requisite sea and weather conditions, and the port facilities provide sufficient space and infrastructure to accommodate temporary tents, trailers, storage containers, and equipment that will be used by the OTUSA crew.

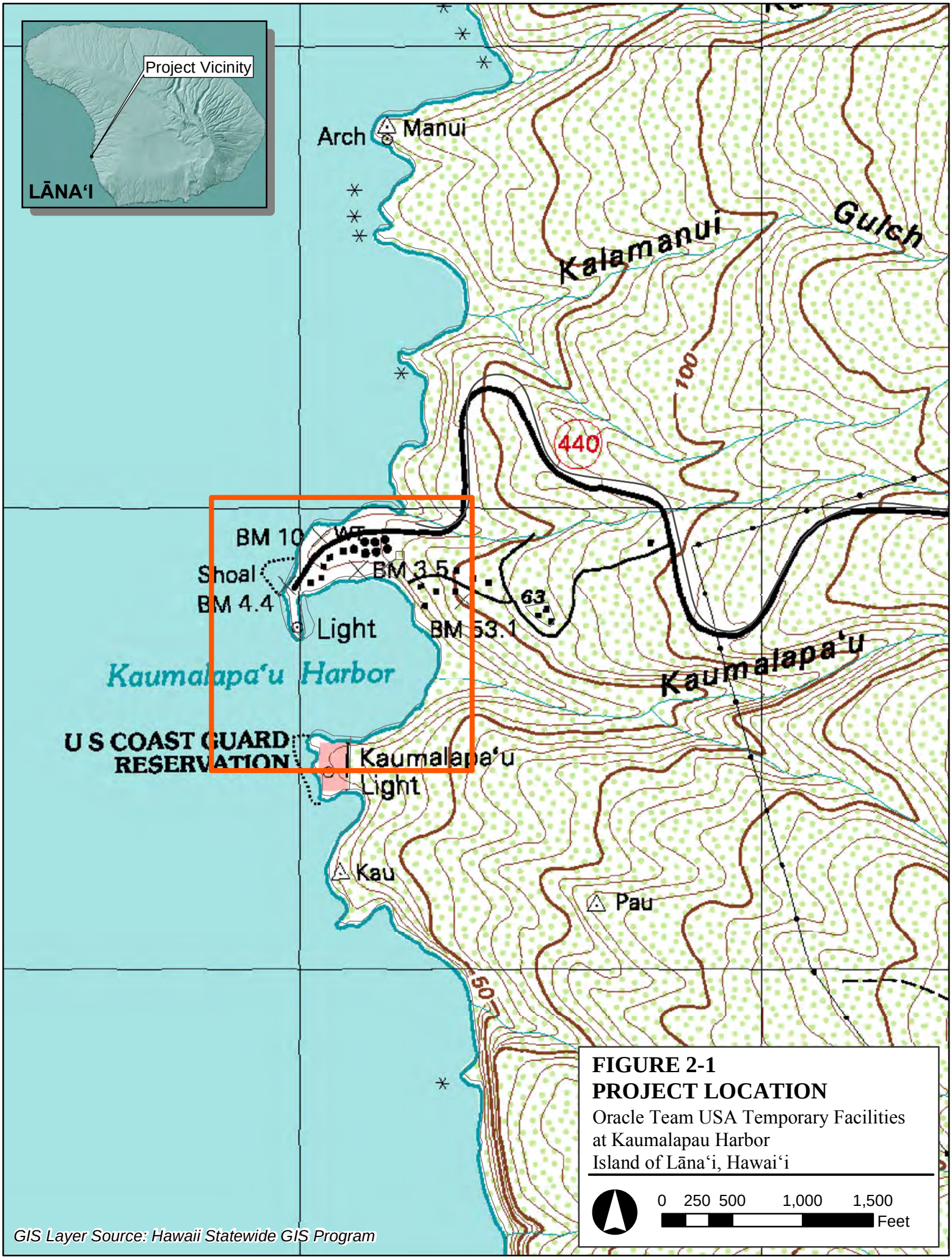


FIGURE 2-1
PROJECT LOCATION
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

GIS Layer Source: Hawaii Statewide GIS Program

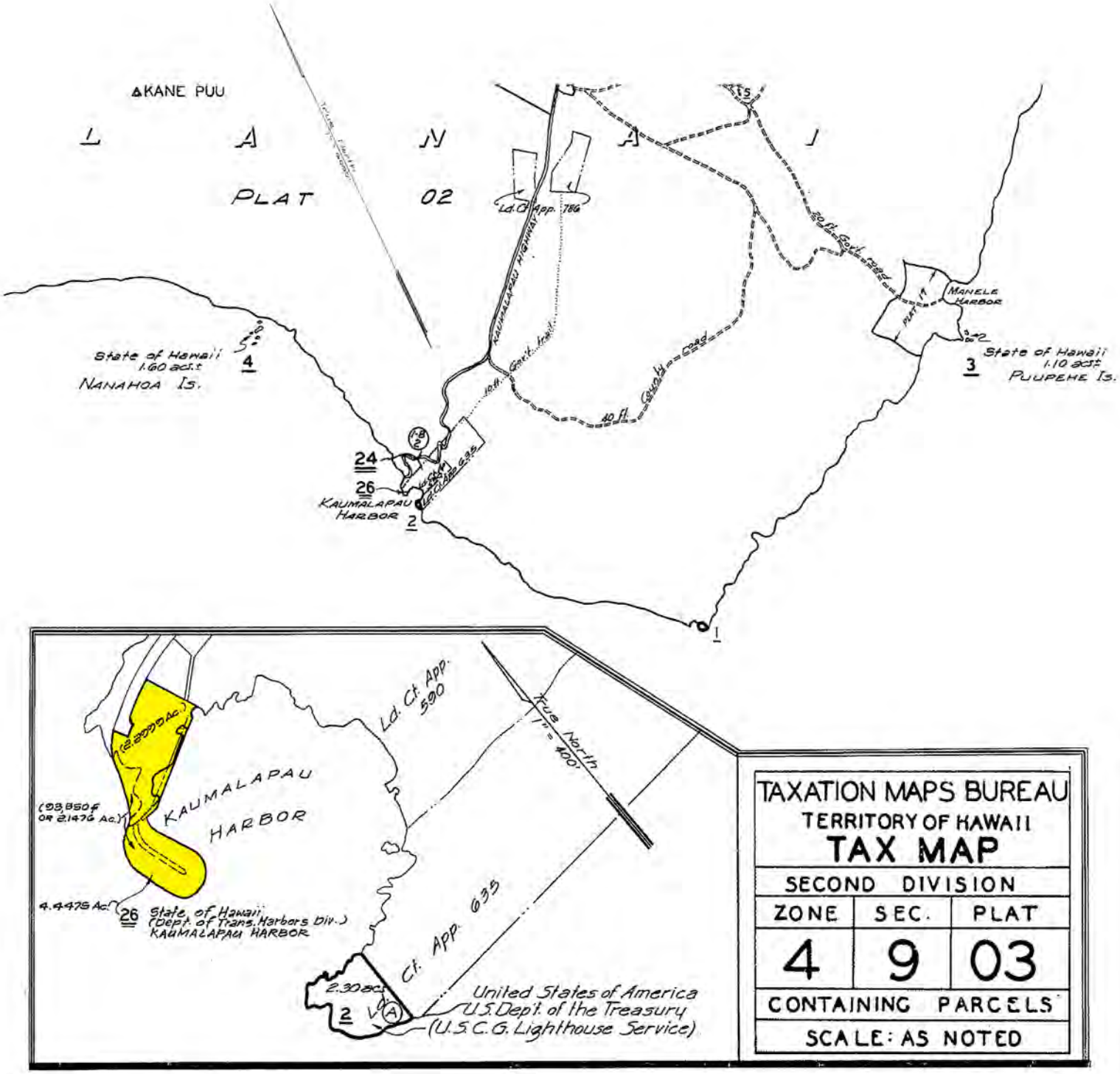


FIGURE 2-2
TMK MAP

Oracle Team USA Temporary Facilities at Kaumalapau Harbor

Island of Lānaʻi, Hawaiʻi

NOT TO SCALE

3.0 Project Description

3.1 Introduction

OTUSA is a professional sailing team comprised of designers, boat builders, sailors and shore crew based in San Francisco, California. OTUSA is currently conducting research and development on a high-performance sail boat for competitive sailing events. During the winter period, sea and weather conditions at OTUSA's home port in San Francisco are not optimal and the temporary use of the Kaumalapau Harbor during the 2012-2013 winter months is sought as the preferred alternative that will address the project's requirements.

3.2 Existing Harbor Facilities and Operations

Kaumalapau Harbor is a small commercial harbor located in a natural embayment on the southwest coast of the Island of Lānaʻi, approximately 6 miles from Lānaʻi City. It is the sole, deep-draft commercial harbor on the island. The submerged harbor "basin" is approximately 10-acres in area with water depths ranging between 20 to 60 feet. A 320-foot long breakwater completed in 2008 extends southward from the northwestern point of the embayment and protects the harbor and wharf facilities. Landside facilities occupy approximately 2.3 acres along the north side of the embayment and consist of a 400-foot long wharf, paved staging areas, and barge loading and unloading equipment including two cranes. Small offices and warehouses used by Young Brothers, Ltd. (YB), and restroom facilities are located along the harbor access road above the active dock and wharf area. See **Figure 3-1**.

YB operates weekly barge service at the harbor, transporting container cargo, fuel, vehicles and materials to and from the island. A single barge arrives each Wednesday at first light and departs around 4:00 p.m. The barge vessels used by YB at the harbor are typically 286 feet or 310 feet in length and are transported and maneuvered by tug boat. (Communication with YB, August 28, 2012).

YB operations on barge days involve unloading and loading container cargo, container fuel tanks, vehicles and other materials to and from the barge. The wharf area adjacent to the dock is used to store cargo until the items can be transported to their final destination. On barge days, the harbor channel, dock and wharf area is secured for use by YB cargo operations.

3.3 Planned Temporary Facilities

OTUSA proposes to use portions of Kaumalapau Harbor to stage a temporary base of operations for approximately 50 people comprised of the following components (**Figure 3-2**):

A. Containers

Eleven, standard 40-foot sea freight containers containing tools, materials and equipment will be positioned in various locations at the harbor facility. Five of the containers are fitted with work benches and tools used for minor maintenance and repair activities, and one of the containers will house electronics equipment. Seven of the standard 40-foot containers require electrical power. Four containers require IT/communications connection. No other utility connections are required for the containers.

B. Office Trailers

Three temporary portable office trailers will be staged in the upper parking area adjacent to the harbor access road. The trailers will be used for OTUSA office and administrative activities and meetings and will contain typical office equipment. No food preparation will take place in the trailers. The office trailers will require electrical power and communications only. No other utility connections are required.

Two temporary pipe awning tents will be erected adjacent to the office trailers to provide a shaded area for OTUSA personnel to meet and eat lunch. Each tent is 30 feet by 30 feet in area.

C. Workshop Tent

Four workshop containers will be placed in a u-shaped configuration with a central space between them. A temporary tent will be installed over the central open space to create a covered work area. The tent will be approximately 25 feet wide by 40 feet long and will consist of an arched canopy supported by metal ribs anchored to the workshop containers. The workshop tent will require electrical power for lighting, powered hand tools and miscellaneous utility uses. The workshop area will be used for minor maintenance, repair and parts fabrication required to maintain the OTUSA sail boat and equipment.

D. Wing Tent

A temporary, free-standing tent will be erected on the wharf to house the OTUSA sail boat wingsail for maintenance and repair work or in the event of a storm. The wing tent dimensions are approximately 60 feet wide by 150 feet long and 38 feet tall. The tent will require electrical power for lighting.

E. Electrical Power

OTUSA will use portable generators to supply electrical power to the office trailers, containers and tents. Portable generators will be positioned at locations convenient to provide power to the offices and workshop containers, wing tent and race boat area.

An existing overhead power line that traverses the cargo loading area may need to be relocated to a new, underground conduit to accommodate sail boat staging and assembly on the dock. The final decision regarding the disposition of the overhead line will be made by DOT-HAR in consultation with OTUSA. No improvements or upsizing of the power line are required and no connection to or use of the power line is contemplated by OTUSA.

F. Water

Water use will be limited to portable hand washing stations at the wing tent, workshop tent and office trailers, and general utility use. Water will be supplied by temporary garden hoses connected to the existing harbor facility hose bib located near the existing restroom facility. Hand washing stations will use portable water tanks filled from the temporary garden hose. Hand washing stations will include a receiving tank that will be routinely serviced by a vendor. No water heating is required.

G. Bathrooms

Self-contained portable toilets will be provided by a commercial vendor for use by OTUSA personnel. Portable toilets will be maintained by the vendor and wastewater will be disposed off-site. Soiled water will be contained and disposed off-site. No hot water will be provided.

H. Temporary Moorings

Three temporary moorings will be placed in the harbor at the locations shown in **Figure 3-3**. The temporary moorings are comprised of 1 to 3 weighted anchors (each) placed on the sea floor. Chains or high-strength rope will connect the mooring anchors to a buoyancy "drogue" at the water surface, to which vessels can be connected. Temporary mooring installation will be undertaken in compliance with U.S. Army Corps of Engineers (USACE) permit requirements and subject to coordination and approval by DOT-HAR. Mooring anchor locations will be identified based on a bottom survey conducted by an ocean engineer and marine biologist. See Section 4.8.C. Marine Biological Resources, and Appendix A for additional information. Mooring anchors will be carefully positioned on the seafloor to avoid impacting corals and other sensitive marine life.

One mooring point will be placed near the breakwater and used to secure the OTUSA sail boat on days when the barge is not in port (Non-barge days). On barge days, the sail boat will use a mooring point at the south-east side of the harbor (Barge days), outside of the barge maneuvering area. The third mooring point will be used during barge days to secure OTUSA's floating dock away from the wharf. Two alternative locations are being investigated for the floating dock mooring, as shown in **Figure 3-3**. A temporary mooring will be installed in only one of the two alternative locations shown.

I. Trash Receptacles

OTUSA will provide covered trash receptacles in various locations around the temporary facilities to collect solid waste generated by OTUSA staff and operations. OTUSA will make arrangements with a private vendor for routine collection and disposal of solid waste at the Lānaʻi solid waste landfill.

3.4 OTUSA Equipment

OTUSA will use the following boats and equipment for training and testing activities:

A. Sail Boat

OTUSA plans to conduct sea trials, testing and training using a catamaran-class sail boat comprised of a twin-hull sail platform and a rigid wingsail. The platform has a hull length of 72 feet and beam of 46 feet. The wingsail is 131 feet in height. The sail boat will be barged to the harbor and assembled on site. Rolling support stands are provided for the platform and wingsail to facilitate maneuvering on land.

Under normal ocean conditions, the sail boat will remain moored in the harbor. If maintenance or repairs are required, or in the event of rough sea conditions, the sail boat will be removed from the water, the wingsail will be removed from the platform and the components will be secured on land.

B. Support Boats

Four motor boats will be used by OTUSA for various support functions. The boats include two 40-foot long boats that will accompany the sail boat during sea trials, and two 30 to 40-foot long boats used for miscellaneous transport and backup duty. Under normal sea conditions, the support boats will be moored to the floating dock. On barge days, the support boats will be relocated to Mānele Small Boat Harbor on the south-east side of Island of Lānaʻi. A trailer or cradle is provided for each support boat to facilitate transport or removal from the water for maintenance and repair or in the event of rough sea conditions.

C. Floating Dock

A temporary, 200-foot long floating dock comprised of five connected segments, each 7 feet wide by 40 feet long, will be moored to the existing dock to facilitate crew access to the support boats and sail boat. On barge days, the floating dock will be relocated away from the barge maneuvering area and secured to a temporary mooring. The floating dock will be removed from the water and secured on land for repairs or in the event of rough sea conditions. A mooring permit will be obtained from DOT-HAR for the temporary floating dock.

D. Mobile Crane

Mobile crane equipment will be positioned on the dock and used to lift the wingsail and platform for assembly and disassembly and placement in and extraction from the water. The crane will also be used to place and remove the support boats and temporary floating dock from the water as necessary. OTUSA will coordinate the crane location and use with YB to minimize disruptions to harbor operations when the barge is in port every Wednesday.

E. Motor Vehicles

OTUSA will use approximately 10 passenger motor vehicles, including four shuttle vans and six standard cars, for general transportation on the Island of Lānaʻi. At the harbor, vehicles will be parked adjacent to the temporary office trailers. Forklifts, scissor lift, boom lift and top loaders provided by YB will be used as necessary for operations at the dock when unloading the OTUSA barge and from time to time for boat maintenance activities. Parking arrangements have been fully coordinated with DOT-HAR and YB.

3.5 Demobilization

Following completion of the OTUSA training and testing program, all components and equipment used for the temporary base of operations, including the temporary moorings, will be demobilized and removed from Kaumalapau Harbor and the harbor facilities will be cleaned and restored to pre-existing conditions. Demobilization activities will be coordinated with DOT-HAR and YB.

3.6 Schedule

OTUSA will conduct facility mobilization, training, testing, sailing, and demobilization over an approximately four-month period as shown on the general schedule below:

Set up of temporary facilities	December 1, 2012 to January 15, 2013
Sail boat delivery and assembly	January 15 to 30, 2013
Sea trials and testing	February 1 to March 15, 2013
Demobilization	March 15 to 30, 2013

During sea trials and testing, OTUSA will conduct activities on the harbor premises six days a week. A typical work week will consist of four "sailing" days when sea trials will take place, and two "maintenance" days when no sailing will occur. On Wednesdays when YB's barge is in port, OTUSA personnel will take the day off for rest.

3.7 Cost

Project costs for the temporary facility components are estimated to be $345,000. All costs will be borne in entirety by OTUSA.

3.8 Coordination with Kaumalapau Harbor Users

A. Young Brothers - Barge Day

YB barge service runs weekly on Wednesday, arriving at first light and departing around 4:00 p.m. OTUSA will use barge days as a day off during which no sailing or maintenance activities will occur at the Harbor, allowing total access for YB's loading and unloading operations

On Tuesday nights, OTUSA will undertake the following preparations for the barge arrival on Wednesday:

- Relocate the sail boat and floating dock to temporary moorings in the harbor located away from the barge maneuvering area. Alternatively, or if sea conditions are rough, the sail boat and temporary floating dock may be removed from the water and secured on land.
- Relocate the four support boats to Mānele Small Boat Harbor. If sea conditions are rough, the support boats may be removed from the water and secured on land outside of the harbor area.
- Coordinate with YB operations personnel to ensure that OTUSA's equipment is suitably situated and secured to prevent disruptions to cargo staging and loading/unloading operations.
- OTUSA will station one security guard at the harbor during the day and two security guards at night to monitor OTUSA facilities and equipment.

OTUSA's wing tent will be located in an area of the wharf ordinarily used by YB for cargo container and fuel container handling and temporary staging. To accommodate the temporary occupation of this area by the wing tent, OTUSA, Castle and Cooke Lānaʻi, and YB will coordinate "just-in-time" ground transportation on barge day to deliver and remove containers to and from the dock as needed. An off-site staging area provided by Castle and Cooke Lānaʻi, located at the shuttle station between the harbor and Lānaʻi Airport (the former pineapple truck staging area) will be used to temporarily store arriving and departing cargo containers and empty fuel containers for "just-in-time" transport.

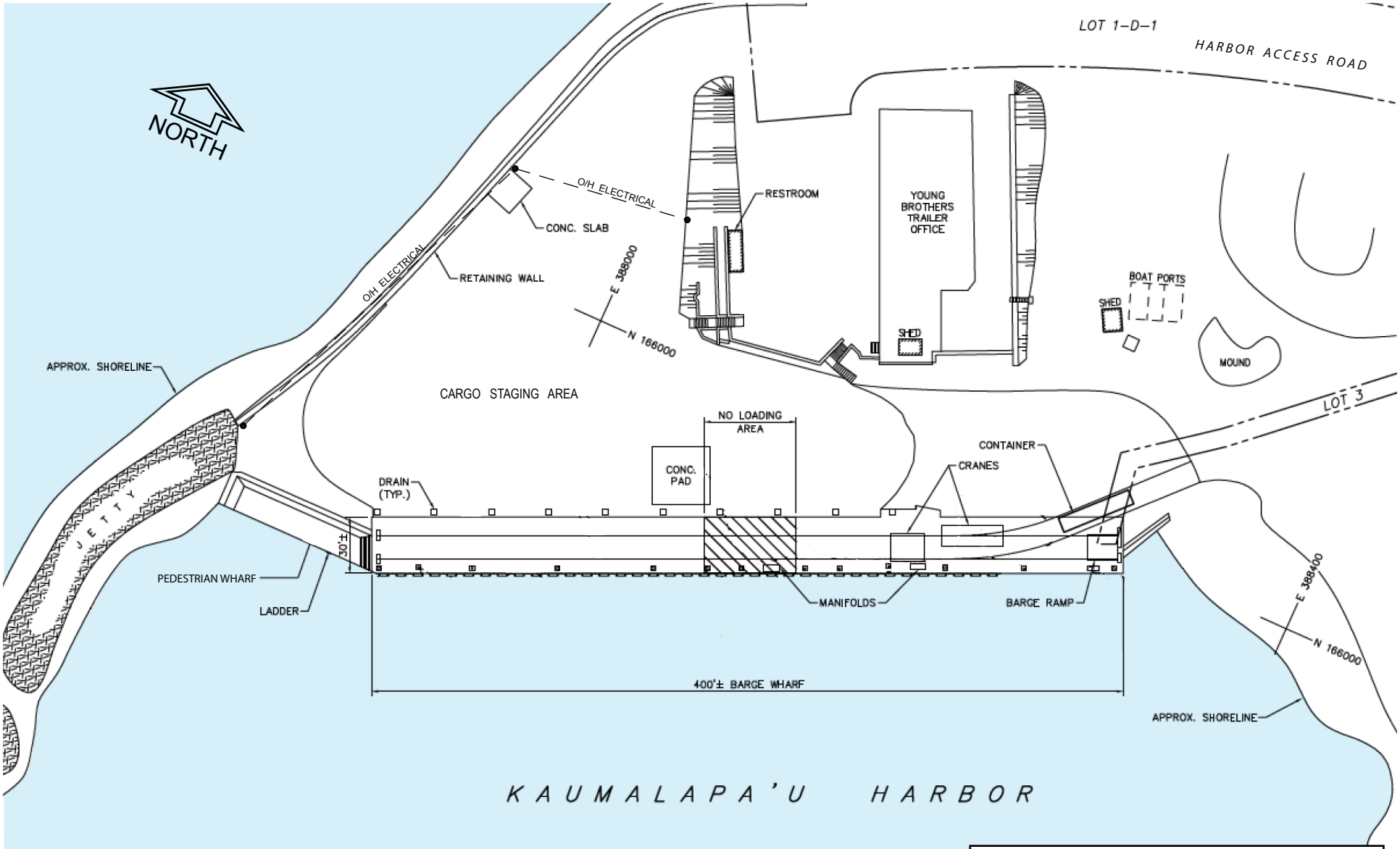
OTUSA personnel will return to the harbor on Thursday morning after barge day to recommence training and research activities.

Special barge deliveries are made to Kaumalapau Harbor approximately twice per year. If such a delivery is required during the period when OTUSA is operating at the harbor, YB and/or the DOT-HAR will notify OTUSA in advance of the arrival. OTUSA will modify their operations and store their equipment as required to accommodate the special barge delivery.

B. American Safari Cruises

From November 2012 through April 2013, American Safari Cruises docks their 145-foot long ship, the Safari Explorer, at Kaumalapau Harbor for Saturday day-trips on a bi-weekly basis. The ship arrives at 7:00 a.m. and departs at 6:00 p.m.

During the period of OTUSA's active harbor use, from mid-January to the end of March, the Safari Explorer is scheduled to make four stops at Kaumalapau Harbor. OTUSA operations will accommodate the Safari Explorer's arrivals on Saturday through shared-use of the dock frontage. No crane or heavy equipment operations will be undertaken on the dock when the Safari Explorer passengers are transiting to and from the ship. As an alternative, OTUSA may use Saturdays when the Safari Explorer is in port as maintenance days, during which no sailing will take place, and the OTUSA sail boat and equipment will be on shore. Maintenance activities will occur on those days.

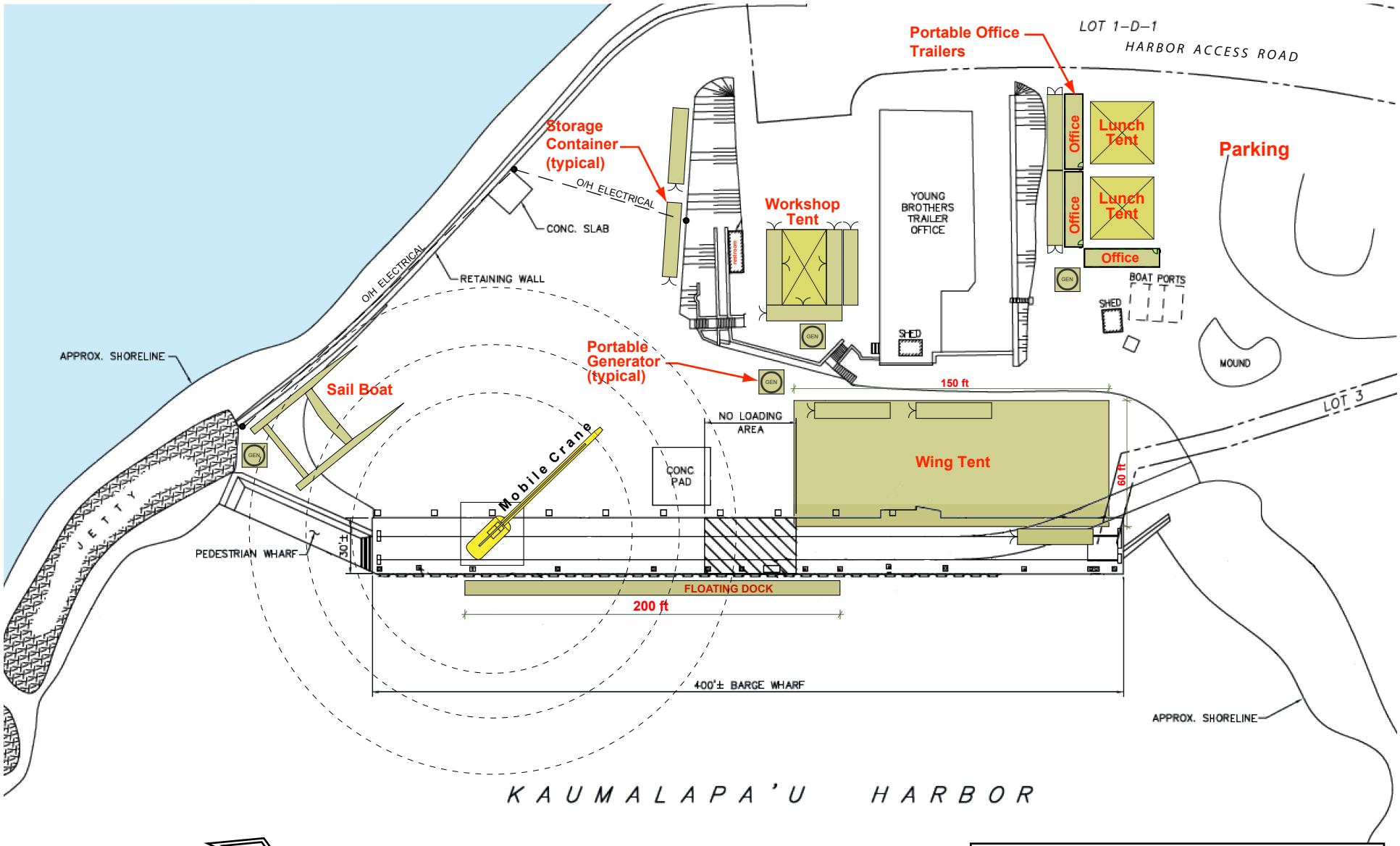


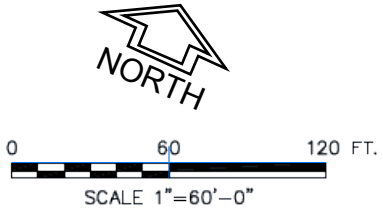
NOTE:
COORDINATES ARE REFERENCED TO HAWAIIAN STATE PLANE SYSTEM, ZONE 2.

0 60 120 FT.
SCALE 1"=60'-0"

FIGURE 3-1
KAUMALAPAU HARBOR EXISTING FACILITIES
Oracle Team USA Temporary Facilities at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

SCALE AS SHOWN





NOTE: Final locations for temporary facilities and equipment will be determined based on consultations with DOT-HAR, Young Brothers, Ltd. and other commercial harbor users.

FIGURE 3-2
SITE PLAN - PROPOSED TEMPORARY USE
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

SCALE AS SHOWN

Note:
Approximate locations shown.
Location numbers correspond to marine resource survey locations indicated in Appendix A of this EA document.

FIGURE 3-3
TEMPORARY MOORING LOCATION ALTERNATIVES
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

SCALE AS SHOWN

4.0 Environmental Setting, Potential Impacts and Mitigation Measures

4.1 Climate and Rainfall

The climate on the Island of Lānaʻi is subtropical and dominated by the surrounding ocean and persistent trade winds. The median annual rainfall varies from 35 inches at Lānaʻihale to ten inches along the arid leeward coast. Average temperatures at Kaumalapau Harbor are not available. However, average temperatures in Lānaʻi City, which is approximately six miles northwest of Kaumalapau at an elevation of 1,600 feet relative to mean sea level (msl), range from 66 degrees Fahrenheit to 73 Fahrenheit during most of the year.

Table 4-1, Record and Average Temperature and Rainfall Data (2011)

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record High °F	82	82	86	87	86	86	86	87	89	92	85	85	92
Average High °F	72.5	72.9	73.2	73.9	75.0	76.5	77.2	78.1	78.5	77.9	75.8	73.4	75.4
Average Low °F	59.5	59.3	59.8	61.2	62.4	63.8	65.2	65.8	65.1	64.1	62.5	60.7	62.4
Record Low °F	48	47	49	49	52	49	49	49	57	49	52	48	47.0
Average Rainy Days (≥ 0.01 in)	7.7	6.2	7.1	3.8	2.0	1.1	2.4	1.4	2.4	2.8	6.5	7.8	51.2
Rainfall Inches	5.3	3.5	3.7	2.8	2.7	1.2	1.8	1.5	2.0	2.4	3.7	4.1	34.7

Source: Weatherbase, http://www.weatherbase.com/weather/weather.php3?s=50019&refer=&cityname=Lanai-City-Hawaii-United-States-of-America

Potential Impacts and Proposed Mitigation. No adverse impacts to the existing climate of the region are anticipated. The project is of limited scope and duration and will have no effect to the area environment.

4.2 Geology and Topography

The Island of Lānaʻi is made of a single volcanic dome called Lānaʻihale, which rises 3,370 feet above sea level. The major crop producing area is located on a central plateau formed by two partially filled calderas. Most of the area below the 1,000-foot elevation slopes steeply. There is a narrow strip of flat, non-stony, alluvial land along the north to east coast. Steep marine cliffs exist along the west and south coast areas.

Kaumalapau Harbor is a small barge harbor located in a natural embayment on the southwest coast of Lānaʻi. The submerged harbor basin is approximately 10 acres in area with water depths ranging between 20 to 60 feet. Landside facilities occupy approximately 2.3 acres along the north side of the embayment and consist of a 400-foot long concrete wharf and paved staging area. The remainder of the

harbor is defined by natural, rock shoreline. The harbor has no distinct entrance channel and has a 600-foot wide opening at the mouth of the bay. A 320-foot long breakwater completed in 2008 extends southward from the northwestern point of the embayment and protects the harbor and wharf facilities. The breakwater crest elevation is about 14 feet above mean lower low water (mllw). The harbor dock and cargo staging area is constructed of fill material and pier-supported concrete over very stony land / rock land.

The topography of surrounding areas is either sheer cliffs or steep slopes. The area behind the existing pier consists of a narrow strip of land, sufficiently wide enough to operate a truck or tractor with trailer. Small offices and warehouses associated with harbor operations are located along the harbor access road.

Potential Impacts and Proposed Mitigation. No adverse impacts to existing landforms of the site are anticipated or expected. None of the activities involving the setup and use of the proposed OTUSA temporary facilities involves major ground disturbance or major modifications to the harbor facilities. The possible relocation of an overhead power line that traverses the cargo staging area to a new underground conduit, if required, will occur entirely within previously disturbed fill lands that were created during harbor construction. Following installation of the conduit, the paved surface will be restored to pre-existing conditions.

4.3 Water Quality

Water quality in Kaumalapau Harbor appears to be generally good and free from the visual presence of suspended sediments or turbidity. This may be due to the arid nature of the western side of the Island of Lānaʻi, which receives little rainfall which would otherwise be deposited in coastal waters in the form of stormwater runoff. The coastal waters at the site, and surrounding the island are rated as Class "AA" by the State of Hawaiʻi.

According to Chapter 11-54, HAR, Water Quality Standards, of the State of Hawaiʻi:

> *(Chapter 11-54-3(c)(1), Class AA.*
> *It is the objective of class AA waters that these waters remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alteration of water quality from any human-caused source or actions. To the extent practicable, the wilderness character of these areas shall be protected.*

Potential Impacts and Proposed Mitigation. No adverse impacts to the existing water quality of the Kaumalapau Harbor are anticipated or expected. The project will principally involve the use of the existing harbor pier and wharf facilities. Stormwater runoff from the pier and wharf area could constitute a potential source of pollution without appropriate best management practices (BMPs) or other measures to provide treatment prior to the discharge. OTUSA will be required to adhere to the operating procedures in place for the use of DOT-HAR facilities. These procedures will include, but not be limited to:

- The storage of materials and products either under roof or in sealed containers such that the comingling of stormwater with stored or stockpiled materials will be prevented.

- Spill kits will be maintained on-site and readily available to clean-up spills or leaks of petroleum, oil, and lubricant associated products. The disposal of soiled clean-up materials shall be to an approved DOT-HAR dumpster or receptacle. The portable generators used consist of self-contained, double-walled fuel tanks equipped with leak detection capability.
- Other methods, measures, or practices as may be required by DOT-HAR to ensure against untreated discharges of materials used on site in stormwater runoff to state waters.

Within the waters of the harbor, a total of three temporary mooring anchor systems will be placed; one temporary mooring anchor system will be located in the shelter of the existing breakwater toward the west end of the dock on sandy harbor bottom; and two temporary mooring anchor systems will be placed southeast of the harbor channel markers, away from the barge maneuvering area, on hard substrate. As an alternative, one of the two temporary mooring anchor systems in the southeast location may be placed instead near the east end of the dock away from barge maneuvering area, on hard substrate. Anchors will be located to avoid any potential for adverse effects to corals. The pre-fabricated anchors will be constructed of steel and/or concrete and will have no effect to coastal water quality.

Upon the completion of use of the Kaumalapau Harbor all facilities and equipment will be demobilized and removed from the site. As required the area will be cleaned and the site restored to preexisting conditions.

4.4 Groundwater and Inland Surface Waters

No ground or inland surface waters will be required for use or affected by the proposed temporary facilities.

4.5 Natural Hazards

A. Floods

According to Federal Emergency Management Agency (FEMA), Flood Insurance Rate Maps (FIRM), Panel 0500E, the majority of the harbor basin is in Flood Zone V, which means that the area has been designated to be within the 100 year coastal flood plain (**Figure 4-1**). The fast land is located within Zone X where there is a 0.2% chance of flooding. However, a base flood elevation has not been determined.

B. Tsunami

A tsunami involves the generation of a series of destructive ocean waves that can affect all shorelines. These waves can occur at any time with limited or no warning. According to the Civil Defense Agency (CDA) Tsunami Inundation Map for Lānaʻi, the project area is within the tsunami inundation zone (**Figure 4-2**). In the event or a tsunami warning, the harbor area will be evacuated.

C. Seismic Hazard

The Island Lānaʻi is in Seismic Zone 2B, which is characterized as being susceptible to earthquakes that may cause minor damage to structures. Zone 2B is based on the International Building Code (IBC),

which contains six seismic zones, ranging from zero (no chance of severe ground shaking) to four (10 percent chance of severe shaking in a 50-year interval). Zone 2 is subdivided into two zones that correspond numerically to the effective horizontal peak bedrock acceleration (or equivalent velocity) that is estimated as a component of the design base shear calculation. Seismic Zone 2B has a Z-factor (seismic zone factor) of 0.15 and is not associated with a particular fault zone. Seismic Zone 2B has a factor of 0.20 and indicates an association with known crustal faults (DLNR, 2008).

The proposed temporary facilities, comprised of sea freight storage containers, office trailers, and tents, will be installed within the existing Kaumalapau Harbor land area. No habitable structures are proposed.

D. Hurricanes and High Winds

The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. The State has been affected twice since 1982 by significant hurricanes, ʻIwa in 1982 and ʻIniki in 1992. During hurricanes and storm conditions, high winds cause strong uplifting forces on structures, particularly on roofs. Wind-driven materials and debris can attain high velocity, cause devastating property damage, and harm to life and limb. It is difficult to predict these natural occurrences, but it is reasonable to assume that future events will occur. The project area is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes.

Potential Impacts and Proposed Mitigation. OTUSA operations would occur on FEMA Zone X and are at very low risk for flood inundation. No adverse effects to human health or safety associated with flooding are anticipated.

Tsunami and coastal flooding in the project area will be handled on a case-by-case basis. It is anticipated that adequate warning will be available to allow the evacuation of the harbor area. Tsunami warning response protocols for securing or removing equipment and evacuating personnel will be included in an Operations Safety Plan prepared by OTUSA in consultation with the U.S. Coast Guard (USCG), DOT-HAR, YB and other commercial operators at Kaumalapau Harbor. A copy of the Operations Safety Plan will be submitted to the USCG and DOT-HAR for review and reference. OTUSA will provide YB and other commercial operators at the harbor with a chain of command list and contact information for operational issues and for response in event of safety or security incident.

The design and installation of the proposed temporary trailers, containers and tents will comply, as required, with applicable State and County of Maui building standards for seismic and wind loads. Under normal operations, mobile crane equipment will be stabilized with outrigger supports to prevent from toppling over in windy conditions. In the event of significant storm events or hurricane warnings, the crane equipment will be demobilized and secured until conditions are safe. Hurricane response protocols for securing or removing equipment and evacuating personnel will be included in OTUSA's Operations Safety Plan, which will be submitted to the USCG and DOT-HAR for review and reference. No other mitigation measures are required or recommended.

4.6 Air Quality

There are no known records or studies of air quality measurements in the vicinity of Kaumalapau Harbor. The nearest State Department of Health air quality monitoring station is located approximately 35 miles east, in Kīhei, Maui near Hale Piilani Park. No other air quality monitoring stations are operated by DOH in Maui County. The Kīhei station measures PM2.5 (particulate matter 2.5 micron size or smaller), wind speed and direction. Monitoring at this station consistently shows readings well in compliance with State and Federal air quality standards for the measured parameter. The most current published summary of State air quality data, which includes measurements from the years 2008 to 2010, records no instance where the measured parameter at this station exceed air quality standards (DOH, 2010).

Air quality can be considered generally good because of limited activities occurring in the harbor, and the prevailing trade winds that disperse any pollutants. Cars, trucks, ships and cargo equipment are the main sources of air pollution. These sources operate only intermittently in the area and typically the trade winds blow their emissions offshore. Dust from agricultural activities on the island is another possible source of air pollution, although agriculture on the island has greatly diminished in recent years with the cessation of commercial pineapple production.

Potential Impacts and Proposed Mitigation. The proposed use of the harbor facilities will involve the use of combustion powered equipment and machinery that will include utility vehicles (such as fork lifts), trucks, a mobile crane, and portable generators. Other powered hand equipment may also be used. All equipment will be maintained and operated in conformance with applicable state and county laws. Powered vehicles and equipment will be properly fitted with exhaust controls to minimize emissions. Combustion powered equipment found to be defective will be properly repaired or replaced. No potential for adverse effects are anticipated and no further mitigation measures are expected to be required.

4.7 Acoustic Characteristics

Cars, trucks, ships, and cargo equipment are the principal sources of intrusive noise at the Kaumalapau Harbor. However, noise from these sources occurs only intermittently when cargo is being offloaded or loaded onto ships at the wharf. In addition, airplane traffic from the Lānaʻi Airport, approximately 2.5 miles from Kaumalapau Harbor, contributes to noise in the region. (Final Environmental Assessment, Kaumalapau Harbor Breakwater Repairs, 2002, DOT-HAR).

Potential Impacts and Proposed Mitigation. OTUSA's proposed use of the harbor facilities will involve the use of combustion powered vehicles, portable generators, and miscellaneous equipment and machinery that will generate noise. Short-term noise increases will result from these uses. Noise generated by OTUSA sources will be temporary and intermittent, and will be generally compatible within an industrial harbor environment. To reduce noise, all equipment will be maintained and operated in conformance with applicable state and county laws. Powered vehicles and equipment will be properly muffled to minimize noise. Powered equipment found to be defective will be properly repaired or replaced. Upon completion of OTUSA's operations and demobilization of the temporary facilities, all related noise generation will cease and noise levels will return to pre-existing conditions. No

potential for adverse effects are anticipated and no further mitigation measures are expected to be required.

4.8 Flora and Fauna Resources

A. Terrestrial Biological Resources

Terrestrial animals found at Kaumalapau Harbor are principally limited to introduced species, including Axis deer (*Cervus axis*), the domestic cat (*Felis catus*), dog (*Canis familiaris*), house mouse (*Mus musculus domesticus*), black roof rat (*Rattus rattus*), brown rat (*R. norvegicus*), Polynesian rat (*R. exulans hawaiiensis*), and Indian mongoose (*Herpestes auropunctatus*). Introduced skinks (*Scincidae*) and geckos (*Gekkonidae*) are also present.

The harbor facility contains no wetlands and the site has been extensively altered from the construction of the harbor facilities. Plant species found at the site include pili grass (*Heteropogon contortus*), swollen fingergrass (*Chloris barbata*), false mallow (*Malvastrum coromandelianum*), hairy merremia (*Merremia aegyptia*), and partridge pea (*Chamaecrista nictitans*). All of these species except for pili grass are considered exotic introductions to Hawai`i that have become naturalized. (Final Environmental Assessment, Kaumalapau Harbor Breakwater Repairs, 2002, DOT-HAR).

Potential Impacts and Proposed Mitigation. The use of the Kaumalapau harbor facilities for OTUSA's proposed temporary operations is not anticipated to adversely affect the terrestrial biological resources of the area. The project will principally involve the use of the developed portions of the harbor and no potential for adverse effects are anticipated or expected. No mitigation measures are proposed.

B. Avifauna Resources

Common avifauna species known from the project area include gray francolin (*Francolinus pondicerianus*), ring neck pheasant (*Phasianus colchicus*), northern cardinals (*Cardinalis cardinalis*), red-crested cardinals (*Paroaria coronata*), barred doves (*Geopilia striata*), spotted doves (*Streptopelia chinensis*), and the common myna (*Acridothetres tristis*). All of these species are considered alien to the Hawaiian Islands. In addition, two extant populations of native seabirds, the Wedgetail shearwater or ʻuaʻo *kani* (*Puffinus pacificus)* and Hawaiian petrel or ʻuaʻu (*Pterodroma sandwichensis*) exist on the Island of Lānaʻi. Wedgetail shearwater are known to nest in the rocks and crevices above Hulopoʻe. A large colony of the Hawaiian petrel is known near the summit of Lānaʻihale. Newell's shearwater or ʻaʻo (*Puffinus newelli*) are also known to overfly the island. These three species may traverse the harbor area when flying between the ocean and mountain nesting sites during their breeding season (March through December). The Hawaiian petrel is listed as endangered under both federal and State of Hawaiʻi endangered species statutes.

Potential Impacts and Proposed Mitigation. No significant adverse effects to avifauna are anticipated to result from OTUSA's use of the harbor facilities. OTUSA activities will take place outside of the primary Petrel fledging season in summer and fall, however, exterior nighttime lighting will be used at OTUSA's temporary facilities. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with

manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets for feral mammals.

Nighttime lighting will primarily consist of individual fixtures located on the exterior entrances of office trailers, containers, and tents for orientation and safety. Occasionally, portable utility lights will be used for short periods in the evening to illuminate end-of-day activities, such as equipment rinse-down, maintenance and repair tasks, and securing material and gear. Otherwise, no exterior nighttime work is proposed. Throughout the duration of their program activities, OTUSA will minimize nighttime lighting use to the minimum practicable extent. Exterior lights will be shielded, full cut-off fixtures that do not radiate above the fixture and will be angled downward to minimize glare and reduce potential impacts to birds flying over the site at night. Work lights will be turned off when not in use. Upon completion of OTUSA research and training operations and demobilization of the temporary facilities, lighting conditions are expected to return to pre-existing conditions. No other mitigation measures are proposed.

C. Marine Biological Resources

A few species of marine animals that occur in Hawaiian waters are considered threatened or endangered by the federal government. These marine biological resources include the threatened Hawaiian Green Sea Turtle (*Chelonia mydas*), which has become increasingly common in Hawaiian waters. The endangered Hawksbill Turtle (*Eretmochelys imbricate*) may also be present but is considered rare in comparison to the presence of the Hawaiian Green Sea Turtle. There are no known turtle nesting sites within the area of the harbor planned for use. (Sea Engineering, May 2002).

The endangered Humpback Whale (*Megaptera novaeangliae*) winter in the Hawaiian Islands from December through April, with some individuals arriving earlier in Hawaiian Waters. A portion of the Hawaiian Island Humpback Whale National Marine Sanctuary is designated in the waters extending seaward from Kaumalapau Harbor to the 100-fathom contour.

Federally protected Hawaiian Monk Seals (*Monachus schauinslandi*) frequent the waters around the Island of Lānaʻi and, although rarely, have been observed in and around Kaumalapau Harbor (NOAA, 2009). Thus there is potential for encountering these animals while OTUSA conducts its 6-week operations at the harbor.

A survey of bottom conditions was conducted on September 04, 2012 by AECOS, Inc. to assess marine resources at five alternative locations within the harbor basin for the temporary mooring anchors. The survey also included the harbor bottom within an approximate 90-foot radius from the center point of each alternative mooring anchor location, as well as the harbor dock deck piles, breakwater, and northeast harbor shoreline. An inventory was made for corals, invasive species, seagrass, marine protected species, and other non-coral macro invertebrates at each proposed mooring location, as well as at the other surveyed locations noted above. The alternative locations for temporary mooring anchors are shown on **Figure 3-3**.

No State-protected (DLNR 1998, 2007) or federally-listed or proposed (NOAA-NMFS, 2010; USFWS, 2008, 2012) species were encountered during the survey. Photos of the alternative mooring locations

and a list of species observed and their relative abundance by location is included in this EA document as Appendix A. A summary of conditions at each of the five alternative mooring sites is described as follows:

Anchor location 1

The harbor bottom within a 32-foot radius of the center point of proposed anchor location 1 consists of silt and sand. A thin layer of cyanobacteria coats the bottom. The sand bottom has many small burrows, possibly hosting the Hawaiian shrimp goby (*Psilogobius mainlandi*) and commensal shrimp (*Alpheus rapax*). Within the 32-foot radius of the center point of the anchor location, no corals or other macro-invertebrates were observed. Beyond this circle, large boulders, loose rubble, and tires host corals (*Porites lobata, Montipora capitata, Pocillopora damicornis, Poc. meandrina, and Pavona varians*). No seagrass or invasive species were observed.

Anchor location 2

The harbor bottom within a 48-foot radius of the center point of proposed anchor location 2 consists of silt and fine sand. Small clumps of cyanobacteria occur on the bottom. No corals were observed, and one macro-invertebrate was encountered within the 48-foot radial distance: a love harp (*Harpa amouretta*). A single colony of *Poc. meandrina* coral (11 to 20 cm diameter size class) was encountered at 48-foot southeast from the anchor location. Two arceye hawkfish (*Paracirrhites arcatus*) were seeking shelter in the coral head. No seagrass or invasive species were observed.

Anchor location 3

The harbor bottom within a 90-ft radius of the center point of proposed anchor location 3 consists of fine sand. Several blackside razor wrasses (*Iniistius umbrilatus*) were observed swimming close to the sand bottom. No corals, other macro-invertebrates, or seagrasses were observed within the 90-foot radius surveyed. Beyond 90 feet from the center point of the anchor location, large boulders hosting corals (*Poc. meandrina, P. lobata, and Poc. damicornis*) were encountered. No seagrass or invasive species were observed.

Anchor location 4

The harbor bottom within a 59-foot radius of the center point of proposed anchor location 4 consists of silt and fine sand. No biota were observed within the 59-foot radial distance. Beyond 59 feet from the anchor location, towards the southern shoreline of the harbor, coral dominates the bottom. Cover is high (estimated 70%), with large (>80 cm diameter size class) colonies of *P. compressa* and *P. lobata* common. No seagrass or invasive species were observed.

Anchor location 5

The harbor bottom within a 23-ft (7-m) radius of the center point of proposed anchor location 5 consists of sand, with scattered loose rubble. Small colonies (1 to 5 cm and 6 to 10 cm diameter size class) of *Poc. meandrina, P. lobata, and M. capitata* occur on the loose rubble. Within the 23-ft (7-m) radial distance surveyed are found two small areas, each approximately 8 feet by 8 feet (2 m by 2 m), of sand bottom

clear of loose rubble. In these two areas, no coral or other macro-invertebrates were observed. Towards the northeast shoreline, beyond 23-ft (7-m) from the anchor location, boulders hosting corals (*P. lobata, Poc. meandrina, M. capitata, M. flabellata, and P. varians*) were observed. No seagrass or invasive species were observed.

Potential Impacts and Proposed Mitigation. The use of the land-side harbor facilities for the proposed project is generally consistent with industrial harbor uses and is not anticipated to adversely affect the marine biological resources of the site. The use of the coastal waters by OTUSA vessels is similarly not anticipated to affect the area's marine biological resources. However, because the project site is located within the Hawaiian Island Humpback Whale National Marine Sanctuary, precautionary measures to ensure the protection of Humpback Whales will include:

- The OTUSA vessels will use an operating area located approximately 30 miles southwest of the Island of Lānaʻi, outside of the whale sanctuary boundary for sail boat training and testing activities.
- The OTUSA vessels will position personnel trained to visually detect the presence of Humpback Whales on the support boats while either transiting to the operating area or in the area of operations. Whale sightings will be communicated to mariners on all OTUSA vessels who will be directed to avoid any physical contact or disturbance to the whales.
- When sailing, the OTUSA fleet will be accompanied by a fixed-wing airplane to watch out for whales. The airplane will have direct communication with the sail boat skipper and support boats to alert them to the presence of whales in the vicinity of the fleet.

Monk seals are not anticipated to be adversely affected by OTUSA activities at Kaumalapau Harbor due to their infrequent presence at the harbor and their ability to quickly evade approach. If monk seals are observed in the harbor, OTUSA personnel will avoid contact and report the sighting to the National Oceanic and Atmospheric Administration Monk Seal Sighting Hotline pifsc.monksealsighting@noaa.gov / (808) 220-7802 /. If monk seals are observed in the near shore or open ocean waters, OTUSA vessels will carefully navigate to avoid them.

The Hawaiian Green Sea Turtle and Hawksbill Turtle are not anticipated to be adversely affected, as these species are highly agile. However, in the event that such species are observed, the OTUSA vessel operators will be instructed to avoid transiting near any observed groups or individuals.

No adverse effects to corals are anticipated to result from the placement of the temporary mooring anchors. Based on the results of the marine resources survey, bottom conditions at the five alternative mooring locations are characterized as sand, silt and loose rubble. At each of the five locations, there is sufficient area free from coral to accommodate placement of the temporary mooring anchors. Three of the five sites will be selected for the temporary moorings. The final site selection will be made by OTUSA in consultation with the ocean engineer, USACE, DOT-HAR, and YB. During placement activities, qualified divers will guide the placement of the mooring anchors to ensure they are in accordance with the recommendations of the ocean engineer and marine biologist. Upon completion of OTUSA's research and training activities, the temporary mooring anchors will be removed from the harbor waters.

To prevent the introduction of potentially invasive marine species, all OTUSA boats, floating dock components, and equipment will be cleaned and inspected prior to leaving the OTUSA home port in California to ensure that transported equipment harbor no organisms.

4.9 Scenic and Aesthetic Environment

The existing Kaumalapau Harbor is a state industrial commercial facility designated for the berthing of cargo vessels transiting to the Island of Lānaʻi. Scenic views of the coastline and Pacific Ocean are visible in the distance. Views of the facility itself include occasional shipping traffic principally on Wednesdays when a crane and cargo moving vehicles are used for the loading and offloading of cargo containers and associated materials. Vehicles slated for delivery and departure from the island are also visible as are numerous vehicles and personnel operating within the harbor wharf and dock areas.

The proposed use of the harbor facility by OTUSA will include installation of temporary tents, office trailers, and storage containers that will occupy various areas of the harbor. These facilities will be visible from areas surrounding Kaumalapau Harbor and will be consistent with existing views and related uses of the facility. Operation of the mobile crane will likewise be visible and generally consistent with typical harbor operations. The most noticeable visual effect will result from the presence of the OTUSA sail boat with the 131-foot tall wingsail moored within the harbor. In addition, support vessels will be moored at a portable floating dock that will be placed next to the existing wharf.

Potential Impacts and Proposed Mitigation. The proposed project is not expected to adversely affect the existing scenic resources of the area. Views of the OTUSA sail boat while moored or under sail in near shore waters will provide a unique scenic point of interest. Otherwise, the planned use of the site will be generally consistent with the maritime activities and uses within an existing harbor facility. Views of the OTUSA operations will be transient and temporary. Following completion of the OTUSA training and research activities, the temporary facilities will be demobilized and removed and views of the harbor will return to pre-existing conditions. No mitigation measures are required and none are proposed.

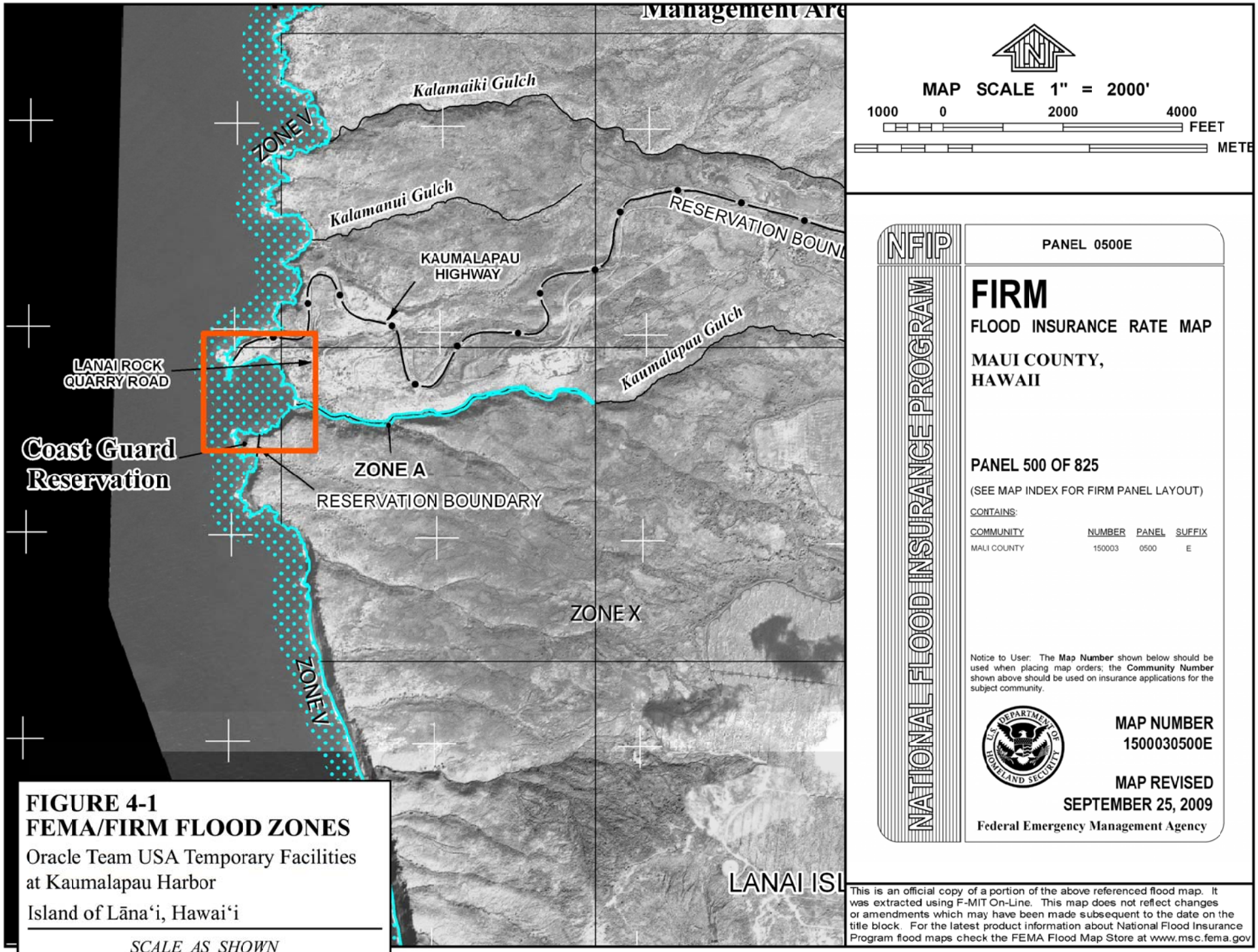


FIGURE 4-1
FEMA/FIRM FLOOD ZONES
Oracle Team USA Temporary Facilities at Kaumalapau Harbor
Island of Lāna‘i, Hawai‘i

SCALE AS SHOWN

FIGURE 4-2
TSUNAMI EVACUATION ZONE
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

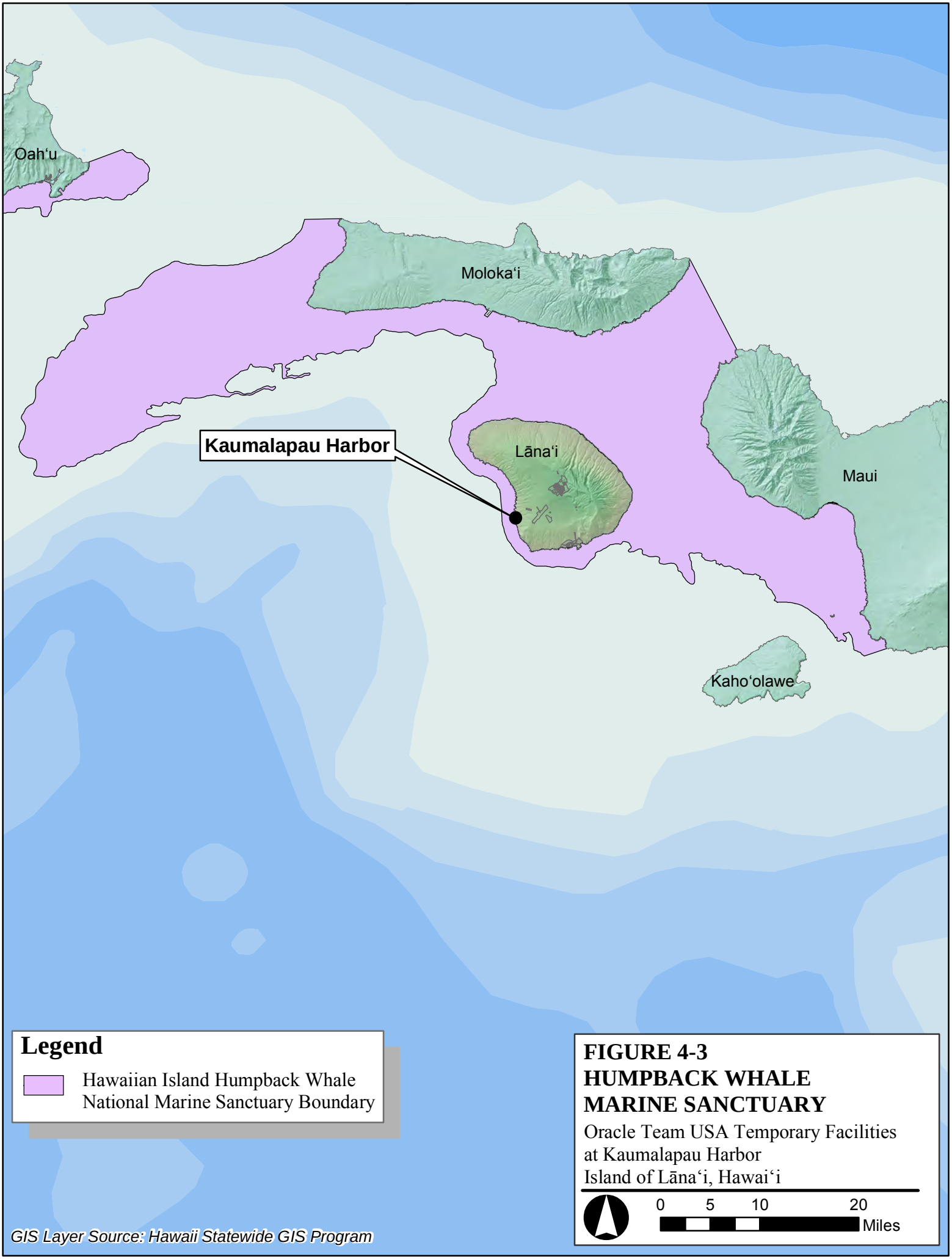


FIGURE 4-3
HUMPBACK WHALE MARINE SANCTUARY
Oracle Team USA Temporary Facilities at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

5.0 Public Services, Potential Impacts and Mitigation Measures

5.1 Traffic and Circulation

Kaumalapau Highway (Highway 440) is the sole roadway serving the Kaumalapau Harbor. Vehicular traffic is currently limited to Wednesday "barge day" when the YB barge arrives at the harbor at day-break. During this period vehicles arrive to off-load and load cargo and vehicles. Throughout the day, vehicles arrive and depart the harbor area. Once all off-loading and loading operations cease at the end of the day, traffic to the harbor will return to normal conditions.

The proposed project will require coordination with YB and the DOT-HAR Maui District Manager on Wednesdays to minimize the disruption of harbor operations associated with the loading and off-loading of the interisland barge. Preliminary discussions with the DOT-HAR and YB indicate that sufficient space can be made available to maintain harbor operations at a sufficient level of service. Other arrangements to limit an increase in vehicular use of the harbor by OTUSA will involve the use of multi-passenger vans to shuttle project personnel from the local hotels to the harbor and back.

During the period of OTUSA's active harbor use, from mid-January to the end of March, the American Safari Cruises ship *Safari Explorer* is scheduled to make four stops at Kaumalapau Harbor. The ship arrives at 7:00 a.m. and departs at 6:00 p.m. Upon arrival, cruise ship passengers are transported from the harbor by passenger van and small tour bus for day trips to various locations around the island.

Potential Impacts and Proposed Mitigation. No adverse impacts to existing traffic patterns and circulation are anticipated. As noted, appropriate provisions will be made on Wednesdays to maintain sufficient space for harbor operations during barge cargo loading and unloading. OTUSA's wing tent will be located in an area of the wharf ordinarily used by YB for cargo container and fuel container handling and temporary staging. To accommodate the temporary occupation of this area by the wing tent, OTUSA, Castle and Cooke Lānaʻi, and YB will coordinate "just-in-time" ground transportation on barge day to deliver and remove containers to and from the dock as needed. An off-site staging area provided by Castle and Cooke Lānaʻi, located at the shuttle station between the harbor and Lānaʻi Airport (the former pineapple truck staging area) will be used to temporarily store arriving and departing cargo containers and empty fuel containers for "just-in-time" transport.

OTUSA will coordinate operations with American Safari Cruises to ensure that there is sufficient space at the dock for vehicle staging and safe access by cruise ship passengers. No crane or heavy equipment operations will be undertaken on the dock when the Safari Explorer guests are leaving or accessing the ship. The potential for increased traffic from OTUSA personnel accessing the site will be managed with the use of vans. Parking, if required, will be accommodated adjacent to the work tent and office trailers.

5.2 Wastewater

The harbor is not served by a municipal sewer system. Existing wastewater facilities are provided via cesspools. In order to accommodate OTUSA personnel for the approximately four month use of the site, portable sanitary facilities will be used.

Potential Impacts and Proposed Mitigation. No adverse impacts to existing wastewater facilities are anticipated. The use of portable sanitary facilities will accommodate the need for restrooms, and all lavatory facilities will be operated in accordance with applicable regulations of the State of Hawaiʻi, and County of Maui. No mitigation beyond the provision of this service is expected to be required.

5.3 Potable Water

Potable water is provided to the harbor via the Lānaʻi Water Company via a 2-inch line supplied from a 0.25 million gallon tank.

Potential Impacts and Proposed Mitigation. OTUSA's water use requirements are minimal and can be accommodated by the existing water service. Water use will be limited to portable hand washing stations at the wing tent, workshop tent and office trailers, and general utility use for equipment and rigging rinse down. Water will be supplied by temporary garden hoses connected to the existing harbor facility hose bib located near the restrooms. No adverse impacts to the existing potable water facilities are anticipated and no mitigation is expected to be required.

5.4 Power and Communications

Electrical power for the harbor is provided by the Maui Electric Company (MECO). Pole supported overhead electrical lines route power to the harbor and are routed from Lānaʻi City to the harbor along the Kaumalapau Highway. Communication services are provided by Hawaiian Telcom.

Power to OTUSA temporary facilities will be provided by mobile power generators. Telecommunications services will be required from Hawaiian Telcom.

An existing overhead power line that traverses the cargo loading area may need to be relocated to a new, underground conduit to accommodate sail boat staging and assembly on the dock. See **Figure 3-2** for the overhead line location. The final decision regarding the disposition of the overhead line will be made by DOT-HAR in consultation with OTUSA and YB.

Potential Impacts and Proposed Mitigation. The proposed action will not require additional electrical load from MECO. No connection to or use of the existing electrical system is contemplated by OTUSA and no upsizing of the system is required. The temporary use of mobile generators will be for a period of approximately four months. The generators will be operated in accordance with State law and County of Maui regulations, with proper environmental controls including ensuring that the machinery is in proper operating condition with mufflers.

Relocation of the overhead electrical line will not result in significant impact to the electrical system or dock operations. The conduit installation work would be conducted within a one-week period between barge days and the dock surface would be restored to pre-existing conditions to prevent disruption to cargo operations. Electrical service would be briefly interrupted during daylight hours to reconnect the power lines. No special mitigation measures would be required.

Hawaiian Telcom will provide some telecommunications services. It is anticipated that these services will be via landlines and/or wireless connections.

No adverse impacts to the existing power and communications facilities at the Kaumalapau Harbor are anticipated and no further mitigation measures are expected to be required.

5.5 Police Protection

Police protection in District 2, Lānaʻi is provided by the Maui Police Department. The Lānaʻi Police Station is located at 855 Fraser Avenue, Lānaʻi City, Hawaiʻi 96762, and is approximately 5.3 miles from the Kaumalapau Harbor. In addition to the police station, private security services are provided by YB to control access during barge operations on Wednesdays.

Potential Impacts and Proposed Mitigation. The proposed project is not anticipated to require the additional need for County police services. The following security measures will be employed to safeguard harbor users and secure OTUSA's temporary facilities and equipment:

- OTUSA will employ private guards 24 hours a day, seven days a week to monitor the areas occupied by the temporary facilities, equipment, and boats.
- On barge days, overall harbor access and security will be managed by YB. OTUSA guards will patrol the temporary OTUSA facilities and moored boats only, and will coordinate their activities with YB.
- On non-barge days, OTUSA security will manage access to the lower dock area by means of a full-length gate across the harbor access road near the Young Brothers office.
- When OTUSA crane equipment is not being actively used, the gate will remain open to allow access for existing uses at the harbor.
- When OTUSA crane equipment is operating, the gate will be temporarily closed and manned by a security guard to prevent unauthorized personnel from accessing the main dock area where operations occur. Crane operations may occur twice each day, once in the morning and once in the evening to remove and place the sail boat in the water, unless the sail boat remains moored overnight. The crane will also be used intermittently to remove the support boats for re-fueling, and may be used to remove the sail boat, support boats, and/or floating dock for repairs or if ocean conditions become too rough for mooring.
- At night, OTUSA security will patrol the harbor facility and monitor access.

OTUSA is preparing an Operations Safety Plan based on consultation with the USCG, DOT-HAR, YB and other commercial operators at Kaumalapau Harbor. Copies of the Operations Safety Plan will be submitted to the USCG and DOT-HAR for review and reference. OTUSA will provide YB and other commercial operators at the harbor with a chain of command list and contact information for operational issues and for response in the event of a safety or security incident. No adverse impact to the existing level of public police service provided by the County is anticipated.

5.6 Fire Protection

The Lānaʻi Fire Station provides protection for the island and is located at 1345 Fraser Avenue, Lānaʻi City, Hawaiʻi 96763. The Fire Station is approximately 5.1 miles from Kaumalapau Harbor.

Potential Impacts and Proposed Mitigation. No adverse impacts to Lānaʻi's existing fire station facilities are anticipated and no further mitigation measures are proposed. The proposed activities will principally involve oceanographic research and data collection. Some work activities will involve maintenance of maritime vessels, however, all maintenance activities will be performed in well ventilated areas and away from major sources of combustible materials. Portable fire extinguishing equipment will be provided at the temporary office trailers, containers, tents and OTUSA vessels in accordance with Maui County Fire Code requirements

5.7 Health Care and Emergency Services

Health care and emergency services are provided by the Lānaʻi Community Hospital located at 628 7th Street, Lānaʻi City, Hawaiʻi 96763. The hospital is the only hospital on the island of Lānaʻi and is a sister facility of the Maui Memorial Medical Center and Kula Hospital located on Maui. The hospital provides 24-hour emergency services, a laboratory and x-ray facilities, and acute and long-term care.

The Lānaʻi Community Hospital is located approximately 5.5 miles from the Kaumalapau Harbor.

Potential Impacts and Proposed Mitigation. No adverse impacts to the existing hospital on Lānaʻi are anticipated and no additional medical care services beyond those provided are anticipated to be required. In the event of a major medical emergency at the Kaumalapau Harbor the Lānaʻi Fire Station, Police Station, and/or Lānaʻi ambulance, will be called upon to serve as emergency first responders. As required, the first responders may transport patients to the on-island hospital or airlift patients to a medical facility on a neighbor island.

OTUSA personnel will include medical professionals who can render emergency care. During sea trials, the OTUSA fleet, including the sail boat and support boats, will carry safety gear, first aid supplies, and trained medical personnel and divers to provide first aid in the event of a medical emergency at sea and until injured individuals can be offloaded to on-shore emergency networks.

5.8 Parks and Recreation

There are no official and organized park facilities in the vicinity of the harbor. During barge operations on Wednesdays, recreation activities (swimming and fishing) are curtailed near the pier facilities. During the remainder of the week, the harbor area is used by residents for informal recreational activities, including fishing, diving, swimming, and picnics.

Potential Impacts and Proposed Mitigation. No significant impacts to existing recreational activities are anticipated, except for those uses curtailed during barge operations, and when OTUSA crane equipment is operating to lift boats or the floating dock into and out of the water. OTUSA security operations will be managed to minimize disruptions to normal access and activities at the Harbor. When OTUSA crane equipment is operating, an access gate across the harbor entry road will be temporarily closed and manned by a security guard to prevent unauthorized personnel from accessing the main dock area where operations occur. As soon as the crane operations are complete, access to the dock will be reopened for normal harbor use. Crane operations may occur twice each day, once in the morning and once in the evening to remove and place the sail boat in the water, unless the sail boat remains moored overnight. The crane will also be used intermittently to remove the support boats for re-fueling, and

may be used to remove the sail boat, support boats, and/or floating dock for repairs or if ocean conditions become too rough for mooring. At night, OTUSA security will patrol the harbor and monitor access to safeguard OTUSA temporary facilities, equipment, and boats. OTUSA security operations will be temporary and of short duration. Upon completion of research and training activities, access to the harbor facilities will return to pre-existing conditions.

6.0 Socioeconomic and Related Environment, Potential Impacts and Mitigation Measures

6.1 Socioeconomic Characteristics

In 2005, the County of Maui published population projections for the Island of Lānaʻi as shown in Table 6-1. The proposed action will not contribute to an increase in the overall resident population based on the limited scope and duration of the project. However, there will be the short-term addition of approximately 50 personnel from OTUSA to the defacto population of the Island of Lānaʻi for a period of approximately four months.

Table 6-1, Population Characteristics of Lānaʻi, 1990 - 2030

Year	Resident Population	Defacto Population	No. of Households	No. of Visitors
1990	2,426	2,629	847	68
2000	3,193	4,243	1,161	1,131
2005	3,452	4,587	1,285	1,224
2010	3,735	4,963	1,415	1,325
2015	4,046	5,377	1,555	1,466
2020	4,308	5,725	1,680	1,577
2025	4,598	6,110	1,817	1,700
2030	4,901	6,513	1,965	1,827

Potential Impacts and Proposed Mitigation. No significant long-term impacts to the population of the Island of Lānaʻi are expected. With the termination of use of the Kaumalapau Harbor by the end of March 2013, all personnel associated with the project will depart.

Short-term impacts may result from a defacto increase in population from project associated personnel who will be accommodated in the local area hotels. The principal effect is expected to include a temporary increase in the demand for on-island related goods and services for the approximately four month period use of the Kaumalapau Harbor. This demand for goods and services can be expected to benefit the local area economy, but will end with the departure of the project personnel.

6.2 Land Use and Ownership

Kaumalapau Harbor is the sole commercial harbor on the Island of Lānaʻi providing deep draft vessel berthing. The harbor is identified as TMK: (2) 4-9-003: parcel 026, comprising a land area of approximately 2.30 acres that contains the dock and harbor operations facilities, and an area of approximately 2.15 acres the contains the breakwater. The harbor is owned by the State of Hawaiʻi and under jurisdiction of the DOT-HAR.

YB is the principal maritime commercial harbor user providing once per week interisland cargo and fuel barge service. The sailing schedule for arrival to Kaumalapau Harbor from Honolulu, Oʻahu, is on Wednesday mornings. Departure from the harbor to Honolulu, Oʻahu, is on Wednesdays afternoons. All goods including perishables, general cargo, and automobiles are accepted for departure until no later than 11:00 am on Wednesdays.

Other uses of the harbor are from the occasional or infrequent transit of commercial and recreational vessels. These uses occur with similar or lower frequency (approximately once per week or less). See also Section 3, Project Description, for further detail.

Potential Impacts and Proposed Mitigation. The proposed project is not anticipated to adversely affect harbor operations based on the relatively low intensity of existing uses. Harbor uses on Wednesdays will be coordinated to maintain sufficient operational space for the barge service and for the pick-up and delivery of cargo by area residents and businesses. Discussions between OTUSA, DOT-HAR, and YB have begun and logistics needed to maintain the operational capacity of the harbor are being developed. As required, other relevant parties may be asked by the DOT-HAR to participate.

The movement of all vessels in the water will be similarly coordinated. The operation of the harbor to accommodate all shipping and boat traffic will be managed by the DOT-HAR, who will participate in sufficient preplanning and coordination activities to ensure the movement of all vessels will be in an orderly, safe, and efficient manner.

Although no adverse effects to land use and ownership are anticipated or expected, there will be limited periods when it may be necessary to temporarily cordon off locations of the harbor used for the movement of boats or equipment. The cordoning off of areas will be no different than under the existing use of the harbor by the DOT-HAR or by users such as YB, to maintain public safety.

6.3 Historic and Archaeological Resources

There are no registered archaeological sites within the boundaries of the harbor. The original breakwater for the harbor was reported to have been built in the 1920s and reconstructed in 2007 after it was damaged by a severe storm. The harbor dock and cargo staging area is constructed of fill material and pier-supported concrete over very stony land / rock land. No jaucus sand deposits are located in the vicinity of the project area. The proposed action will not require major ground disturbance or modifications to the existing facility. The use of equipment and materials at the site will be confined to areas as described in Section 3.0, Project Description.

Potential Impacts and Proposed Mitigation. No adverse impacts to archaeological resources are anticipated. None of the activities involving the setup and use of the proposed OTUSA temporary facilities involves major ground disturbance or major modifications to the harbor facilities. The possible relocation of an overhead power line to a new underground conduit, if required, will occur entirely within previously disturbed fill lands created during the harbor construction.

Because the potential for the discovery of a significant archaeological or cultural site is always present, should any significant finds be discovered, the State Historic Preservation Division (SHPD) will be notified and activities at the site will be secured until a determination is made by the State. No further mitigation measures are recommended.

6.4 Cultural Impact Assessment

Much of the cultural history and traditions of Lānaʻi and the people of Lānaʻi appear to have been lost to history as documented in the Lānaʻi Community Plan of 1998. Excerpts from the Lānaʻi Community Plan,

1998, and others, document early activities on the island and the effects and impacts associated with land use and land ownership.

> *Page 8 "Early native historians, working in populated areas, usually wrote down traditions that were significant to understanding major trends in Hawaiian history. Since Lana`i did not play a major role in the evolution of broader patterns of history in Hawaii, much of the local history and culture of the island was not recorded." (Lānaʻi Community Plan, 1998)*
>
> *"Most of the local traditions of Lana`i were not written down when Kenneth Emory conducted his research there in 1921. Emory concentrated on surveying extant archaeology on the island. During preliminary field work, it became obvious to Emory that "the answer to many questions concerning the various objects and types of ruins can come only from present native informants or through a laborious compilation of indirect evidence." (Emory 1924:3, in Lānaʻi Community Plan, 1998)*
>
> *Page 18. "All current deeds and formal ownership records for Lana`i trace their roots to the time of The Great Māhele. At that time, lands on Lānaʻi were divided between lands claimed by Kauikeaouli (40,665 acres), which were known as the Crown Lands, and the lands to be claimed by the chiefs and people (48,640 acres), which were called the Government Lands. The total land area of Lana`i was then 89,305 acres, which included 13 ahupuaʻa or traditional land divisions. The government set up a commission to hear people's claims for land. This commission, called the Land Commission, eventually awarded lands to chiefs and commoners according to the legitimacy of their claim. The first Lānaʻi land awards made to commoners by the Land Commission occurred on August 12, 1852, to Waimalu for seven acres of land situated in five areas on the island." (Lānaʻi Community Plan, 1998)*
>
> *Page 21. "By 1907, more than half the island of Lana`i was in the hands of native Hawaiians. Just 14 years later, in 1921, when Emory conducted his Lana`i research, only 208.25 acres of land remained in native Hawaiian ownership. By 1875 Walter Gibson had control, either through lease or direct ownership, of nine-tenths of Lānaʻi's lands. This was the first time since the occupation of Lānaʻi by humans that power was consolidated this way. In the traditional system, land managers or konohiki, existed for all ahupua`a land divisions of which Lana`i had 13. These konohiki were subject to control by the ruling chiefs. Because of the poor rural nature of Lānaʻi, the ruling chief probably had very little to do with Lānaʻi other than occasional fishing trips and collecting yearly tribute." (Lānaʻi Community Plan, 1998)*
>
> *Page 29 "When James Dole bought Lānaʻi, ranching was a thriving business under the control of George Munro. Shortly after the purchase, Dole got Munro working at removing cattle from potential pineapple lands. As soon as cattle were fattened they were sold. Ranching operations became a secondary priority to pineapple development. Finally, in 1927, Dole decided that all cattle would be cleared from the plantation lands. During 1923, the company embarked on making major improvements to the island of Lānaʻi. Efforts were concentrated on a breakwater, 400 foot wharf, roads, and a town site. At first, Dole wanted to name the town Pine City, but the post office department objected because there were too many "pine" post offices in the mainland United States. So the plantation town was called Lānaʻi City. Dole hired Mr. Root, an engineer, to lay out and plan the town. On March 23, Root arrived at Mānele Bay to begin his work. He designed the central park with a symmetrical grid of residential streets, which remains the configuration of Lānaʻi City today." (Lānaʻi Community Plan, 1998)*

Potential Impacts and Proposed Mitigation. No significant impacts to existing cultural practices are anticipated. The harbor area is used by residents for fishing, diving, swimming, ocean resource gathering, picnics and related recreational activities. These uses, however, are routinely assessed with regard to the need to maintain public safety and security when there are temporary periods of increased commercial use of the harbor. Activities that can pose a safety hazard include periods when vehicles and equipment are mobilized and moved to various areas of the harbor wharf and pier, or when heavy equipment is being operated to load or deliver cargo to waiting vessels. During these limited periods, the affected areas will be cordoned off to prevent public entry and injury. This limitation is

anticipated to be of short duration and will not permanently restrict public access to the shoreline. OTUSA security operations will be managed to minimize disruptions to normal access and activities at the Harbor, as described above in Sections 5.5 and 5.8. The planned temporary use of the harbor facilities will not disturb any known traditional sacred sites or objects, will not result in the degradation of resources used for subsistence or traditional practices, will not obstruct landforms or way-finding features, and will not result in loss of access to areas customarily used for traditional cultural practices.

No further potential for adverse effects is anticipated. OTUSA operations will be temporary and of short duration. Upon the completion of use of the harbor, the OTUSA will demobilize and clear all equipment and materials used for the project from the site and the site will be returned to its preexisting condition.

7.0 Relationship to Land Use Plans Policies and Controls of the Potentially Affected Area

7.1 Overview

State and County of Maui policies, plans, and land use controls are established to guide development in a manner that enhances the environment and quality of life. The establishment of policies, plans, and land use controls at all levels of government are further promulgated to help ensure that the long-term social, economic, environmental, and land use needs of the community and region can be met. The proposed project's relationship to land use policies, plans, and controls for the region and proposed activity are as follows.

7.2 Hawaiʻi State Plan

The Hawaiʻi State Plan, adopted in 1978, and promulgated in Chapter 226, HRS, consists of three major parts:

> Part I, describes the overall theme including Hawaiʻi's desired future and quality of life as expressed in goals, objectives, and policies.
>
> Part II, Planning Coordination and Implementation, describing a statewide planning system designed to coordinate and guide all major state and county activities and to implement the goals, objectives, policies, and priority guidelines of the Hawaiʻi State Plan.
>
> Part III, Priority Guidelines, which express the pursuit of desirable courses of action in major areas of statewide concern.

The proposed project is consistent with the objectives and policies of the Hawaiʻi State Plan. Specifically, the proposed action will increase and diversify the State's economic base through upgrading facilities used by the shipping industry. The following section of the Hawaiʻi State Plan's objectives and policies for facility systems are relevant to the proposed action.

> *§226-14 Objectives and policies for facility systems—in general. (a) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.*
>
> *(b) To achieve the general facility systems objective, it shall be the policy of this State to:*
>
> *(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.*
>
> *(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.*
>
> *(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems. [L 1978, c 100, pt of §2; am L 1986, c 276, §13]*

The proposed project will promote general statewide policy to encourage flexibility in the design and development of the existing Kaumalapau Harbor for use by a private sector party, within the resource

capacities of the site that will provide a facility for oceanographic research and maintenance of a marine vessel. These uses will help to promote the maintenance of the Kaumalapau Harbor through the payment of fees for the use of the facility.

The design and development of this project will further address the needs of the community and region through the selection of a site that is specifically used for maritime industrial land uses. The project will be developed in accordance with all laws and regulations necessary to ensure against the potential for adverse environmental effects.

7.3 State Land Use Law

The State Land Use Commission classifies all lands in the State of Hawaiʻi into one of four land use designations: Urban, Rural, Agricultural and Conservation. The project site is located in the State Land Use Urban District (harbor improvements) and the Conservation District (**Figure 7-1**).

A. State Urban Land Use District

According to Section 205-2(b), HRS, "Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated." The land use for the proposed project is consistent with the State Urban District designation as the Kaumalapau Harbor pier facility is zoned by the County of Maui as a combination of M-2 Heavy Industrial, Conservation, and Interim zoned land.

B. State Conservation Land Use District

According to Section 205-2(e), HRS, "Conservation districts shall include areas necessary for protecting watersheds and water sources; preserving scenic and historic areas; providing park lands, wilderness, and beach reserves; conserving indigenous or endemic plants, fish, and wildlife, including those which are threatened or endangered; preventing floods and soil erosion; forestry; open space areas whose existing openness, natural condition, or present state of use, if retained, would enhance the present or potential value of abutting or surrounding communities, or would maintain or enhance the conservation of natural or scenic resources; areas of value for recreational purposes; other related activities; and other permitted uses not detrimental to a multiple use conservation concept."

The proposed project will not be contrary to the purpose of the State Conservation District. Section 205-5, HRS, also notes that Conservation Districts shall be governed by the Department of Land and Natural Resources pursuant to Chapter 183C, HRS. In accordance with Conservation District Use Permit No. SH-2658, submerged lands within Kaumalapau Harbor from the shoreline to the seaward boundary established from the breakwater to the lighthouse are under the jurisdiction of DOT-HAR for the management of harbor use, maintenance and improvements. No action from the State Land Use Commission is required to implement the proposed temporary harbor use.

C. State Conservation District Subzones

Chapter 183C, HRS, and Title 13-5, HAR, regulates land use in the State Conservation District for the purpose of conserving, protecting, and preserving the important natural resources of the State through appropriate management and use to promote their long term sustainability and the public health, safety and welfare. The submerged areas of Kaumalapau Harbor (coastal waters) are located within the Resource subzone of the State Conservation District. Described below are the objectives for the Resource subzone per Section 13-5-13, HAR:

> *The objective of the Resource subzone is to develop, with proper management, areas to ensure sustained use of the natural resources of those areas.*
>
> *(b) The (R) subzone shall encompass:*
>
> *(1) Lands necessary for providing future parkland and lands presently used for national, state, county, or private parks;*
>
> *(2) Lands suitable for growing and harvesting of commercial timber or other forest products;*
>
> *(3) Lands suitable for outdoor recreational uses such as hunting, fishing, hiking, camping, and picnicking;*
>
> *(4) Offshore islands of the State of Hawaii, unless placed in a (P) or (L) subzone;*
>
> *(5) Lands and state marine waters seaward of the upper reaches of the wash of waves, usually evidenced by the edge of vegetation or by the debris left by the wash of waves on shore to the extent of the State's jurisdiction, unless placed in a (P) or (L) subzone.*

The project site is located within the Resource subzone and designated as within an area of permitted land use for the Kaumalapau Harbor. The rules for the Resource subzone also identify land uses which are permitted in the Protective and Limited subzones also would also apply to the Resource subzone. According to Section 13-5-22P-6 (D-1), Protective subzone, the following are allowed:

> *Land uses undertaken by the State of Hawaii or the counties to fulfill a mandated governmental function, activity, or service for public benefit and in accordance with public policy and the purpose of the conservation district. Such land uses may include transportation systems, water systems, communication systems, and recreational facilities.*

The project specific activities will utilize a portion of the harbor pier facilities and the waters surrounding the harbor for the purposes of conducting training, research and data collection to support the development of a sailing vessel. The proposed uses will not affect nor lessen the intended stated objectives for the Resource subzone. The sustained use of the natural resources will therefore be unaffected by the project.

7.4 Coastal Zone Management Program

All land and water use activities in the state must comply with Chapter 205A, HRS, Hawaiʻi Coastal Zone Law. The State of Hawaiʻi designates the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of HRS, Chapter 205(A)-2, as amended, for the areas from the shoreline to the seaward limit of the State's jurisdiction, and any other area which a lead agency may designate for the purpose of administering the CZMP.

The following is an assessment of the project with respect to the CZMP objectives and policies set forth in Section 205(A)-2.

> ***1. Recreational resources***
>
> *Objective: Provide coastal recreational opportunities accessible to the public.*
>
> *Policies: A) Improve coordination and funding of coastal recreational planning and management; and B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:*
>
> *(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
>
> *(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;*
>
> *(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
>
> *(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
>
> *(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*
>
> *(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;*
>
> *(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and*
>
> *(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.*

The design of the proposed project is not anticipated to result in adverse negative impacts to the recreational resources of the area. The project site is used as an existing commercial harbor and proposed temporary uses at the site will have minimal visual impacts due to the nature of the project involving work primarily at grade and its location within and surrounding an industrial waterfront area. Although this land use setting does not itself provide recreational opportunities, the site is known to be frequented by local residents who access the shoreline and breakwater for fishing.

There are no nearby beaches as much of the coastline in the area is comprised of steep, rocky coastline.

Public access to the harbor area will not be significantly affected but may be temporarily limited during equipment operations. OTUSA security operations will be managed to minimize disruptions to normal access and activities at the Harbor. As a public safety precaution when OTUSA crane equipment is operating, an access gate across the harbor entry road will be temporarily closed and manned by a security guard to prevent unauthorized personnel from accessing the main dock area where operations occur. As soon as the crane operations are complete, access to the dock will be reopened for normal harbor use. Crane operations may occur twice each day, once in the morning and once in the evening to remove and place the sail boat in the water, unless the sail boat remains moored overnight. The crane

will also be used intermittently to remove the support boats for re-fueling, and may be used to remove the sail boat, support boats, and/or floating dock for repairs or if ocean conditions become too rough for mooring. At night, OTUSA security will patrol the harbor and monitor access to safeguard OTUSA temporary facilities, equipment, and boats. OTUSA security operations will be temporary and of short duration. Upon completion of research and training activities, access to the harbor facilities will return to pre-existing conditions.

2. Historic resources

Objective: Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies: (A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

There are no archaeological or cultural resources known to be present within the immediate project site, as much of the project area was previously disturbed during the construction of the harbor and access roads. None of the proposed activities involving the setup and use of the proposed OTUSA temporary facilities involves major ground disturbance or major modifications to the harbor facilities. The possible relocation of an overhead power line to a new underground conduit, if required, will occur entirely within previously disturbed fill lands created during the harbor construction. In accordance with HRS, Chapter 6E, and the requirements of the SHPD, DLNR, should any historic resources, including human skeletal and significant cultural remains, be identified during the set up and use of the proposed temporary facilities: (1) Work will cease in the immediate vicinity of the find; (2) The find will be protected from any additional disturbance; and (3) The SHPD, will be contacted immediately at (808) 243-5169 (Maui Island) or (808) 692-8015 (Main Office, Oʻahu) for further instructions including the conditions under which project activities may resume.

3. Scenic and open space resources

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

Policies: (A) Identify valued scenic resources in the coastal zone management area;

(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural land forms and existing public views to and along the shoreline;

(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

(D) Encourage those developments that are not coastal dependent to locate in inland areas.

The potential for adverse visual impacts is anticipated to be minimal as the temporary tents, office trailers and storage containers used by OTUSA will be staged on existing grades within the harbor property and will be consistent in appearance with the surrounding harbor facilities and uses. Operation of the mobile crane will likewise be visible and generally consistent with typical harbor operations. The most noticeable visual effect will result from the presence of the OTUSA sail boat with the 131-foot tall

wingsail moored within the harbor or under sail in near shore waters. Views of the OTUSA operations will be transient and temporary. Following completion of the OTUSA training and research activities, the temporary facilities will be demobilized and removed and views of the harbor will return to pre-existing conditions.

Public access to the harbor will be maintained in accordance with standard harbors operating practices during the set up period; however, residents may be affected by equipment operations and traffic. These activities will be only for a temporary period of time and will not result in any adverse permanent changes.

> ***4. Coastal ecosystems***
>
> *Objective: Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.*
>
> *Policies: (A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;*
>
> *(B) Improve the technical basis for natural resource management;*
>
> *(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;*
>
> *(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and*
>
> *(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.*

Coastal ecosystems will not be adversely affected by the proposed activities. The use of the land-side harbor facilities for the proposed project is generally consistent with industrial harbor uses and is not anticipated to adversely affect the marine biological resources of the site. The use of the coastal waters by OTUSA vessels is similarly not anticipated to affect the area's marine biological resources. OTUSA personnel will be instructed to identify and avoid contact with protected sea turtles, monk seals and humpback whales. Placement of the temporary mooring anchors in the Kaumalapau Harbor is not anticipated to affect the coastal ecosystem as the mooring anchors will be positioned on the harbor bottom away from corals or other sensitive marine species in accordance with the recommendations of the ocean engineer and marine biologist. The anchors will be constructed of steel and/or concrete and will have no effect to coastal water quality.

To protect coastal waters and prevent discharge of pollutants in stormwater runoff from the wharf area, OTUSA will be required to adhere to the operating procedures in place for the use of DOT-HAR facilities. These procedures will include, but not be limited to:

- The storage of materials and products either under roof or in sealed containers such that the comingling of stormwater with stored or stockpiled materials will be prevented.
- Spill kits will be maintained on-site and readily available to clean-up spills or leaks of petroleum, oil, and lubricant associated products. The disposal of soiled clean-up materials shall be to an approved DOT-HAR dumpster or receptacle. The portable generators used consist of self-contained double-walled fuel tanks equipped with leak detection capability.

- Other methods, measures, or practices as may be required by the DOT-HAR to ensure against untreated discharges of materials used on site in stormwater runoff to state waters.

Upon completion of training and research activities, OTUSA's facilities and equipment, including the mooring anchors, will be demobilized and removed from the harbor.

5. Economic uses

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

Policies: (A) Concentrate coastal dependent development in appropriate areas;

(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;

(ii) Adverse environmental effects are minimized; and

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

The proposed project has been assessed for potential social, visual, and environmental impacts in accordance with State of Hawaiʻi regulations. With the implementation of the mitigation measures identified in this document, no adverse impacts are expected to result. In the short term, OTUSA operations will have an overall minor but beneficial impact on the local shipping and stevedore industry. Harbor facility use fees will benefit the State by helping support harbor maintenance costs. The presence of OTUSA personnel will benefit the community indirectly through a temporary increase in the demand for on-island goods and services for the approximately four month period use of the Kaumalapau Harbor.

6. Coastal hazards

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies: (A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

(D) Prevent coastal flooding from inland projects.

The proposed temporary use of the harbor has been evaluated for potential impacts associated with natural hazards including flooding, erosion, and nonpoint source pollution hazards. Natural hazards such as hurricanes, flooding, and tsunami are unavoidable for all coastal harbor areas. Accordingly, all temporary facilities will be installed in compliance with County of Maui Building Code requirements which include minimum performance standards to withstand wind and seismic forces.

In the event of a hurricane or tsunami, it is anticipated that adequate warning will be available to allow the evacuation of the harbor area. Hurricane and tsunami warning response protocols for securing or removing equipment and evacuating personnel will be included in an Operations Safety Plan prepared by OTUSA in consultation with the U.S. Coast Guard (USCG), DOT-HAR, YB and other commercial operators at Kaumalapau Harbor. A copy of the Operations Safety Plan will be submitted to the USCG and DOT-HAR for review and reference. OTUSA will provide YB and other commercial operators at the harbor with a chain of command list and contact information for operational issues and for response in event of safety or security incident. In addition, the DOT-HAR, will coordinate with the County of Maui Civil Defense agency to implement and maintain established procedures in the event of a hurricane, flood or tsunami. Although the proposed project is located within the FEMA Flood Zone X, areas outside of the 100 year flood, it is noted that no habitable structures are proposed that would constitute an unreasonable risk to life or property. Given the requirement for the proposed project to be located within proximity of the shoreline, the proposed use is considered reasonable and is not anticipated to have a significant impact on flood conditions.

7. Managing development

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies: (A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

OTUSA's proposed temporary use of the harbor is consistent with existing harbor uses and will conform to all State of Hawaiʻi regulations. A comprehensive list of permits that may be required is provided in Section 9, Permits and Approvals That May Be Required. While the harbor area is under the jurisdiction of the CZMA, no coastal resources will be adversely affected. The proposed use of the harbor does not involve coastal development. OTUSA's operations will be temporary. Upon completion of the planned training and research activities, the OTUSA trailers, tents, containers, vessels and equipment will be demobilized and removed from the harbor.

8. Public participation;

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies: (A) Promote public involvement in coastal zone management processes;

(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and

(C) Organize workshops, policy dialogues, and site-specific mitigation to respond to coastal issues and conflicts.

The provision for public participation is provided through the environmental review process as required in Chapter 343, HRS. Public comments will be accepted during the public comment period of the Draft

EA and response letters acknowledging all relevant comments will be prepared, mailed, and documented in the project's Final EA. In addition, environmental permit applications filed for the subject project will be subject to governmental agency and public review as required under law.

> ***9. Beach protection;***
>
> *Objective: Protect beaches for public use and recreation.*
>
> *Policies: (A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;*
>
> *(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and*
>
> *(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.*

The proposed project does not involve nor require the direct use of beaches or shoreline resources.

> ***10. Marine resources***
>
> *Objective: Promote the protection, use, and development of marine and coastal resources to assure their sustainability.*
>
> *Policies: (A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;*
>
> *(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;*
>
> *(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;*
>
> *(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and*
>
> *(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.*

The proposed project does not involve the use or development of marine and coastal resources that would constitute an adverse effect. The project will promote research and understanding of ocean processes and technologies to support the development and operation of high-performance sail boats.

7.5 Special Management Area (SMA) Rules and Regulations

The County of Maui has designated certain shoreline and inland areas of the Island of Lānaʻi as being within the SMA. SMA areas are designated sensitive environments that are to be protected in accordance with the State's Coastal Zone Management policies, as set forth in in the Hawaiʻi Coastal Zone Law, Section 205A, HRS (**Figure 7-2**).

7.6 County of Maui General Plan 2030

The County of Maui General Plan is a requirement of the County Charter and sets forth the policy for the long range comprehensive physical development of the county. The purposes of the General Plan are stated as:

> *"The Countywide Policy Plan, adopted on March 24, 2010, provides broad goals, objectives, policies, and implementing actions that portray the desired direction of the County's future. Furthermore, this Countywide Policy Plan provides the policy framework for the development of the Maui Island Plan and the nine Community Plans. The Countywide Policy Plan is the outgrowth of, and includes the elements of the earlier General Plans of 1980 and 1990. "*

The plan further provides for a:

> *"…pro-active planning process by establishing urban and rural growth areas that indicate where development is intended and will be supported. Growth areas will provide for less costly services, reduced commuting, protection of community character and the preservation of agriculture, open space and cultural and natural resources. It comprises goals, policies, programs and actions which are based on an assessment of current and future needs and available resources."*

A series of broad themes and goals, each supported by more specific objectives, policies, and implementing actions, were formulated for the plan. A series of core themes relevant to the proposed project include the following:

A. Protect the Natural Environment – The proposed project will be consistent with the protection of the natural environment in its use of the ocean environment for research and data collection on wind and wave resources to support the development of sail boat technologies. Use of the existing, developed industrial harbor facilities for the temporary operations also avoids affecting other, less-developed environments.

B. Preserve Local Cultures and Traditions – Although the proposed project is not directly related to Hawaiian culture, it is related to the study of the ocean environment and will be undertaken in a manner that is respectful of local environmental resources.

C. Strengthen the Local Economy – The proposed project will be limited in scope and duration, but will have a beneficial economic impact on the local economy. Material transport and use of Kaumalapau Harbor will support the local shipping and stevedore industry. The presence of OTUSA personnel will benefit the Lānaʻi community indirectly through a temporary increase in the demand for on-island goods and services.

D. Improve Physical Infrastructure – The project will provide indirect benefits to the Kaumalapau Harbor based on the short-term use of the site for harbor and maritime related activities. These activities will involve compensation to the State which in turn will help to promote the long-term maintenance of the harbor facilities.

E. Strive for Good Governance – The project will involve the responsible use of an existing DOT-HAR facility. OTUSA is a willing partner in ongoing coordination with government agencies and other stakeholders to accommodate the proposed temporary uses at Kaumalapau Harbor. OTUSA operations at the harbor and at sea will be undertaken in compliance with all County, State and Federal regulatory requirements.

7.7 Lānaʻi Community Plan (1998)

The Lānaʻi Community Plan is one of nine (9) Community Plans for the County of Maui which reflects the current and anticipated conditions of the Island of Lānaʻi and region, and advances specific planning goals, objectives, policies, and implementation considerations to guide decision-making for the future.

The Lānaʻi Community Plan provides specific recommendations to address the goals, objectives and policies contained in the General Plan, while recognizing the values and unique attributes of Lānaʻi, to enhance the region's overall living environment (Lanai CP, 1998).

The proposed action will involve the use of the Kaumalapau Harbor for a relatively short period of approximately four months and is not anticipated to curtail nor adversely impact the goals and objectives of the Lānaʻi Community Plan. The proposed action will also not require any changes to the existing land use designation of the Harbor.

Kaumalapau Harbor is the sole commercial harbor for the Island of Lānaʻi, handling the shipment of the majority of goods and products that support the island population. In order to ensure no adverse effects the use of the harbor for the proposed action will be coordinated with the harbor operations of YB and American Safari Cruises. The coordination will involve ensuring there is sufficient staging, mobilization, and storage facilities to maintain the existing level of service provided at the harbor.

Recreational uses will similarly not be adversely affected, with reasonable accommodations being made to ensure access to coastal resources. However, as noted public safety will require the temporary cordoning off of some sections of the harbor operational areas.

7.8 County of Maui Zoning

The project site is located entirely within the State Urban District. Pursuant to Section 183C-3(2), HRS, the submerged areas of the harbor are within the State Conservation District.

County zoning maps recognize the subject property as a combination of M-2 Heavy industrial, Conservation, and Interim zones (County of Maui, 1999). The proposed use of the harbor by OTUSA is consistent with the existing harbor use and is in conformance with the requirements of these zoning districts (**Figure 7-3**).

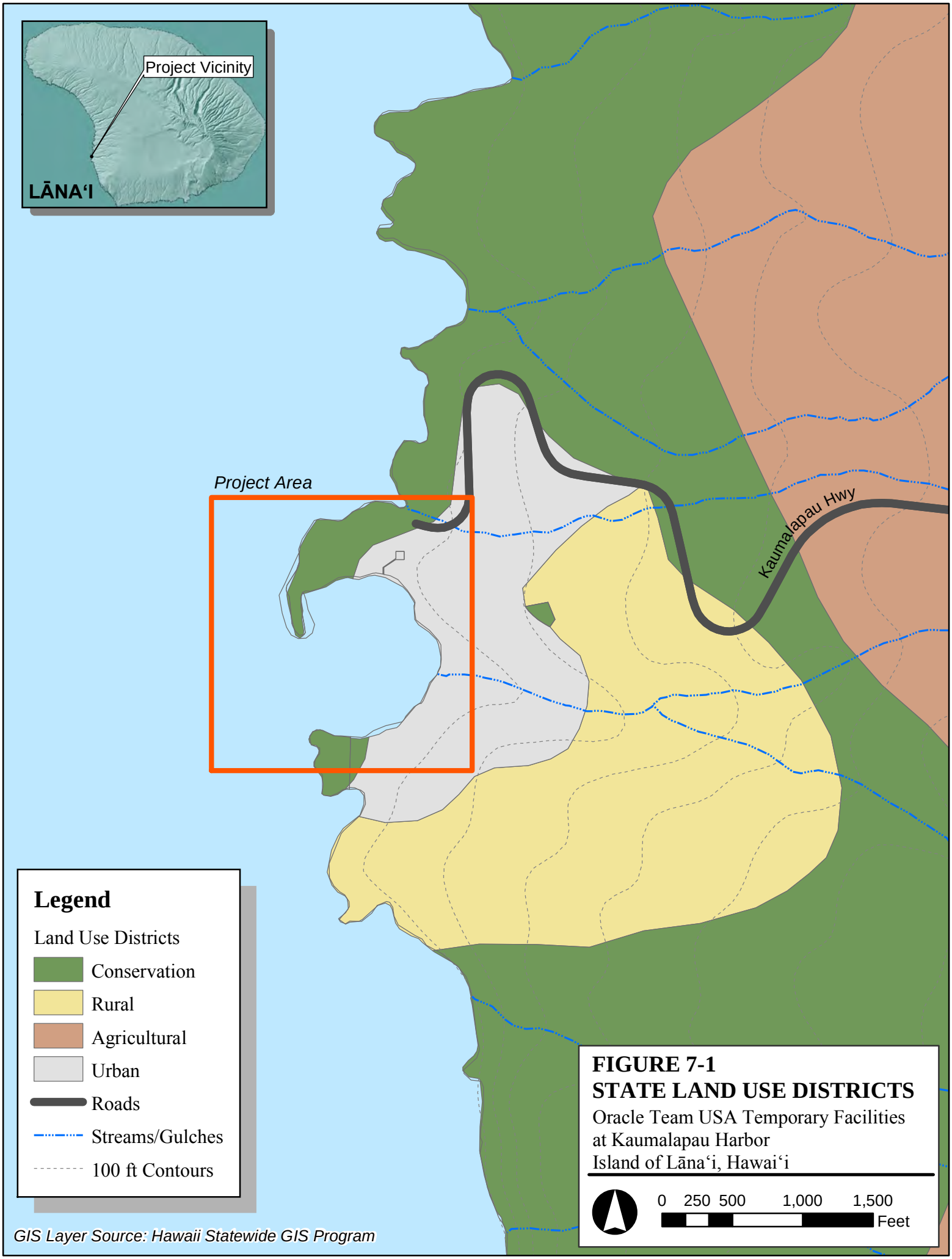


FIGURE 7-1
STATE LAND USE DISTRICTS
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

FIGURE 7-2
SPECIAL MANAGEMENT AREA
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

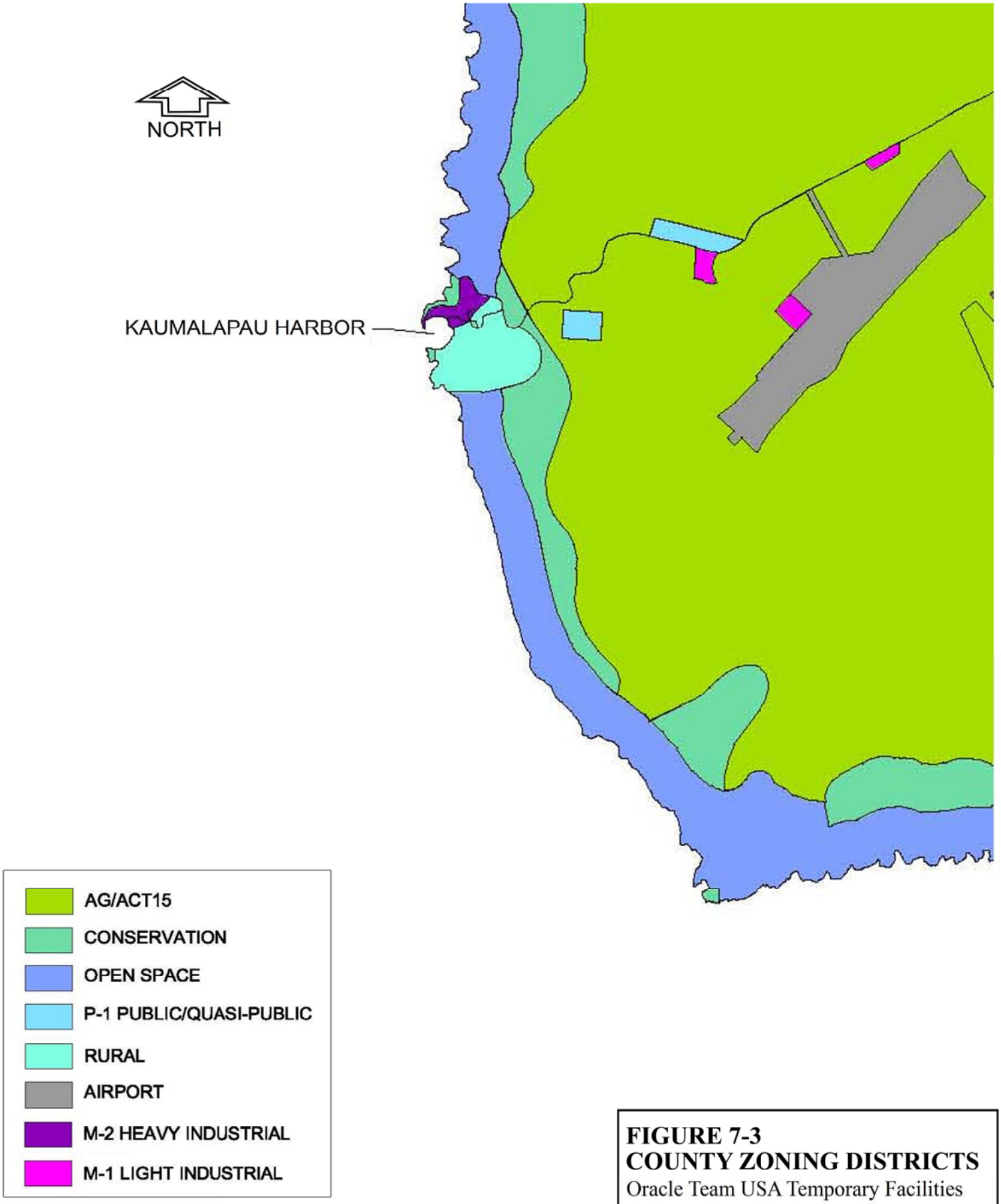


FIGURE 7-3
COUNTY ZONING DISTRICTS
Oracle Team USA Temporary Facilities
at Kaumalapau Harbor
Island of Lānaʻi, Hawaiʻi

NOT TO SCALE

8.0 Alternatives to the Proposed Action

8.1 Introduction

The following site selection criteria were used to investigate potential alternative locations for OTUSA's temporary winter base of operations for sea trials, training, and related research and data collection to support the development of a high-performance sail boat:

A. The location must be a reasonable distance from OTUSA's home port in San Francisco to minimize travel and shipping days.

B. The location must be in an area that has optimal wind and sailing conditions and good weather during the winter months.

C. The location must have direct deep-water access to accommodate delivery and launching of the OTUSA vessels, and reasonably developed infrastructure and utilities (water and telecommunications) to accommodate temporary tents, trailers, storage containers, and equipment that will be used by the OTUSA personnel. Extraordinary requirements for development and construction to obtain access to basic infrastructure services would result in an infeasible project.

D. The location must have basic accommodations for OTUSA personnel.

8.2 "No-Action" and Delayed Action Alternatives

State legislation requires that a "No-Action" Alternative be considered to serve as a baseline against which potential actions can be measured. The No-Action Alternative involves the continued operation of Kaumalapau Harbor without the proposed temporary use by OTUSA. Under the No-Action Alternative project costs and potential environmental impacts disclosed in this document would be avoided. Likewise, direct and indirect economic benefits of the project, in the form of harbor facility fees, expenditures on shipping and stevedore services, and local goods and services purchased by OTUSA personnel, would not be realized.

The Delayed Action Alternative is similar to the No Action Alternative in that the potential for environmental impacts from the project and the project-related economic benefits would not occur at the present time. Under this alternative, environmental impacts and economic benefits resulting from the project would be delayed, but are anticipated to be generally the same as with the proposed project. It is also reasonable to expect that costs for materials, services, and labor will increase over time, resulting in ultimately higher project costs if the action is delayed. However, given the proposed schedule for OTUSA's temporary operations to conclude by April 2013, delayed action is effectively the same as no-action.

Both the No Action and Delayed Action alternatives do not accomplish the stated purpose and need of the proposed action which is to provide a temporary, winter 2013 location for OTUSA to conduct training, research and data collection to support the development of a high-performance sail boat for

competitive racing events. Because these alternatives do not meet the project purpose and need, they were rejected from further consideration.

8.3 Alternative Sites

Several alternative sites were considered for this project, including:

- San Francisco, California;
- Various Locations in New Zealand and Australia;
- Mānele Small Boat Harbor, Island of Lānaʻi, and
- Kaumalapau Harbor, Island of Lānaʻi, Hawaiʻi

San Francisco is currently the home port for OTUSA. This site has many of the attributes necessary to undertake the subject project, but suffers from less than optimal sailing conditions during the winter months. In particular, weather conditions include a much colder operating environment, a poor wind regime, and frequently rough sea conditions which limit the number of days when sea trials can be conducted and diminishes the quality of feedback data necessary for sail boat development. For these reasons, this site was eliminated from further consideration.

Various locations in New Zealand and Australia meet most of the requirements necessary for the project, including possessing excellent wind and sailing conditions, good weather, and suitable accommodations and harbor infrastructure, and were considered by OTUSA for the proposed winter site. The principal impediment associated with the use of New Zealand and Australia involved the physical distance of the site from the Mainland U. S. and the need for long-distance transportation of equipment and personnel; and the potential loss of research and maintenance expenditures in the U. S. For these reasons, New Zealand and Australia were eliminated from further consideration.

Mānele Small Boat Harbor (SBH) was also considered. While the Mānele SBH meets project requirements for travel distance and sailing and weather conditions, the harbor does not have adequate dock facilities to receive barge shipment of OTUSA equipment and materials and lacks space to moor the temporary floating dock, sail boat and support boats. In addition, Mānele SBH is heavily utilized seven days a week by recreational boaters. The heavy boat traffic creates significant safety and operational issues. For these reasons, Mānele SBH was eliminated from further consideration.

8.4 Preferred Alternative

The Kaumalapau Harbor, situated along the southwestern shore of the Island of Lānaʻi, possesses a number of features that make it the preferred alternative:

- The submerged harbor “basin” is approximately 10-acres in area with water depths ranging between 20 and 60 feet msl which is suitable for barge delivery of OTUSA containers, trailers, boats, and equipment, and suitable for launching and retrieving OTUSA vessels;
- The wind conditions of the Island of Lānaʻi are favorable as the Hawaiian Islands are subject to northeasterly trades throughout most of the year occurring approximately 90 to 95 percent of the time during the summer months and 55 to 65 percent of the time during the winter months.

Offshore wind conditions are expected to be especially favorable with higher wind speeds available once the OTUSA vessels move away from the sheltering effect of the island.

- Storm conditions in the Hawaiian Islands are also relatively infrequent. It is anticipated that cold fronts, which occur during the winter months, will cause spotty rainfall and gusty winds. Although heavy rainfall may occur at sea, these infrequent storms will also general strong winds which will be beneficial to the training and research effort.
- The Kaumalapau Harbor over the past decade has been subject to maintenance involving the construction of a new breakwater that enhances the protection of the harbor and wharf facilities. The harbor facility also has suitable water and telecommunications service and can be conveniently accessed by service providers for portable self-contained sanitary facilities and other equipment needs.
- The Kaumalapau Harbor is only heavily used on Wednesdays of each week. The Kaumalapau Harbor can be made available for an approximately four month period with the concurrence of the DOT-HAR, to ensure no adverse effects to existing harbor operations which serve the Island of Lānaʻi. Ongoing discussions with the DOT-HAR, and YB, operating barge service to the island, indicate that the site can accommodate the project provided that OTUSA activities are properly coordinated to minimize disruption of the weekly barge service, and the use of the site by the island population.

Upon project completion, OTUSA will demobilize and remove their trailers, containers, tents, boats, materials and equipment from Kaumalapau Harbor and will restore the facilities to preexisting conditions.

9.0 Permits and Approvals That May Be Required

9.1 County of Maui

Planning Department

- Special Management Area Use Permit – Minor

Department of Public Works

- Building Permit

9.2 State of Hawaiʻi

Department of Transportation (Chapter 343, HRS, Documentation)

- Finding of No Significant Impact (FONSI)
- Harbor Use and Operating Agreement
- Mooring Permit for Temporary Floating Dock

Office of Planning

- Coastal Zone Management Federal Consistency Review

9.3 Federal

Army Corps of Engineers

- Section 10, Rivers and Harbors Act Permit

Federal Aviation Administration

- Form 7460-1

U. S. Coast Guard

- Operations Safety Plan Review

10.0 Agencies, Organizations and Individuals Consulted for the Environmental Assessment

10.1 County of Maui

Office of the Mayor

Planning Department

Department of Water Supply

Department of Public Works

Department of Environmental Management

10.2 State of Hawaiʻi

Department of Transportation

Department of Land and Natural Resources
- Office of Conservation and Coastal Lands
- State Historic Preservation Division
- Division of Boating and Ocean Recreation
- Division of Conservation and Resource Enforcement

Office of Planning

Department of Business, Economic Development & Tourism

10.3 Federal Government

Department of the Army, U. S. Army Corps of Engineers

Federal Aviation Administration

National Marine Fisheries Services (NMFS), National Oceanographic and Atmospheric Administration (NOAA)

U. S. Coast Guard

10.4 Organizations and Individuals

Young Brothers, Ltd.

Maui Electric Company

Hawaiian Telcom

Danny A. Mateo, Council Chair, Maui County Council

G. Riki Hokama, Council Member, Lānaʻi, Maui County Council

Lānaʻi Planning Commission

Representative Mele Carroll, House District 13, Hawaiʻi Legislature

Senator J. Kalani English, Senate District 6, Hawaiʻi Legislature

Hawaiian Islands Humpback Whale National Marine Sanctuary

Lanaians for Sensible Growth

Kōʻele Homeowners Association

Mānele Homeowners Association

Coalition for A Drug Free Lānaʻi

Hulopoʻe Beach Park Council

Lānaʻi Filipino Community Association

Lānaʻi Community Association

Lānaʻi Culture and Heritage Center

Straub Lānaʻi Family Health Center

Lānaʻi Senior Center

Lānaʻi High and Elementary School

American Safari Cruises

11.0 Summary of Impacts and Significance Determination

In accordance with the content requirements of Chapter 343, Hawaiʻi Revised Statutes (HRS), and the significance criteria in Section 11-200-12 of Title 11, Chapter 200, Hawaiʻi Administrative Rules (HAR), an applicant or agency must determine whether an action may have significant impacts on the environment, including all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long term effects. In making the determination, the Rules establish "Significance Criteria" to be applied as a basis for identifying whether significant environmental impacts will occur. According to the Rules, an action shall be determined to have a significant impact on the environment if it meets any one of the following criteria.

11.1 Short-Term Impacts

The potential for short-term impacts resulting from the proposed action include:

- The use of limited portions of the Kaumalapau Harbor, including the temporary installation of trailers, containers, tents, and equipment, and operations associated with OTUSA's sea trials, training and research program;
- The consumption of energy and fuel for the generation of power;
- Noise from the operation of internal combustion powered vehicles and equipment;
- Reduced availability of hotel accommodations on the Island of Lānaʻi due to occupation by OTUSA personnel;
- Increased vehicular traffic to and from the harbor; and
- Increased boating activity at the harbor.

These potential short-term uses are not anticipated to result in secondary or cumulative impacts beyond the planned temporary period of use of the harbor facilities for the subject project. All anticipated short-term impacts would be addressed through the use of appropriate mitigation and other measures and practices to minimize adverse effects.

11.2 Long-Term Impacts

OTUSA's proposed use of Kaumalapau Harbor for sea trials, training, research and data collection will last approximately four months, from December 2012 to the end of March 2013. Project activities do not require permanent modifications to harbor facilities that would have a long-term adverse impact. Upon project completion, all trailers, tents, containers, boats, equipment, temporary moorings, and materials used by OTUSA will be demobilized and removed and the harbor will be restored to pre-existing conditions. Due to the temporary nature of the proposed use for not longer than approximately four months, long-term impacts are not expected. Based on the evaluation and the information contained in this Draft Environmental Assessment, it is anticipated that an Environmental Impact Statement (EIS) will not be required.

11.3 Significance Criteria Evaluation

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

The proposed project is not expected to adversely impact natural or cultural resources. The planned duration of use will be limited to not longer than approximately four months, including time for set-up, approximately six weeks of sea trials, and site demobilization. Upon the completion of uses the harbor facilities will be restored to pre-existing conditions.

2. *Curtails the range of beneficial uses of the environment;*

The proposed project will not result in the curtailment of the range of beneficial uses of the environment. The proposed use and associated activities are consistent with operations normally associated with a working commercial harbor. Activities proposed by the applicant will be authorized by and in accordance with regulations and guidelines of the DOT-HAR, to maintain environmental conditions and public safety.

OTUSA will coordinate with YB and the DOT-HAR Harbormaster on Wednesdays to minimize the disruption of harbor operations associated with the loading and off-loading of the interisland barge. Ongoing discussions with the DOT and YB indicate that sufficient space can be made available to maintain harbor operations at a sufficient level of service.

In addition, during the period of OTUSA's active use of the harbor, from mid-January to the end of March, the American Safari Cruises ship *Safari Explorer* is scheduled to make four stops at Kaumalapau Harbor. OTUSA will coordinate operations with American Safari Cruises to ensure that there is sufficient space at the dock for vehicle staging and safe access by cruise ship passengers.

Use of the mobile crane will be visible during the lifting and lowering of boats into the water, however this is considered an activity that is normal to the operations of a commercial harbor and without a significant adverse effect. Open space and view plane resources therefore are not anticipated to be adversely affected.

Existing recreational activities that occur along and within the harbor include public access to the coastline for fishing, diving, and other ocean-related activities. Because of the nature of the use of the facility as a commercial harbor, it may be necessary to temporarily cordon off certain sections of Kaumalapau Harbor to maintain public safety, and to properly secure materials and equipment. This period however, will be temporary in duration and will not involve long-term restriction of access to the shoreline and recreational resources.

3. *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;*

The proposed project is consistent with the environmental policies, goals and guidelines expressed in Chapter 343 and 344, HRS. Potential sources of adverse impacts have been identified and appropriate measures have been developed to either mitigate or minimize potential impacts to negligible levels.

4. *Substantially affects the economic or social welfare of the community or state;*

Though relatively minor in scope and duration, the proposed project is expected to enhance the future long-term economic and social welfare of the Lānaʻi community and State of Hawaiʻi through harbor use fees collected for the temporary use of an existing public facility by OTUSA for training, research and data collection activities. Compensation for the use of the harbor will indirectly benefit the community and region by helping to maintain basic public infrastructure necessary to trade and commerce for the island of Lānaʻi.

5. *Substantially affects public health;*

During project activities, there will be the potential for minor impacts to air quality and noise levels which will be addressed through the application of appropriate mitigation measures as described in this EA. The potential impacts and the planned use of appropriate mitigation measures will be consistent with sound operational practices as applied at other Hawaiʻi commercial harbors.

Following the completion of use of the site there will be no further short- or long-term negative consequences relating to air quality and noise. No substantial adverse impacts to public health are anticipated.

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

The potential for adverse effects to public facilities are negligible. The general region surrounding Kaumalapau Harbor consists of vacant land and open space which will remain unaffected.

The temporary presence of approximately fifty OTUSA personnel will not result in a substantial change in population or demand on public facilities. The principal effect is expected to include a temporary increase in the demand for on-island related goods and services for the approximately four month period of use of the Kaumalapau Harbor. In addition, OTUSA operations will have an overall minor, but beneficial effect on the local shipping and stevedore industry, and harbor facility use fees will benefit the State by helping support harbor maintenance costs. These effects will end with the completion of the project and departure of project personnel.

7. *Involves substantial degradation of environmental quality;*

The proposed project will be developed in accordance with the environmental polices of Chapter 343, HRS. There will be no significant nor substantial degradation of environmental quality based on the limited scope and scale of the proposed action. No adverse effects are therefore, anticipated or expected.

8. Is individually limited but cumulatively has considerable effects on the environment, or involves a commitment for larger actions;

The proposed project does not commit resources or energy for a larger action. There are no future phases of development and there is no commitment to a larger action involving the development of the

harbor. There are also no cumulative effects on ecosystem resources or human communities based on the project's limited scope, scale, and temporary period of use.

9. Substantially affects any rare, threatened or endangered species or its habitat;

Project activities and uses will not adversely affect rare, threatened or endangered species or habitat. Protected avifauna species that may occur in the vicinity of Kaumalapau Harbor include the Wedge tail shearwater or ʻuaʻu kani, the Newell's shearwater or ʻaʻo, and Hawaiian petrel or ʻuaʻu which may traverse the harbor area when flying between the ocean and mountain nesting sites during their breeding season (March through December). The protected Hawaiian monk seals, green sea turtles, and hawksbill turtles have been observed in the waters in and around Kaumalapau Harbor. In addition, the harbor is located within the Hawaiian Island Humpback Whale National Marine Sanctuary.

Mitigation measures are proposed to minimize the potential for adverse effects to these species. OTUSA activities will take place outside of the primary Petrel fledging season in summer and fall. As a standard operating procedure, project operations will be limited to daylight hours as much as possible. To avoid disorienting seabirds, nighttime light use will be kept to a minimum. Exterior lights will be shielded, full cut-off fixtures that do not radiate above the fixture and will be angled downward to minimize glare and reduce potential impacts to birds flying over the site at night. Work lights will be turned off when not in use.

Precautionary measures to ensure the protection of Humpback Whales will include:

- The OTUSA vessels will use an operating area located approximately 30 miles southwest of the Island of Lānaʻi, outside of the whale sanctuary boundary for sail boat training and testing activities.
- The OTUSA vessels will position personnel trained to visually detect the presence of Humpback Whales on the support boats while either transiting to the operating area or in the area of operations. Whale sightings will be communicated to mariners on all OTUSA vessels who will be directed to avoid any physical contact or disturbance to the whales.
- When sailing, the OTUSA fleet will be accompanied by a fixed-wing airplane to watch out for whales. The airplane will have direct communication with the sail boat skipper and support boats to alert them to the presence of whales in the vicinity of the fleet.

OTUSA personnel will also be instructed to identify and avoid contact with monk seals and sea turtles. Any monk seal sightings in the harbor will be reported to the NOAA Monk Seal Sighting Hotline.

10. Detrimentally affects air or water quality or ambient noise levels;

As required, any potential impacts to air, water quality, or noise levels will be addressed through the implementation of appropriate mitigation measures described in this document.

11. 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, freshwater, or coastal waters;

The proposed project involves temporary use of the existing Kaumalapau Harbor facilities. Kaumalapau Harbor is subject to storm surges and may be impacted by large waves or tsunamis. All temporary facilities, including office trailers, containers, and tents will be installed in compliance with County of Maui standards for safety. In the event of significant storm events or rough sea conditions, OTUSA is capable of removing all of its boats and the temporary floating dock from the harbor waters and securing them on land. For a tsunami event, it is anticipated that adequate warning will be available to allow the evacuation of the harbor area. Tsunami warning response protocols for securing or removing equipment and evacuating personnel will be included in an Operations Safety Plan prepared by OTUSA in consultation with the U.S. Coast Guard (USCG), DOT-HAR, YB and other commercial operators at Kaumalapau Harbor. A copy of the Operations Safety Plan will be submitted to the USCG and DOT-HAR for review and reference. OTUSA will provide YB and other commercial operators at the harbor with a chain of command list and contact information for operational issues and for response in the event of a safety or security incident. OTUSA's proposed temporary facilities do not include habitable structures that would constitute an unreasonable risk to life or property.

Mitigation measures will also be undertaken to prevent adverse effects to corals that could result from the placement of temporary mooring anchors on the harbor bottom. A marine resources survey of bottom conditions was conducted by a marine biologist to identify specific spot locations for the temporary mooring anchors where corals will not be impacted. The survey report is included as Appendix A and summarized in Section 4.8.C. Suitable sites have been mapped based on the marine resources survey for reference during mooring anchor placement. During placement activities, qualified divers will guide the placement of the mooring anchors to ensure they are in accordance with the recommendations of the ocean engineer and marine biologist. Upon completion of OTUSA's research and training activities, the temporary mooring anchors will be removed from the harbor waters.

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

No scenic vistas or view planes identified in county or state plans or studies will be adversely affected by the proposed project. The proposed use of the harbor facility by OTUSA includes the installation of temporary tents, office trailers, and storage containers that will occupy various areas of the harbor. These facilities will be visible from areas surrounding Kaumalapau Harbor and will be consistent with existing views and related uses of the facility. Operation of the mobile crane will likewise be visible and generally consistent with typical harbor operations. The most noticeable visual effect will result from the presence of the OTUSA sail boat with the 131-foot tall wingsail moored within the harbor. In addition, support vessels will be moored at a portable floating dock that will be placed next to the existing wharf. Views of the OTUSA operations will be transient and temporary. Following completion of the OTUSA training and research activities, the temporary facilities will be demobilized and removed and views of the harbor will return to pre-existing conditions.

13. *Requires substantial energy consumption.*

The facilities identified in this project will not consume a substantial amount of energy. Construction activities will result in a short-term increase in power demand, but the increase will be of short duration and will cease upon project completion.

11.4 Preliminary Determination

Based on the above evaluation and the information contained in this Draft Environmental Assessment, it is preliminarily determined that an Environmental Impact Statement (EIS) is not anticipated to be required and that a recommended Finding of No Significant Impact (FONSI) will be published for this project.

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APPENDIX A

Marine Resources Survey of Kaumalapau Boat Harbor, Kaumalapau, Lānaʻi
By AECOS, Inc., September 7, 2012

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September 7, 2012 *AECOS* No. 1331

TO: Marc Ericksen
Sea Engineering

Marine Resources Survey of Kāumalapaʻu Boat Harbor, Kāumalapaʻu, Lānaʻi

On September 4, 2012, *AECOS* biologist, Stacey Kilarski, conducted a reconnaissance survey in Kāumalapaʻu Boat Harbor, Kāumalapaʻu, Lānaʻi. The SCUBA survey was performed to assess marine resources at five proposed mooring anchor locations as indicated in Table 1. The survey also included the harbor bottom within an approximate 90-ft (27-m) radius from the center point of the proposed mooring anchor group and the harbor loading dock deck piles, breakwater, and northeast harbor shoreline. The survey began at 10:25 AM, approximately 3 hours after the predicted 1.94-ft high tide (relative to mean lower low water or MLLW; Kāumalapaʻu, Lānaʻi HI Station Id: 1614465). Underwater visibility during the survey was about 20 ft (6 m).

Table 1. Anchor loocation coordinates.

Proposed anchor location	Coordinates (degree, minutes, seconds) Latitude	Longitude
1	20° 47’ 9.612” N	156° 59’ 29.2128” W
2	20° 47’ 5.2415” N	156° 59’ 27.271” W
3	20° 47’ 6.2206” N	156° 59’ 24.6568” W
4	20°47’ 4.1617” N	156° 59’ 29.2323” W
5	20° 47’ 11.7998” N	156° 59’ 26.2487” W

An inventory was made for corals, invasive species, seagrass, marine protected species (DLNR, 1998, 2007; NOAA-NMFS, 2010; USFWS, 2008, 2012), and other non-coral macro-invertebrates at each proposed mooring anchor location. Corals,

invasive species, seagrass, marine protected species, and non-coral macro-invertebrates were also recorded other for the other surveyed areas as described above. A list of species observed, including the relative abundance by location is presented as Appendix A. Photos were taken at each mooring anchor location and are presented in Appendix B.

Anchor location 1

The harbor bottom within a 32-ft (10-m) radius of the center point of proposed anchor location 1 consists of silt and sand. A thin layer of cyanobacteria coats the bottom. The sand bottom has many small burrows, possibly hosting the Hawaiian shrimp goby (*Psilogobius mainlandi*) and commensal shrimp (*Alpheus rapax*). Within the 32 ft (10-m) radius of the center point of the anchor location, no corals or other macro-invertebrates were observed. Beyond this circle, large boulders, loose rubble, and tires host corals (*Porites lobata, Montipora capitata, Pocillopora damicornis, Poc. meandrina,* and *Pavona varians*). No seagrass or invasive species were observed.

Anchor location 2

The harbor bottom within a 48-ft (15-m) radius of the center point of proposed anchor location 2 consists of silt and fine sand. Small clumps of cyanobacteria occur on the bottom. No corals were observed, and one macro-invertebrate was encountered within the 48-ft (15-m) radial distance: a love harp (*Harpa amouretta*). A single colony of *Poc. meandrina* (11 to 20 cm diameter size class) was encountered at 48 ft (15 m) southeast from the anchor location. Two arc-eye hawkfish (*Paracirrhites arcatus*) were seeking shelter in the coral head. No seagrass or invasive species were observed.

Anchor location 3

The harbor bottom within a 90-ft (27-m) radius of the center point of proposed anchor location 3 consists of fine sand. Several blackside razor wrasses (*Iniistius umbrilatus*) were observed swimming close to the sand bottom. No corals, other macro-invertebrates, or seagrasses were observed within the 90-ft (27-m) radius surveyed. Beyond 90 ft from the center point of the anchor location, large boulders hosting corals (*Poc. meandrina, P. lobata*, and *Poc. damicornis*) were encountered. No seagrass or invasive species were observed.

Anchor location 4

The harbor bottom within a 59-ft (18-m) radius of the center point of proposed anchor location 4 consists of silt and fine sand. No biota were observed within the 59-ft (18-m) radial distance. Beyond 59 ft (18 m) from the anchor location, towards the southern shoreline of the harbor, coral dominates the bottom. Cover is high (estimated 70%), with large (>80 cm diameter size class) colonies of *P. compressa* and *P. lobata* common. No seagrass or invasive species were observed.

Anchor location 5

The harbor bottom within a 23-ft (7-m) radius of the center point of proposed anchor location 5 consists of sand, with scattered loose rubble. Small colonies (1 to 5 cm and 6 to 10 cm diameter size class) of *Poc. meandrina, P. lobata*, and *M. capitata* occur on the loose rubble. Within the 23-ft (7-m) radial distance surveyed are found two small areas, each approximately 8 ft by 8 ft (2 m by 2 m), of sand bottom clear of loose rubble. In these two areas, no coral or other macro-invertebrates were observed. Towards the northeast shoreline, beyond 23-ft (7-m) from the anchor location, boulders hosting corals (*P. lobata, Poc. meandrina*, *M. capitata*, *M. flabellata*, and *P. varians*) were observed. No seagrass or invasive species were observed.

No State-protected (DLNR, 1998, 2007) or federally-listed or proposed (NOAA-NMFS, 2010; USFWS, 2008, 2012) species were encountered during the survey.

Signed,

Stacey Kilarski
AECOS Marine Biologist

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Appendix A. Inventory of aquatic biota observed in Kāumalapaʻu Boat Harbor, September 4, 2012.

PHYLUM, CLASS, ORDER, FAMILY			Abundance by location	
Genus species	Common name & *Hawaiian name*	Status	Proposed anchor locations[1]	Shoreline, piles, and coral lock revetment
	ALGAE			
CHLOROPHYTA	GREEN ALGAE			
Codium arabicum		**Ind.**		U
Neomeris sp.		**Ind.**		O
Halimeda discoidea		**Ind.**		O
RHODOPHYTA	RED ALGAE			
Gelidiella acerosa		**Ind.**		O
Hydrolithon onkodes		**Ind.**		U
Hydrolithon reinboldii		**Ind.**		U
Pterocladilla capillacea		**Ind.**		O
Dichotomaria marginata		**Ind.**		O
CYANOBACTERIA	BLUE-GREEN ALGAE			
Lyngbya majuscula		**Ind.**	U	
Symploca hydnoides		**Ind.**	U	
CNIDARIA, HYDROZOA, ANTHOATHECATA				
Pennaria disticha	Christmas tree hydroid	**Nat.**		O
CNIDARIA, ANTHOZOA, ZOANTHINARIA, ZOANITHIDAE	ZOANTHIDS			
Zoanthus sp.	zoanthid	**Ind.**		O
Palythoa caesia	blue-gray zoanthid	**Ind.**		R
CNIDARIA, ANTHOZOA, SCELRACTINIA POCILLOPORIDAE	HARD CORALS			
Pocillopora damicornis	lace coral	**Ind.**	R	O
Pocillopora eydouxii	porkchop coral	**Ind.**		U
Pocillopora meandrina	cauliflower coral	**Ind.**	R	C

[1] Anchor location 1: within a 32-ft (10-m) radius; anchor location 2: within a 48-ft (15-m) radius; anchor location 3: within a 90-ft (27-m) radius; anchor location 4: within a 59-ft (18-m) radius; and anchor location 5: within a 23-ft (7-m) radius.

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name & *Hawaiian name*	Status	Abundance by location Proposed anchor locations[1]	 Shoreline, piles, and coral lock revetment
ACROPORIDAE				
Montipora capitata	rice coral	**Ind.**	R	C
Montipora flabella	blue rice coral	**End.**		R
Montipora patula	sandpaper rice coral	**End.**		O
PORITIDAE				
Porites lobata	lobe coral, *pōhaku puna*	**Ind.**		A
Porites compressa	finger coral, *pōhaku puna*	**End.**		C
AGARICIIDAE				
Pavona varians	corrugated coral	**Ind.**		O
CNIDARIA, ANTHOZOA, HEXACORALLIA, ANTIPATHARIA ANTIPATHIDAE				
Cirrhipathes anguina	common wire coral	**Ind.**		R
ANNELIDA, POLYCHAETA, SABELLIDAE				
Sabellastarte spectabilis	feather duster worm	**Ind.**		C
TEREBELLIDAE				
Loimia medusa	Medusa spaghetti worm, *kauna'oa*	**Ind.**		O
BRYOZOA, RETEPORIDAE				
Reteporellina denticulata	lace bryozoan	**Ind.**		O
MOLLUSCA, GASTROPODA HARPIDAE				
Harpa amouretta	love harp	**Ind.**	R	
PATELLIDAE				
Siphonaria normalis	false *'opihi* , *'opihi 'awa*	**Nat.**		C
NERITIDAE				
Nerita picea	black nerite, *pipipi*	**Nat.**		C
THAIDADAE				
Morula granulata	granular drupe	**Ind.**		R
Morula uva	grape morula	**Ind.**		R
LITTORINIDAE				
Littoraria pintado	dotted periwinkle, *pipipi kolea*	**Ind.**		U

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name & *Hawaiian name*	Status	Abundance by location Proposed anchor locations[1]	 Shoreline, piles, and coral lock revetment
MYTILLIDAE				
Brachidontes crebristriatus	Hawaiian mussel	**End.**		C
ARTHROPODA, CRUSTACEA, MALACOSTRACA, DECAPODA				
PALINURIDA				
Panulirus marginatus	Banded spiny lobster, *ula*	**End**		R
GRAPSIDAE				
Grapsus tenuicrustatus	thin shelled rock crab,*ʻaʻama*	**Ind.**		C
ECHINODERMATA, ECHNOIDEA, ECHINOMETRIDAE	SEA URCHINS			
Echinometra mathaei	rock boring urchin *ʻina kea*	**Ind.**		C
Echinometra oblonga	oblong boring urchin; *ʻina*	**Ind.**		C
Tripneustes gratilla	collector urchin	**Ind.**		C
DIADEMATIDAE				
Diadema paucispinum	long spine urchin, *wana*	**Ind.**		O
OREASTERIDAE				
Culcita novaeguineae	cushion sea star	**Ind.**		U
ECHINODERMATA, HOLOTHUROIDEA HOLOTHURIDAE	SEA CUCUMBERS			
Actinopyga mauritiana	white-spotted sea cucumber, *loli*	**Ind.**		U
VERTEGRATA, ACTINOPTERYGII	BONY FISHES			
ACANTHURIDAE				
Acanthurus achilles	achilles tang	**Ind.**		A
Acanthurus nigricans	goldrim tang	**Ind.**		O
Acanthurus nigrofuscus	brown tang, *māʻiʻiʻi*	**Ind.**		U
Acanthurus olivaceus	orangeband surgeonfish, *naʻenaʻe*	**Ind.**		O
Acanthurus triostegus	convict tang, *manini*	**Ind.**		O

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name & *Hawaiian name*	Status	Abundance by location Proposed anchor locations[1]	Shoreline, piles, and coral lock revetment
ACANTHURIDAE (continued)				
Ctenochaetus strigosus	goldring surgeon, *kole*	**Ind.**		U
Naso lituratus	orangespine unicornfish	**Ind.**		O
Zebrasoma flavescens	yellow tang	**Ind.**		C
MULLIDAE	GOATFISH			
Parupeneus multifasciatus	manybar goatfish, *moano*	**Ind.**		O
CHAETODONTIDAE	BUTTERFLYFISH			
Chaetodon ornatissimus	ornate butterflyfish, *kīkākapu*	**Ind.**		O
Chaetodon unimaculatus	teardrop butterflyfish; *lauhau*	**Ind.**		O
Forcipiger flavissimus	Common longnose butterflyfish, *lauwiliwili nukunuku ʻoiʻoi*	**Ind.**		U
POMACENTRIDAE	DAMSELFISH			
Abudefduf abdominalis	Hawaiian sergeant, *mamo*	**End.**		U
Plectroglyphidodon imparipennis	bright-eye damselfish	**Ind.**		O
Stegastes marginatus	Hawaiian gregory	**End.**		O
Dascyllus albisella	Hawaiian dascyllus, *ālo'ilo'i*	**End.**		U
BALISTIDAE	TRIGGERFISH			
Rhinecanthus rectangulus	wedgetail triggerfish, *humuhumu-nukunuku-ā-pua'a*	**Ind.**		U
ZANCLIDAE				
Zanclus cornutus	moorish idol, *kihikihi*	**Ind.**		C
KUHLIIDAE				
Kuhlia sandvicensis	zebra-head flagtail, *āholehole*	**End.**		U
GOBIIDAE	GOBIES			
Bryaninops sp.	wire coral goby	**Ind.**		R
Psilogobius mainlandi	Hawaiian shrimp goby	**End.**	R	

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name & *Hawaiian name*	Status	Abundance by location Proposed anchor locations[1]	Shoreline, piles, and coral lock revetment
LABRIDAE	WRASSE			
Coris gaimard	yellowtail coris, *hīnālea ʻakilolo*	**Ind.**		O
Gomphosus varius	bird wrasse, *hīnālea ʻiʻiwi*	**Ind.**		O
Iniistius umbrilatus	blackside razor wrasse	**End.**	R	
Stethojulius balteata	belted wrasse, *ʻomaka*	**End.**		C
Thalassoma duperrey	saddle wrasse, *hinalea lauwili*	**End.**		C
CIRRHITIDAE	HAWKFISH			
Paracirrhites arcatus	arc-eye hawkfish, *pilikoʻa*	**Ind.**		U
OSTRACIIDAE	BOXFISH			
Ostracion meleagris	spotted boxfish, *moa*	**Ind.**		U
HOLOCENTRIDAE	SOLIDERFISH			
Myripristis kuntee	pearly soliderfish, *ʻūʻū*	**Ind.**		R
TETRAODONTIDAE				
Canthigaster jactator	Hawaiian whitespotted toby	**End.**		R
BOTHIDAE	FLATFISH			
Bothus mancus	flowery flounder; *pākiʻi*	**Ind.**		R
SCARIDAE	PARROTFISH			
Scarus psittacus	palenose parrotfish, *uhu*	**Ind.**		U

KEY TO SYMBOLS USED:

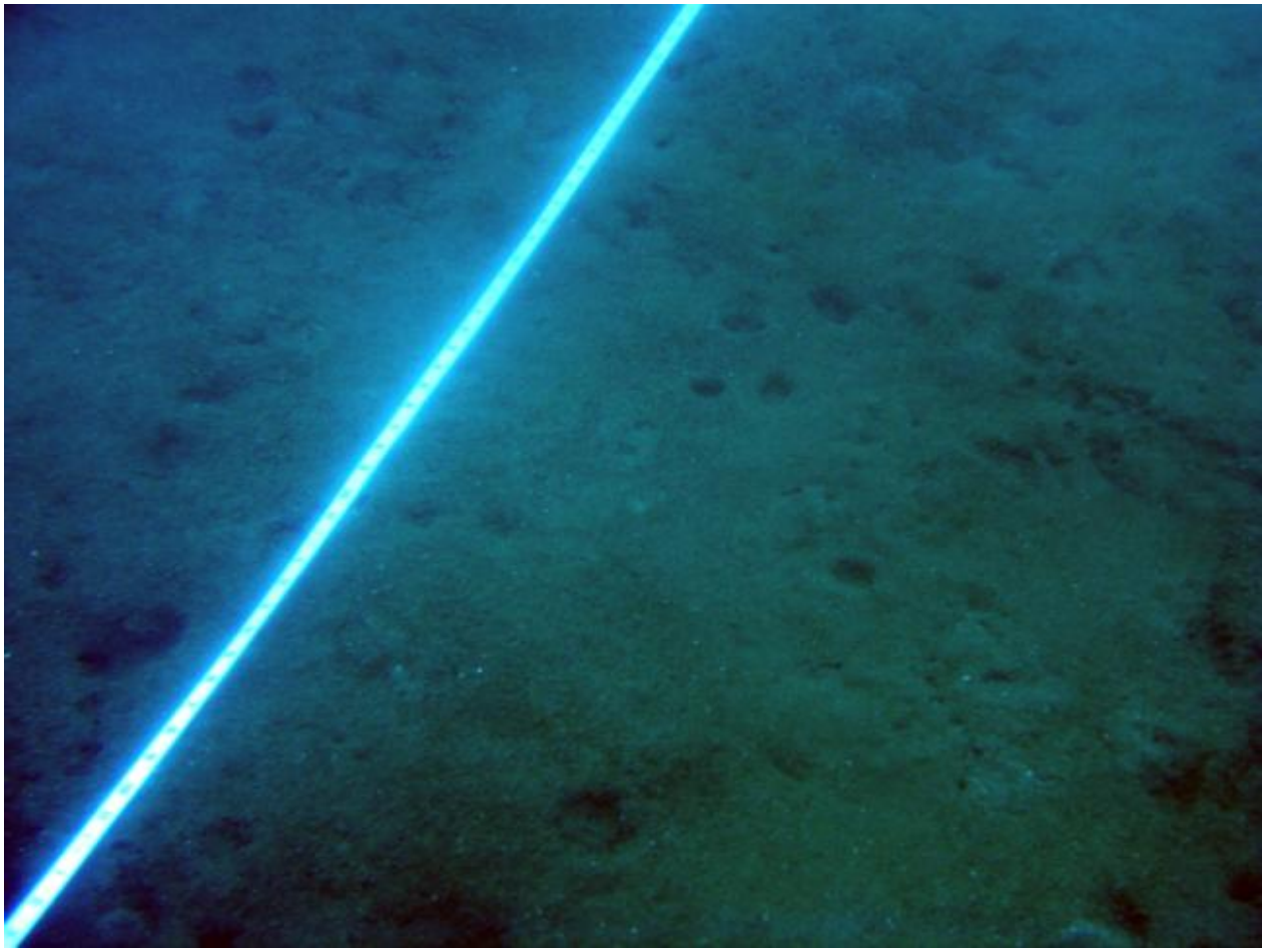
Abundance categories:

- R – Rare – only one or two individuals observed.
- U – Uncommon – several to a dozen individuals observed.
- O – Occasional – seen irregularly in small numbers
- C – Common – observed everywhere, although generally not in large numbers.
- A – Abundant – observed in large numbers and widely distributed.

Status categories:

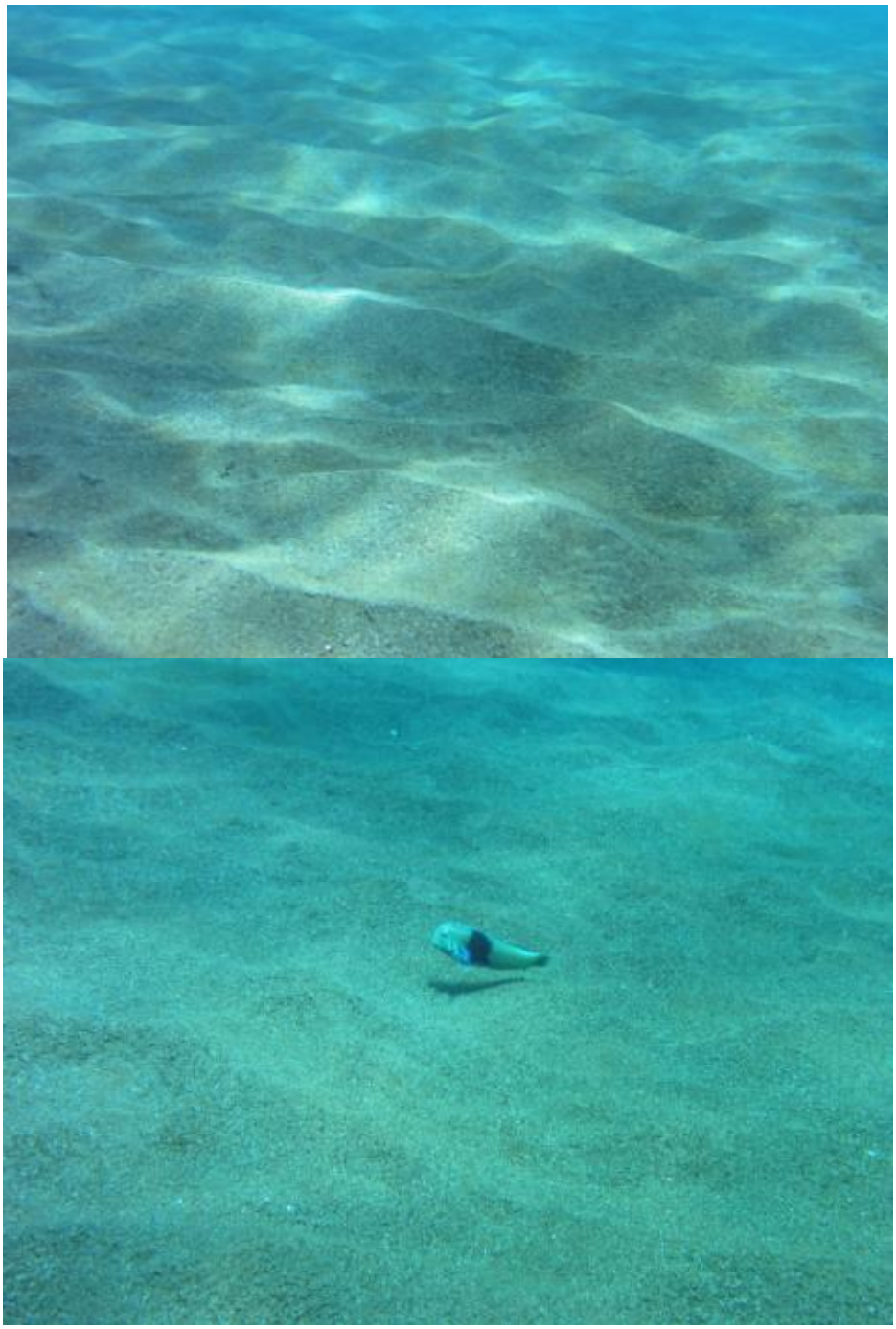
- End – Endemic – species found only in Hawaii
- Ind. – Indigenous – species found in Hawaii and elsewhere
- Nat. – Naturalized – species were introduced to Hawaii intentionally, or accidentally.

Appendix B. Photos of Kāumalapaʻu Boat Harbor potential mooring anchor locations, September 4, 2012.

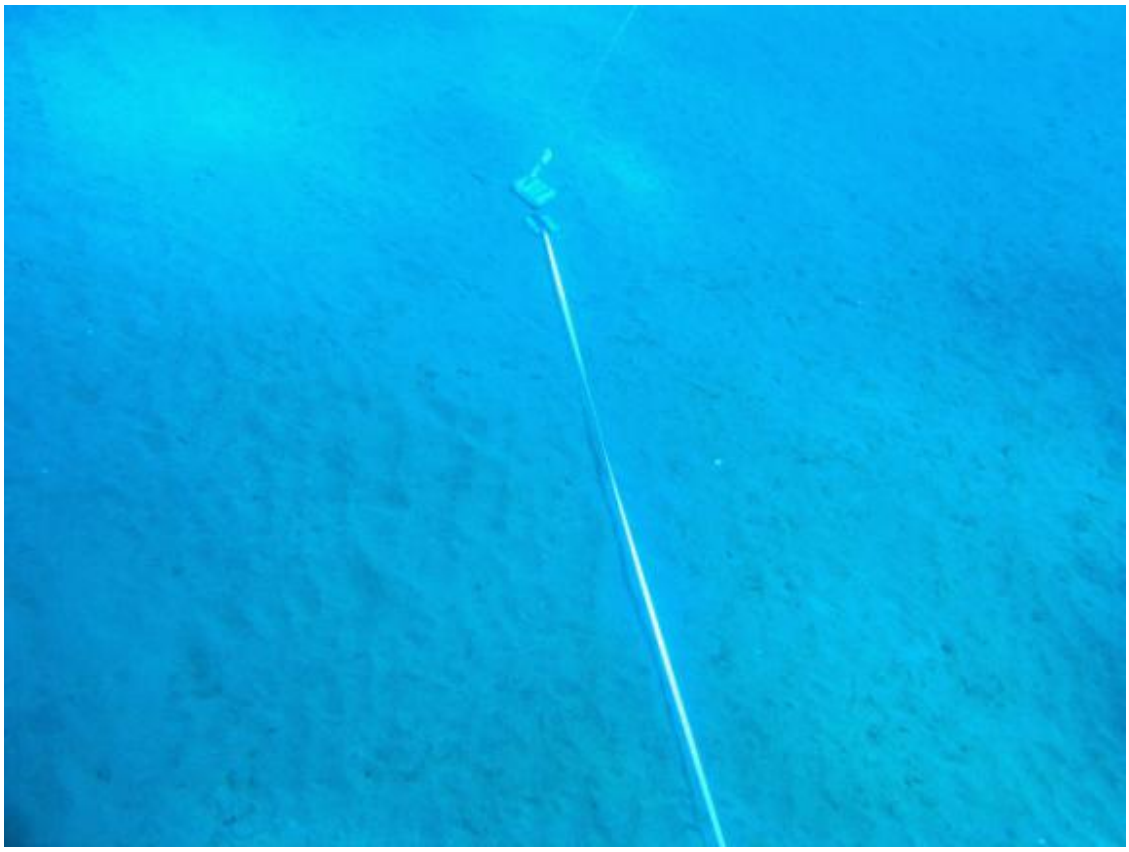


Proposed mooring anchor location 1 bottom is silt and sand, with a layer of Cyanobacteria. Small holes are present here, possibly hosting the Hawaiian shrimp goby (*Psilogobius mainlandi*) and commensal shrimp (*Alpheus rapax*).

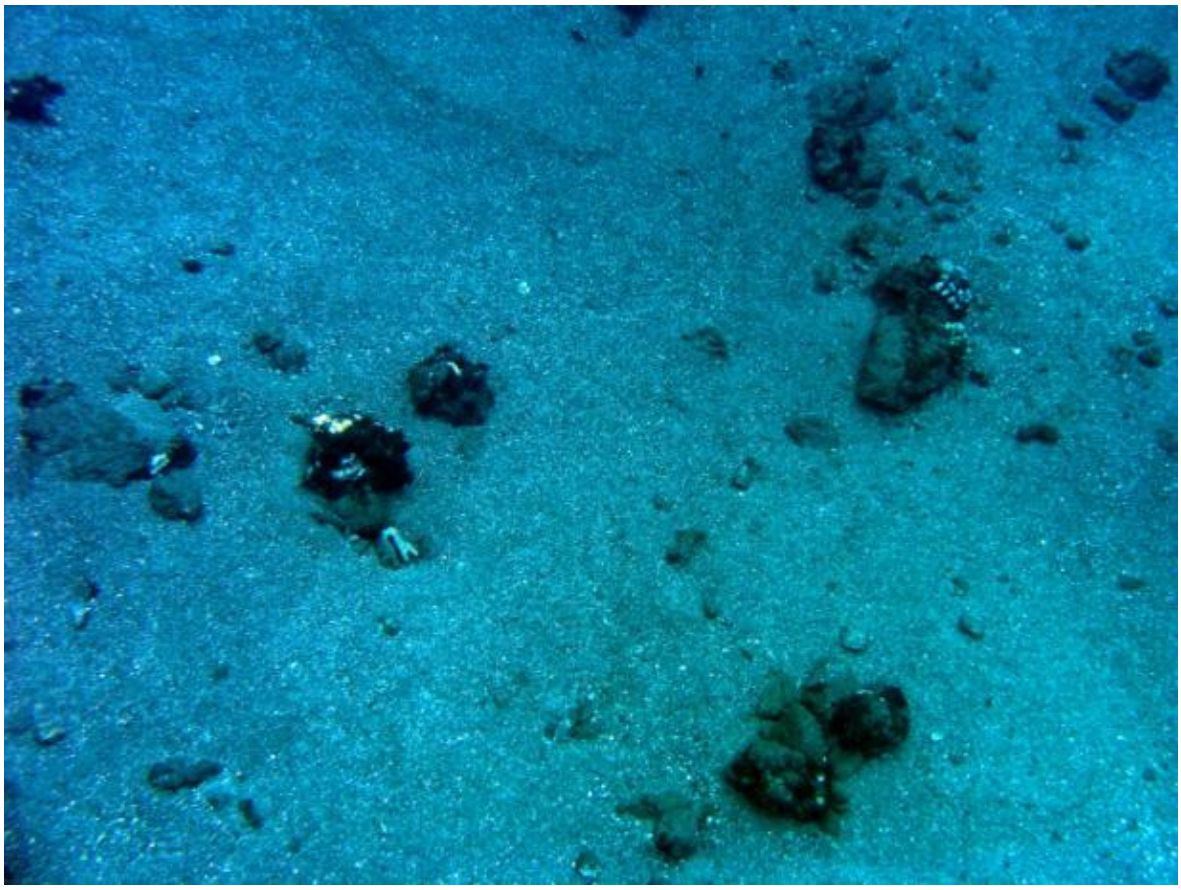
Proposed mooring anchor location 2 bottom is fine sand, with clumps of cyanobacteria. A single macro-invertebrate (love harp, *Harpa amouretta*) was observed.



Proposed mooring anchor location 3 bottom is sand. Blackside razor wrasse (*Iniistius umbrilatus*) were present in this area.



Proposed mooring anchor location 4 bottom is fine sand. No biota were observed within a 59-ft (18-m) radius from the proposed anchor location.



Proposed mooring anchor location 5 bottom is sand with scattered loose rubble.