Environmental Assessment
for Patrol Boat Support Facilities
USCG Station Maui

Prepared for

US Coast Guard

Civil Engineering Unit
300 Ala Moana Blvd., Room 8-134
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Prepared by

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June 2006

ENVIRONMENTAL ASSESSMENT ORGANIZATION

This environmental assessment addresses modification of the existing lease agreement at USCG Station Maui to include a 3,312 square foot berthing area and to add necessary mooring infrastructure to accommodate a new 47-foot motorized life boat at Maʻalaea Small Boat Harbor on Maui, Hawaiʻi. As required by Hawaii Revised Statutes Chapter 343, the National Environmental Policy Act, and USCG Commandant Instruction M16475.1D, the potential environmental and socioeconomic impacts are analyzed.

An ***EXECUTIVE SUMMARY*** briefly describes the proposed action, environmental and socioeconomic consequences, and mitigation measures.

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CHAPTER 1.0: ***PROJECT DESCRIPTION*** summarizes the purpose of and need for the Proposed Action and describes the scope of the environmental impact analysis process. This section also provides a discussion of public and agency consultations and correspondences and a summary of special studies completed to support the project description.

CHAPTER 2.0: ***DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES*** describes the Proposed Action, subsequent design alternatives, and No Action Alternative. This section also provides a discussion of alternative sites considered with justification on why these sites were not considered further.

CHAPTER 3.0: ***AFFECTED ENVIRONMENT AND CONSEQUENCES*** discusses the existing environment and socioeconomic setting on the island of Maui and specifically in the region of Maʻalaea Small Boat Harbor. This section also identifies potential effects of implementing the Proposed Action (including subsequent design alternatives), No Action Alternative, and cumulative actions, and summarizes the resulting environmental effects.

CHAPTER 4.0: ***FINDINGS AND CONCLUSIONS*** provides a summary of the resulting environmental effects, identifies appropriate and necessary mitigation measures, and justifies the USCG's decision of the preferred alternative. This section also includes a findings and reasons for the USCG's determination.

CHAPTER 5.0: ***REFERENCES*** provides bibliographical information for cited sources.

CHAPTER 6.0: ***LIST OF PREPARERS*** identifies persons who prepared the document.

CHAPTER 7.0: ***DISTRIBUTION LIST*** provides a list of individuals, organizations, and agencies who have received and will receive distributions during the planning process and who have been given the opportunity to provide input to the EA.

APPENDICES

- ***A*** Public Review Comments
- ***B*** Agency Consultations
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF BOATING AND OCEAN RECREATION

333 QUEEN STREET, SUITE 300
HONOLULU, HAWAII 96813

June 19, 2006

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

Subject: Finding of No Significant Impact (FONSI) for US Coast Guard Patrol Boat Support Facilities, TMK (2) 3-6-001-041, Ma`alaea Small Boat Harbor, Maui, Hawaii

The State of Hawai`i, Department of Land and Natural Resources, Division of Boating and Ocean Recreation has reviewed the comments received during the 30-day public comment period which began on February 23, 2006. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next available OEQC Environmental Notice.

The Coast Guard is submitting a completed OEQC Publication Form and four copies of the final EA. Please call Jay Silberman (US Coast Guard) at (808) 541-2077 if you have any questions.

Sincerely,

Richard K. Rice
Administrator

USCG

FINDING OF NO SIGNIFICANT IMPACT

FOR

US COAST GUARD PATROL BOAT SUPPORT FACILITIES

MAALAEA SMALL BOAT HARBOR, MAUI, STATE OF HAWAII

This project has been thoroughly reviewed by the USCG and it has been determined, by the undersigned, that this project will have no significant effect on the human environment.

This finding of no significant impact is based on the attached contractor prepared environmental assessment which has been independently evaluated by the USCG and determined to adequately and accurately discuss the environmental issues and impacts of the proposed project and provides sufficient evidence and analysis for determining that an environmental impact statement is not required. The USCG takes full responsibility for the accuracy, scope, and content of the attached environmental assessment.

21 June 2006
Date

Environmental Reviewer

Environmental Protection Specialist
Title/Position

I have considered the information contained in the EA, which is the basis for this FONSI. Based on the information in the EA and this FONSI document, I agree that the proposed action as described above, and in the EA, will have no significant impact on the environment.

21 June 2006
Date

Responsible Official

Commanding Officer
CEU Honolulu
Title/Position

PROJECT SUMMARY

Project Name:	US Coast Guard Patrol Boat Support Facilities
Location:	Ma`alaea Small Boat Harbor, Maui, Hawai`i
Judicial District:	Wailuku
Tax Map Key(s):	(2) 3-6-001-041
Applicant:	US Coast Guard, Civil Engineering Unit Contact: US Coast Guard, CEU Honolulu 300 Ala Moana Blvd., Room 8-134 Honolulu, HI 96813
Consulting Party:	Tetra Tech, Inc. Contact: Tetra Tech, Inc. 820 Mililani Street, Suite 700 Honolulu, HI 96813
Approving Agency:	State of Hawai`i, Department of Land and Natural Resources, Division of Boating and Ocean Recreation
Land Area:	Ma`alaea Small Boat Harbor Slips 108 and 109 3,312 square feet alongside the wharf, immediately adjacent to the existing US Coast Guard Station Maui
Recorded Fee Owner:	State of Hawai`i, Department of Land and Natural Resources
Existing Use:	Public/Commercial Harbor
State Land Use District:	Urban
County of Maui Zoning:	M-1 Light Industrial
Consulted Parties:	The US Coast Guard (USCG) has consulted with the DLNR, National Oceanic and Atmospheric Administration Fisheries, the US Fish and Wildlife Service, State Historic Preservation Office, the Office of Hawaiian Affairs, and the US Army Corps of Engineers. The status of these consultations is further discussed in Section 1.6.2 of this

environmental assessment (EA), and letters received from these agencies to date are included in Appendix B. Furthermore, comment submissions received during the scoping and draft review periods are included in Appendix A.

General Description of Affected Environment:

The USCG is proposing to extend its current lease at Station Maui located in Ma`alaea Small Boat Harbor, Maui, to include berthing space adjacent to its current station offices. In addition to the lease modification, the Proposed Action includes necessary pier improvements within the berthing space to accommodate a new 47-foot motor life boat recently incorporated into the Station Maui response boat fleet. Key improvement activities include dredging 60 cubic yards of benthic soil (only within the berthing space), predrilling a hollow casing to a depth of 35 feet below the mudline, inserting concrete piles to the full depth to provide an adequate and secure socket into hard, relatively intact basaltic rock, and constructing one or two piers. No improvements would take place on land.

The main issues identified relevant to this project included noise to surrounding communities and to the marine environment, traffic, public access, and biological resources (specifically impacts on corals common to Ma`alaea Small Boat Harbor).

Summary of Impacts and Alternatives Considered:

Based on the evaluation discussed in the draft EA, no significant impacts were identified as a result of the Proposed Action. Most impacts would be experienced only during the construction phase and would be discontinued upon operation. During the construction period, access within the harbor at the northeast extent of the central breakwater would be reduced and traffic on land would be moderately increased. Several heavy pieces of equipment would be on-site, many of which would create noise levels above the permissible daytime noise levels. No rare or endangered species would be lost in this already disturbed environment. Possible biological impacts include siltation stress in corals from dredging, physical destruction of corals and reef habitat, and bleaching from decreased sunlight from the new piers.

Conversely, by implementing the Proposed Action, the new patrol boat would be supported against damage caused at the harbor during storm surges. As a result, the public would greatly benefit from improved Search and Rescue response capabilities by the USCG.

Proposed Mitigation Measures:

Although no significant impacts were identified that may require mitigation to reduce significance levels, using silt curtains during the dredging and drilling phase of construction would minimize siltation that may temporarily affect the water and biological resources. Furthermore, certain noise control mitigations have been identified, including restricting all noise-emitting activities to daytime hours, maintaining all equipment for proper operation, and shutting down equipment between operations. Other best management practices recommended by the National Oceanic and Atmospheric Administration Fisheries specific to each phase of the proposed construction have been discussed and included in the project implementation planning and evaluation.

Although not a standard mitigation, the noise permit that would be acquired prior to construction would identify appropriate restrictions that should be implemented to minimize noise impacts.

Required Permits: HDOH Noise Permit (HAR 11-46); US Army Corps of Engineers Section 10 Permit (Rivers and Harbors Act).

Anticipated Determination: Based on the findings of this assessment, the USCG concludes with a Finding of No Significant Impact determination, as set forth in HAR §11-200-9.

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LIST OF ACRONYMS

Acronym	Full Phrase
AOR	area of responsibility
AST	aboveground fuel storage tank
BMP	best management practice
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CZM	Coastal Zone Management
dBA	A-weighted decibel scale
DBOR	Department of Boating and Ocean Recreation
DLNR	Department of Land and Natural Resources
DOT	Department of Transportation
EA	environmental assessment
EFH	essential fish habitat
EO	executive order
EPA	US Environmental Protection Agency
ESA	Endangered Species Act
FONSI	finding of no significant impact
HAPC	habitat areas of particular concern
HAR	Hawai`i Administrative Rules
HDOH	Hawai`i Department of Health
HDOT	Hawai`i Department of Transportation
HIHWNMS	Hawaiian Islands Humpback Whale National Marine Sanctuary
HRS	Hawai`i Revised Statutes
L_{10}	noise level that can be exceeded no more than ten percent of any 20-minute period
LCA	Land Commission Awards
LOS	level of service
MHHW	mean higher high water
MHW	mean high water
MLB	motor lifeboat
MLLW	mean lower low water
MLW	mean low water
MMPA	Marine Mammal Protection Act
MPA	marine protected area
MSA	Magnuson Stevens Fishery Conservation and Management Act
MSBH	Ma`alaea Small Boat Harbor
MT	mean tide
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act

LIST OF ACRONYMS *(continued)*

Acronym	Full Phrase
NM	nautical miles
NOAA	National Oceanic and Atmospheric Administration Fisheries
NRHP	National Register of Historic Places
NWHI	Northwest Hawaiian Islands
NWP	Nationwide Permit
OEQC	Hawai`i Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
OSHA	Occupational Safety and Health Administration
PL	public law
ppt	parts per thousand
RB-S	small response boat
ROI	region of influence
SAR	search and rescue
SHPO	State Historic Preservation Office
SPCC	spill prevention control and countermeasures (plan)
SPL	sound pressure level
USACE	US Army Corps of Engineers, Honolulu Engineer District
USC	United States Code
USCG	US Coast Guard
USFWS	US Fish and Wildlife Service
V/C	volume to capacity ratio

EXECUTIVE SUMMARY

This environmental assessment (EA) is an evaluation of the proposal of the United States Coast Guard (USCG, the Applicant) to modify its lease agreement with the State of Hawai‘i Department of Land and Natural Resources, Department of Boating and Ocean Recreation (Approving Agency). In this leased parcel, the USCG operates USCG Station Maui at Ma‘alaea Small Boat Harbor (MSBH), on the south side of the island of Maui. From Station Maui, the USCG operates a station headquarters office, storage facilities, and two 25-foot small response boats (RB-S). In an effort to address ongoing capability constraints of this fleet, the USCG is replacing one of the response boats with a 47-foot motor lifeboat (MLB). In order for Station Maui to safely and securely accommodate the new MLB, the USCG requires adequate slip space within the harbor and certain infrastructural improvements and associated dredging and piling within the berthing area.

Because the USCG would fund and implement the Proposed Action, this EA has been developed in accordance with the National Environmental Policy Act (NEPA) and the implementing regulations issued by the Council on Environmental Quality. And since the Proposed Action would be sited on property owned by and leased from the State of Hawai‘i, requiring a lease amendment in accordance with Section 171-95 of Hawai‘i Revised Statutes (HRS), this EA is additionally prepared in accordance with HRS Chapter 343. Furthermore, the Proposed Action has been evaluated in accordance with USCG Commandant Instruction M16475.1D, which guides the USCG in complying with NEPA (42 USC 4321-4370f).

In accordance with HRS, Title 11, Chapter 200, Section 10 of the Hawai‘i Administrative Rules, the Applicant is the entity that is requesting approval for the Proposed Action. In this case, the USCG Civil Engineering Unit is the Applicant of this project to modify its existing lease to accommodate a new 47-foot MLB and attain permission to dredge and construct associated infrastructural improvements. The Approving Agency to meet HAR Chapter 343 requirements would be Department of Boating and Ocean Recreation.

Proposed Action

The USCG has replaced one of two smaller response boats at Station Maui in MSBH with a 47-foot MLB. In order to accommodate the new MLB, the vessel would require a berthing area because it is too large to trailer, dredging to allow berthing clearance below the boat in high and low tides, and piling and construction of one or two piers to moor the boat. These elements of the Proposed Action are discussed further below.

Berthing area. The USCG is applying for a lease extension to include harbor slip spaces 108 and 109, directly in front of Station Maui at MSBH. The proposed extension is approximately 3,312 square feet alongside the wharf face to the northwest of the center breakwater.

Soil borings and subsurface testing. In February 2006, as a preliminary study to supplement this evaluation, soil borings were advanced into the subsurface with a drill rig on a small landing craft. There were two objectives to this exercise. First, to determine the engineering properties of soil for the proposed future pier; these findings helped to determine the most effective approach to inserting the proposed pilings, while providing long-term integrity to the structure. Second, sediment was sampled to determine the suitability for land disposal of any dredged material. Soil profiling at the boring phase prevents the need to stockpile soils at the implementation phase of the Proposed Action before disposal would be allowed. The results of these objectives helped to finalize the project description by determining the approach to construction and the handling of dredge material. The drilling method was confirmed to be the most efficient approach.

Required Dredging to Support MLB. The proposed berthing area is directly opposite the harbor entrance. High waves in the mooring area are estimated to be about three feet. A one-foot allowance to account for tide changes would be used for wave conditions, and an additional two-foot clearance would be provided below the boat bottom.

The required water depth for the MLB is as follows:

Draft depth	4.5 feet
Low tide	1.5 feet
Wave conditions	1.0 feet
Bottom clearance	2.0 feet
Total depth	**9.0 feet**

The approach to the berthing area is 10 to 12 feet deep and would require no additional dredging.

Considering a required nine-foot depth below MLLW and the berthing area, the estimated dredge material quantity would be 60 cubic yards. Because of the limited amount of material to be removed, either land-based or barge-mounted equipment would be used to reduce costs and to minimize impacts on the subsurface environment. The assumption is that the material would be excavated using a crane and clamshell bucket, and it would be placed within a watertight containment area onshore, adjacent to the project site, for drying before being trucked to an approved land disposal site. An area about 50 feet by 50 feet and two feet high would accommodate the material for drying. Environmental controls would include turbidity barriers (silt curtains) surrounding the dredge area to prevent silt migration and to reduce water quality impacts.

Samples collected during the February 2006 boring event confirmed that sediment would not have to be handled or disposed of as contaminated material following the dredging phase of construction.

Pile Driving Activities. To confirm engineering and design parameters specific to the project site, soil borings were advanced to 28 and 38 feet deep. This provided site-specific subsurface characterization and confirmed that drilling would be a suitable and efficient approach to reaching the full extent of the boring. The proposed piles would be inserted into the open holes using a pile driving method. While at this time the two-staged technique is anticipated to be the most efficient approach to pile insertion, it is also anticipated to minimize noise and vibration impacts from single-phase pile driving, thereby minimizing biological and noise impacts.

Boring results indicated that subsurface conditions consisted of silty sand harbor deposits, underlain by sandy silt alluvium and finally by medium hard to hard basaltic rock to the bottom of the borings at 28 to 38 feet below the mudline. The top of the basaltic rock (necessary to secure the proposed pilings) began at approximately 24 to 26 feet below the mudline, though this depth varied and is assumed to continue. Twenty-inch, octagonal, precast/prestressed concrete piles would be used for the new finger piers. The basaltic rock layer encountered at the site should provide suitable support for the new piles and finger piers. The piles would be socketed at least five feet into hard, relatively intact basaltic rock.

Predrilling is required by the plans and specifications for the piers. The plan proposed includes installing a temporary casing at each pile location. The casing would be installed through the upper sediments to the basalt rock layer. The casing would be cleaned out and then a 24-inch-diameter socket would be drilled five feet into the basalt layer. After the hole is drilled, the casing would be inserted without any further drilling. The final tip elevation would be approximately -35 feet. The only purpose of the hammering at this point is to push through sediment that may have come into the hole. The hammer would be placed on the pile, which would be driven with just enough blows to prove its capacity. It is important to note that the actual hammering time is expected to be no more that five to ten minutes per pile. Since there are a total of nine piles, the total hammering time is thus collectively only 45 to 90 minutes during the entire two-week timeframe. After this stage, the void surrounding the pile would be filled with grout and the temporary casing would be extracted.

Schedule. June is the beginning of the summer season and also the beginning of swell season. The harbor experiences about three to four large sea swells per year with a heavy storm surge. With this comes high surf and heavy winds and waves several feet high in the berthing area (measured at just over three feet [Thermal Engineering Corporation 2005]) and much higher in the deepwater regions. If the Proposed Action is approved, the USCG plans to begin dredging, piling, and construction activities as soon as possible following the summer swell season (as early as August 2006).

Construction would include dredging 60 cubic yards of benthic soil, using a rig to drill pilings, and installing the piers and associated fenders, cleats, electrical system, and stairs/ramps. Table ES-1 gives an estimated timetable for completing this work.

Table ES-1
Timetable for Construction Phase

Milestone	Duration	Schedule
Completion of NEPA	9 months	June/July 2006
Dredging	1 week	August 2006
Piling with drill rig	2 weeks	September 2006
Pier construction	8 weeks	September-October 2006

Design Alternatives

As part of this Proposed Action, specific infrastructural improvements over the mooring area would be required to secure the larger vessel. Thermal Engineering Corporation completed a mooring configuration study to consider all viable and feasible design alternatives for the Proposed Action. Eight mooring configurations were initially investigated (Thermal Engineering Corporation 2005). These conceptual designs were narrowed to four design alternatives based on criteria corroboration, harbor clearance requirements, mooring load and wave height calculations, geotechnical consultation recommendations, benthic disturbance minimization, and design simplicity. The four design alternatives are:

- Design Alternative 1: Single Fixed Concrete Pier;
- Design Alternative 2: Two Fixed Concrete Piers;
- Design Alternative 3: Single Floating Pier; and
- Design Alternative 4: One Fixed and One Floating Concrete Pier.

The following features are common to the four design alternatives:

- Each would require approximately 60 cubic yards of benthic soil to be dredged using either a land-based or barge-mounted crane and clamshell.
- Each design alternative pier, whether fixed or floating, would require concrete piling to be inserted into the subsurface. A hollow casing would first be predrilled into the subsurface and piles would be inserted without any further drilling.
- Although the MLB has replaced one of two response boats, the remaining response boat will continue to be kept on either the boat lift or on a landside trailer. The proposed pier(s) would be used primarily to secure the MLB.
- Each mooring alternative would include finger pier(s), an electrical shore tie, mooring points, fendering, and lighting so as to be a complete usable mooring.
- Rubber fenders would be provided on the finger pier(s). Calculations indicate that the maximum mooring line force that could be applied to the pier would be approximately 2,630 pounds. Adequate cleats would be provided to resist this force and would be spaced approximately 15 feet on centers along the edge of the pier.

Table ES-2 provides an overview of the four alternatives.

Table ES-2
Parameters of Design Alternatives

	Design Alternative 1	Design Alternative 2	Design Alternative 3	Design Alternative 4
Number of Piers	1	2	1	2
Number of Pilings	5	9	3	6
Dimensions of pier(s) (in feet)	6x54	6x47	6x54	6x45, 10x54
Depth of Pilings (in feet)	20-25	20-25	20-25	20-25
Cubic yards dredged	60	60	60	60
New Personnel	0	0	0	0

Summary of the Preferred Design Alternative Decision

Design Alternative 2, Two Fixed Concrete Piers, was chosen as the preferred design alternative to supplement the Proposed Action for the following reasons:

- Fixed piers require less maintenance;
- Although a single pier would cost less to construct, the difference in cost is less consequential when compared to the flexibility in mooring arrangements of having twin piers; and

- Station Maui personnel prefer having two fixed piers so that, in high wind and waves, the MLB could be tied between the two piers and would not rub against the pier.

Based on the evaluation of this EA, although this design alternative would produce elevated noise and traffic impacts during the construction phase, this elevation would be slight and short-term. There would be no long-term adverse impacts resulting from the preferred alternative, while the long-term benefit of this alternative would be substantial, as supported above. For these reasons, Design Alternative 2 remains as the preferred mooring configuration to supplement the Proposed Action for the USCG Patrol Boat Support Facilities EA evaluation.

No Action Alternative

The continuation of the existing conditions without implementing the Proposed Action is referred to as the No Action Alternative. For this project, the No Action Alternative is defined as replacing one of the RB-S boats with the new 47-foot MLB patrol boat but without the infrastructure to support it. The USCG would continue to use the remaining RB-S, which would continue to be kept either on the current boat lift or on a land-based tow trailer. The MLB would be tied to the 120-foot-long wharf adjacent to the USCG property, to which USCG Station Maui has exclusive rights. There would be no protective pier or mooring construction, and USCG staff would board the patrol boat directly from the wharf. The No Action Alternative is evaluated in this EA and addresses the impacts of no action on the baseline conditions.

Alternatives Development and Alternatives Not Considered

Although Station Maui is set at MSBH, any harbor or landing area on Maui could be used to moor the new MLB with the appropriate infrastructure, staffing, and available space. The following criteria were used to identify all viable sites for the mooring site:

- It must be on Maui;
- It must include existing slip space or mooring capabilities available for lease to the USCG use, must be capable of supporting the MLB, and must be able to withstand weather conditions.
- It must include office space either on-site or nearby, where adequate USCG staffing can be on-site at all times to receive SAR calls and to respond in a timely manner. Alternatively, personnel could mobilize from the MSBH Station or the USCG detachment in Kahului, if they were located within a reasonable distance to allow an expedited response to distress calls.
- SAR units must be ready to respond within 30 minutes of receipt of the distress call. Furthermore, SAR units must be on the scene of the distress,

or within the search area, within 90 minutes of response (120 minutes from distress call).

- If neither criteria 2 nor 3 is met, renovation or construction must be feasible and practical to meet the USCG mission, and the harbor or landing site layout and space for such construction must be available.

The USCG looked at 10 sites around Maui where either a ramp, wharf, or harbor exists, including Kahukui Ramp, Māliko Ramp, Ke`anae Ramp, Hana Ramp and Wharf, Kīhei Ramp, MSBH, Lahaina Small Boat Harbor, Lahaina Roadstead, Māla Wharf and Ramp, and Kā`anapali Harbor. MSBH was the only site that could meet these criteria. Furthermore, beyond the viability determination, there was no significant benefit to stationing the MLB at any other site besides MSBH USCG Station Maui. This is because all facilities, personnel, lease capabilities, and central location are provided at this site and no other.

Other Required Analyses

Significant Unavoidable Adverse Impacts

There would be no significant unavoidable adverse impacts as a result of the USCG's proposed lease modification or mooring infrastructure construction.

Relationship Between Local Short-Term Uses of the Environment and Long-Term Productivity

Short-term damage to the environment relating to the Proposed Action would be limited, as described above. No significant impacts were identified.

The Proposed Action would provide safe and adequate mooring for the new MLB coming to USCG Station Maui. As such, the long-term productivity would ensure longevity and success of the USCG's SAR mission to "aid to distressed persons, boats, and aircraft on and under the high seas and on and under the waters over which [Station Maui] has jurisdiction." Any measurement of long-term productivity in this context must recognize the importance of public safety on the waters and the effects of severe weather conditions, both in causing these effects and in intensifying the mission of life saving. The USCG will take whatever actions are reasonable and practicable to preserve and protect the resources under its stewardship.

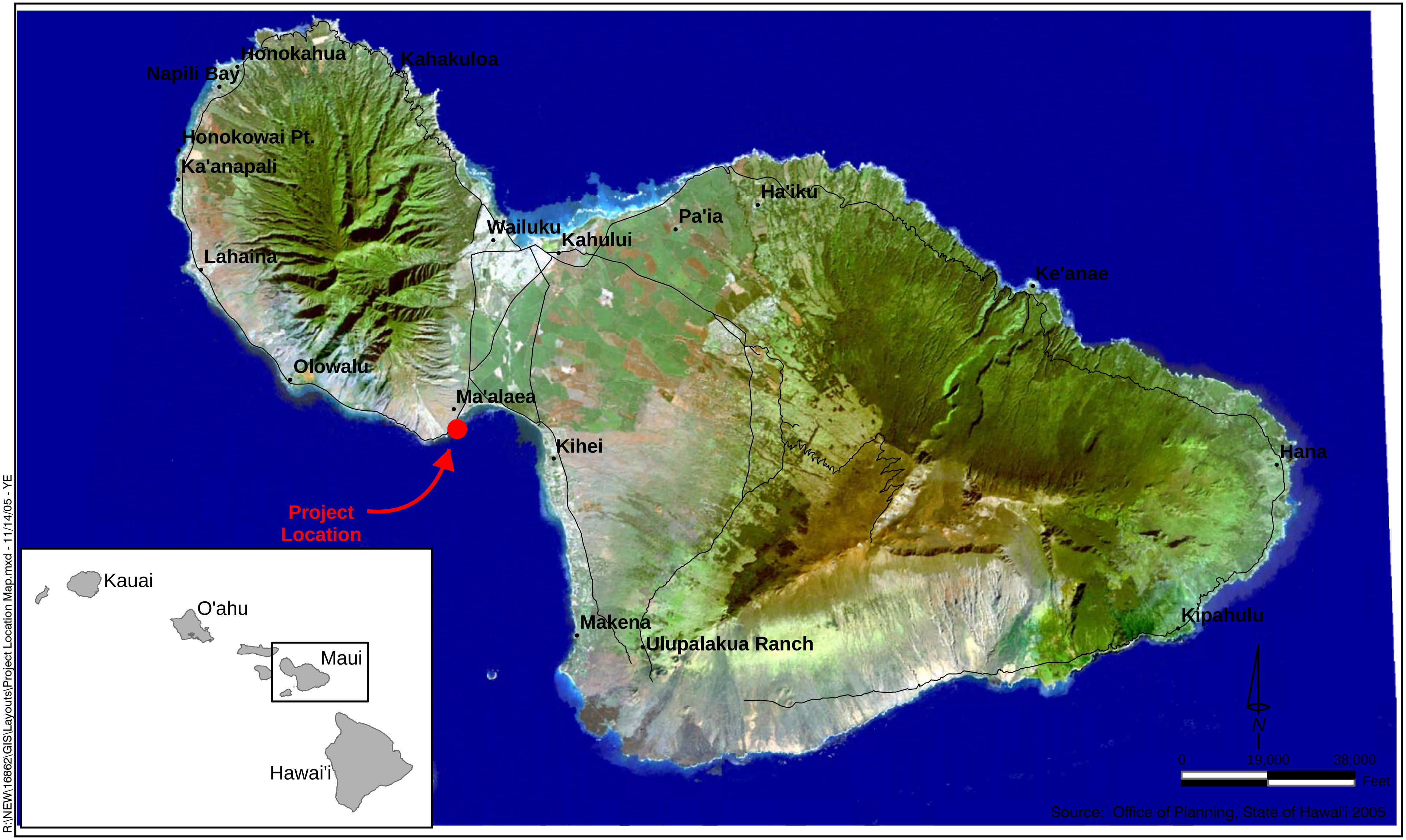
Irreversible and Irretrievable Commitments of Resources

Implementing the Proposed Action would require committing both renewable and nonrenewable energy and material resources for construction, such as the fuel used by machinery.

CHAPTER 1
INTRODUCTION

This environmental assessment (EA) is an evaluation of the proposal of the United States Coast Guard (USCG, the Applicant) to modify its lease agreement with the State of Hawai`i Department of Land and Natural Resources (DLNR) Department of Boating and Ocean Recreation (DBOR, the Approving Agency). In this leased parcel, the USCG operates USCG Station Maui at Ma`alaea Small Boat Harbor (MSBH), on the south side of the island of Maui. From Station Maui, the USCG operates a station headquarters office, storage facilities, and two 25-foot small response boats (RB-S). In an effort to address ongoing capability constraints of this fleet, the USCG is replacing one of the response boats with a 47-foot motor lifeboat (MLB). In order for Station Maui to safely and securely accommodate the new MLB, the USCG requires adequate slip space within the harbor and certain infrastructural improvements and associated dredging and piling within the berthing area. Figure 1-1 depicts the project area for the harbor improvements.

Because the USCG would fund and implement the Proposed Action, this EA has been developed in accordance with the National Environmental Policy Act (NEPA) and the implementing regulations issued by the Council on Environmental Quality (CEQ). And since the Proposed Action would be sited on property owned by and leased from the State of Hawai`i, requiring a lease amendment in accordance with Section 171-95 of Hawai`i Revised Statutes (HRS), this EA is additionally prepared in accordance with HRS Chapter 343. Furthermore, the Proposed Action has been evaluated in accordance with USCG Commandant Instruction M16475.1D, which guides the USCG in complying with NEPA (42 USC 4321-4370f). In accordance with HRS, Title 11, Chapter 200, Section 10 of the Hawai`i Administrative Rules (HAR), the Applicant is the entity that is requesting approval for the Proposed Action. In this case, the USCG Civil Engineering Unit is the Applicant of this project to modify its existing lease



Project Location Map

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc

Figure 1-1

to accommodate a new 47-foot MLB and attain permission to dredge and construct associated infrastructural improvements. The Approving Agency to meet HAR Chapter 343 requirements is DBOR.

The objective of this EA is to inform USCG decision makers, the State of Hawai`i, and the public of the likely environmental consequences of the Proposed Action and reasonable design alternatives to the Proposed Action. The preparers have focused on site-specific issues of modifying the lease agreement with the state and constructing associated infrastructure at MSBH on Maui, Hawai`i.

1.1 SITE OVERVIEW AND BACKGROUND

The USCG is a multi-mission federal agency with five operational goals: maritime safety, national defense, maritime security, mobility, and the protection of natural resources. In the past, the USCG has been under the Department of Transportation, the Department of Defense (Navy), the Department of Commerce, and the Department of the Treasury. However, on March 1, 2003, this agency was officially transferred to the Department of Homeland Security. The USCG is the oldest continuous maritime agency in the United States. Two of its key roles are saving lives and guarding the sea (USCG 2003).

In 2003, the USCG Commandant finalized a programmatic EA generally evaluating the nationwide proposal to upgrade and replace aging and inadequate response boat fleets at stations around the country (USCG 2003). The project scope included all USCG facilities along the coastal United States, including the Great Lakes states, Hawai`i, Alaska, Guam, Puerto Rico, and the US Virgin Islands. The purpose of the programmatic EA was to document and assess, at a program level, the magnitude and intensity of the potential environmental effects of the USCG's proposal to acquire and operate the replacement response boats. Site-specific supplemental NEPA evaluations, such as this one, are being completed to address unique environmental impacts and issues.

In this Programmatic EA, the USCG described the multi-mission operational doctrine for boats deployed from coastal stations, which allows general purpose assets (response boats, patrol boats, and aircraft in the USCG fleet) to support several mission areas. As described in this document, the response boats are to be used to conduct several primary missions (USCG 2003), as follows:

- *Search and Rescue (SAR)*—As mandated by Title 14 of the US Code (USC) Section 88, the USCG is responsible for rendering "aid to distressed persons, boats, and aircraft on and under the high seas and on and under the waters over which the United States has jurisdiction." Response boats are primary assets for conducting coastal zone SAR from most USCG stations.

- *Recreational Boating Safety*—In 1971, the Federal Boat Safety Act established a national program encompassing all aspects of boating safety. This act, as amended and codified into Subtitle II of Title 46 USC, tasks the USCG with coordinating the National Recreational Boating Safety Program, promulgating boating safety standards, and enforcing those standards. With an emphasis on prevention, response boats are primary assets for enforcing boating safety standards. Response boats enable USCG personnel to monitor, board, and inspect recreational boats to determine compliance.
- *Marine Environmental Protection (MEP)*—The USCG protects the public health and safety and natural resources from consequences of oil and hazardous material incidents under Title 16 USC and the provisions of a wide range of specific laws and treaties, such as the Clean Water Act and the International Convention for the Prevention of Pollution from Ships, November 2, 1973, London. The USCG's primary emphasis is on prevention; if that fails, appropriate response is required to minimize associated damage. In many cases, USCG boats provide the first line of defense in the MEP program. One of the primary missions of response boats is to support the MEP program through patrols and investigations.
- *Enforcement of Laws and Treaties (ELT)*—The ELT program emphasizes protecting living marine resources, preventing illegal drug trafficking, intercepting illegal migrants at sea, and enforcing a wide range of federal laws and treaties. In addition, the ELT program provides support to other federal, state, and local law enforcement activities. The authority for the ELT program is primarily set forth in Title 14 USC; additional authorities are contained in Titles 8, 16, and 46 USC, along with several executive orders (EO) and presidential decision directives. While the ELT program has been a mission since the USCG's inception, recent years have seen an increase in drug and alien migrant interception within the coastal zone. Response boats support ELT in the coastal zone by conducting patrols, boarding suspect boats, and recovering illegal alien migrants and contraband from the sea.
- *Port Safety and Security (PSS)*—The Magnuson Act and the Port and Waterways Safety Act of 1972, along with Titles 14, 16, 33, and 46 USC and various EOs, provide the basis for the USCG's PSS program. The safety component of the program is primarily concerned with preventing accidental damage to boats and port facilities. The security component is primarily concerned with preventing intentional destruction, loss, or damage to port assets through terrorism and sabotage. While the USCG's role in homeland security following September 11 is still evolving, it is primarily a component of PSS. Response boats support PSS and homeland security through direct security operations (i.e., patrol and interception) and support (i.e., transporting inspectors, investigators, and personnel to commercial boats).

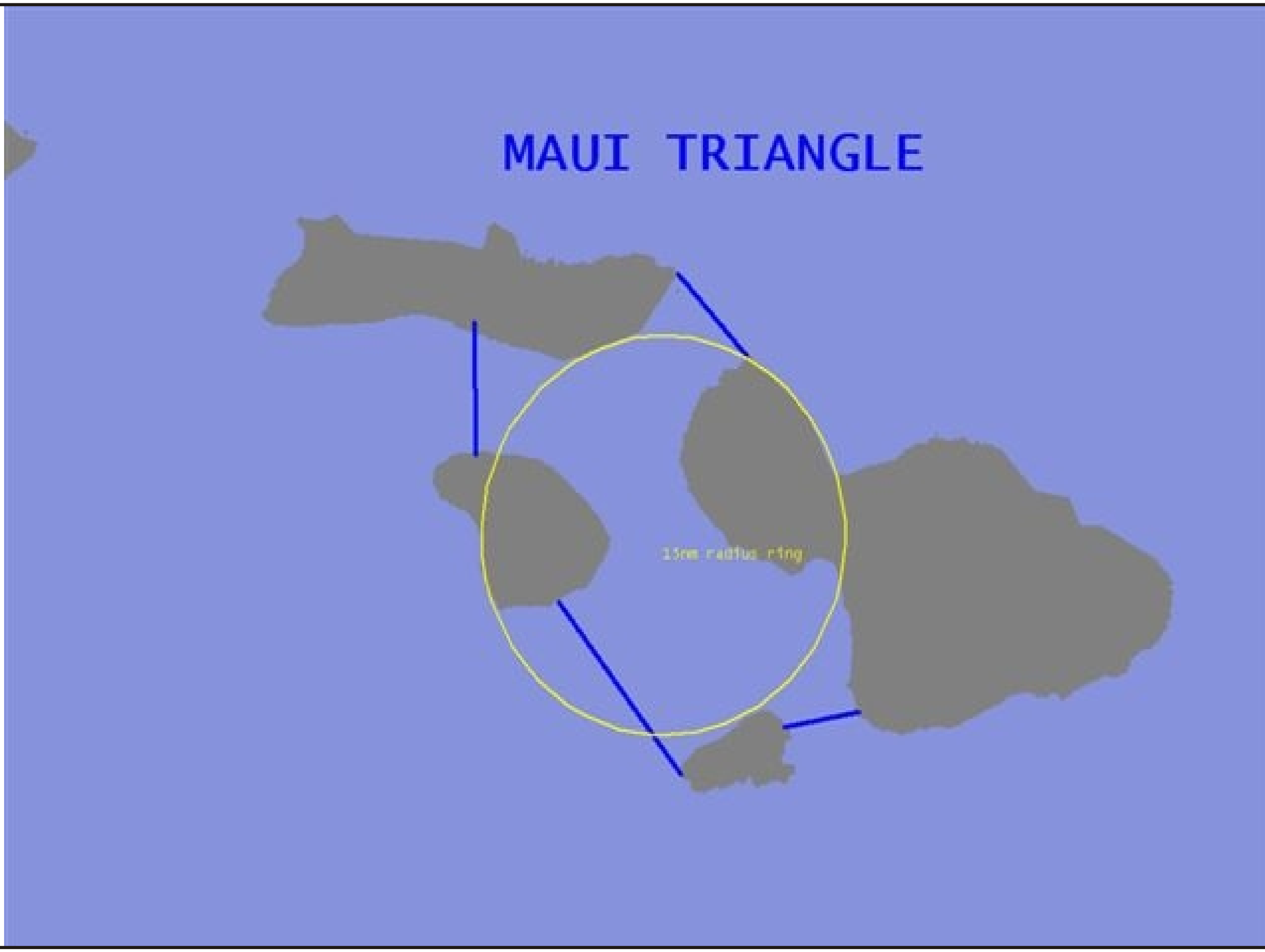
- *Defense Operations/Contingency Preparedness (DO)*—In accordance with Title 14 USC, the USCG operates as a branch of the US Navy in times of war. This happened twice in the twentieth century, first in World War I and then again in World War II. Whether under the US Navy or the Department of Transportation (DOT), the USCG takes an active military role, supporting a range of operations, including those that have occurred in Korea, Vietnam, Grenada, the Persian Gulf, and Haiti. Authorities for this aspect of the USCG's mission are set forth in numerous sections of Titles 10, 33, and 50 USC, as well as various EOs. In addition, under Title 10 USC, the USCG directly supports operations within the maritime defense zone, a coastal theater. Within the coastal zone, response boats are one of the primary assets for DO. Response boats may be deployed overseas in support of high priority DO, if necessary.

Under progressive nationwide USCG maintenance, aging fleets are being identified and replaced in order to meet mission needs, as follows (USCG 2003):

- Ensure optimal capabilities to carry out the aforementioned mission programs;
- Reduce total ownership costs through use of fleets that are more economical to staff, operate, and maintain;
- Facilitate readiness by maximizing boat availability and by reducing required maintenance time; and
- Achieve efficiencies in maintenance and training support that are available from fleets of similar boats.

Sector Honolulu provides each of the above mission services to the public. Sector Honolulu's jurisdiction for SAR includes water and land areas within a 200-nautical mile (NM) radius surrounding the main Hawaiian Islands (Hawai`i, Kaho`olawe, Maui, Lāna`i, Moloka`i, O`ahu, Kaua`i and Ni`ihau), which includes approximately 276,000 square miles. Within this area of responsibility (AOR), Station Maui's AOR is restricted to the geographic area known as the Maui Triangle, composed of approximately 94 NM (or a 15-NM radius from the center of the Maui Triangle), which centers between the three islands of Maui County: Maui, Moloka`i, and Lāna`i. Figure 1-2 shows the estimated circumference of the Maui Triangle. Based on the elevated capabilities of the new MLB, Sector Honolulu is planning to expand the Station Maui AOR.

Because the AOR experiences routinely rough seas and high winds that exceed normal small boat operational parameters, the primary responsibility for Station Maui is for SAR. Additionally, the USCG continues to support programs to ensure that boats are safe for public use and that they contain appropriate safety



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Maui Triangle: USCG Station Maui Area of Responsibility

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 1-2

equipment (USCG 2003). Station Maui retains two RB-S vessels. Because of sea swells, common during summer, these boats are kept on either a boat lift or land-based trailers to prevent them from knocking up against the wharf, potentially damaging the vessels. The USCG retains no slip space at MSBH. Furthermore, operational limitations, as further discussed in Section 1.4, have been identified with the current fleet in responding to life-at-risk events at sea within the jurisdiction of USCG Station Maui. Weather constraints limit the capabilities of the RB-S vessels, one of which will be replaced by the new MLB.

The USCG retained General Lease No. H-70-9 from the State of Hawai`i on July 1, 1970, to expire on June 30, 2015. The lease was amended on March 2, 1979, to extend the expiration date to June 30, 2030. The USCG has applied for a lease modification for the aforementioned lease extensions. This lease amendment would include a request for a concurrent lease duration, ending in June 2030.

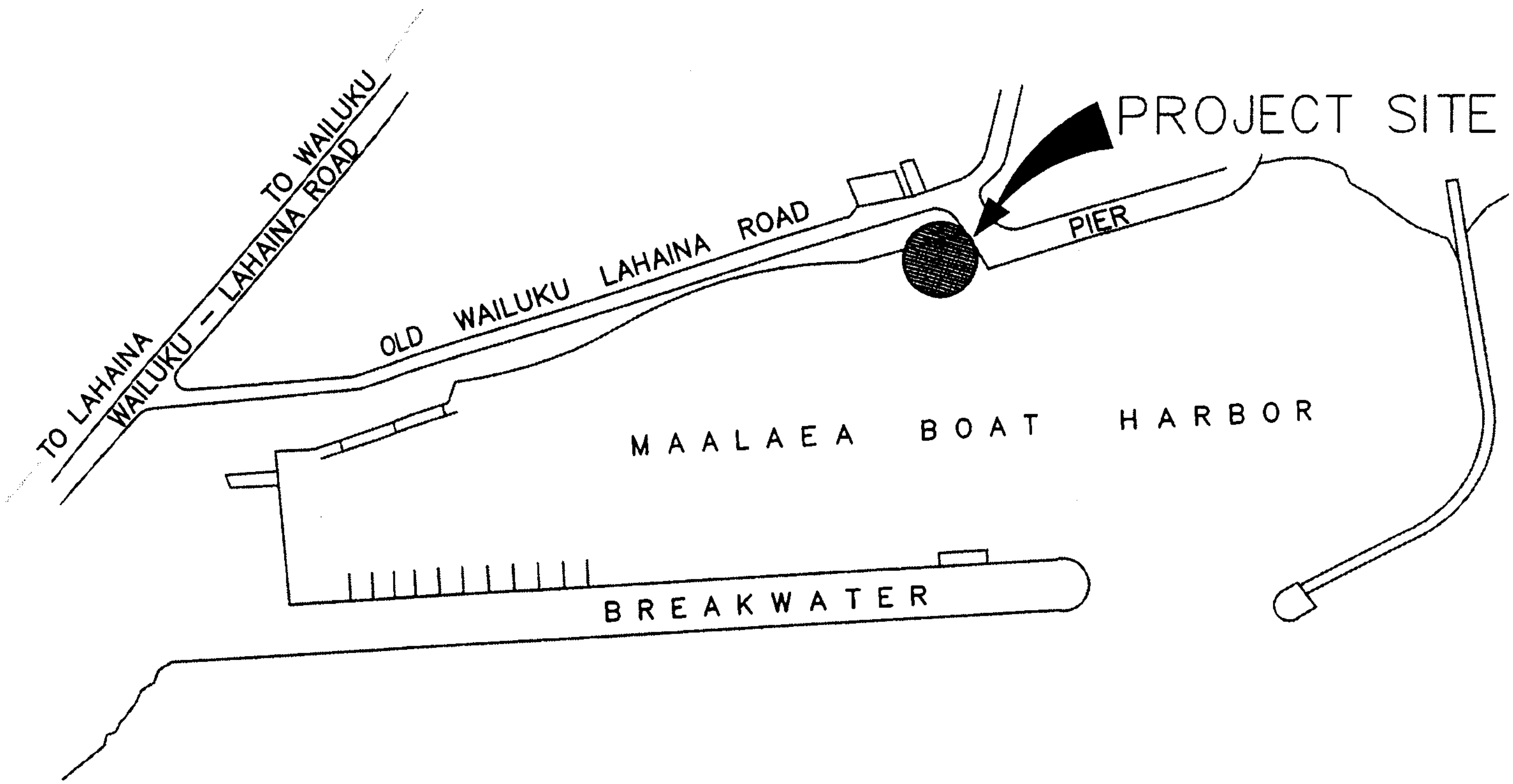
The station currently includes a Station Maui headquarters office, a storage shed, a 250-gallon fuel tank on a cradle, two 25-foot rescue boats with trailers, a boat lift, and seven parking stalls. Station Maui employees 13 active-duty personnel.

On June 9, 2005, the USCG obtained an amendment to its landside lease to extend the wharf space along the northern side of the harbor (Land Board Submittal Item J-2). This additional space was needed to add an eight-foot chain-link security fence, security pole-mounted lighting, a 12-foot by 44-foot modular storage trailer (to replace the existing storage shed), and an additional 1,000-gallon aboveground fuel storage tank (AST) to supplement the existing 250-gallon AST. This action, though separate from the Proposed Action discussed in this EA, would provide needed security to the new MLB and proposed berthing improvements. A categorical exclusion was completed in 2005 to address potential impacts or issues of the landside lease modification and improvements.

These are all separate initiatives from the Proposed Action but may be relevant during the evaluation.

1.2 PROJECT LOCATION

The project area is adjacent to the USCG Station Maui, MSBH, Hawai`i (Figure 1-3). The USCG is requesting slips 108 and 109, totaling approximately 3,312 square feet, directly adjacent to and alongside the west side of the wharf face. This site is open and unused. The south face of the wharf that is being used is ideal for stationing or temporarily mooring visiting USCG vessels for loading and unloading. However, the south-face wharf space is exposed to “kona storm” surge, or south swell, thus increasing the chance of damage to any vessel permanently moored there. The referenced submerged land is surrounded by a rock revetment base. This base may need to be repaired and boulders throughout the berthing area may need to be removed or secured.



Source: USCG 2005

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Vicinity Map

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 1-3

The USCG maintains two rescue boats that are kept on either a boat lift or trailer to avoid damage from sea swells along the station moorings. These boats have limited capabilities in servicing the vast regions of the Maui jurisdiction. The proposed vessel would take the place of one of these boats and would offer life-saving support to greater distances and higher surfs, seas, and winds. The State of Hawai`i owns the slips directly adjacent to USCG Station Maui. As mentioned above, the USCG is working with DLNR to lease this space for necessary pier development to support the new patrol boat. This EA will support the state's decision to offer a lease agreement and to permit construction within the slip space.

1.3 ENVIRONMENTAL CONDITIONS

Certain environmental conditions unique to the Pacific region have proven the current Station Maui fleet to be inadequate and have thus brought a need for upgrade and improvement. These conditions have been studied and evaluated comprehensively in order to develop viable, reasonable, and effective design of mooring alternatives and even the schedule for the project. These conditions were documented and considered in the associated hydrographic survey completed for this project (Thermal Engineering Corporation 2005).

1.3.1 Weather and Climate

Maui is characterized by a semitropical climate, with an average annual temperature of 75 degrees Fahrenheit in the coastal regions. The seasonal variation is slight. Typically the rainy season throughout Hawai`i is November through March, but the southern coast of Maui experiences fewer rain storms than the northern shorelines. Because Ma`alaea sits in the saddle of Maui, trade winds are known to carry smaller showers across the island. Trade winds are most prevalent May through September, moving from the northeast toward the southwest (WRCC 2002).

1.3.2 Tides

The tides in the Hawaiian Islands occur twice a day, although they do not ebb and flow equally day and night. According to *Tide Tables 2005,* published by International Marine, and based on data from the National Ocean Service and NOAA, the mean range, diurnal range, and mean tide are 1.6 feet, 2.3 feet, and 1.0 foot at Ma`alaea Bay. This data provides engineering design parameters in determining the necessary depth of the proposed berthing area at all tidal phases, the necessary height of pier structures, and channeling of the new MLB. Tidal information is provided below. The extreme water levels were estimated based on the extreme water level data at Kahului on Maui and Honolulu on O`ahu.

- Extreme high water level (estimated) 3.4 feet;
- Mean higher high water (MHHW) 2.3;
- Mean high water (MHW) 1.8;
- Mean tide (MT) 1.0;

- Mean low water (MLW) 0.2;
- Mean lower low water (MLLW) 0.0; and
- Extreme low water level (estimated) -1.5.

Elevations and depths in this report are referenced to the MLLW datum. These measurements were used in designing the viable mooring configurations, construction schemes, and dredge depths for the Proposed Action.

1.3.3 Currents

The environmental impact statement by the US Army Corps of Engineers, Honolulu Engineer District (USACE) (1994) provides current information in MSBH. Measurements of the harbor currents from July 28 to July 31, 1994, gave the maximum current speed of about an inch per second, or 0.05 knot, along the shoreline in the vicinity of the present project location. During the measurements, the tidal range was between 0 and +2.5 feet, which was greater than the diurnal range of 2.3 feet; winds were between north and east-northeast at speeds of 7 to 16 knots. The current speed was relatively low at the project site considering the large tidal range and the typical trade wind conditions. Based on the low measured speed of the current, a design current speed of 0.5 knot parallel to the shoreline is considered reasonable for the mooring design (Thermal Engineering Corporation 2005).

1.3.4 Wind

The predominant winds in Hawai`i are the northeast trade winds, which typically occur approximately 75 percent of the year. On Maui the trade winds are strongly influenced by topographic conditions. The northeast trade winds become northerly at MSBH as they are funneled between the high mountains of East and West Maui. The trade wind speeds at Ma`alaea are also significantly greater than those approaching the north coast of Maui due to the funneling effect.

Twelve months of hourly wind data measured at Ma`alaea have been obtained from the Honolulu National Weather Service Office. These are discussed further in the Mooring Alternative Study prepared by Thermal Engineering Corporation (2005). This study shows that winds at MSBH come from a narrow directional sector between north-northwest and north-northeast over 75 percent of the time. Although southerly winds occur only a small percentage of the time, they are occasionally strong. Based on the 12 months of wind data, winds at Ma`alaea regularly exceed 15 knots, exceed 30 knots approximately 8 percent of the time, and 40 knots 0.2 percent of the time. The annual maximum wind speed is 46 knots. The current RB-S fleet at Station Maui typically can sustain maximum wind speeds of 25 knots. The proposed MLB is designed to sustain 50-knot wind speeds. Furthermore, from a design standpoint, 50 knots is considered a reasonable design wind speed for the mooring design and has been applied for all wind directions.

1.4 PURPOSE AND NEED OF THE PROPOSED ACTION

The USCG Station Maui gets approximately 72 SAR calls per year but has been closed due to weather conditions 1,113 hours of the past 10 months (an aggregate of approximately 46 days). This means that no SAR support was available when the station was closed. There is no other station or suitable alternative site on Maui or within its jurisdiction that can adequately respond to these calls. The new MLB is needed due to operational limitations of the current fleet at USCG Station Maui. Weather constraints, primarily the summer swells, result in elevated seas and surf in the Hawaiian waters beyond what the current response boats can handle. Furthermore, these boats are not able to navigate to the distances needed for SAR operations nor tow the loads sometimes needed in these situations. These environmental conditions and the operational limitations of the fleet result in an unacceptable and, at best, constrained and weather-conditional readiness status to meet the escalating ports, waterways, and coastal securities requirements. Because bad weather is a risk at sea, a fleet that is unable to handle these weather conditions only exacerbates the crisis without offering any real reliability.

While RB-S are ideally designed for operations within internal mainland waterways, Station Maui serves an area of open ocean subject to wind funneling and rapidly building, high seas. Table 1-1 lists the capabilities of Station Maui's existing response boats and those of the new MLB.

Table 1-1
Capabilities and Needs of the Existing Response Boats and New MLB

Vessel Capabilities	Existing Response Boats	Operational Need	Proposed 47-Foot MLB
Surf	None	N/A	20 feet
Seas	6 feet	10 feet	30 feet
Winds	25 knots	35 knots	50 knots
Offshore travel distance	10 NM	Up to 50 NM	Up to 50 NM
Towing capacity	10 tons	150 tons	150 tons

The Proposed Action would provide greater life-saving capabilities for the full jurisdiction of Station Maui, at all times of the year, by providing a safe homeport slip space, supported by piers, for the new MLB. As part of the USCG response standards, SAR units must be ready to respond within 30 minutes of receipt of the distress call. Furthermore, SAR units must be on the scene of the distress or within the search area within 90 minutes of response (120 minutes from distress call). These standards are objective benchmarks among SAR units and vary in certain areas and at certain times of the year (including vast areas of the Pacific) but are generally geared toward a goal of readiness and quick response.

Mooring designs have been studied to minimize potential effects on local benthic communities (specifically corals) and to retain a useful turning basin within the rock wall for harbor inhabitants. The chosen design alternative would be a part of the Proposed Action.

1.5 SCOPE OF ANALYSIS

This EA has been developed in accordance with NEPA and implementing regulations issued by CEQ, HRS, Chapter 343, and USCG Commandant Instruction M16475.1D. Its purpose is to inform decision makers, the State of Hawai`i, and the public of the likely environmental consequences of the Proposed Action and reasonable design alternatives.

The preparers of this EA identified, documented, and evaluated the effects of the Proposed Action. This would involve attaining a lease modification from the state to include the slip space adjacent to the Station Maui buildings. In this slip, the USCG would moor the new MLB, along with associated dredging and construction to secure the vessel, specifically one floating pier, one or two fixed piers, or one of each (discussed further in Section 2.2.1). An interdisciplinary team of environmental scientists, biologists, planners, economists, engineers, and archaeologists has analyzed the Proposed Action and design alternatives in light of existing conditions and has identified relevant beneficial and adverse effects associated with the project alternatives. Although nine other sites were considered to accommodate the Proposed Action, only MSBH met the criteria to meet the purpose and need of the Proposed Action. Four design alternatives have been identified to supplement the Proposed Action; the preferred alternative includes dredging, pile driving, and construction to install two fixed concrete piers. This alternative is discussed in Sections 2.2.1 and 2.2.2.

The decision to be made from this environmental analysis is whether or not to allow the USCG to develop necessary infrastructure to support the new MLB within the proposed berthing area. Furthermore, this analysis will aid in deciding which design alternative is most appropriate to adequately support the MLB.

The Proposed Action and subsequent design alternatives and the No Action Alternative are defined and described in Chapter 2. Chapter 3 is separated by resources under three general sections: current conditions considered to be the “baseline” conditions, or affected environment; the expected effects, or environmental consequences, of the Proposed Action and project design alternatives; and cumulative effects. Findings and conclusions are summarized in Chapter 4, including a discussion of findings and reasons justifying the conclusion of no significant impact, in accordance with HAR Title 11, Chapter 200, Section 12 (HAR 11-200-12) of HRS 343.

1.6 AGENCY AND PUBLIC COLLABORATION

Taking into consideration the views and information of all interested persons promotes open communication and enables better decision making. All agencies, organizations, and members of the public having a potential interest in the

Proposed Action, including minority, low-income, disadvantaged, and Native Hawaiian groups, are encouraged to participate in the process.

1.6.1 Public Involvement Process

Public participation opportunities with respect to the Proposed Action, project alternatives, and this EA are guided by the provisions of 40 Code of Federal Regulations (CFR) Section 1506.6 and HAR 11-200 Section 9.1. Although not required by either state or federal regulations, the EA process included a public scoping period from November 8 through December 8, 2005, to identify the key issues, project conflicts, and cumulative effects. The USCG received 10 written submissions, several of which contained multiple comments on different topics. Eighty-two individual comments were contained within the 10 written submissions. Each of these comments are included in Appendix A of this EA. The issue of greatest concern was water quality, followed by permitting and hazardous materials. Most comments addressed specific resource issues, including air quality, cultural resources, hazardous materials, marine life/biology, noise, public access, traffic, and water quality. All other issues pertained to project permitting, the public involvement process, and the content of the EA, or the commenters had no objection or were in support of the project. Most written submissions were from state agencies, followed by local agencies.

All information received during the scoping period was evaluated, verified, and incorporated into the EA, as appropriate. The draft EA was concluded and distributed for a 30-day public and agency review period, from February 23 through March 23, 2006. Thirteen comments were received, each of which is included in Appendix A. Each of these comments was received from state or county agencies, with the exception of one received from an elected official. Although many of these commentors stated support for the improved USCG capabilities and services, others focused their concerns on native or sensitive species in the area, dust controls during dredge material drying, and the environmental review content, schedule, and process. These issues have been addressed in the final EA, as appropriate.

Based on the findings of this assessment, the USCG concludes with a Finding of No Significant Impact (FONSI) determination, as set forth in HAR §11-200-9. Two FONSIs were signed; one prepared in compliance with HAR requirements and the second in accordance with federal NEPA and USCG Commandant Instruction M16475.1D mandates. Copies of these documents are attached to this EA, which will be distributed to members of the public, to appropriate agencies, and to public venues easily accessible to interested communities.

1.6.2 Agency Consultation

The USCG has consulted with the DLNR, National Oceanic and Atmospheric Administration Fisheries (NOAA Fisheries, formerly the National Marine Fisheries Service), the US Fish and Wildlife Service (USFWS), State Historic Preservation Office (SHPO), the Office of Hawaiian Affairs (OHA), the USACE, and the Hawaii Department of Business, Economic Development, and Tourism (DBEDT).

DLNR. In November 2005, the USCG began informal consultation with the DLNR by sending a letter requesting a list of any potential threatened or endangered species that may be present within the project area. DLNR found no conflict with its lands. This letter is part of Appendix B.

NOAA. In November 2005, the USCG began informal consultation with NOAA Fisheries and National Marine Fisheries Service. The USCG believes that the proposed project is not likely to adversely affect federally listed species. In January 2006, the USCG sent a letter describing the project and potential impacts to NOAA Fisheries and NMFS and requested a letter of concurrence. NOAA Fisheries and NMFS replied in a letter received on January 25, 2006, and stated their concurrence that the soil borings associated with the Proposed Action were not likely to adversely affect listed species in the project area. A copy of this letter is included in Appendix B. Per the request of NOAA, a biological assessment evaluating the potential effects of the Proposed Action on these resources has been prepared and submitted to NOAA for review. Construction would not begin until NOAA approves of this assessment and provides concurrence that there would likely be no adverse effect.

USFWS. In November 2005, the USCG wrote the USFWS requesting a list of any potential threatened or endangered species that may be within the project area. The USFWS responded on December 5, 2005, stating that "to the best of [its] knowledge, no federally listed or proposed threatened or endangered species, or designated or proposed critical habitats occur at the project site." This letter is part of Appendix B.

SHPO. In January 2006, the USCG sent a letter to the SHPO to begin informal consultation but has received no response. Consultation is considered complete. However, if SHPO responds at a later date, its concerns will be considered.

OHA. At the OHA's request during the scoping period, in January 2006, the USCG sent a letter to Ms. Thelma Shimaoka, the Community Resources Coordinator with the Maui Office of OHA. Ms. Shimaoka responded with a list of five local Native Hawaiians or organizations to be contacted. (This letter is included in Appendix B.) The USCG contractor contacted each of these representatives, two of whom responded. One such contact, Mr. Lui Hookoana, expressed a concern with water quality in the area where he and other Native Hawaiians fish and collect limu and sea urchins. These concerns were incorporated into the EA and are discussed further in Section 3.2.8 of this EA.

USACE. In April 2005, the USCG began consultation with the USACE, Honolulu Engineering District, which informed the USCG that the Proposed Action would require a Section 10 (Rivers and Harbors Act) Permit. The USACE has submitted a Section 10 permit application; approval will be attained before construction begins.

DBEDT. In May 2006, the USCG provided DBEDT with a Coastal Zone Management (CZM) Assessment Form and Coastal Consistency Determination Checklist (included in Appendix D). A CZM federal consistency review is underway pursuant to 15 CFR 930.

1.7 REGULATORY FRAMEWORK

A decision on whether or not to proceed with the Proposed Action rests on numerous factors, such as mission requirements, schedule, availability of funding, and environmental considerations. In addressing environmental considerations, the USCG is guided by several relevant regulations and permit requirement statutes and their implementing regulations. It also is guided by EOs that establish standards and provide guidance on environmental and natural resources management and planning. Appendix C provides a list and brief description of regulations, laws, and EOs that may apply to the Proposed Action. This list is not intended to be a complete description of the entire legal framework under which the USCG conducts its missions, but it is more of a guide in conducting the environmental evaluation. Key provisions of these statutes and EOs are described in more detail in later sections of this EA, if needed to better understand their application for the specific resource evaluation. Appendix D includes the Coastal Zone Management Act Consistency Checklist. This checklist has been submitted to the State Department of Planning DBEDT and a CZM federal consistency review is underway pursuant to 15 CFR 930.

1.7.1 Permits

The Proposed Action and associated studies would require a Section 10 (Rivers and Harbors Act) permit through the USACE, as summarized under Section 1.6.2. This permit application has been submitted and is being reviewed. Construction would not begin until this permit is acquired. No other USACE permits would be required.

The Hawai`i Department of Health (HDOH) notified the USCG during the scoping comment period that the proposed construction activities may exceed the maximum allowable noise levels set forth in HAR Chapter 11-46, “Community Noise Control” (HDOH 2005). Before work begins, the USCG contractor would attain this permit through HDOH.

Finally, special management area requirements begin at the shoreline and extend landward. The project activities would take place only on submerged lands and would not extend landward. As a result, these activities would not require a special management area permit from the County of Maui. Furthermore, the shoreline would not be modified, thus there would be no requirement for a County of Maui shoreline setback variance permit.

1.8 SPECIAL STUDIES COMPLETED IN CONJUNCTION WITH THE ENVIRONMENTAL ASSESSMENT

1.8.1 Hydrographic Survey and Mooring Alternative Study

Thermal Engineering Corporation completed a hydrographic study and mooring alternatives study of the project site, including a 60-foot by 120-foot area adjacent to the station (Thermal Engineering Corporation 2005) to develop concepts and associated costs for alternatives. Thermal Engineering identified all viable design alternatives to meet the purpose and need of the Proposed Action without compromising the integrity, efficiency, and requirements of the harbor and USCG's lease with DLNR.

The design team started with eight mooring configuration concepts, narrowing this number to four, based on harbor clearance requirements, mooring load and wave height calculations, geotechnical consultation recommendations, benthic disturbance minimization, and design simplicity. These are discussed further in Section 2.2.1.

The design team identified the specific design characteristics of the proposed construction under the Proposed Action. These characteristics are discussed further in Section 2.2.1. They identified costs for each design alternative and provided an economic analysis. Furthermore, the team evaluated the pros and cons of each alternative. This study is cited throughout this document.

1.8.2 Soil Borings and Sediment Sampling

Viable mooring configurations and development of the proposed design alternatives were based on the results of an engineering study. To supplement the parameters of the Proposed Action, on February 16 and 17, 2006, two soil borings were completed, one to 28 feet below the mudline and the second to 38 feet below the mudline in the proposed mooring area. A third boring was advanced from an upland paved area near the USCG Station building. The drilling duration was five, five, and eight hours for Borings 1, 2, and 3. Boring equipment included a drill rig on a small landing craft, mounted on a barge. A four-inch drill bit was used for each boring. The only equipment that came into contact with the water during drilling was the four-inch diameter steel casing of the drill bit, drilling and sampling rods, a split barrel sampler, and a core-barrel.

Using a nonvibrating hammer, sediment was sampled from the alluvial layer between the soft surface mudline and the deeper basaltic rock. The benefit of the hammer method was to allow for a consistent sample collection. Although the hammer commonly results in elevated noise and vibrations, the softer sediment of the mudline and alluvial layers dulled this effect. After samples were collected, a more efficient drilling technique resumed to the full extent of the borehole. This method minimized noise and vibrations. Per the USCG, field personnel inspected the immediate area for seals, whales, and turtles before each over-water boring began. No obvious signs of this marine life were observed.

The borings provided the subsurface characterization and engineering properties of the soil that are necessary for the design of the pier foundation. This information was further used to determine the most efficient method of pile insertion during the implementation phase of the Proposed Action. The samples were analyzed to confirm suitability for land disposal of proposed future dredged material.

1.8.3 Underwater Marine Survey

On October 24, 2005, AECOS, Inc., completed an underwater marine biological survey of the substrate and water column at the site of the proposed piers. The purposes of the survey were to characterize the various marine organisms that compose the substrate habitat in the project area, to list all the species observed in the survey area (including those that were not seen but might be expected to use or pass through the habitat at other times of the year), to compare present findings to data found in other marine surveys, and to summarize trends in habitat growth. Additionally, water samples were collected along the shoreline to measure chemical and physical properties. Furthermore, the report documents any potential archaeological sites. AECOS prepared a survey report describing these findings, which is provided in Appendix E. The conclusions of this report were incorporated into the biological and coastal resources section of this EA (Section 3.2.7).

CHAPTER 2
DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

This section is a description of the Proposed Action, subsequent design alternatives to supplement the Proposed Action, and the No Action Alternative. Section 2.1 is a discussion of the criteria for determining all viable alternatives, Section 2.2 is a description of the Proposed Action, while Section 2.3 is a description of the No Action Alternative. Section 2.4 is a description of the alternatives that were not considered in detail, including the justification for this decision.

2.1 CRITERIA FOR VIABLE ALTERNATIVE DETERMINATION

In order to meet the purpose and need of the Proposed Action, the USCG Station Maui personnel must be able to meet the SAR requirements without limitations caused by damage to the MLB from weather conditions, environmental constraints, or other asset restrictions. A mooring must be able to withstand the unique conditions of the region, primarily wind funneling, high seas, and rapidly escalating weather conditions. Furthermore, an appropriate mooring should support the patrol boat to prevent damage from storm surge, severe weather conditions, and swells.

The 47-foot MLB has been identified as the appropriate response boat for Station Maui in order to handle these conditions and as such has replaced one of the two RB-S patrol boats. The USCG is proposing to extend its lease at MSBH and add necessary mooring structures to secure the new MLB. Although this is the only alternative determined to be viable, four viable design alternatives have been developed for the proposed berthing area. The new MLB would remain at MSBH under the No Action Alternative but would be secured to the existing wharf with no protection from the swells or weather conditions.

Although Station Maui is set at MSBH, any harbor or landing area on Maui could be used to moor the new MLB with the appropriate infrastructure, staffing, and available space. The following criteria were used to identify all viable sites for the mooring site:

- It must be on Maui;
- It must include existing slip space or mooring capabilities available for lease to the USCG use, must be capable of supporting the MLB, and must be able to withstand weather conditions.
- It must include office space either on-site or nearby, where adequate USCG staffing can be present at all times to receive SAR calls and to respond in a timely manner. Alternatively, personnel could mobilize from the MSBH Station or the USCG detachment in Kahului, if they were located within a reasonable distance to allow an expedited response to distress calls.
- As further discussed in Section 1.4, SAR units must be ready to respond within 30 minutes of receipt of the distress call. Furthermore, SAR units must be on the scene of the distress, or within the search area, within 90 minutes of response (120 minutes from distress call).
- If neither criteria 2 nor 3 is met, renovation or construction must be feasible and practical to meet the USCG mission, and the harbor or landing site layout and space for such construction must be available.

MSBH was the only site that could meet these criteria. Furthermore, beyond the viability determination, there was no significant benefit to stationing the MLB at any other site besides MSBH USCG Station Maui. This is because all facilities, personnel, lease capabilities, and central location are provided at this site and no other. Section 2.4 offers further explanation of nine other sites considered for accommodating the Proposed Action, including justification for why each site was not considered further.

2.2 Description of Proposed Action and Design Alternatives

The USCG has replaced one of two smaller response boats at Station Maui in MSBH with a 47-foot MLB. This replacement vessel was formerly stationed at USCG Station Port Aransas. The specific physical characteristics of the new MLB are provided on Table 2-1.

Table 2-1
Physical Characteristics of the New 47-Foot MLB

Overall length	47 feet, 11 inches
Width with fenders	14 feet by 15 feet, 4 inches
Full load draft (sub-hull below water level)	4 feet, 6 inches

In order to accommodate the new MLB, the vessel would require a berthing area because it is too large to trailer, dredging to allow berthing clearance below the boat in high and low tides, and piling and construction of one or two piers to moor the boat. These elements of the Proposed Action are discussed further below.

Berthing area. As shown on Figure 2-1, the USCG is applying for a lease extension to include harbor slip spaces 108 and 109, directly in front of Station Maui at MSBH. The proposed extension is approximately 3,312 square feet alongside the wharf face to the northwest of the center breakwater. The slip is bordered on the north and west by the wharf, with a concrete rubble revetment on each wall.

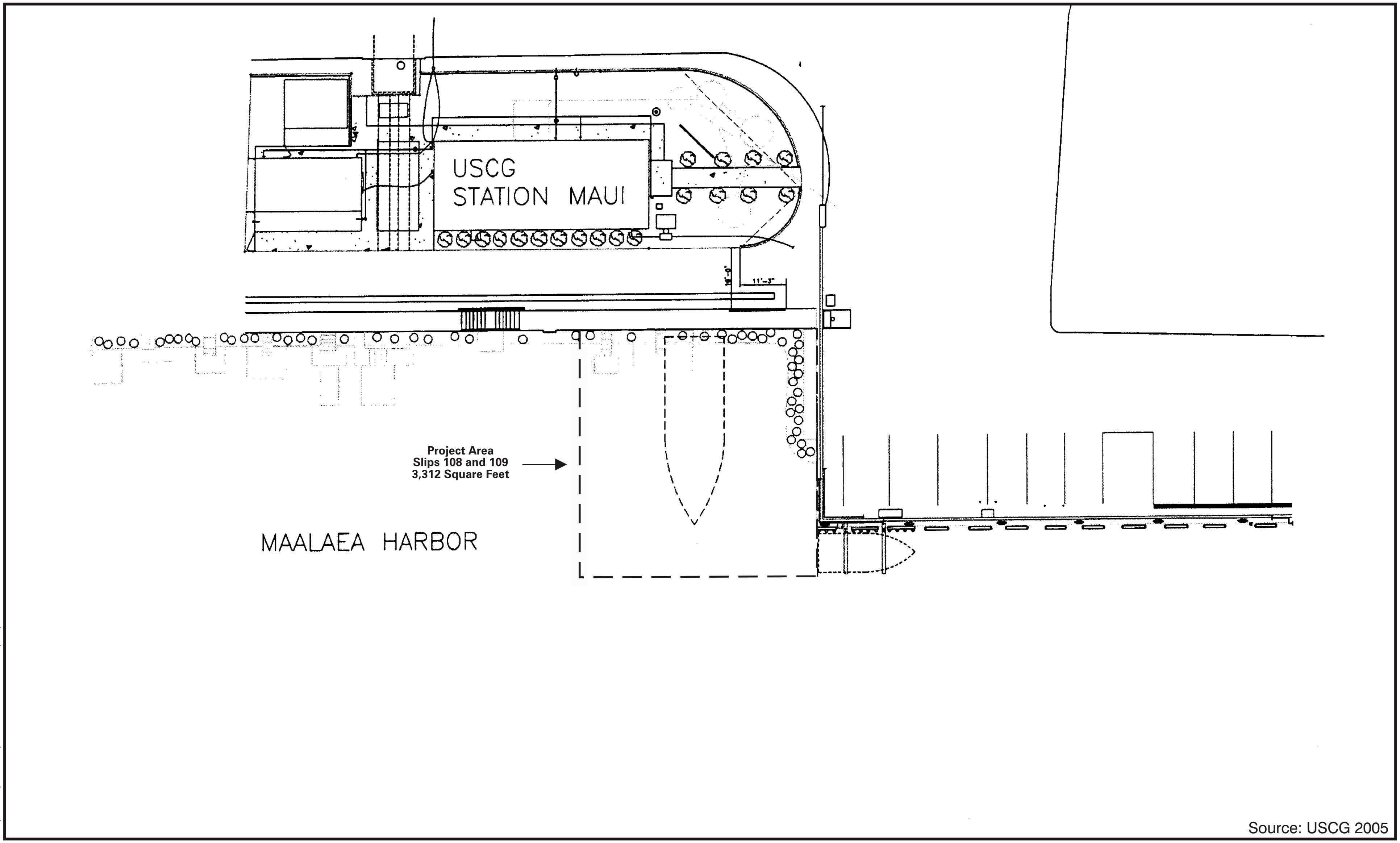
Soil borings and subsurface testing. As discussed in more detail in Section 1.8, in February 2006, soil borings were advanced into the subsurface with a drill rig on a small landing craft. There were two objectives to this exercise. First, to determine the engineering properties of soil for the proposed future pier; these findings helped to determine the most effective approach to inserting the proposed pilings, while providing long-term integrity to the structure. Second, sediment was sampled to determine the suitability for land disposal of any dredged material. Soil profiling at the boring phase prevents the need to stockpile soils at the implementation phase of the Proposed Action before disposal would be allowed. The results of these objectives helped to finalize the project description by determining the approach to construction and the handling of dredge material. The drilling method was confirmed to be the most efficient approach.

Required Dredging to Support MLB. The proposed berthing area is directly opposite the harbor entrance (see Figure 1-3). High waves in the mooring area are estimated to be about three feet. A one-foot allowance to account for tide changes would be used for wave conditions, and an additional two-foot clearance would be provided below the boat bottom.

The required water depth for the MLB is as follows:

Draft depth	4.5 feet
Low tide	1.5 feet
Wave conditions	1.0 feet
Bottom clearance	2.0 feet
Total depth	**9.0 feet**

The approach to the berthing area is 10 to 12 feet deep and would require no additional dredging.



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USCG Berthing Area Site Plan

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 2-1

Considering a required nine-foot depth below MLLW and the berthing area, the estimated dredge material quantity would be 60 cubic yards. Because of the limited amount of material to be removed, either land-based or barge-mounted equipment would be used to reduce costs and to minimize impacts on the subsurface environment. The assumption is that the material would be excavated using a crane and clamshell bucket, and it would be placed within a watertight containment area onshore, adjacent to the project site, for drying before being trucked to an approved land disposal site. An area about 50 feet by 50 feet and two feet high would accommodate the material for drying. Environmental controls would include turbidity barriers (silt curtains) surrounding the dredge area to prevent silt migration and to reduce water quality impacts. Furthermore, the dust controls listed below would be used:

- Keep dust down at all times, including during nonworking periods;
- Apply dust suppressants to the soil at the site, haul roads, and other areas disturbed by operations;
- Vacuum, wet mop, wet sweep, or wet power broom instead of dry power broom, which would not be permitted;
- Air blow only to clean nonparticulate debris, such as steel reinforcing bars;
- Wet cut only concrete blocks, concrete, and bituminous concrete; and
- Shake bags of cement, concrete mortar, or plaster only as much as is necessary.

Samples collected during the February 2006 boring event were analyzed for total petroleum hydrocarbons, polychlorinated biphenyls, metals, volatile organic compounds, semivolatile organic compounds, pH, and ignitibility. Samples were analyzed for total metals, as opposed to just TCLP metals, which is the isolated constituent of interest in profiling soils for landfill disposal. However, Section 1.2 of the TCLP test method (EPA Method 1311) allows for a total constituent analysis in lieu of the TCLP extraction (http://www.epa.gov/sw-846/faqs_tclp.htm). The results of the total constituent analysis may be divided by twenty to convert the total results into the maximum leachable concentration. Barium, chromium, and lead were detected in these samples, but when divided by 20, they are well below their allowable TCLP concentrations. All other analytes whose disposal is regulated by the EPA were not detected. (MFA 2006).

Pile Driving Activities. To confirm engineering and design parameters specific to the project site, soil borings were advanced to 28 and 38 feet in depth. This provided site-specific subsurface characterization and confirmed that drilling would be a suitable and efficient approach to reaching the full extent of the boring. The proposed piles would be inserted into the open holes using a pile driver. While this two-staged technique is anticipated to be the most efficient approach to pile insertion, it is also expected to minimize noise and vibration impacts from single-phase pile driving, thereby minimizing biological and noise impacts.

Boring results indicated that subsurface conditions consisted of silty sand harbor deposits, underlain by sandy silt alluvium, and finally by medium hard to hard basaltic rock to the bottom of the borings at 28 to 38 feet below the mudline. The top of the basaltic rock (necessary to secure the proposed pilings) began at approximately 24 to 26 feet below the mudline, though this depth varied and is assumed to continue (Pacific Geotechnical Engineers 2006). Twenty-inch precast/prestressed concrete piles would be used for the new finger piers. The basaltic rock layer encountered at the site should provide suitable support for the new piles and finger piers. The piles would be socketed at least five feet into hard, relatively intact basaltic rock. (Thermal Engineering Corporation 2005).

Predrilling is required by the plans and specifications for the piers. The plan proposed includes installing a temporary casing at each pile location. The casing would be installed through the upper sediments to the basalt rock layer. The casing would be cleaned out and then a 24-inch diameter socket would be drilled five feet into the basalt layer. After the predrilled hole is completed, the casing would be inserted without any further drilling (in other words, the piles are not being driven below the predrilled hole). Piles would run to the bottom of the predrilled hole, that is, all the way to the hole's final tip elevation (the bottom of the pile). The final tip elevation would be approximately -35 feet. The only purpose of the hammering at this point is to push through sediment that may have come into the hole. The hammer would be placed on the pile, which would be driven with just enough blows to prove its capacity. It is important to note that the actual hammering time is expected to be no more than five to ten minutes per pile. Since there are a total of nine piles, the total hammering time is thus collectively only 45 to 90 minutes during the entire two week timeframe. After this stage, the circumferential void around the pile would be filled with grout and the temporary casing would be extracted.

Schedule. June is the beginning of the swell season. The harbor experiences about three to four large sea swells per year with a heavy storm surge. With this comes high surf and heavy winds and waves several feet high in the berthing area (measured at just over three feet [Thermal Engineering Corporation 2005]) and much higher in the deepwater regions. If the Proposed Action is approved, the USCG plans to begin dredging, piling, and construction activities as soon as possible following the summer swell season (as early as August 2006).

Construction would include dredging 60 cubic yards of benthic soil, using a rig to drill pilings, and installing the piers and associated fenders, cleats, electrical system, and stairs/ramps. Table 2-2 is an estimated timetable for completing this work.

Table 2-2
Timetable for Construction Phase

Milestone	Duration	Schedule
Completion of NEPA	9 months	June/July 2006
Dredging	1 week	August 2006
Piling with drill rig	2 weeks	September 2006
Pier construction	8 weeks	September-October 2006

2.2.1 Design Alternatives

As part of this Proposed Action, specific infrastructural improvements over the mooring area would be required to secure the larger vessel. Thermal Engineering Corporation completed a mooring configuration study to consider all viable and feasible design alternatives for the Proposed Action. Eight mooring configurations were initially investigated (Thermal Engineering Corporation 2005). These conceptual designs were narrowed to four design alternatives based on criteria corroboration, harbor clearance requirements, mooring load and wave height calculations, geotechnical consultation recommendations, benthic disturbance minimization, and design simplicity.

The following features are common to the four design alternatives:

- Each would require approximately 60 cubic yards of benthic soil to be dredged using either a land-based or barge-mounted crane and clamshell. Soils have been profiled to prevent the need to stockpile soils after dredging.
- Each design alternative pier, whether fixed or floating, would require concrete piling to be inserted into the subsurface. A hollow casing would first be pushed or hammered into the subsurface, followed by a pre-drilling to clear the void within the casing. Piles would be inserted without any further drilling. This method is considered the most efficient and would also minimize above- and below-water noise and subsurface vibrations.
- Although the MLB has replaced one of two response boats, the remaining response boat will continue to be kept on either the boat lift or on a landside trailer. The proposed pier(s) would be used primarily to secure the MLB.
- Each mooring alternative would include finger pier(s), an electrical shore tie, mooring points, fendering, and lighting so as to be a complete usable mooring.
- Rubber fenders would be provided on the finger pier(s). Calculations indicate that the maximum mooring line force that could be applied to the pier would be approximately 2,630 pounds. Adequate cleats would be

provided to resist this force and would be spaced approximately 15 feet on centers along the edge of the pier.

Design Alternative 1: Single Fixed Concrete Pier

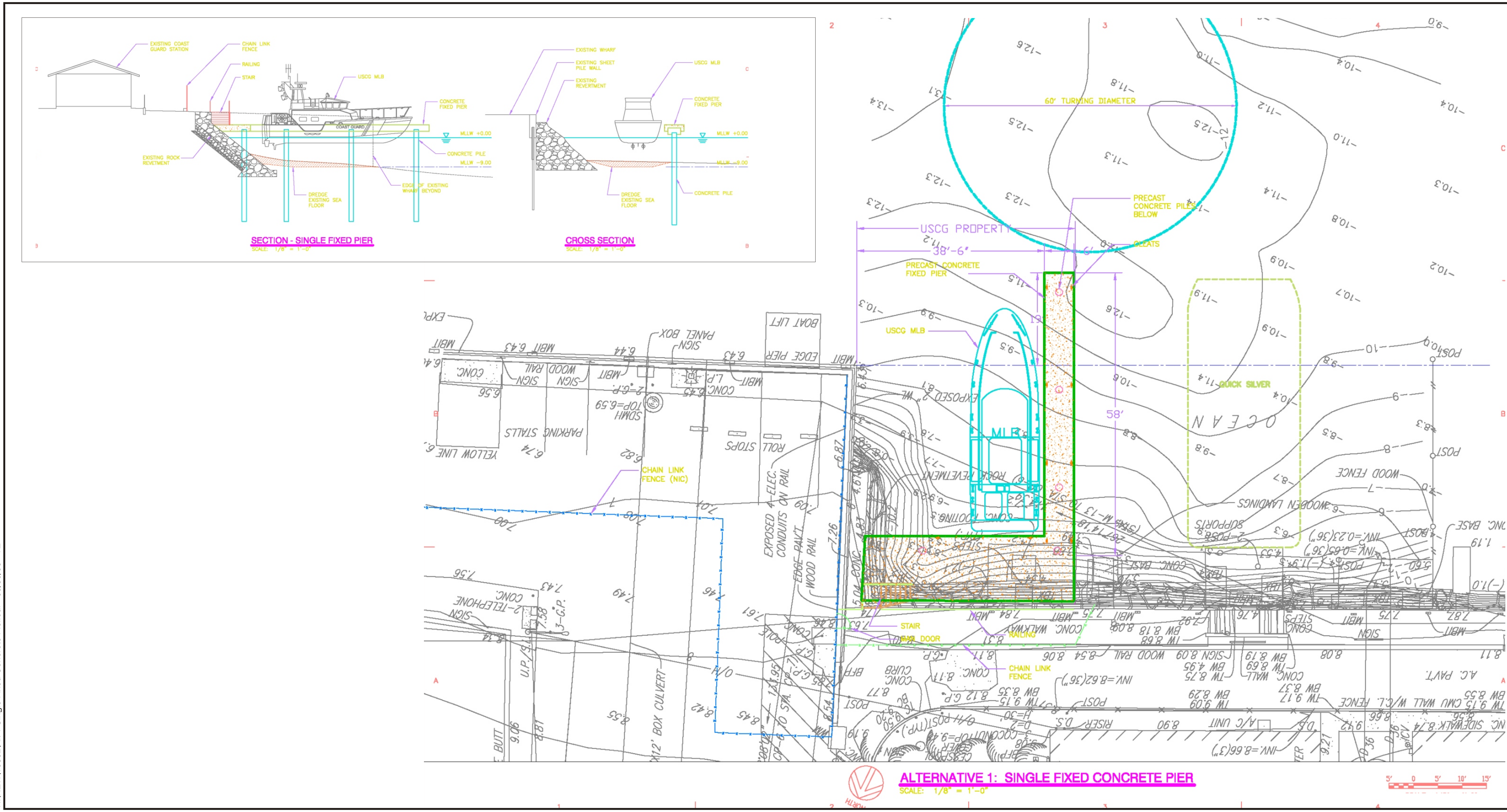
The single concrete fixed pier would be 6 feet wide by 54 feet long with a concrete deck along the rock revetment (Figure 2-2). The pier deck would be at +4.0 feet above MLLW. A concrete stairwell would provide access to the pier. Railings would guard against falls.

Pier design. The fixed concrete pier would be precast reinforced concrete, where possible. The precast pier deck would be an inverted U, spanning cast-in-place, reinforced, concrete pile caps supported by four 16.5-inch precast, prestressed, octagonal concrete piles. The piles would be socketed at least five feet into hard, relatively intact basaltic rock. A hollow casing would first be pushed or hammered into the subsurface to a final depth of 35 feet below the mudline, followed by a pre-drilling to clear the void within the casing. The pile would be inserted directly into the hollow casing. The only purpose of the hammering at this point is to push through sediment that may have come into the hole. The hammer will be placed on the pile pushing the pile to -35 feet. It is important to note that the actual hammering time is expected to be no more that five to ten minutes per pile. Since there are a total of five piles, the total hammering time for Design Alternative 1 would be approximately 25 to 50 minutes during the entire two week timeframe. After this stage, the circumferential void around the pile would be filled with grout and the temporary casing extracted.

Design Alternative 2: Two Fixed Concrete Piers (Preferred Alternative)

One concrete fixed pier would be 6 feet wide by 47 feet long and the other would be approximately 10 feet wide by 47 feet long, with a concrete deck along the rock revetment (Figure 2-3). The pier decks would be at +4.0 feet above MLLW. A concrete stairwell would provide access to the piers, and railings would guard against falls.

Pier design. The fixed concrete piers would be precast reinforced concrete, where possible. The precast pier deck would be an inverted U, spanning cast-in-place, reinforced, concrete pile caps, supported by 16.5-inch precast, prestressed, octagonal concrete piles for each pier. The piles would be socketed at least five feet into hard, relatively intact basaltic rock. A hollow casing would first be pushed or hammered into the subsurface to a final depth of 35 feet below the mudline, followed by a pre-drilling to clear the void within the casing. The pile would be inserted directly into the hollow casing. The hammer would be placed on the pile pushing the pile to -35 feet. Since there are a total of nine piles used under Design Alternative 2, the total hammering time would be approximately 45 to 90 minutes during the entire two-week timeframe. After this stage, the void surrounding the pile would be filled with grout and the temporary casing would be extracted.



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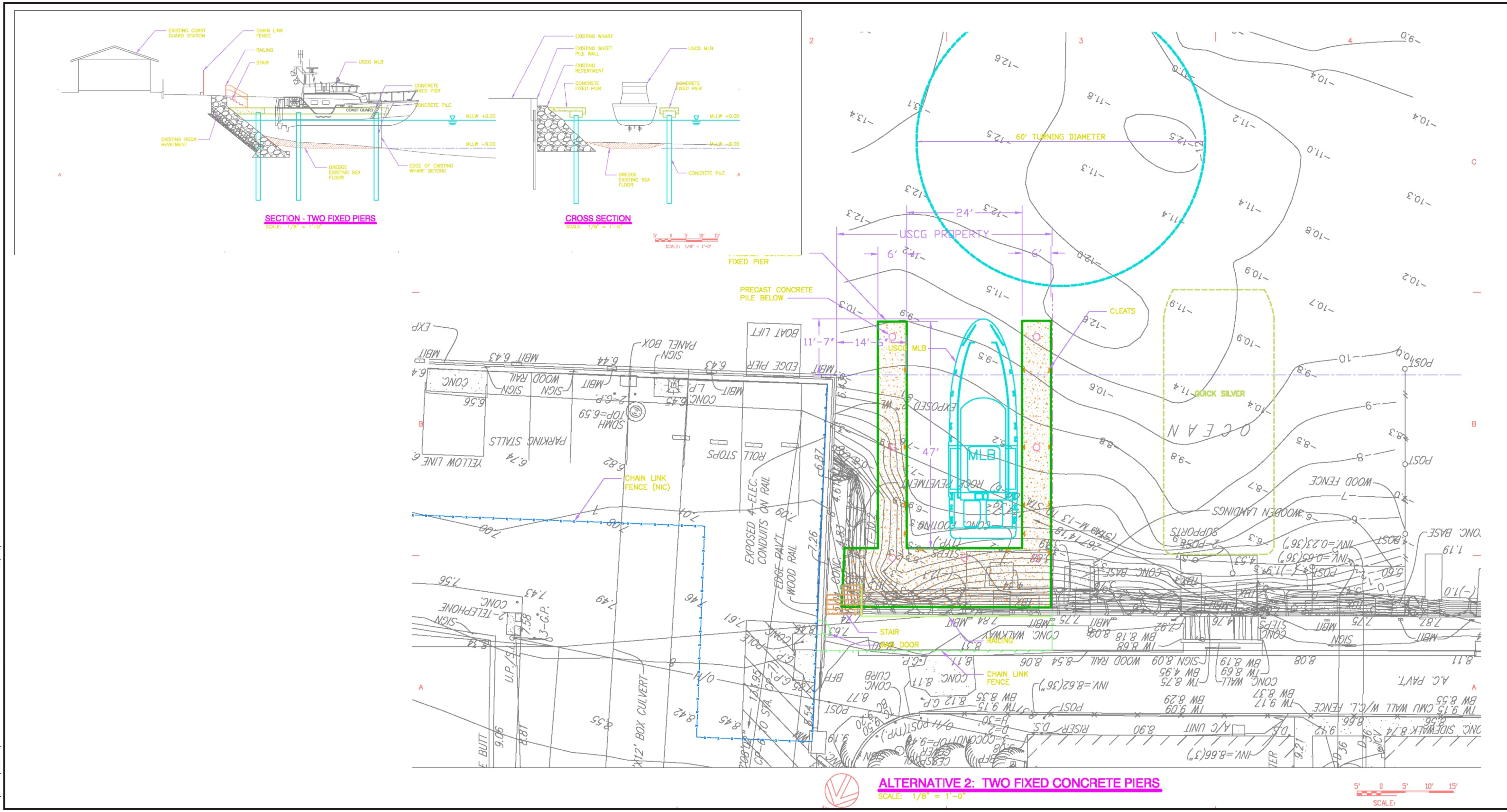
Design Alternative 1: Single Fixed Concrete Pier

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 2-2



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Design Alternative 2: Two Fixed Concrete Piers

Ma'alaea Harbor, Maui, Hawai'i

Design Alternative 3: Single Floating Pier

The concrete floating pier would be 6 feet wide by 54 feet long (Figure 2-4). The pier deck would have approximately two feet of freeboard, and a metal ramp would provide access.

Pier design. The floating pier would be made of precast reinforced concrete, consisting of multiple connected sections. The pier would be supported laterally by two 20- or 24-inch precast, prestressed, square concrete piles, one at each end. The piles would be socketed at least five feet into hard, relatively intact basaltic rock. A hollow casing would first be pushed or hammered into the subsurface to a final depth of 35 feet below the mudline, followed by a pre-drilling to clear the void within the casing. The pile would be inserted directly into the hollow casing. The hammer would be placed on the pile pushing the pile to -35 feet. Since there are three piles, the total hammering time for Design Alternative 3 would be approximately 15 to 30 minutes during the entire two-week timeframe. After this stage, the void surrounding the pile would be filled with grout and the temporary casing would be extracted.

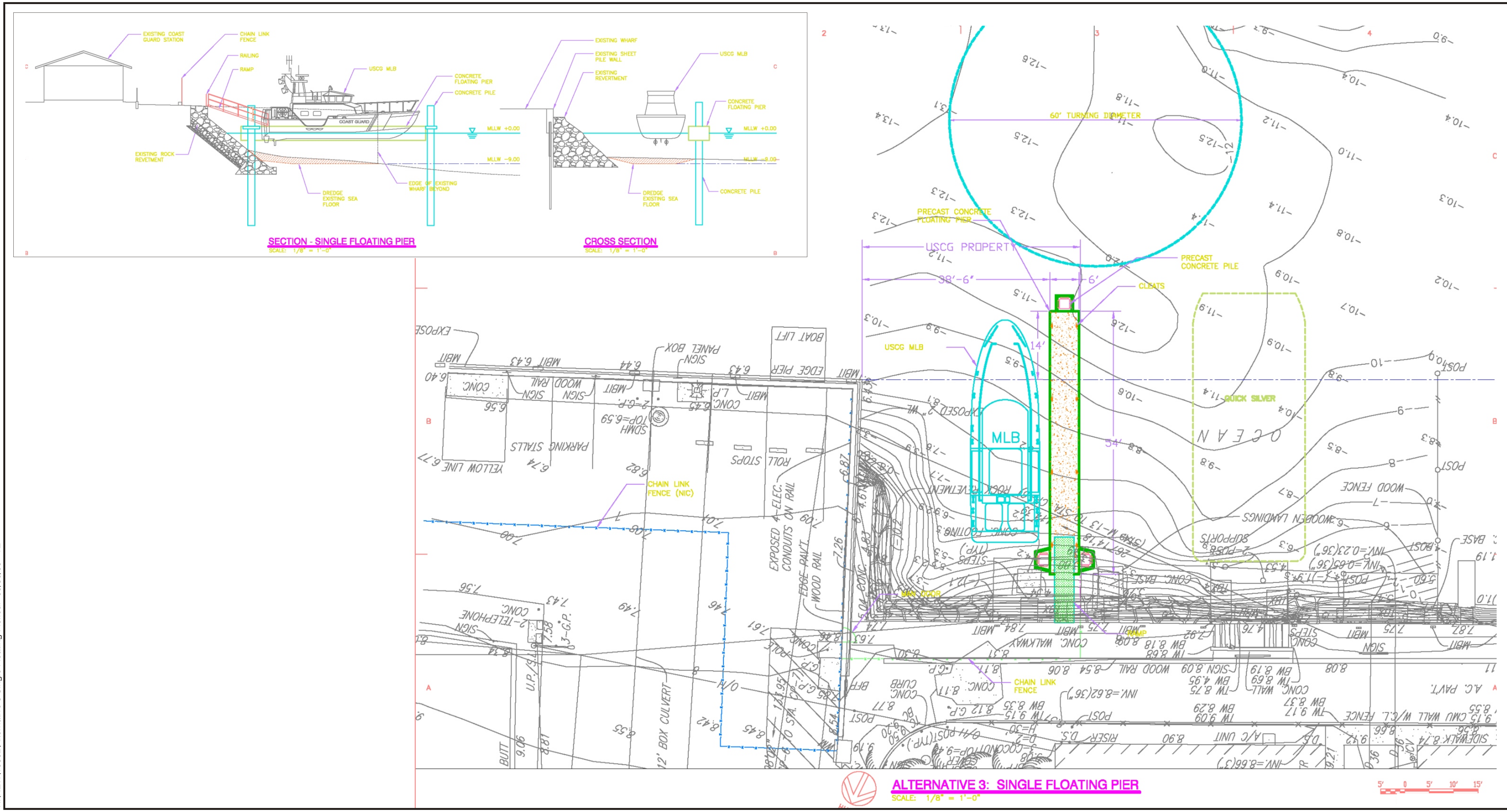
Collars with rollers would connect the floating pier to the piles. A metal ramp manufactured by the floating pier manufacturer would be specified for use with the floating piers.

Design Alternative 4: One Floating Pier and One Fixed Concrete Pier

Design Alternative 4, One Floating Pier and One Fixed Concrete Pier, would include one floating pier on the southwest side and a fixed pier on the northeast side by the wharf. The concrete fixed pier would be approximately 10 feet wide by 54 feet long, and the concrete floating pier would measure 6 feet wide by 45 feet long (Figure 2-5). The pier deck would be at +4.0 feet above MLLW. The floating pier deck would have approximately two feet of freeboard. A concrete stairwell would provide access to the fixed pier, and a metal ramp would provide access to the floating pier. Railings would guard against falls.

Pier design. The floating pier would be made of precast reinforced concrete, consisting of multiple connected pier sections. It would be supported laterally by 20- or 24-inch precast, prestressed, square concrete piles, one at each end. The fixed concrete pier would be precast reinforced concrete, where possible. The precast pier deck would be an inverted U, spanning cast-in-place, reinforced, concrete pile caps supported by three 16.5-inch precast, prestressed, octagonal concrete piles.

The piles would be socketed at least five feet into hard, relatively intact basaltic rock. A hollow casing would first be pushed or hammered into the subsurface to a final depth of 35 feet below the mudline, followed by a pre-drilling to clear the void within the casing. The pile would be inserted directly into the hollow casing. The hammer would be placed on the pile pushing the pile to -35 feet. Since there



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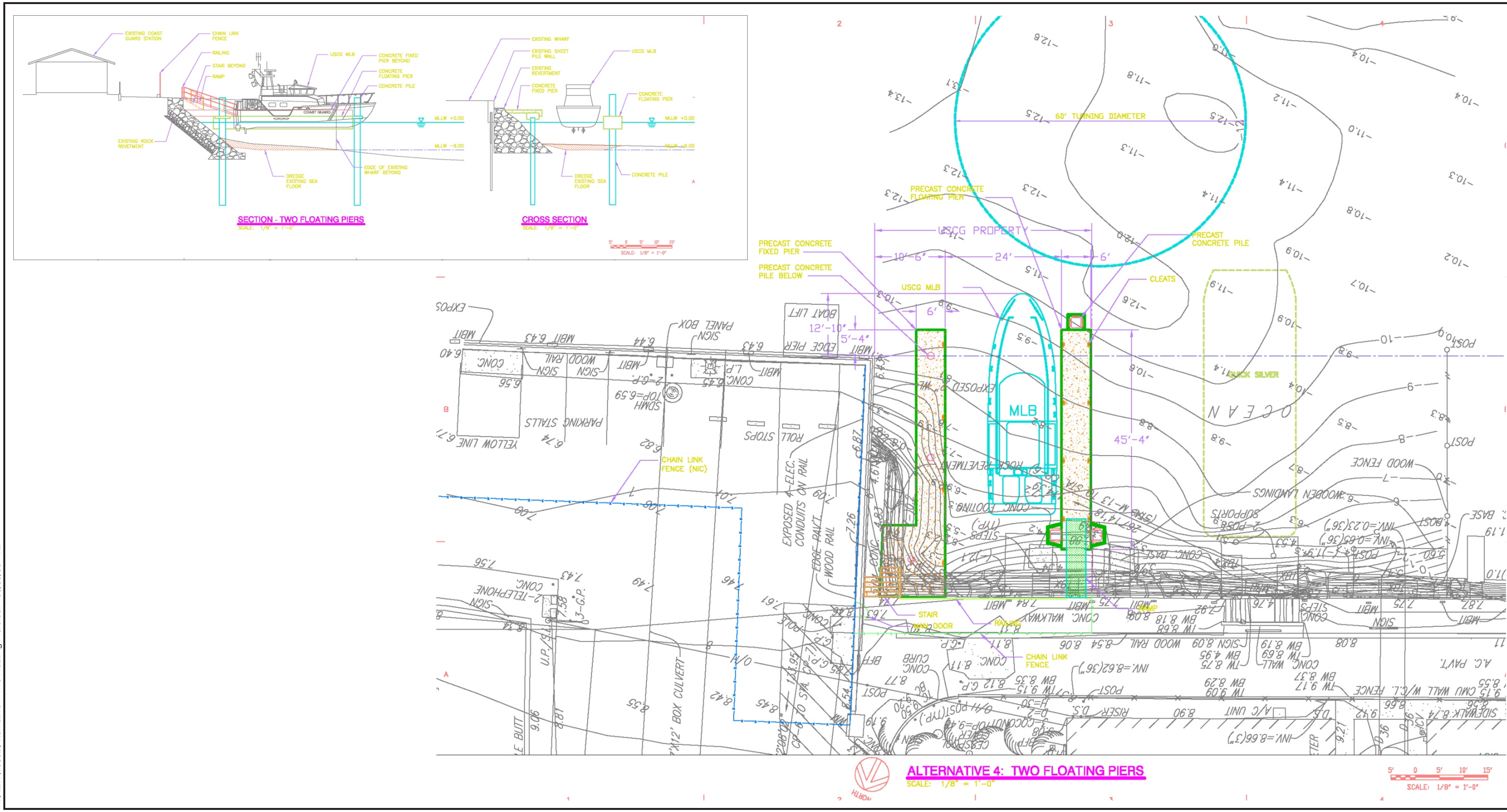
Design Alternative 3: Single Floating Pier

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 2-4



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Design Alternative 4: One Floating Pier and One Fixed Concrete Pier

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc.

Figure 2-5

are a total of six piles used for Design Alternative 4, the total hammering time would be approximately 30 to 60 minutes during the entire two-week timeframe. After this stage, the void surrounding the pile would be filled with grout and the temporary casing would be extracted. Collars with rollers would connect the floating pier to the piles. A metal ramp manufactured by the floating pier manufacturer would be specified for use with the floating pier.

The fixed pier would be precast reinforced concrete where possible. The precast pier deck would be an inverted U, spanning cast-in-place, reinforced, concrete pile caps, supported by three 16.5-inch precast, prestressed, octagonal concrete piles.

2.2.2 Summary of the Preferred Design Alternative Decision

Design Alternative 2, Two Fixed Concrete Piers, was chosen as the preferred design alternative to supplement the Proposed Action for the following reasons:

- Fixed piers require less maintenance;
- Although a single pier would cost less to construct, the difference in cost is less consequential when compared to the flexibility in mooring arrangements of having twin piers; and
- Station Maui personnel prefer having two fixed piers so that, in high wind and waves, the MLB could be tied between the two piers and would not rub against the pier.

2.3 NO ACTION ALTERNATIVE

The continuation of the existing conditions without implementing the Proposed Action is referred to as the No Action Alternative. For this project, the No Action Alternative is defined as replacing one of the RB-S boats with the new 47-foot MLB patrol boat, without the infrastructure to support it. The USCG would continue to use the remaining RB-S, which would continue to be kept either on the current boat lift or on a land-based tow trailer. The MLB would be tied to the 120-foot-long wharf adjacent to the USCG property, to which USCG Station Maui has exclusive rights. There would be no protective pier or mooring construction, and USCG staff would board the patrol boat directly from the wharf.

The No Action Alternative is considered a viable alternative to generally support the new MLB, but, without slip space, protective pier(s), or protection against severe weather, swells, and storm surge, the patrol boat would suffer damage, possibly limiting its integrity for life-saving missions. As a result, when possible, the USCG would likely relocate the vessel outside of the harbor during storms and heavy surge periods, whether en route to a distress call or simply offshore, in order to prevent damage to the vessel and to ride out high waves. As a result, this would increase crew fatigue and would affect the station’s ability to respond, depending on the relocation site. This relocation may not always be possible but would be an alternative to keeping the MLB at port, where it and surrounding vessels and infrastructure could suffer major structural damage, making it inoperable and requiring extensive repairs. The No Action Alternative is the benchmark against which the other alternatives are compared and evaluated.

Under the No Action Alternative, the capabilities of USCG Station Maui would improve above its currently inadequate conditions. By replacing one of the RB-S boats with the new MLB patrol boat, the USCG would be able to venture up to 50 NM offshore and could handle the elevated surf, seas, and winds common to the Pacific region. The main drawback to implementing the No Action Alternative is that the new MLB would not be protected and would often rub up and bang against the wharf, potentially damaging both the patrol boat and the wharf.

2.4 ALTERNATIVES CONSIDERED BUT NOT STUDIED IN FURTHER DETAIL

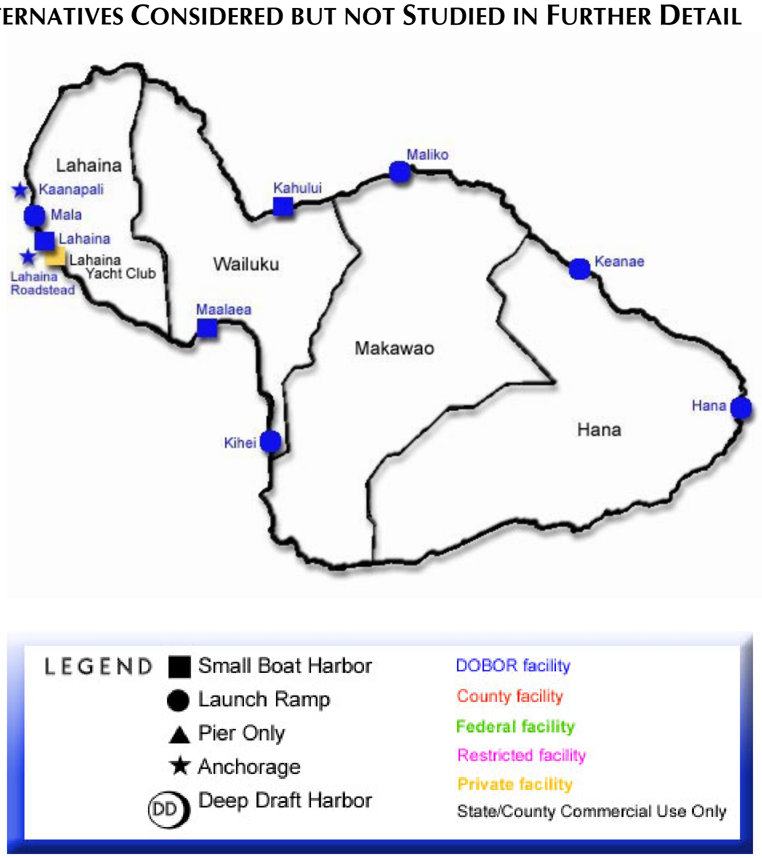


Figure 2-6. Maui Harbors, Ramps, and Wharfs

2.4.1 Kahului Ramp

Located on the northern coast of Maui on the south side of Kahului Bay, the Kahului Ramp serves primarily as a commercial harbor. There is one ramp, a loading dock, and a vessel washdown area, but there are no facilities or infrastructure at Kahului Ramp. There is a detachment of the USCG stationed in Kahului. In order for Kahului Ramp to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Construct a pier or dock with design specifications large enough to tie and secure the vessel designated for USCG use only; or
- Dredge the immediate area and possibly the area offshore to allow the boat adequate berthing and mobilization.

This site would require extensive upgrades to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Kahului Ramp. Because there are no on-site personnel and because of the developmental requirements to make this site operable as a SAR response harbor, this site is not a viable alternative.

2.4.2 Māliko Ramp

Māliko Ramp is on the north shore of Maui, close to the town of Pā`ia. The entire property is on 0.26 acre, including a single-lane 18-foot-wide ramp. There is no other infrastructure on this site. Because there is not enough property associated with Māliko Ramp, this site is not large enough to be considered further.

2.4.3 Ke`anae Ramp

The Ke`anae Ramp is on the north side of the eastern lobe of Maui, near Ke`anae Point. There is only one ramp at this site, with no pier space or infrastructure. In order for Ke`anae Ramp to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Construct a pier or dock with design specifications large enough to tie and secure the vessel designated for USCG use only;
- Dredge the immediate area and possibly offshore to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Ke`anae. The mobilization to Ke`anae from either of these stations is over an hour drive.

This site would require extensive upgrades to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Ke`anae Ramp. For these reasons, this site is not a viable alternative.

2.4.4 Hana Ramp and Wharf

On the eastern end of Maui, approximately 59 miles from the central Waikulu area, Hana Ramp and Wharf includes one pier, ten moorings, and one ramp. There is no infrastructure.

In order for Hana Ramp and Wharf to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Construct a pier or dock with design specifications large enough to tie and secure the vessel designated for USCG use only;
- Dredge the immediate area and possibly offshore to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock in order to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Hana. Mobilization to this site from either of the stations would be an approximately two-hour drive.

Furthermore, Hana is not centrally located to most effectively respond to SAR calls. Because most boats are launched from the central Maui area, the time to travel around the island to respond to a distress call would be unacceptable. This site would have to be extensively upgraded to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Hana Ramp and Wharf. For these reasons, this site is not a viable alternative.

2.4.5 Kīhei Ramp


Kīhei is on the west side of the eastern lobe of Maui, and Kīhei Ramp is in south Kīhei. Parking is available for cars and trailers, and the facility includes three ramps and two docks. There is a vessel washdown area and restrooms with showers but no other infrastructure.

In order for the Kīhei Ramp to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Construct a pier or dock with design specifications large enough to tie and secure the vessel designated for USCG use only;
- Dredge the immediate area and possibly offshore to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock in order to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Kīhei.

This site would require extensive upgrades to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Kīhei Ramp. For these reasons, this site is not a viable alternative.

2.4.6 Lahaina Small Boat Harbor

Lahaina Small Boat Harbor is on the west coast of Maui in Lahaina. Of the alternative sites considered, Lahaina Small Boat Harbor was determined to be the most viable location after MSBH. Most other ramp, wharf, or harbor locations around Maui are largely unimproved and include no facilities or infrastructure. However, Lahaina Small Boat Harbor includes 16 berths, 83 moorings, various loading docks, a fuel facility, restrooms, and a harbor office.

But there is no USCG presence in Lahaina. Pier and slip space that could be designated to the USCG is scarce, if available at all. In order for Lahaina Small Boat Harbor to be a viable alternative, the USCG would need to do the following:

- Construct a pier or dock, or an extension to the existing pier, with design specifications large enough to tie and secure the vessel designated for USCG use only;
- Dredge the immediate area to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock in order to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Lahaina. Under ideal driving conditions, mobilization to this site from MSBH would take approximately 26 minutes.

Alternatively, the personnel at the Station Maui office at MSBH could mobilize to the Lahaina Harbor in the event of a SAR call. But in order to improve on current inadequate PWCS requirements, response time is imperative to being able to effectively and adequately respond to life-at-risk events. Because of these limitations and the added environmental and logistical issues of the Lahaina Small Boat Harbor alternative, this site becomes less of an option. There is no significant developmental, operational, or socioeconomic advantage to considering the Lahaina Small Boat Harbor instead of the MSBH.

2.4.7 Lahaina Roadstead

Located near the town of Lahaina on the western side of Maui, the Lahaina Roadstead serves primarily as an anchorage site with undesignated mooring space. The Lahaina Roadstead does not have any of the necessary criteria to accommodate the new MLB.

2.4.8 Māla Wharf and Ramp

Māla is approximately one mile north of Lahaina on the west coast of Maui. The facility includes two ramps and two loading docks, a vessel washdown area, and restroom facility with shower. However, this site does not include any other infrastructure.

In order for the Māla Wharf and Ramp to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Construct a pier or dock with design specifications large enough to tie and secure the vessel designated for USCG use only;
- Dredge the immediate area and possibly offshore to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock in order to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Māla. Under ideal driving conditions, mobilization to this site from MSBH would take approximately 30 minutes.

Furthermore, Māla is not centrally located to most effectively respond to SAR calls. This site would have to be extensively upgraded to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Māla Wharf and Ramp. This site is not a viable alternative.

2.4.9 Kā`anapali Harbor

Kā`anapali is on the west cost of Maui, approximately four miles north of Lahaina. The area is primarily submerged land used for ocean recreation servicing the Kā`anapali resort area and a mooring area for private sailing vessels. The mooring spaces at this harbor are undesignated so that any private vessel can be tied to whichever mooring is available. There is no onshore infrastructure or facilities at Kā`anapali Harbor.

In order for the Kā`anapali Harbor to adequately accommodate the new 47-foot MLB, the USCG would need to do the following:

- Attain a lease to part of the pier or construct a pier or dock with design specifications large enough to tie and secure the vessel designated only for USCG mooring;
- Dredge the immediate area and possibly further to allow the boat adequate berthing and mobilization;
- Construct an onshore office space for a USCG detachment to be stationed around the clock in order to quickly and efficiently respond to distress calls; and
- Allocate USCG staffing from the already short-staffed Station Maui at MSBH, from the detachment unit in Kahului, or from a remote station to be relocated to Kā`anapali. Under ideal driving conditions, mobilization to this site from MSBH would take over 30 minutes.

Furthermore, Kā`anapali is not centrally located to most effectively respond to SAR calls. Because most boats are launched from the central Maui area, the time to travel around the island to respond to a distress call would be unacceptable. This site would have to be extensively upgraded to accommodate the purpose and need of the Proposed Action. There would be considerable environmental and logistical issues associated with upgrading the Kā`anapali Harbor. This site is not a viable alternative.

CHAPTER 3
AFFECTED ENVIRONMENT AND CONSEQUENCES

3.1 INTRODUCTION

This chapter is organized by sections for each resource area. Each resource section provides an overview of the baseline physical, biological, social, and economic conditions that occur within the region of influence (ROI) of the Proposed Action. An ROI is generally defined as the physical area that bounds the environmental, sociological, economic, or cultural feature of interest for the purpose of analysis. This may vary in context on the resources being analyzed. The ROI for this environmental evaluation generally includes the MSBH, specifically the harbor waters and the facilities, roadways, and infrastructure surrounding the harbor. Figure 3-1 shows the ROI for this project and also identifies certain features around MSBH that may be mentioned in subsequent resource sections.

For readability, each baseline resource section is followed directly by a discussion of the potential environmental impacts of the Proposed Action and the No Action Alternative. This analysis includes likely beneficial and adverse impacts on the human environment, including short-term and long-term impacts, direct and indirect impacts, and cumulative impacts. The analysis of impacts on resources focuses on environmental issues in proportion to their potential effects. Detailed consideration is given to those resources that have a potential for environmental impacts. Interpretation of impacts in terms of their duration, intensity, and scale are provided where possible. Impacts under the No Action Alternative are compared against baseline effects discussed in the resource-specific affected environment section.

Only those environmental and socioeconomic conditions relevant to the proposed project are presented in Section 3.2, including the following:

3.2.1 Public Uses;
3.2.2 Traffic;

Features of Ma'alaea Small Boat Harbor

Maui, Hawai'i

Tetra Tech, Inc

Figure 3-1

3.2.3 Noise;
3.2.4 Hydrology and Water Resources;
3.2.5 Solid Waste and Hazardous Materials Management;
3.2.6 Public Health and Safety;
3.2.7 Biological and Coastal Resources;
3.2.8 Historic and Cultural Resources; and
3.2.9 Socioeconomics and Environmental Justice.

Resource conditions not affected by the Proposed Action were not considered in this evaluation. These included air quality, land use, public services and utilities, geology, and visual resources. All activities under the Proposed Action would be over the 3,312-square-foot berthing area proposed for lease expansion and pier construction. Therefore, land uses would not be affected. Air quality and geology are not expected to be compromised as construction would primarily be in the water and would be relatively contained to the berthing area. Furthermore, appropriate dust controls would be used, as described in Section 2.2. Construction impacts would be short term, and any minor contribution of dust or particulates to the air as a result of construction would be quickly dissipated by the prevailing trade winds. Any sedimentation issues that may be experienced during dredging or piling are discussed in the Water Resources section (Section 3.2.5) or Biological and Coastal Resources (Section 3.2.7). There would be no change to utilities accessing the USCG Station and services to or from the Station would not be changed. Finally the Proposed Action would not alter the recreational uses or aesthetical setting of the Harbor, therefore recreation and visual resources would remain the same. Any potential impacts on recreational boaters who use the harbor are discussed in Section 3.2.1, Public Uses.

3.1.1 Chapter Organization

Each section describes the methodology used for impact analysis and factors used to determine the significance of impacts (40 CFR 1508.8). Impacts are all described where they occur for each resource, including both direct and indirect impacts; direct impacts are caused by the Proposed Action and occur at the same time and place, while indirect impacts are caused by the Proposed Action but occur later in time or at a distance from the Proposed Action. Following the description of cumulative impacts, each section will discuss whether the Proposed Action would contribute to cumulative impacts on this resource.

3.1.2 Terminology

To determine whether an impact is significant, CEQ and HRS 343 regulations also require the consideration of context and intensity of potential impacts (40 CFR 1508.27; HRS 343§11-200-9, 12). Context normally refers to the setting, whether local or regional, and intensity refers to the severity and duration of the impact.

Impacts are considered by the following levels of significance:

- Significant impact;
- Significant impact but mitigable to less than significant;
- Less than significant impact;
- No impact; or
- Beneficial impact.

Impacts are further organized in this order. As said, impacts are considered by these impact levels and criteria for determining the level of impact are provided at the beginning of each resource evaluation. These criteria were developed based on criteria listed in HAR 11-200-12 and resource-specific determinant factors. No impacts were identified to be significant or significant but mitigable to less than significant. Findings and reasons supporting the determination of no significant impact is provided in Section 4.1.2, Findings and Reasons of Determination.

There may be both adverse and beneficial impacts within a single resource category; for instance, a project could interfere with a pre-existing land use such as recreation (an adverse impact), while expanding public access to different recreational resources (a beneficial impact). Where there are adverse and beneficial impacts, both are described. Mitigation is identified where it may be appropriate or reduce the significance of an impact.

A summary of the impacts is included in Chapter 4, *Findings and Conclusions.*

3.1.3 Cumulative Effects Analysis

Cumulative impacts on the environment are those that result from the incremental impact of the action when added to other past, present, and reasonably foreseeable actions, regardless of what agency or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time (HRS 343§11-200-2). Guidance for implementing NEPA recommends that federal agencies identify the temporal and geographic boundaries of the potential cumulative effects of a proposed action (CEQ 1997). For the purposes of this EA, the temporal boundary of analysis is generally the term of Station Maui lease from DLNR (1970 through 2030) with emphasis given to projects that may have a bearing on determining current conditions and future impacts. This boundary encompasses a range within which data are reasonably available and forecasts can be reasonably made. Past to present activities are discussed in the appropriate resource affected environment section.

The geographic boundaries of analysis vary, depending on the resource and potential effects. For most resources, the analysis area is characterized by MSBH on the island of Maui. If different, the analysis area is specifically defined under the resource section.

Specific projects that are similar in size or scope or have the potential to cumulatively affect the resources evaluated for the project are discussed below. Some resources would be affected by several or all of the described activities, while others could be affected very little or not at all.

Associated USCG Station Maui Activities. Aside from the Proposed Action, the USCG has recently completed certain landside site improvements, including the addition of security fencing and lighting, an additional 1,000-gallon diesel fuel tank, and replacing an existing storage shed with a storage mobile trailer. These activities have been exempt by the state of Hawai`i under HRS Chapter 343 and have been categorically excluded from NEPA requirements.

Additionally, to address ongoing staffing deficiencies at Station Maui, the USCG is working to redistribute personnel from within the district to bring additional bodies to the station. This is an ongoing endeavor and no definitive billeting have been finalized.

MSBH Improvements by DLNR. Based on an EA recently completed by DLNR in April 2005, the state is beginning the implementation phase of their plans to repair, upgrade, and otherwise improve landside facilities around MSBH including restructuring the existing inter-island ferry building, resurfacing of an access road, paving of a parking area, upgrading water, sewer, and electrical utilities, adding a comfort station, landscaping, and other renovations to comply with ADA requirements (DLNR 2005).

Navigational Improvements by USACE and DLNR. Based on an EIS completed by the USACE Honolulu Engineering District completed in 1994 and a supplemental EIS completed in 1998, the USACE is planning certain navigational improvements around MSBH to address the prevalent impacts of storm surge and summer swells. These plans include realignment of the entrance channel and modification and extension of the breakwater to attenuate surge within the harbor thus eliminating damage to vessels. Under this action, DLNR is also interested in further developing the interior harbor basin to increase berthing capacity from 93 vessels to an estimated 220 vessels (USACE 1998). Although these plans have been modified and supplemented several times since inception, no actions have been implemented and the status or likelihood of future actions is unknown. To be comprehensive, this cumulative analysis considers this project as a reasonably foreseeable future activity.

Maui Ocean Center. The Maui Ocean Center, located within the Ma`alaea Triangle (shown on Figure 3-1), is a large aquarium and shopping complex adjacent to the harbor. This site includes a new package sewage treatment plant and water supply from which effluent is emptied into the harbor. Construction of the new plant was completed in 1998. Effluent was previously discharged into the harbor as well, however monitoring since the latest construction has shown vast improvements in the quality of effluent entering the harbor (USACE 1998)

Ma`alaea Village Project District. This future project includes the residential development of 650 acres immediately east of MSBH. Approximately 1,500-2,000 units would be developed over a 15-to-20-year period, plus a golf course, community parks, and open space systems and wastewater treatment infrastructure.

**Ma`alaea Mauka Project District.** This future project includes the residential development on approximately 260 acres on the mauka side of Honoapi`ilani Highway including approximately 1,150 housing units, a community center, park and open space. Construction wouldn't begin for six to eight years and would depend on demand for housing (USACE 1998).

Highway Improvements. DLNR DBOR and HDOT have been completing highways improvements for a section of Honoapi`ilani Hwy in the area of MSBH. This includes improvement of access and egress at the harbor as part of the improvements.

3.2 AFFECTED ENVIRONMENT AND CONSEQUENCES

This section discusses the baseline conditions of each resource, as mentioned above. Directly following the baseline discussion, resource-specific impacts are evaluated and compared against the affected environment. A summary of impacts resulting from the Proposed Action, No Action Alternative, and Cumulative Effects is provided in Section 4.1.

3.2.1 Public Uses

3.2.1.1 Affected Environment/Region of Influence

For the purpose of this public uses evaluation, the ROI for Patrol Boat Support Facilities at USCG Station Maui would include the MSBH (Figure 3-1). Special management area requirements begin at the shoreline and extend landward. The project activities would take place only on submerged lands and would not extend landward. As a result, these activities would not require a special management area permit from the County of Maui. Furthermore, there would be no modification to the shoreline, thus a County of Maui Shoreline Setback Variance Permit would not be required.

Resource Overview

MSBH is on the southwest coast of Maui, on the eastern side of the western lobe of the island, and approximately eight miles southwest of the commercial and business center of Kahului. Covering an area of 29.51 acres, the harbor has 30 berths, 61 moorings, one ramp, a harbor office, a dry dock, a restaurant, and a boat club (DBOR 2005). The harbor is under the control of the Hawai`i DLNR DBOR. The state land use district classification for the ROI is urban (DBOR 2006), and the county land use zoning designation for the ROI is Business and Light Industrial (USACE 1998). The MSBH is on the western side of Ma`alaea Bay and can be otherwise accessed landside through the Honoapi`ilani Highway (harbor access road) and by the Old Wailuku Lahaina Road, which connects with the Ma`alaea Road. Features of MSBH and surrounding land uses are shown on Figure 3-1. The adjacent commercial development, referred to as the Ma`alaea Triangle, accommodates a variety of uses catering predominantly to tourism, including restaurants, an ocean center, a miniature golf course, souvenir shops, and parking (DLNR 2005). Adjacent land to the northeast along the shore is designated for multifamily use and contains a series of condominiums. MSBH falls within the state's coastal zone management area, as does the entire state of Hawai`i (Maui County 2005).

Under the Hawai`i CZM Program, recreational activities in the coastal zone management area are protected (USACE 1998). This includes access to surfing sites and sandy beaches used for fishing, limu gathering, and other Native Hawaiian traditional practices and public recreational uses. The waters adjacent to the MSBH are known for three distinct surf sites, the Ma`alaea Pipeline, Off-the-Wall, and Buzz's (USACE 1998). A sandy beach next to the east breakwater provides wading access to the harbor for anglers and surfers (USACE 1998).

MSBH supports sport and subsistence fishing, and hook-and-line fishing is commonly practiced from the breakwater. Spear fishing is practiced on the reef flat fronting the harbor. The harbor is also known to have several species of edible algae (USACE 1998).

Boating activities at MSBH include recreational, commercial fishing, and passenger charter operations. The most common size vessel ranges from 35 to 45 feet. Of the 89 vessels having berths in MSBH, 49 are recreational vessels, 13 are commercial (occupational) fishing, and 27 are charter fishing and commercial passenger vessels. The state controls commercial passenger-carrying operations at MSBH through commercial and mooring permits (USACE 1998; Giaconi 2006). Twenty-seven commercial passenger permits are currently issued. All owners of boats moored at MSBH are required to have a mooring permit. Those who operate charter and passenger boats are required to have a commercial passenger permit (Giaconi 2006). Four commercial permits have been issued for vessels moored elsewhere to use the MSBH docks to pick up passengers (Giaconi 2006). In addition to the commercial boats that occupy slips at MSBH, boat owners without slips drive their boats in on trailer and use the launch ramp, which tapers to a width of 20 feet, at the western extent of the harbor (see Figure 3-1). There are two catamarans moored in the slips adjacent to Station Maui, whose owners would be required to relocate their daily operations for the duration of the piling work. There are no slips on the east break wall (Giaconi 2006).

The Proposed Action includes a lease extension to include slips 108 and 109 directly south of the USCG Station Maui, MSBH, Hawai`i (Figure 2-1). The ROI considered for the public uses evaluation includes MSBH, with specific attention devoted to the northern side of the harbor, along Old Wailuku Lahaina Road and encompassed within the central breakwater (Figure 3-1). This area includes Station Maui, with 120 feet of wharf and the proposed 3,312-square-foot lease extension area.

3.2.1.1. Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

Impacts on public uses were assessed based on whether the Proposed Action would be consistent with MSBH policies and uses, state and local land use and recreation plans, and permitting requirements, while being compatible with the surrounding public uses, as described in Section 3.2.1.1.

The evaluation of potential impacts on public uses, including recreational resources, was based on the project's consistency with the following:

- Beneficial ongoing uses of the environment;
- Existing/planned land or harbor uses or ownership;
- Unique characteristics of the geographical area (40 CFR 1508.27);
- The objectives, policies, and guidance of state and local land use plans;
- Recreational use of the beach, ocean, or land-based resources, such as parks or hiking paths, or the public's right of access to the sea;

- Hawai`i Coastal Zone Management Program policies; and
- The Public Access Shoreline Hawai`i vs. County of Hawai`i Planning Commission decision, which ensures that Native Hawaiians can exercise traditional and customary practices on undeveloped and underdeveloped land.

3.2.1.2.1 Proposed Action

The environmental consequences related to public uses are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

Less than Significant Impacts

Construction of a single or double fixed or floating concrete piers would not result in the permanent change in public use type and patterns for the MSBH except to preclude others from using these slips. For the duration of construction, use patterns and access to the construction sites' neighboring slips would be compromised due to dredging and drilling, especially if equipment is mounted on a barge, resulting in indirect impacts on public uses and activities. Primarily, the clearance of the turning basin between the proposed berthing area and the central breakwater running parallel to the northern wharf could be temporarily reduced due to the presence of construction equipment and activities at the site. However, access would be available to the western end of this breakwater for neighboring slip lessees. This construction period would be short term (see Table 2-2 in Chapter 2 for the estimated schedule of the Proposed Action) and would be coordinated with DBOR and neighboring harbor residents. No long-term activities would compromise harbor or sea access

No Impacts

The Proposed Action is consistent with factors listed in Section 3.2.1.2. No adverse impacts on public uses are anticipated for the following reasons:

- No change in ownership or type of public use is proposed;
- No change in zoning or harbor uses is proposed; and
- The Proposed Action is consistent with MSBH objectives and policies and with state and local land use and recreational plans.

Beneficial Impacts

Proposed construction under any of the four identified viable design alternatives would result in a beneficial impact. Construction of one or two piers would allow the USCG to secure the new 47-foot MLB, which will be better capable of serving the USCG Maui Station and its jurisdiction in SAR missions. The pier(s) would be instrumental in protecting the MLB from the summer swells and bad weather. This benefit would be common to each of the four design alternatives, but if the USCG were to construct two piers instead of one, the vessel could be more securely moored between the piers instead of against one pier, thereby minimizing any rubbing or bumping against a single moor area. The new and improved MLB at Station Maui would benefit the public and recreational boat users, many of which are based at MSBH, by increasing the life-saving capability of the USCG and widening the area in which recreational boaters can safely operate.

3.2.1.2.2 No Action Alternative

No Impacts

There would be no impacts from the No Action Alternative on public uses and activities. The baseline conditions of public uses follow current community plans, though the new MLB would still be brought to MSBH and secured to the wharf. This would not be likely to compromise access within the harbor, and because this new boat would be used only for SAR calls and patrolling, there would be no public use of the new MLB. Impacts occurring independent of the Proposed Action would continue, but these would be negligible as there are no actions such as ongoing or recent land acquisitions or rezoning. There would be no impacts resulting from ongoing or past actions within the ROI.

3.2.1.3 Cumulative Effects Analysis

In order to evaluate the potential cumulative effects on public uses of the Proposed Action and other cumulative activities, an ROI including MSBH and a surrounding buffer were considered. A large component of public uses is the issue of access, so the buffer includes access routes and uses of these routes. The cumulative effects of traffic and roadways are discussed in Section 3.2.2.

Permanent construction is proposed under the following cumulative projects:

- Associated USCG Station Maui activities (for example, security fencing that will limit access to Station Maui);
- DLNR MSBH improvements (for example, various infrastructural improvements would temporarily limit access to the specific project sites, but movements toward structural compliance with ADA would improve access to harbor municipalities and improvements to the access roads and parking areas would result in a short-term adverse impact on access but long-term beneficial impact on access);
- USACE/DLNR navigational improvements (for example, although short-term adverse impacts may be experienced during dredging and seawall modifications, these improvements would allow for safer and more secure use of MSBH);
- Maui Ocean Center construction;
- Ma`alaea Generating Unit construction;
- Ma`alaea Village Project District housing construction;
- Ma`alaea Mauka Project District housing construction; and

- DLNR DOBOR and HDOT highways plans for Honoapi`ilani Highway.

Collectively, these projects could have adverse effects due to changes in public use type and ownership, but several projects would ultimately lead to long-term beneficial effects on access, safety, and security. Some of these projects are quite far along in the planning process or are completed, and mitigation has been identified during the planning phases of the specific projects to address the potentially significant public use impacts associated with individual projects. Other projects have not reached that level of planning yet. The Proposed Action would not contribute to significant cumulative impacts. The less than significant public use impacts associated with the Proposed Action are, for the most part, temporary and limited to the project site. All projects are consistent with state land use district zoning and land use designations as well as MSBH policies and uses.

3.2.2 Roadways and Traffic

3.2.2.1 Affected Environment/Region of Influence

For this evaluation, the ROI includes the roadways and vehicular traffic immediately leading in and out of the harbor and the parking facilities and nautical travel channels within MSBH. There are two main roadways accessing MSBH, Honoapi`ilani Highway (State Route 30) and Old Wailuku Lahaina Road, which connects with Ma`alaea Road. Harbor nautical uses are discussed further in Public Uses, Section 3.2.1. Figure 3-2 shows the major highway systems on the island of Maui. Figure 3-3 shows roads in the vicinity of MSBH, which are discussed in this evaluation.

In January 2005, a traffic evaluation study was published in a DLNR EA for proposed improvements at MSBH (DLNR 2005). This study documented and rated the baseline level of service (LOS).[1] Table 3-1 summarizes their ratings and findings.

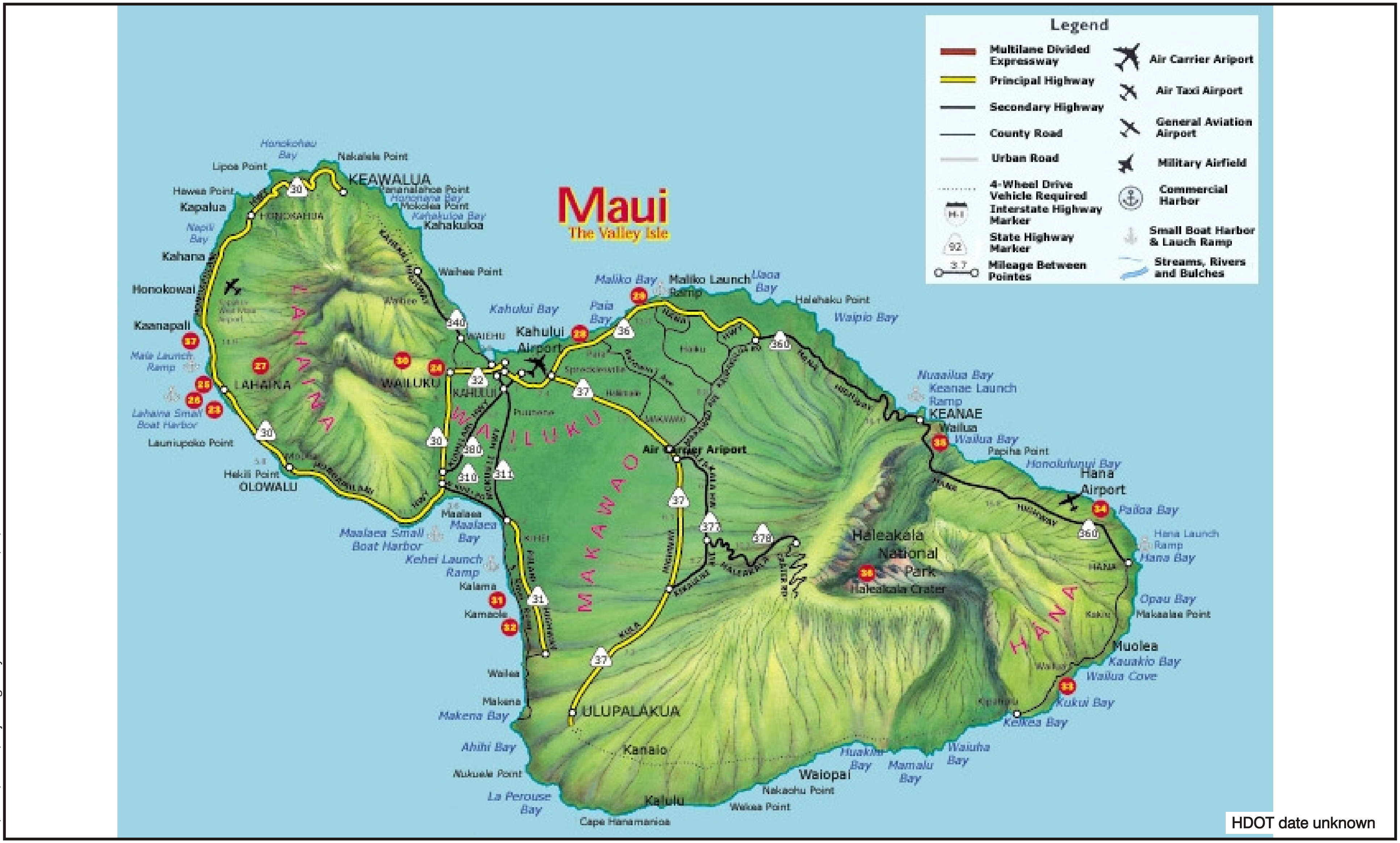
Table 3-1
Summary of 2005 DLNR EA Traffic Study for MSBH

		LOS AM Peak Period[a]	LOS PM Peak Period[b]
Honoapi`ilani Highway and Ma`alaea Harbor Access Road	Traffic turning left and right onto Honoapi`ilani Highway	D	F
	Northbound traffic turning right from Hana Highway	N/A[c]	N/A[c]
	Southbound, left-turning and trough-traffic on Honoapi`ilani Highway	A	B
Honoapi`ilani Highway and Old Wailuku Lahaina Road (Ma`alaea Road) (south end)	Right turns in and out of the harbor	N/A[d]	N/A[d]
	Right turn out of Old Wailuku Lahaina Road feeding into an auxiliary lane through the Ma`alaea Triangle area	B	C
Old Wailuku Lahaina Road (Ma`alaea Road) and the Internal Harbor access road	All turning movements at this intersection	A	A

Source: DLNR 2005

[a]AM peak period determined to be from 6:15 AM to 7:15 AM.
[b]PM peak period determined to be from 4:45 PM to 5:45 PM.
[c]The study found that north-bound right-turning movements from Hana Highway were unrestrained and thus not evaluated.
[d]The study found that right-turning movements from the highway into the harbor access road were unrestrained and thus not evaluated.

[1]LOS refers to a standard measurement used by transportation officials and reflects the relative ease of traffic flow on a scale of A to F, with free-flowing being rated LOS A and congested conditions rated as LOS F (FHWA, no date).



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Major Highways on Maui

Island of Maui, Hawai'i

Figure 3-2

R:\NEW\16862\GIS\Layouts\roads.mxd - 02/02/06 - JC

MSBH Vicinity Roadways

Ma'alaea Harbor,
Maui, Hawai'i

Tetra Tech, Inc

Figure 3-3

The two most recent available Hawai`i Department of Transportation (HDOT) 24-hour traffic counts for the MSBH region were surveyed on April 8, 1999, and May 14, 2001. The 1999 HDOT survey counted individual vehicles traveling on Honoapi`ilani Highway at the intersection with Old Wailuku Lahaina Road/Ma`alaea Road. The total traffic volume for this intersection on this day was 26,257 vehicles in a 24-hour period. In the 1999 study, 412 vehicles were counted entering and 210 exiting MSBH, using Old Wailuku Lahaina Road/Ma`alaea Road (HDOT 1999). In the 2001 HDOT survey, individual vehicles were counted traveling on Honoapi`ilani Highway at the intersection with Kapoli Street. The total traffic volume at this intersection on this day was 4,988 vehicles in a 24-hour period. In this study, 1,809 vehicles entered and 3,179 exited MSBH, using Kapoli Street (HDOT 2001). These HDOT traffic counts are somewhat outdated but do at least provide a baseline. The 2005 traffic study for MSBH compared peak hour traffic counts to that of HDOT's 2001 counts for peak volume periods. Peak periods coincide with typical AM and PM commuter periods. For Honoapi`ilani Highway northbound AM peak hour traffic, HDOT 2001 counted 419 vehicles and the preparers of the 2005 MSBH traffic study counted 380. For the southbound traffic AM peak hour, the counts were 1,127 and 1,003, respectively. HDOT's 2001 northbound PM peak hour traffic counted 1,133 and the 2005 MSBH count revealed 1,061; southbound was 857 and 809; respectively. In summary, the 2005 MSBH traffic counts conducted for the DLNR EA indicate a slight decrease in peak traffic volume compared to the older HDOT counts.

With the exception of a LOS rating of F for left- and right-turning traffic onto Honoapi`ilani Hwy from Ma`alaea Harbor Access Road, traffic at MSBH operates at acceptable LOS ratings or is unrestrained altogether.

Thirteen people make up the daily operational workforce at USCG Station Maui. Employees park in seven USCG-designated parking spaces. There are 277 parking stalls for the MSBH (DLNR 2005). Public parking for the MSBH is limited, and there is some traffic congestion within the parking areas as visitors drive around looking for open stalls and as tour buses pick up and drop off people for boat tours (DLNR 2005).

As discussed in Public Uses, Section 3.2.1, nautical traffic within the MSBH is composed of the 89 vessels that have berths there, 49 of which are recreational vessels, 13 are commercial fishing vessels, and 27 are charter fishing and commercial passenger vessels. The project site is along the northern wharf of MSBH within the central breakwater. The breakwater envelops numerous harbor slips and allows access at the southwest and to the northeast. The project site is at the northeastern extent of this breakwater where neighboring slip lessees travel from their slip space when entering and leaving the harbor.

3.2.2.2 Environmental Consequences

The ROI considered for the roadways and traffic impact analysis includes the roadways leading immediately into and out of the harbor, the parking facilities where construction and operation-related vehicles may likely travel, and the harbor channels where vessels enter and leave MSBH.

Impact Methodology and Considerations for Impact Analysis

The criteria for assessing effects on traffic conditions in the ROI included reviewing and interpreting baseline traffic conditions and applying the projected traffic contributions that may be generated as a result of the Proposed Action. Traffic factors include volume, LOS (defined in Section 3.2.2.1), and volume to capacity ratio (V/C).[2] Significance is determined if the traffic from the Proposed Action would result in a decrease of the baseline LOS rating for the affected roadways or intersections. In other words, if the Proposed Action were to generate traffic volume so as to increase congestion in the ROI, then that would be deemed a significant impact on traffic conditions.

3.2.2.2.1 Proposed Action

Design Alternative 1: Single Fixed Concrete Pier Alternative

Less Than Significant Impacts

Construction Phase. No adverse effects on traffic conditions, roadways, or parking facilities within the ROI are anticipated under Design Alternative 1. During the construction phase of the single fixed concrete pier alternative (July 2006 through November 2006) existing roadways would continue to be used for regular operations. Any necessary barricading within the harbor parking area would be temporary, limited to the areas adjacent to the Proposed Action berthing site, and would be prearranged with DBOR, the Maui Police Department, and other harbor residents. There could be some infrequent short-term traffic disturbances on some roads within the harbor, but nothing that would inhibit traffic flow or cause significant adverse effects (e.g., road closures).

Traffic generation and effects under these alternatives include heavy equipment, delivery of concrete and materials, miscellaneous service trips, and daily commuting for approximately eight construction workers. These workers would likely park on-site in available vehicle parking areas. Traffic resulting from construction-related equipment and crew vehicles would be infrequent. DLNR maintains the roads and parking areas within the harbor. Vehicular traffic is normally low in volume, as discussed in Section 3.2.2.1, and would not be substantially affected by the cyclic integration of construction vehicles and equipment. Although traffic conditions would not experience any significant

[2] V/C measures traffic demand on a facility (expressed as volume), compared to the traffic carrying capacity. In other words, this is the ratio of the level of vehicular travel for a roadway to the amount of designed capacity on the roadway. A V/C ratio of 1means the roadway is functioning at capacity and congested conditions are expected (APA 2002).

adverse effects during the construction phase of Design Alternative 1, the USCG and its contractors would coordinate with DBOR, the Maui Police Department, and other harbor residents and users in the event a roadway or portion of the parking area were to be barricaded. Furthermore, the USCG and its contractors would schedule major deliveries around heavier traffic periods or other activities to the extent needed or practicable.

Construction vehicles include heavy equipment, such as a pile driving rig, a crane with clam shell for dredging, dump trucks for hauling the dredged material, cement trucks, and flat beds or related delivery vehicles as needed. In order to promote efficiency while avoiding traffic congestion, heavy equipment would be on-site only for the duration of use and would not require a longer term staging area. One staging area would be set up and used by the construction crew to store materials and smaller daily-use equipment until it is needed. This staging area would be immediately northeast of the proposed project site and across the parking lot in an open area (Figure 3-2). Most of the required concrete would be delivered from one of two commercial plants in Puunene. There are no significant adverse impacts on traffic conditions, roadways, or parking facilities within the ROI anticipated under this alternative during the construction phase of the Proposed Action.

Although the impacts on nautical harbor uses resulting from the Proposed Action are discussed further in Section 3.2.1.2.1, traffic-specific impacts would result during the short-term construction period (generally estimated to be from August through October 2006, though impacts would be intermittent and would not last this full period). As previously mentioned, the project site is in a location where neighboring slip users along the northern wharf of MSBH, within the central breakwater, access the main harbor channels from MSBH. Construction activities would include intermittent use of equipment set on barges or in this access channel, while the proposed pilings were being driven and piers were being constructed. Vessel traffic may be impeded during this period. The scheduling of these activities would be shared with DBOR and harbor users, and access would remain open at the southwestern extent of the central breakwater. For these reasons, this short-term impact is considered less than significant.

No Impacts

<u>*Operational Phase*</u>. No impacts on nautical or vehicular traffic conditions, roadways, or parking facilities within the ROI are anticipated under Design Alternative 1. The operational phase would begin after the construction phase is completed and the vessel is delivered to the site. The on-site staff of 13 would not change as a direct result of the Proposed Action, so no impacts are anticipated.

<u>*Design Alternative 2: Two Fixed Concrete Piers Alternative*</u>

Impacts under Design Alternative 2 are identical to those identified under Design Alternative 1. Less than significant short-term impacts would be experienced during the estimated five-month construction period in correlation to the phases of construction activities. Any potential conflicts with harbor activities or neighboring traffic flows would be coordinated with DBOR, the Maui Police Department, and harbor residents. No impacts would continue during the operational phase of the Proposed Action under Design Alternative 2.

Design Alternative 3: Single Floating Concrete Pier Alternative

Less Than Significant Impacts

Construction Phase. The potential construction-related impacts under Design Alternative 3 would be the same as those described under Design Alternative 1, with one minor exception. The floating pier alternatives would require less concrete and therefore fewer concrete delivery trips during the estimated five-month construction period. Less than significant impacts would remain, as discussed under the Design Alternative 1 evaluation, but at a slightly lower level.

No Impacts

Operational Phase. The potential operational impacts under Design Alternative 3 would be the same as those discussed under Design Alternative 1, but with one minor exception. The floating pier alternatives would require additional maintenance over the life of the piers, compared to the fixed concrete pier alternatives. This difference would be negligible, with no substantial adverse effects on nautical or vehicular traffic or roadways anticipated. Thus no adverse effects on traffic conditions, roadways, or parking facilities within the ROI are anticipated under this alternative.

Design Alternative 4: One Floating Pier and One Fixed Concrete Pier Alternative

Impacts under Design Alternative 4 are identical to those identified under Design Alternatives 1 and 3. Less than significant short-term impacts would be experienced during the estimated five-month construction period in correlation to the phases of construction. This alternative would require more concrete delivery than that mentioned under Design Alternative 3, but slightly less than that discussed under the fixed concrete pier alternatives. Any potential conflicts with harbor activities or neighboring traffic flows would be coordinated with DBOR, the Maui Police Department, and harbor residents. No impacts would continue during the operational phase of the Proposed Action under Design Alternative 4.

3.2.2.2.2 No Action Alternative

Nautical and vehicular traffic would experience no adverse effects from the No Action Alternative. No facility would be constructed, and, although the new MLB would be brought to MSBH, it would be used only as a patrol boat, so there would be no effect on roadways or parking facilities under the No Action Alternative.

3.2.2.3 Cumulative Effects Analysis

Traffic conditions are often susceptible to the cumulative effects of multiple proposed construction-related actions. The Proposed Action would have no direct or indirect traffic impacts during the operational phase alone, and there would be only minimal short-term impacts from construction-related traffic. However, when factoring in and accounting for every additional incremental effect from unrelated projects in the ROI, then the potential for cumulative traffic effects may exist.

Due to ongoing personnel deficiencies at Station Maui, the USCG is working to redistribute personnel within its district to bring additional personnel to the station. This is not associated with the Proposed Action, and no definite timeline has been determined. Additional personnel would mean additional vehicles parking at and traveling through MSBH. However, any increase in personnel would be minor, and staff would work in shifts so that all new vehicles would not always be traveling and parking in the area at the same time. This impact is considered negligible.

Although the operational phases of the cumulative projects identified within the ROI are not expected to result in any substantial change in traffic flow or congestion, the construction phases of various cumulative projects may overlap and could result in numerous detours, limitations on traffic flow patterns, and increased crew traffic in and around the MSBH area. Still, any concurrent construction phasing is expected to be minimal and coordination with DBOR would minimize any additive effects. These incremental construction phase impacts are considered to be less than significant. Furthermore, any longer term effects, such as personnel increases or housing development, would be negligible and would be supported by roadway improvements and design in order to minimize impacts on traffic flows. Therefore, cumulative effects on traffic conditions are considered to be less than significant, and contributing impacts of the Proposed Action would be short term.

3.2.3 Noise

3.2.3.1 Affected Environment/Region of Influence

Hawai`i has adopted statewide noise standards that apply to fixed stationary noise sources and equipment related to agricultural, construction, and industrial activities. The design alternatives under the Proposed Action do not introduce any stationary noise sources, such as generators, but they do involve construction-related activities and equipment; thus, Title 11 of Chapter 46 of the HAR applies to this evaluation. The project area is zoned as a Class B district under these statewide community noise regulations (HAR 11-46-4). Class B zoning districts include "all areas equivalent to lands zoned for multi-family dwellings, apartment, business, commercial, hotel, resort, or similar type." The A-weighted decibel scale (dBA) is used in statewide standards because it best approximates the way the human ear responds to noise levels.

Maximum permissible daytime sound levels in Class B zones under HAR 11-46-4 are 60 dBA for nonimpulse noise (for example, the steady noise of a crane) and 70 dBA for impulsive noise (for example, a jackhammer). These noise limits are defined as levels that can be exceeded no more than ten percent of the time in any 20-minute period (L_{10}).

Existing noise sources at MSBH include terrestrial and marine traffic, wind, and public uses of the harbor. There have been no known noise studies conducted at MSBH.

With the exception of biological communities, noise-sensitive receptors at MSBH are limited to the residential area (condominium complexes) to the northeast of the project site. The nearest condominium is approximately 220 feet from the installation point for the pier(s). There are no other sensitive receptors near the harbor, such as schools, hospitals, or other similar land uses where people generally expect and need a quiet environment. Underwater noise and sensitive biological receptors, such as sea life living in the waters of the harbor, are discussed in Sections 3.2.7 of this EA.

3.2.3.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

Project-related noise impacts were evaluated by using existing noise generation estimates for the equipment expected to be used during project activities. Noise levels were then attenuated over distance at a rate of 6 dBA for every doubling of distance from the reference noise point provided in the literature (or likewise increased at a rate of 6 dBA for every halving of distance from the reference noise point). Where possible, the distance of the 60 dBA noise contour from the construction site was determined and depicted on Figure 3-4 (60 dBA is the maximum permissible daytime sound levels in Class B zones under HAR 11-46-4).

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The 60 dBA contour shows the area that would be exposed to noise levels in exceedance of the maximum permissable daytime sound level.

60 dBA Noise Contour for 90 dBA Crane

60 dBA Noise Contour for 96 dBA Crane

58 dBA Noise Contour for 100 dBA Cement Mixer

Project Construction Noise Contour

Ma'alaea Harbor,
Maui, Hawai'i

Tetra Tech, Inc

Figure 3-4

Noise impacts would be considered significant if the project were to generate noise above 60 dBA at any residential areas without permit from HDOH. In this analysis, the identified sensitive noise receptors are the condominiums to the northeast of the project site.

3.2.3.2.1 Proposed Action

Design Alternative 1: Single Fixed Concrete Pier Alternative

Less than Significant Impacts

Construction Phase. Noise would be generated during construction, which includes dredging the harbor floor, drilling underwater holes for anchoring the piers, and operating the construction machinery and equipment. Excavation would involve a crane with a clamshell bucket and two dump trucks to transport the excavated sediment to a landfill. Holes for the anchors would be drilled using a drill rig, and the piles for the piers would be driven using a pile driver. The construction phase would involve a flatbed truck to bring in materials, a cement truck for mixing and pouring cement for the piers, and a crane for lifting the pre-cast cement planks into the water. Noise data has been acquired for individual pieces of equipment and is used as a basis for the analysis of noise impacts. Tables and figures have been provided to further illustrate the potential noise impacts during the construction phase of the Proposed Action. Some documentation reports the amount of noise generated by individual types of equipment at specific distances from the equipment, while other documentation states “at or near” the equipment. For the “at or near” data where a distance is not specified, a 10-foot distance has been assumed for this analysis.

Dredging. Dredging would produce noise for approximately one week in August 2006, when cranes and dump trucks would be the major sources of noise. Cranes typically generate noise levels in the range of 90 to 96 dBA at a distance of 10 feet (CPWR 2003). Sound levels from a point source of noise, such as equipment and machinery, are expected to decrease by about 6 dBA for every doubling of distance away from the source (OSHA 2005). Table 3-2 shows the theoretical lessening of noise levels from two cranes at the dredging site to the neighboring condominiums; the 90 dBA crane represents a quieter crane, and the 96 dBA crane represents a noisier crane.

As shown in this table, receptors at the nearest condominium, at a distance of about 220 feet, would experience outdoor noise levels dredging in the range of 66 to 72 dBA for a 96 dBA crane and 60 to 66 dBA for a 90 dBA crane. This noise level exceeds the maximum permissible daytime sound level of 60 dBA in Class B zones, as stated under HAR 11-46-4 for nonimpulse noise. Figure 3-4 shows the theoretical position of the 60 dBA contour based on the data in Table 3-2. The area within this contour is expected to be exposed to noise levels louder than the maximum permissible daytime sound level in a Class B Zone.

Table 3-2
Noise Levels at Varying Distance from Crane during Dredging

Distance of Receptor from Noise Source (Feet)	Noise Level (dBA) with 96 dBA Crane	Noise Level (dBA) with 90 dBA Crane
10	96	90
20	90	84
40	84	78
80	78	72
160	72	66
320	66	60
640	60	54
1,280	54	48

Source: CPWR 2003

Note: Shading shows range distance of the nearest condominium (about 220 feet).

Also during the dredging phase, two dump trucks would alternate moving dredged material to the drying site. Figure 3-1 shows the location of the drying site. Dump trucks generate approximately 81 dBA of noise at a distance of 50 feet (USEPA 1987). Table 3-3 shows the lessening of noise levels from the dump trucks at the dredging site to the neighboring condominiums.

Table 3-3
Noise Levels at Varying Distances from Dump Truck during Dredging

Distance of Receptor from Noise Source (Feet)	Noise Level (dBA)
12.5	93
25	87
50	81
100	75
200	69
400	63
800	57
1200	51

Note: Shading shows range distance of the nearest condominium (about 220 feet).

As shown in this table, receptors at the nearest condominium, at a distance of about 220 feet, would experience outdoor noise levels resulting from dredging in the range of 63 to 69 dBA. This noise level exceeds the maximum permissible daytime sound level of 60 dBA in Class B zones, as stated under HAR 11-46-4 for nonimpulse noise. The 60 dBA contour would be somewhere between 400 and 800 feet from the project site and would encompass two condominium complexes. This range is depicted on Figure 3-4.

Drilling. Drilling would produce noise for approximately two weeks in September of 2006. The drill rig has an operating noise level of approximately 60 dBA at a distance of 50 feet from the drill rig above water (Pacific Geotechnical Engineers 2005). Table 3-4 shows the lessening of noise from the drill rig at the drilling site to the neighboring condominiums.

Table 3-4
Noise Levels at Varying Distance from Drill Rig During Drilling

Distance of Receptor from Noise Source (Feet)	Noise Level (dBA)
12.5	72
25	66
50	60
100	54
200	48
400	42

Note: Shading shows range distance of the nearest condominium (about 220 feet).

As shown in Table 3-4, noise from the drill rig during drilling would be below the maximum permissible daytime noise level at the nearest condominium, about 220 feet from the drilling site.

Pile Driving. Design Alternative 1 would involve the driving of five piles and would produce noise for a maximum of two weeks during September of 2006. Pile driving has been documented to produce noise at a level of approximately 95 dBA at a distance of 50 feet (Workers' Compensation Board of British Columbia 2000). Table 3-5 shows the lessening of noise from the pile driver from the site to the neighboring condominiums.

Table 3-5
Noise Levels at Varying Distance from Pile Driver

Distance of Receptor from Noise Source (Feet)	Noise Level (dBA)
12.5	108
25	102
50	95
100	88
200	82
400	76
800	70
1600	64
3200	58
6400	52

Note: Shading shows range distance of the nearest condominium (about 220 feet).

As shown in Table 3-5, noise from the pile driver would be above the maximum permissible daytime noise level at the nearest condominium, about 220 feet from the drilling site.

Pier Construction. Pier construction would produce noise for approximately eight weeks, starting in September and ending in October 2006. Flatbeds would be used to bring in materials, a concrete truck/cement mixer would make up to 10 trips to deliver and mix concrete, and a crane would be used to lift the precast cement planks into the water. (Noise levels for crane operations are discussed above, under Dredging.)

The cement mixer has an operating noise level of approximately 100 dBA at a distance of 10 feet from the mixer (NIH 2005). Table 3-6 shows the lessening of noise from the cement mixer from the project site to the neighboring condominiums.

As shown in this table, receptors at the nearest condominium, at a distance of about 220 feet, would experience outdoor noise levels resulting from construction in the range of 70 to 76 dBA. This noise level exceeds the maximum permissible daytime sound level of 60 dBA in Class B zones, as stated under HAR 11-46-4 for nonimpulse noise. The 60 dBA contour would be somewhere between 640 and 1,280 feet from the project site and would encompass four condominium complexes to the northeast. This range is depicted on Figure 3-6.

Table 3-6
Noise Levels at Varying Distances from the Cement Mixer During Pier Construction

Distance of Receptor from Noise Source (Feet)	Noise Level (dBA)
10	100
20	94
40	88
80	82
160	76
320	70
640	64
1280	58
2,560 (0.48 mile)	52
5,120 (0.97 mile)	46

Note: Shading shows range distance of the nearest condominium (about 220 feet).

Since the projected activities would likely exceed the maximum permissible noise levels during dredging, construction, and pile driving, the USCG would be required to acquire a noise permit from HDOH before starting any construction at the project site (HDOH 2005). HDOH may grant a permit for a project that would exceed maximum permissible noise levels, but the permit would include day and time restrictions on when such noise could be generated. Compliance with this permit and the mitigation measures described below would reduce noise impacts to less than significant levels.

Ground-borne vibrations would not likely be detectable beyond the immediate job site during drilling. Drilling through soil would create minimal ground-borne vibrations, unlikely to be detectable by people standing at the harbor. Drilling through the bedrock would begin at approximately 30 feet below MLLW, and associated ground-borne vibrations would not be detectable by people standing on the ground surface.

Construction-Related Traffic Noise. A short-term negligible increase in general vehicle traffic to and from the harbor would be expected, including noise from construction workers traveling to and from the site and vehicles delivering construction materials and hauling away dredged materials. A projected eight construction workers would travel to and from the site each day, resulting in a maximum of 16 passenger vehicle or pickup truck trips per day. The hauling of dredged materials would involve two alternating dump trucks for the dredging period of one week. Two to three flatbed truck trips are expected for delivering the concrete piles, and up to 10 concrete truck trips would be required to deliver concrete. The few additional trips per day would result in less than significant noise impacts. All traffic noise would be intermittent and short-term and would not have significant impacts on background noise conditions.

Construction Worker Noise Exposure. With regard to potential noise impacts from construction on workers and related job-site receptors, the contractor and applicable subcontractors would be required to comply with all federal Occupational Safety and Health Administration (OSHA) regulations and State of Hawai`i occupational noise exposure safeguards stipulated under HAR 12-200.1. These safeguards include establishing a hearing protection program and issuing on-site hearing protectors during active operations for all employees exposed to an 8-hour time-weighted average of 85 dBA or greater. This requirement would be formalized in the contractor's HDOH-approved project health and safety plan. The project would result in less than significant noise impacts on construction workers.

Underwater noise impacts are discussed in Section 3.2.7.

Mitigation. Although no significant impacts have been identified, in order to minimize expected noise impacts during construction at MSBH, contractors would implement reasonable noise reduction practices and abatement procedures during construction. These include the following source control mitigation measures, all regarded as standard in the industry:

- Conduct all noise-emitting activities within strict day and time constraints, with work prohibited during sensitive nighttime periods;
- Reduce or substitute power operations/processes with proportionally sized and proportionally powered equipment necessary only for tasks at hand;
- Maintain all powered mechanical equipment and machinery in good operating condition with proper intake and exhaust mufflers; and
- Turn off or shut down idling equipment and machinery between active operations.

In addition, contractors would be required to comply with applicable state noise regulations under HAR 11-46 during the project. For instance, all construction equipment and machinery with a motor or exhaust system must have properly functioning mechanical mufflers to reduce noise emissions, and the use of altered or modified equipment with impaired or limited noise reduction capabilities is strictly prohibited. Furthermore, although state noise control regulations do allow for permits to generate excessive noise sources "which (are) in the public interest," the following construction permit restrictions relating to nuisance noise are mandated (HAR 11-46-7):

- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels for the hours before 7:00 AM and after 6:00 PM of the same day, Monday through Friday;
- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels for the hours before 9:00 AM and after 6:00 PM on Saturday; and,
- No permit shall allow any construction activities that emit noise in excess of the maximum permissible sound levels on Sundays and on holidays.

No Impacts

Operational Phase. Operational phase impacts of Design Alternative 1 do not change from existing ambient noise levels at MSBH. This alternative would have no impact on long-term noise conditions.

Design Alternative 2: Two Fixed Concrete Piers Alternative

Less than Significant Impacts

Construction Phase. Impacts on existing ambient noise conditions from construction phase under Design Alternative 2 are the same as those discussed under Design Alternative 1. The only difference in noise levels is the length of time the drill rig and pile driver would be at the site due to the different number of piles. The Two Fixed Pier Alternative would require four additional piles to be driven (for a total of nine piles) and additional pier construction. Since the pile driver would produce noise that would exceed the maximum permissible daytime noise level, Design Alternative 2 would have a greater noise impact than any of the other alternatives. Compliance with HDOH noise permit conditions and the mitigation measures described above would reduce noise impacts under the Design Alternative 2 to a less than significant level.

No Impacts

Operational Phase. Operational phase impacts of Design Alternative 2 do not change from existing ambient noise levels at MSBH. This alternative would have no impact on long-term noise conditions.

Design Alternative 3: Single Floating Pier Alternative

Less than Significant Impacts

Construction Phase. Impacts on existing ambient noise conditions from construction operations under Design Alternative 3 are the same as those discussed under Design Alternative 1. The only difference in noise levels is the length of time the drill rig would be at the site due to the different number of piles between alternatives. Design Alternative 3 would require a total of three piles to be driven (two less than Design Alternative 1 projections). Pier construction would be comparable to that of Design Alternative 1. Since the pile driver would produce noise that would exceed the maximum permissible daytime noise level, Design Alternative 3 would have a lower noise impact than any of the other alternatives. Compliance with HDOH noise permit conditions and the mitigation measures described above would reduce noise impacts under Design Alternative 3 to a less than significant level.

No Impacts

Operational Phase. Operational phase impacts of Design Alternative 3 do not change from existing ambient noise levels at MSBH. Design Alternative 3 would have no impact on long-term noise conditions.

Design Alternative 4: One Floating Pier and One Fixed Concrete Pier Alternative

Less than Significant Impacts

Construction Phase. Impacts on existing ambient noise conditions from construction operations under Design Alternative 4 are the same as those discussed under Design Alternative 1. The only difference in noise levels is the length of time the drill rig would be at the site due to the different number of piles between alternatives. Design Alternative 4 would require a total of six concrete piles to be driven and additional pier construction. Since the pile driver would produce noise that would exceed the maximum permissible daytime noise level, Design Alternative 4 would have a greater noise impact than Alternatives 1 and 3 and a lower noise impact than Alternative 2. Compliance with HDOH noise permit conditions and the mitigation measures described above would reduce noise impacts under Design Alternative 4 to a less than significant level.

No Impacts

Operational Phase. Operational phase impacts of Design Alternative 4 do not change from existing ambient noise levels at MSBH. Design Alternative 4 would have no impact on long-term noise conditions.

3.2.3.2.2 No Action Alternative

No Impacts

Under the No Action Alternative, no construction would take place. The new MLB would come to MSBH, but, because it would be used only for patrolling and responding to SAR calls, no change in noise levels is expected. Other activities and security improvements at Station Maui would continue, but fencing and structural improvements would be short-term and would introduce minimal noise impacts. There would be no change in existing noise levels at MSBH in the long term. The No Action Alternative would have no impact on noise conditions.

3.2.3.3 Cumulative Effects Analysis

Although it is unlikely that any of the cumulative projects identified within the ROI would be constructed concurrently with the Proposed Action, it is possible that projects may overlap and have an additive effect on noise levels in the project area. Furthermore, simultaneous stages of the construction phase of each activity could also have a similar additive affect. For instance, when a dump truck is operating at the same time as the dredging equipment, although the noises do not add together, the concurrent sources result in potentially additive disturbance. Although specific equipment and machinery was not described for each of the cumulative activities, HDOH would require a noise permit for any activities exceeding the HAR 11-46 Class B permissible noise level. Compliance with HDOH noise permit conditions and the mitigation measures similar to those described above under the Proposed Action would reduce noise impacts for each cumulative project to a less than significant level. Furthermore, because the Proposed Action is not anticipated to overlap with other major construction projects, the contribution of the Proposed Action to this less than significant effect would not minimal.

Several of the identified cumulative projects discussed in Section 3.1.3 would result in noise increases in the project area over the long term; however, since the Proposed Action would not result in any long-term noise impacts, it would not result in any long-term cumulative noise impacts.

3.2.4 Water Resources and Hydrology

3.2.4.1 Affected Environment/Region of Influence

MSBH is part of the Kīhei coast, which begins on the western end of MSBH and extends around Ma`alaea Bay to the east, all the way to Big Beach and Mākena. The Kīhei coast is partially protected by Lana`i and Kaho`olawe from large ocean swells. However, south swells strike the entire Kīhei coast during the summer and can dramatically change the profile of the beach. Additionally, the passage of hurricanes has been known to generate swells that influence the beach profile. Also, thermal updrafts that develop during the day on the slopes of Haleakalā tend to turn the winds onshore on Ma`alaea Harbor (Hawai`i Coastal Geology Group 2005).

MSBH is within the Pōhākea watershed (or *ahupua`a*). Groundwater boundaries at MSBH are the Waikapū Aquifer System of the Wailuku Aquifer Sector Watershed; groundwater-aquifer and sector boundaries are shown on Figure 3-5. A sector is a large region with hydrogeological similarities that primarily reflects broad hydrogeological features and, secondarily, geography. A system is an area within a sector showing hydrogeological continuity (HDOH 2004). Boundaries of the Pōhākea watershed are shown on Figure 3-5.

Waters of MSBH, Pōhākea watershed, and Waikapū Aquifer System make up the ROI for impacts on water resources.

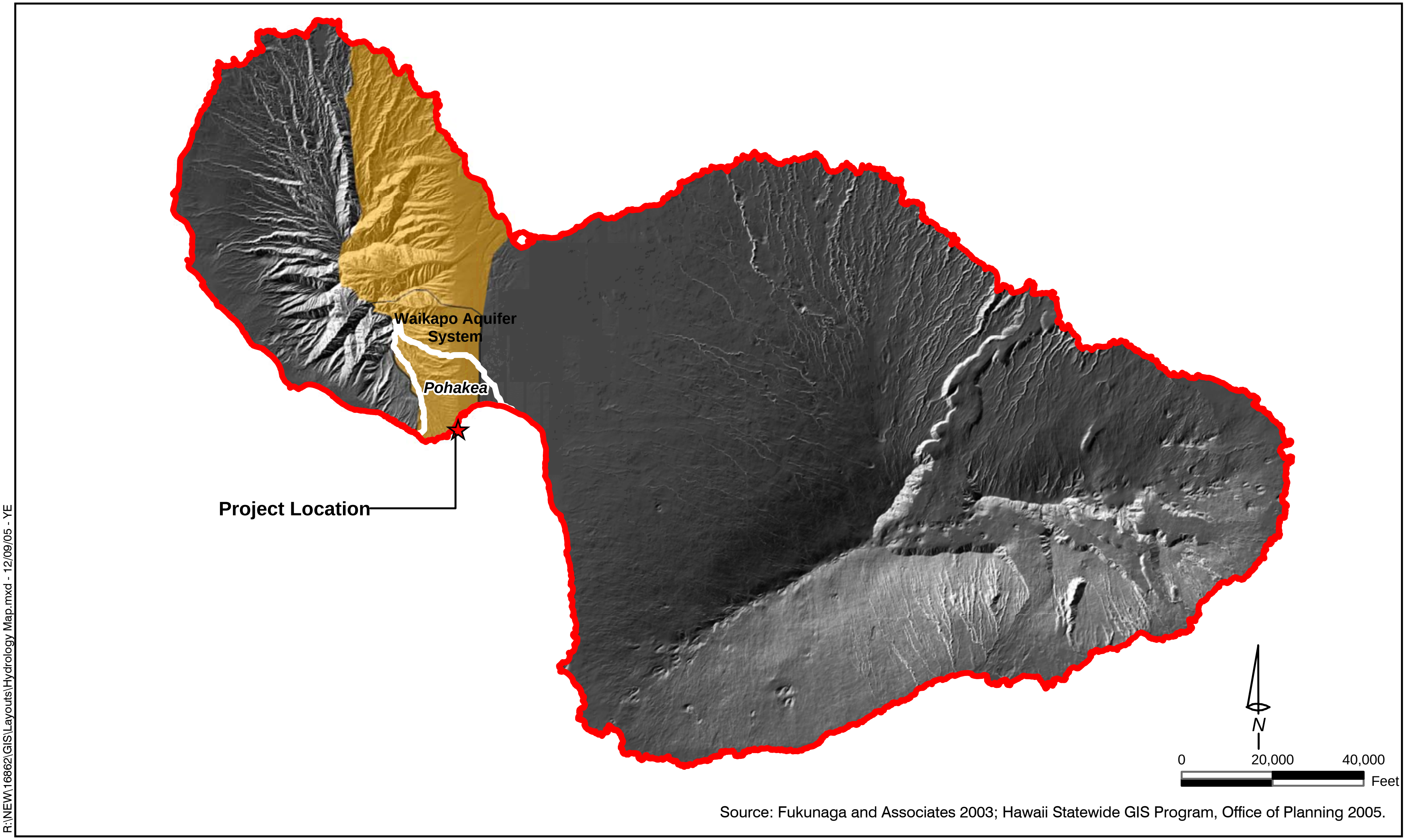
Drainage Features

Stormwater runoff from the upland drainage area is collected in three ditches that drain into the ocean (DLNR 2005). With a low rainfall in the area, the amount of runoff feeding into these ditches is relatively low. However, during periods of high rainfall, the sediment load in nearshore waters of Ma`alaea Bay increases substantially as a result of drainage from erosion-prone uplands. Although the harbor acts as a sediment trap, finer sediments are regularly resuspended by vessel activity, and these sediments exit the harbor in the surface flow. Bottom sediments remain within the harbor, where they are confined by the inward bottom flow pattern (DLNR 2005).

Under a separate action, MSBH is undergoing certain improvements, which include the installation of a drainage detention system at a parking lot at the northeast side of the project area. The detention system would capture post-development stormwater to mitigate adverse impacts on downstream and adjacent properties (DLNR 2005).

Dredging

Approximately 60 cubic yards of benthic soil would be dredged from the proposed berthing area (contained within the 3,312-square-foot area of harbor slips 108 and 109).



Hydrologic Features

Wailuku Sector

Watershed Boundary

Ma'alaea Harbor, Maui, Hawai'i

Tetra Tech, Inc

Figure 3-5

Boring results indicated that subsurface conditions consisted of silty sand harbor deposits, underlain by sandy silt alluvium (Pacific Geotechnical Engineers 2006). Dredged material would be composed most likely of fine sediments. In order to address contaminants released from sediments during harbor dredging, in 1994 the USACE, Honolulu Engineer District, conducted a sediment analyses. Sediment samples were tested for inorganics, pesticides, herbicides, volatiles, and semivolatiles, in accordance with the methods specified in EPA publication SW-846. None of the tested samples were found to be near the action limits established by the EPA (USACE 1998). Although these results were used in planning for this project evaluation, the USCG conducted a project- and site-specific soil boring in February 2006 including sediment sampling and characterization. These samples analyzed for total petroleum hydrocarbons, polychlorinated biphenyls, metals, volatile organic compounds, semivolatile organic compounds, pH, and ignitability. Samples were analyzed for total metals, as opposed to just TCLP metals, which is the isolated constituent of interest in profiling soils for landfill disposal. However, Section 1.2 of the TCLP test method (EPA Method 1311) allows for a total constituent analysis in lieu of the TCLP extraction (http://www.epa.gov/sw-846/faqs_tclp.htm). The results of the total constituent analysis may be divided by twenty to convert the total results into the maximum leachable concentration. Barium, chromium, and lead were detected in these samples, but when divided by 20, they are well below their allowable TCLP concentrations. All other analytes whose disposal is regulated by EPA were not detected (MFA 2006).

Flushing

Flushing is the amount of time that it takes to exchange the water within the harbor with the receiving water. Based on a study conducted by the USACE in 1994, north-northeast winds have a strong influence on the harbor circulation. Winds in MSBH induce a two-layer flow pattern. The surface layer flows outward while the bottom layer flows inward (USACE 1998).

In 1983, the EPA established a five-day threshold for coastal marina flushing. However, these guidelines suggest that different measures for flushing rates may be appropriate for different regions, depending on tide and position, and should be expressed as the percent of the water exchanged in a 24-hour period. At MSBH, the average flushing percentage is 50.3 percent in 24 hours.

Water Quality

The waters within MSBH are designated by Chapter 11-54 of the HAR as Class A waters, where recreational use and aesthetic enjoyment should be protected. Water within the harbor is moderately turbid as a result of fine sediments originating from three drainage ditches at the northern side of the harbor. Fine sediments are slowly washed from the harbor by winds and boat traffic. Bottom sediments remain within the harbor, where they are confined. Turbidity levels measured by the HDOH between 1991 and 1994 exceeded the state water criteria between one and four times. No exceedences were recorded in 1995 and 1996 (USACE 1998).

A water quality survey involving sample collection of the MSBH surface water was conducted on October 24, 2005, in conjunction with this EA. Results revealed low turbidity concentrations, between 1 and 1.5 nephelometric turbidity units (AECOS 2005). This water quality survey report is in Appendix E.

The harbor is designated as Class II Marine Bottom Ecosystem for unlimited recreational purposes and for the protection and/or propagation of fish, shellfish, and wildlife.

Waters outside the harbor are designated as Class AA waters, which should be remain in their pristine state as nearly as possible (USACE 1998).

Groundwater

As previously mentioned, groundwater boundaries at MSBH are the Waikapū Aquifer System of the Wailuku Aquifer Sector (Figure 3-5). The Waikapū Aquifer System is characterized by high level dike-impounded groundwater in Waikapū Valley, above an elevation of about 1,000 feet, and basal groundwater at lower elevations throughout the system. A well and a test hole were drilled in the basal lens, but potable water was not found. The well has an estimated yield of two million gallons per day of groundwater, suitable for irrigation but not for drinking. Potable groundwater is limited to the high level portion of the system (Yuen and Associates 1990).

One well, Ma`alaea Well, is within the Waikapū aquifer system. DLNR owns this well, which was drilled in 1965 for observation purposes.

There is no sewage collection system in the Ma`alaea area; cesspools or septic tanks are used instead. The sewer system for the harbor consists of injection wells and cesspools. A harbor cesspool is considered to be a failed system due to overflows and frequent pump out services. However, no groundwater contamination was identified at the site (USACE 1998). DLNR is planning certain site improvements not included in the Proposed Action. These include upgrading the wastewater systems of the harbor. The improvement to the wastewater systems will meet regulatory requirements, and the systems will have less environmental impact than they do now (DLNR 2005).

Flooding

MSBH is within zone V18, areas of 100-year flooding zone with waves action, and Zone C, areas of minimal flooding. Zone V18 encompasses the entire harbor, and Zone C surrounds the harbor area (DLNR 2005).

3.2.4.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

The methods used to determine whether a design alternative would have a significant impact on water resources or hydrology are as follows:

- Review and evaluate existing and past activities to identify the action's potential to affect water quality;
- Review and evaluate each design alternative to identify the action's potential to increase harbor or marine pollution or otherwise to affect water quality within MSBH;
- Review and evaluate the water quality results of the October 2005 underwater marine survey (AECOS 2005); and
- Assess the compliance of the Proposed Action with applicable federal, state, or local water quality regulations, guidelines, and pollution prevention measures.

Factors considered in determining whether the Proposed Action or any subsequent design alternative would have a significant impact on water resources or hydrology include the following:

- If any substantial degradation of water quality or hydrologic resources would result;
- The extent or degree to which implementing the Proposed Action and appropriate design alternative would alter the bacterial, physical, or chemical characteristics of the marine waters of the affected environment such that it would violate state water quality standards;
- The extent or degree to which implementing the Proposed Action and appropriate design alternative would result in harbor or ocean discharges that do not meet discharge criteria established under the CWA; or
- The extent or degree to which an alternative would violate the CWA, the CZMA, CERCLA, RCRA, or the Hawai`i Coastal Nonpoint Pollution Control Program policies.

3.2.4.2.1 Proposed Action

The environmental consequences related to water resources and hydrology are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

Less than Significant Impacts

The Proposed Action is anticipated to have short-term adverse environmental effects on water quality of the MSBH. Dredging and construction activities may resuspend sediments and increase turbidity levels. During the construction period, efforts would be made to reduce sediment loads by using silt curtains. The USCG would implement all the required regulatory compliance to minimize the impacts caused by dredging and the construction of the concrete piles and fixed pier(s). Additionally, implementing the following measures is expected to minimize the effects of dredging to less than significant levels:

- Incorporate adequate controls to minimize turbidity where excess turbidity levels are expected;
- Test sediments for contaminants; and
- Ensure that bankward slopes of the dredged area are slanted to acceptable angles to prevent sloughing.

No changes or construction activities are anticipated for the wharf, sheet pile wall, and revetment, and the Proposed Action would not increase impervious surfaces at the site. The existing stormwater flow patterns would not be significantly changed by the Proposed Action, and impacts on the drainage patterns at the project site would be less than significant.

Incidental discharges from boats may alter the quality of the waters at the harbor. In general, modern boats are designed to reduce the potential for inadvertent discharges. Implementing best management practices (BMPs) to control potential hazardous waste from the new MLB would reduce impacts on the harbor water quality. Additionally, accidental spills at the staging areas during construction may result in adverse impacts on the water quality. The USCG completed a site-specific spill prevention, control and countermeasures (SPCC) plan in April 2006. By following this plan while implementing and operating the proposed project, the potential for contaminants to migrate into harbor waters, drainage ditches, or the groundwater aquifer would be minimized and impacts would be negligible. Waste and spill management procedures and responsibilities at the project site are briefly discussed in Section 3.2.5.

Although the project site is within a 100-year flood zone, the Proposed Action is not expected to increase flooding in the harbor area.

3.2.4.2.2 No Action Alternative

No Impacts

Under the No Action Alternative no construction or dredging would take place, so no impacts on water resources are expected.

3.2.4.3 Cumulative Effects Analysis

Cumulative construction activities would increase the potential for soil erosion and sediments transported in runoff. However, the project proponents would be required to comply with local and state regulations to minimize the effects on surface and groundwater resources. Compliance measures may include the use of BMPs to control erosion and to minimize the potential for sedimentation. Construction projects on sites greater than an acre are required to implement a stormwater pollution prevention plan to minimize their effects on surface water.

Ongoing improvements for the sewer system near the project site being completed by DLNR would contribute positively in minimizing the adverse effects on water quality within the harbor.

The Maui Ocean Center, a nearby aquarium, has a package sewage treatment. Generated effluents are used for landscape irrigation or discharged into seepage/leach fields. Additionally, the center uses a flow-through seawater system, with the intake outside MSBH and the discharge through an existing drainage ditch that empties into the harbor. Water quality modeling for the center indicated that water quality has significantly improved in the immediate vicinity of the discharge, and that the aquarium water accumulating in the harbor improves flushing slightly (USACE 1998).

If project proponents of the cumulative projects identified within the ROI comply with state and local requirements, cumulative effects on water resources and hydrology would be less than significant. The Proposed Action would contribute temporarily to these effects during the estimated five-month construction period, but no long-term effects would result.

3.2.5 Solid Waste and Hazardous Materials Management

This section is a discussion of solid waste disposal and hazardous material use at the project site and how conditions may be affected by implement the Proposed Action. The potential presence of previously contaminated on-site soils is not discussed here since no surface soils would be disturbed by the Proposed Action. Soil testing conducted in conjunction with the February 2006 soil boring event characterized the soil so as to determine the appropriate means of disposal during the implementation of proposed dredging. These results are discussed in this section.

3.2.5.1 Affected Environment/Region of Influence

Solid waste, as defined under HAR §11-58.1-03 , refers to any garbage, refuse, and other discarded materials, including solid, liquid, semisolid, or contained gaseous materials discarded from industrial, commercial, mining, or agricultural operations and from community activities.

Hazardous waste, as defined by the EPA (Title 40 CFR, Part 261-299), refers to substances that have “imminent and substantial danger to public health and welfare or the environment.” HAR §11-58.1-03 concurs with this definition and allows for enforcement by either federal or state authority, whichever is more stringent.

For this evaluation, the ROI includes the USCG Station Maui with 120 feet of wharf, the proposed 3,312-square-foot berthing area, and the immediate surrounding area. Impacts include those from all activities associated with the Proposed Action, including the handling of solid waste and the use and handling of hazardous materials.

Resource Overview

Solid Waste

Much of Maui’s solid waste is delivered to the Central Maui Sanitary Landfill. A recently opened section of the landfill, called Phase 4, accepts approximately 450 tons per day and is expected to reach capacity in 2012 (Baker 2005). Commercial construction and demolition debris is banned from the county landfills on Maui; the private Maui Demolition and Construction Landfill in Ma`alaea disposes of such debris from commercial haulers (County of Maui 2005). Currently, the small amount of solid waste generated at Station Maui is picked up by the county garbage collectors.

Hazardous Materials and Site Contamination

Hawai`i does not have a hazardous waste disposal facility. Hazardous waste is shipped to the continental United States for proper disposal. Used oil, oily water, and coolants used in vehicle maintenance at Station Maui are removed by Unitek. Although no hazardous waste has been generated at the site in over a year, if any were generated, Haztech Environmental would remove it.

In conjunction with the February 2006 boring event and sediment sampling, paint samples were collected to test for the presence of lead-based paint. These samples were collected on features around the wharf that could be compromised during the construction phase of the Proposed Action. Measurable lead was identified on cleats and posts at the project site, but this material was found to be intact and sample analysis confirmed that the lead content was below the US Department of Housing and Urban Development definition of lead-based, thus requiring no special handling or disposal. Furthermore, this paint and these structures are not anticipated to be disturbed during project activities (MFA 2006).

Furthermore, a visual survey was conducted to identify any potential asbestos-containing materials (ACM). No suspect structures or materials were identified, thus no samples were collected to test for asbestos (MFA 2006).

3.2.5.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

Numerous federal, state, and local laws regulate the storage, use, recycling, disposal, and transportation of hazardous materials and waste. Their primary goal of these laws is to protect human health and safety. The methods for assessing potential impacts from solid waste or hazardous materials generally include the following:

- Reviewing and evaluating the Proposed Action to identify the action's potential to generate additional solid waste;
- Reviewing and evaluating the Proposed Action to identify the action's potential to use hazardous or toxic materials or to generate hazardous waste, based on the activities proposed;
- Assessing the compliance of the Proposed Action with applicable site-specific hazardous materials and waste management plans; and
- Assessing the compliance of the Proposed Action with applicable site-specific standard operating procedures and health and safety plans in order to avoid potential hazards.

Regulatory standards and guidelines have been applied to determine the significance of the Proposed Action's potential impact from solid waste and hazardous materials and waste. Factors considered in determining whether an action would have a significant impact include the extent or degree to which its implementation would result in the following:

- Generate solid waste in excess of the capacity of any approved municipal landfill;

- Generate either hazardous or acutely hazardous waste, resulting in increased regulatory requirements over the long term (for example, becoming a small or large quantity generator);
- Cause a spill or release of a hazardous substance (as defined by 40 CFR Part 302 [known as CERCLA], or Parts 110, 112, 116, and 117 [the Clean Water Act]);
- Expose the environment or public to any hazardous condition through release or disposal; or
- Cause the accidental release of friable (easily crumbled by hand pressure) asbestos or lead-based paint during the demolition or renovation of a structure.

3.2.5.2.1 Proposed Action

The environmental consequences related to solid waste and hazardous materials are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

Construction Phase

Less than Significant Impacts

Solid Waste. The Proposed Action would generate approximately 60 cubic yards of dredged material. This material would be placed within a container for drying with watertight sides so as not to allow the moisture to drain onto the land. An area of about 50 feet by 50 feet and two feet high would accommodate the material for drying. This site is identified on Figure 3-1. The dust controls outlined in Section 2.2 would be used, and prevailing trade winds would quickly dissipate any minor dust generated. Samples collected during the February 2006 boring event confirmed that sediment would not have to be handled or disposed of as contaminated material following the dredging phase of construction (MFA 2006). The dredged material would be dried and then trucked to an approved municipal landfill for disposal. Environmental controls would include silt curtains surrounding the dredge area to prevent silt migration and to reduce water quality impacts.

All other solid waste generated during construction would be handled and disposed of by the contractor at Maui’s construction and demolition landfill in Ma`alaea. Construction waste and debris would be secured, particularly during nonworking hours, to minimize windblown materials.

The Proposed Action’s construction-related impacts on solid waste disposal at MSBH would be negligible and short term.

Hazardous Materials. Construction operations would bring diesel- and gasoline-powered vehicles and equipment to the project site. Other potential hazardous materials involved with construction include oil, lubricants, and solvents. The construction contractor would abide by the following guidelines related to hazardous waste during construction:

- No hazardous waste is to be released at the site. Surplus or used oil, solvents, and similar material must be removed from the area and disposed of by an EPA-approved transport storage disposal facility. If a contractor’s employee accidentally spills any hazardous material, the spill must be reported immediately to the on-site USCG supervisor, who would supervise spill containment. The on-site USCG Contracting Officer’s Representative must approve spill remediation methods before cleanup, and all costs incurred for cleanup would be assigned to the contractor. In the event of a reportable release, the construction contractor would be liable for any federal or state imposed noncompliance penalties.
- Washing and curing water used for such activities as aggregate processing, concrete curing, and cleanup, cannot be released into the soil at the site. A recovery process is required by the contractor to recapture wastewater.

In the event of an accidental spill of a hazardous material, construction workers would immediately report the event to the on-site USCG Contracting Officer’s Representative. Containment activities would be implemented in accordance with EPA and state regulations. Impacts resulting from the use and handling of hazardous materials and waste during the construction phase of the Proposed Action would be less than significant.

Operational Phase

Less than Significant Impacts

Hazardous Materials. Operating the MLB would generate used motor oil and other waste fluids at the proposed facility. These wastes would be managed on the MLB and would be processed according to USCG protocols. These materials are currently used at Station Maui for the RB-S vessels, and protocol would remain the same, with one exception. Because the MLB is a larger vessel that will be kept in the water, the vessel would be fueled from an aboveground storage tank at Station Maui. This is the case for other vessels in the harbor of similar size, and Station Maui will follow the protocol of the MSBH in order to prevent spills. The USCG Contracting Officer’s Representative would be responsible for any spills and staff training to properly fuel the vessel. This impact is considered less than significant as the same offshore fueling practice is employed by other harbor boat owners.

There would be little potential for significant releases of hazardous substances to the environment from either the construction or operational phases of the pier(s). However, because the potential would exist, the Proposed Action would have a less than significant impact on hazardous materials and waste.

No Impacts

Solid Waste. After pier construction, no more solid waste would be generated at the site beyond the current Station Maui waste streams. There would be no long-term solid waste impacts.

3.2.5.2.2 No Action Alternative

No Impacts

Under the No Action Alternative there would be no change from the current use and handling of solid waste and hazardous materials. There would be no impact from solid waste and hazardous materials under the No Action Alternative.

3.2.5.3 Cumulative Effects Analysis

Several construction projects are included in the identified cumulative projects within the ROI, as discussed in Section 3.1.3. This could increase solid waste generation or hazardous materials present at the project site during construction. Project managers would need to coordinate with the appropriate municipal landfills to ensure capacity and would need to recycle materials when possible. These impacts are considered less than significant as long as landfills have the capacity for the short-term increase in solid waste. New residential development would increase local population, thus would increase solid waste generation. These increases should be planned for and are not anticipated to be substantial. No long-term significant increases in solid waste are anticipated from any of the cumulative activities.

The addition of a 1,000-gallon diesel tank on Station Maui under a separate action from the Proposed Action would increase the amount of fuel stored on site. The EPA requires facilities that use, manage, and store petroleum products to prepare and implement an SPCC plan. SPCC requirements apply to most facilities that have total aboveground storage capacity of 1,320 gallons or more. The addition of the new tank would bring the total storage capacity at Station Maui to only 1,250 gallons and, when added to additional 55-gallon drums storing on-site petroleum products used in vehicle maintenance, an SPCC plan would be required. Such a plan was developed specific to the project site. No other cumulative activities would involve a noteworthy increase in hazardous materials. There would be no significant long-term cumulative impacts from hazardous materials.

3.2.6 Public Health and Safety

3.2.6.1 Affected Environment/Region of Influence

The following section addresses the potential risk to the public health and safety within the ROI as a result of the Proposed Action. For this evaluation, the ROI includes the existing Station Maui parcel and the area that the USCG proposes to lease for the Proposed Action. Specifically considered for this evaluation was the existing capabilities of Station Maui and how the Proposed Action may improve or diminish public health and safety within the ROI. Under the Proposed Action, public health and safety could be affected (beneficially or adversely) during the construction and operational phases. Other potential risks to public health and safety include Noise (Section 3.2.3) and Hazardous Materials (Section 3.2.5).

Resource Overview

Station Maui has two RB-S vessels, one of which is stored on a boat lift and the other on a land-based trailer. The primary use of the two vessels is for SAR missions in the USCG Maui jurisdiction. In addition to SAR missions, the USCG Station Maui continues to support programs to ensure that boats are safe for public use and that they contain appropriate safety equipment (USCG 2003). The RB-S boats have limited capabilities in servicing the vast regions of Hawai`i. Table 1-1 in Chapter 1 gives a summary of the capabilities and inadequacies of the RB-S boats. Summer swells bring elevated seas and surf in the waters off MSBH, and the water conditions are beyond what the RB-S boats can handle. Due to weather conditions, USCG Station Maui has been closed for 1,113 hours in the last ten months, an equivalent of 46 days. Station Maui gets approximately 72 SAR calls per year. There are no other stations within USCG jurisdictions that can respond to SAR calls.

Furthermore, summer swells pose a threat not only to vessels operating inside and outside the harbor, but also to vessels moored within the harbor. During swells, these moored vessels are constantly pushed up against the wharf, damaging both the vessels and the piers, which regularly require additional maintenance and infrastructure repairs. The USACE is planning for specific harbor upgrades and modifications to manage the effects of the swells, including realigning the entrance channel and modifying the breakwater (USACE 1998). The potential impacts of this project are discussed below, under the cumulative effects analysis.

3.2.6.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

A primary purpose of the USCG, especially that of Station Maui, is to protect the public and to ensure safety within the USCG's jurisdiction. As such, at a basic level, public health and safety is critical to meeting the purpose and need of the Proposed Action. In evaluating the possible effects on public health and safety within the ROI, the protocol of MSBH and the USCG has been reviewed. Factors considered in determining whether the Proposed Action would have a significant impact on public health and safety include whether this action would result in any of the following:

- Substantial effect on public health;
- Conflict with MSBH or USCG protocol, specifically health and safety protections;
- Pose a potential danger or harm to any harbor inhabitants, neighbors, or visitors;
- Further reduce the capabilities of the Station Maui fleet in responding to SAR calls; and
- Conflict with any OSHA requirements or site health and safety plan created by the USCG contractor and approved by the USCG and DBOR.

3.2.6.2.1 Proposed Action

The environmental consequences on public health and safety are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

No Impacts

Only authorized personnel would be permitted on-site during the construction phase of the Proposed Action. This would be limited to an estimated crew of eight and the Station Maui staff. Before construction begins, the contractor would prepare a site health and safety plan outlining the specific tasks to be completed, appropriate protocol and regulations with which to comply, responsibilities of each person on-site, and points of contact and protocol for emergency situations. This plan would be prepared in accordance with OSHA standards. Each person on-site would review and sign this plan.

In case of an emergency requiring medical care, Station Maui staff are trained in general life-saving procedures. Otherwise, major hospitals and clinics on Maui near the project site include the following (Verizon 2005):

- St. Francis Medical Center, Lahaina and Wailuku;
- Maui Memorial Medical Center, Wailuku; and
- Vending Stand M-7 - Maui Memorial Hospital, Wailuku.

No adverse impacts are anticipated during the construction phase of the Proposed Action.

Proposed construction, including each of the four identified viable design alternatives, would not result in increased public exposure to physical hazards. The proposed pier(s) and vessels would be isolated from public access by a security fence and proper signage (the effects of which are assessed under a separate action). The Proposed Action would not alter floodplains or shorelines and would not add substantial or different types of infrastructure to the harbor. However, structures would protect the MLB more effectively during storms than tying it to the wharf and allow USCG staff to safely board the vessel. Risk of tsunami inundation and flooding is quite high at the current location, and the proposed construction of the pier(s) would have little effect on the level of risk. There would be no adverse impact on public health and safety during the operational phase of the Proposed Action.

Beneficial Impacts

Proposed construction under any of the four identified viable design alternatives would result in a beneficial impact. Construction of one or two piers would allow the USCG to secure the new 47-foot MLB, which will be better capable of serving the USCG Maui Station and its jurisdiction in SAR missions. The pier(s) would be instrumental in protecting the MLB from the summer swells and bad weather. This benefit would be common to each of the four design alternatives, but if the USCG were to construct two piers instead of one, the vessel could be more securely moored between the piers instead of against one pier, thereby minimizing any rubbing or bumping against a single moor area. The new and improved MLB at Station Maui would benefit the public by increasing the life-saving capability of the USCG.

3.2.6.2.2 No Action Alternative

Less Than Significant Impacts

Under the No Action Alternative, the USCG would not increase lease space for Station Maui and would not dredge or add infrastructure to secure the new MLB. The USCG would secure the new vessel as well as possible to the existing 120-foot wharf, where the deck of the boat would be at the same level as the wharf. Still, USCG staff would use precaution when loading and unloading the boat, as the USCG vessels are more regularly used during times of unfavorable weather and boating conditions. Because USCG staff members are trained for these conditions, this impact is considered less than significant but is noteworthy for the need for the proposed infrastructure. The MLB would likely be taken offshore during times of storm swells and surges in order to prevent damage to the boat, surrounding wharf and infrastructure, and neighboring vessels. This would likely result in crew fatigue, but would be more favorable than the expensive and frequent maintenance that would likely be required if the boat stayed at harbor.

No Impacts

Because no construction would take place under the No Action Alternative, there would be no site health and safety plan required and no necessary coordination of contractors and staff during the construction phase. Risk of tsunami inundation and flooding would not change. No impact would result.

Beneficial Impacts

Under the No Action Alternative, the MLB would remain at MSBH, but it would be secured to the existing wharf without any designated slip space or protective pier(s). The capability of the Station Maui fleet would be improved, and response time and travel distance to SAR calls would be substantially heightened.

3.2.6.3 Cumulative Effects Analysis

Because OSHA has specific requirements to ensure the health and safety of workers, each construction activity identified within the ROI would require preparing a health and safety plan and providing safe working conditions. Activities such as the separate USCG project to erect security fencing and lighting would increase safety and security at Station Maui. Harbor improvements would benefit all leaseholders and users of the harbor. Examples of these improvements are the realignment of the harbor entrance and modification of the breakwater in order to minimize effects of summer swells and surge on vessels within MSBH. No activities were identified that could cause substantial adverse impacts on public health and safety within the ROI, and many planning efforts have been ongoing to further improve safety within MSBH.

3.2.7 Biological and Coastal Resources

3.2.7.1 Affected Environment/Region of Influence

The project area consists of either terrestrial or marine habitat. The marine habitat portion of the project footprint is of minor importance in terms of habitat value. The project land-based activities, primarily having to do with basing equipment, pier construction, and drying dredge material, would be over such a small and previously developed area as to be considered negligible in terms of biological resources and impacts. Pier construction itself would be largely a terrestrial action and would not introduce noise into the marine environment. Other project activities would take place in the water. Because it is so highly developed and disturbed, as well as being a small area, the land portion of the Proposed Action does not contain significant biological resources that would be affected by it. For this reason, only the marine habitat is considered in this section. The marine portion of the project area lies within MSBH (see Figure 2-1) and outside the harbor entrance. The project ROI is considered to be the immediate harbor area—the project footprint—where construction would occur, and the surrounding waters out to half mile outside the harbor breakwater. The ROI was delineated to account for noise and increased human physical presence during construction and any resulting disturbance.

This area provides some habitat for various coral species and marine wildlife. The biological resources discussed in this section include wildlife, sensitive habitats, and special status species.

Biological resources data for the USCG have been collected from various sources, including previous environmental documentation and species lists requested during ongoing consultations. As discussed in Section 1.6.2, species requests have been made to various government agencies, including the DLNR, the USFWS (including data compiled by the Hawai`i Natural Heritage Program), and NOAA Fisheries (see Appendix B).

Various reports provided resource information for this evaluation, such as the following: USFWS Final Fish and Wildlife Coordination Report (USFWS 1994), Coral Baseline Survey of Ma`alaea Harbor for Light-Draft Vessels, Island of Maui (Jokiel and Brown 1998), Baseline Marine Environmental Surveys, Ma`alaea Harbor, Maui, Hawai`i (Brewer and Assoc. 1987), and Ma`alaea Harbor for Light-Draft Vessels, Navigation Improvement Project (USFWS 1980). In addition, data was obtained from an underwater survey of the project area done by AECOS in October 2005 and previously in 2004 (Appendix E). Finally, numerous scientific papers were referenced. The likelihood of species occurrence is determined based on the presence of suitable habitat in the Proposed Action area, along with recorded occurrences, as identified by the USFWS and NOAA Fisheries, or from observations made during site surveys.

Regularity Considerations

Laws, regulations, and guidance applicable to wildlife and fisheries include federal and state and local regulations or statutes, as detailed below.

Federal jurisdiction (guidance for protecting threatened and endangered wildlife, plant, and fishery resources):

- Clean Water Act (33 USC, Sections 1251-1387);
- Endangered Species Act (ESA) (16 USC, Sections 1531-1534);
- Executive Order (EO) 11990, Protection of Wetlands (May 24, 1977);
- EO 13089, Coral Reef Protection, and Coral Reef and Coastal Marine Conservation Act of 2001 (HR 22720; June 11, 1998);
- EO 13112, Invasive Species (February 3, 1999);
- EO 13158, Marine Protected Areas (MPA, May 26, 2000);
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds (January 10, 2001);
- Fish and Wildlife Coordination Act (16 USC, Sections 661-666c);
- Marine Mammal Protection Act (MMPA, 16 USC, Sections 1361-1421h);
- Marine Protection, Research, and Sanctuaries Act (33 USC, Sections 1401-1445);
- Magnuson-Stevens Fishery Conservation and Management Act of 1976 (MSA, 16 USC, Section 1801); and
- NEPA (42 USC, Sections 4321-4370d).

State jurisdiction (guidance for protecting threatened and endangered wildlife, plant, and fishery resources):

- <u>Hawai`i State Plan.</u> In 1978, the state completed a plan to improve the planning process, to increase the effectiveness of government and private actions, to improve coordination among agencies and government levels, to provide for the wise use of Hawai`i's resources, and to guide the future development of the state. The legislature adopted the Hawai`i State Planning Act as Hawai`i Revised Statute Section 226-1. The act consists of a series of broad goals, objectives, and policies that guide future long-term growth and development. It establishes a system for plan formulation and program coordination to integrate all major state and county activities.
- <u>HAR Title 13, DLNR.</u> Under this HAR, DLNR is charged with regulating land use in the Conservation District. The state must conserve, protect, and preserve its important natural resources by appropriate

management and use to promote their long-term sustainability and the public health, safety, and welfare. Conservation District subzone designations are Protective, Limited, Resource, General, and Special.

- Hawai`i Coastal Zone Management (CZM) Program. Enacted as Chapter 205A, Hawai`i Revised Statute, the Hawai`i CZM Program was established in 1977 in response to the Federal Coastal Zone Management Act of 1972. The CZM Program encompasses the entire state, including all marine waters seaward to the extent of the state's police power and management authority, including the 12-mile US territorial sea.
- State Functional Plans. The Hawai`i State Planning Act of 1991 calls for the creation of functional plans to set specific objectives, to establish policies, and to implement actions for a particular field of activity. These functional plans further identified those organizations responsible for carrying out the actions, the implementing timeframe, and the proposed budgets. The most current functional plans that may be relevant are discussed below.
    - The State Recreation Functional Plan focused on ocean and shoreline recreation; mauka, urban, and other recreation; public access to the shoreline and upland recreation areas; resource conservation and management; management and recreation programs and facilities; and wetlands protection and management. The plan includes a technical reference document, referred to as the State Comprehensive Outdoor Recreation Plan, which was updated in 1996.
    - The State Conservation Lands Functional Plan primarily addresses governmental policies and programs directed at preserving conservation lands and judiciously using the state's natural resources.

The Proposed Action and associated studies require a Section 10 (Rivers and Harbors Act) permit from the USACE. The permit application has been submitted and is in review. Construction would begin only after this permit is obtained.

Current management direction also requires that any action must also conform to any recovery plans written by either the USFWS or NOAA Fisheries for any special status species. The ESA requires NOAA Fisheries Service to develop and implement recovery plans for endangered and threatened species. These plans include the following:

- A description of site-specific management actions necessary to achieve the plan's goals for the conservation and survival of the species;
- Objective measurable criteria, which, when met, would result in the species being removed from the list; and

- Estimates of the time and costs required to achieve the plan's goal and to achieve intermediate steps.

Recovery plans have been developed for the following species found or with the potential to be found in the project area: humpback whale *(Megaptera novaengliae),* Hawaiian monk seal *(Monachus schauinslandi),* green sea turtle *(Chelonia mydas),* and hawksbill turtle *(Eretmochelys imbricate).* These species are discussed below. Plans have also been written for sea turtle species that may occur but are considered to be extremely unlikely to occur in the project ROI. Recovery plans are available for the loggerhead turtle *(Caretta caretta),* leatherback turtle *(Dermochelvs coriacea),* and the olive ridley turtle *(Lepidochelys olivacea).* Humpback whales and monk seals are protected by the ESA and the MMPA; all the above species are protected by the Hawai`i Administrative Rule.

General Wildlife

The project ROI is divided into three general areas: the harbor environment, outside the harbor breakwater, and Ma`alaea Bay. General wildlife species seen during the site survey or previously noted are listed in Appendix E, Table 1.

<u>The Harbor Environment</u>. MSBH is one of only two berthing areas for small watercraft on Maui. Northeast trade winds blow fairly consistently across Ma`alaea Bay, except between October and April when "Kona storms" shift the trade winds and bring more frequent rainstorms. The predominant ocean current flow is a trade wind-generated surface movement of less than 1.2 miles per hour toward the southwest (USFWS 1994). Tidal fluctuations in concert with prevailing currents continuously flush the harbor of suspended fine sediments that are introduced to the harbor from stormwater runoff from upland sources (USFWS 1994). Three drainage channels discharge stormwater runoff into Ma`alaea Harbor. The drainage channel at the USCG station also includes discharge from the Maui Ocean Center (AECOS 2005). Water visibility in the harbor is typically poor, and salinity is often lower than 35 parts per thousand (ppt; USFWS 1994).

The MSBH originally consisted of reef flats divided by a shallow channel (Jokiel and Brown 1998). The entrance to MSBH opens to the south, and the harbor is subjected to occasional strong southerly swells. Since much of Ma`alaea Harbor is soft bottom, it supports a variety of borrowing animals. Boulder revetments and sea walls line the margin and provide substratum for many intertidal and subtidal plants and animals. Coral reefs have developed along the east and west slopes of the dredged channel and turning basin (Jokiel and Brown 1998) and the greatest concentration of coral occurs along the channel entrance near the southern tip of the east breakwater. Coral colonies exist on the vertical surfaces throughout the harbor, and remnants of the former reef flat remain in areas of the harbor that have not been dredged. There is a dark sand beach in the northeast corner of the harbor (AECOS 2005).

The intertidal habitat within the harbor is predominantly basalt revetment stones and concrete surfaces that host a variety of intertidal flora and fauna. Species documented to have occurred (AECOS 2005; Brewer 1987) in the harbor include the following:

- Thin-shelled rock crab or *`a`ama* crab *(Grapsus tenuicrustatus),* common in the eastern part of the harbor;
- Common supratidal snails *(Nerita picea, Littorina pintado,* and *L. scabra);*
- Fleshy green algae *(Ulva fasciata* and *U. reticulate),* which are occasionally found along with filamentous blue-green algae; and
- Coralline red algae *(Porolithon onkoides),* which can be found as an encrusting layer on boulders.

Some additional species can be seen farther inside the harbor, as follows:

- Oyster *(Ostrea* sp.*),* which is common near the shore west from the USCG station;
- Clusters of mussels *(Brachidontes crebristriatus)* in the vicinity of the boat ramp; and
- *`Alamihi* crab *(Metopograpsus thukuhar)* on rocks just above and below the water line.

In a 1994, the USFWS reported *`opihi (Cellana exarata)* abundant in the harbor, but most likely this is the false limpet *(Siphonaria normalis).*

A more detailed history of the coral coverage and previous reports of coral found in the harbor is given in Appendix E, pages 6 and 7.

The project footprint site is a mud bottom basin with a small area (less than 108 square feet) of boulders and undredged reef in the northern corner (AECOS 2005). Scattered corals cover up to 30 percent of the hard surfaces, which is higher than the 10 percent reported previously (AECOS 2005). *Montipora capitata* is the predominant species, but *Pocillopora damicornis, Porites lobata,* and *Montipora patula* colonies are also present. Some *M. capitata* colonies were over 10 inches across, but most colonies were much smaller. Bleached *M. capitata* colonies were noted growing in the dark overhanging habitat created by the concrete wharf decking of the north wall. A school of Hawaiian flagtail fishes *(Kuhlia sandvicensis)* hovered near the shore and under sheltered overhangs (AECOS 2005).

The vertical surface of the seawall adjacent to the USCG station is covered with an extensive community of the coral *Montipora capitata* (AECOS 2005). About 70 percent of the surface is covered with corals, but in some places the coverage exceeds 100 percent, with colonies overlapping each other on the vertical surface. *Montipora capitata* is the predominant coral on the remnant reef southeast of the project footprint, and a fair number of small *Pocillopora damicornis* colonies are also present (AECOS 2005). Total coral coverage approaches 30 percent here.

MSBH contains common coral species found throughout Hawaiian waters and include *Montipora capitata, Pocillopora damicornis, Porites compressa,* and *P. lobata.* The growth forms of the corals inside the harbor are adapted to low water motion environments, and as a consequence, the corals tend to be delicate and foliaceous (leaf-like). At harbor depths less than 6 feet, corals thrive in high light conditions, moderate water motion, steep slope, and a lack of destructive waves. Coral cover diminishes with depth as a result of lessening light associated with high turbidity in the harbor. The highest coral coverage in the vicinity of the Station Maui is on the adjacent vertical wall, which has up to 70 percent coral coverage of foliaceous *M. capitata* coral colonies. The area proposed for the pier has about 20 percent coral coverage, and the reef remnant southwest of the station has about 30 percent coral coverage.

The harbor serves as a nursery for juvenile fish, such as mullet *(Mugil cephalus),* Hawaiian flagtail *(Kuhlia sandvicensis),* anchovy *(Encrasicholina purpurea),* butterflyfish *(Chaetodon* spp.*),* surgeonfish *(Acanthurus triostegus* and *A. blochii),* wrasses *(Stethojulis balteata* and *Thalassoma duperrey),* and parrotfish *(Scarus psittacus)* (AECOS 2005). Planktivores (fish that eat plankton) are the most common fish inside the harbor. In harbors, juvenile fish are attracted to human-made structures and low visibility, which protect them from predation. Food resources, such as algae, plankton, and benthic invertebrates in the soft substrate, are also abundant within the harbor. A comprehensive list of common fish species found inside the harbor can be found in Appendix E, page 15.

<u>Outside Harbor Breakwaters</u>. The marine bottom offshore of the harbor generally consists of a hard coralline reef, with small channels and scattered coral heads. Directly offshore of the west breakwater, the bottom grades from smooth rounded rocks and cobbles to a flat limestone reef with scattered patches of coral rubble to 200 feet offshore. Water depths are about 6 feet in this area, and wave energy is relatively high. Beyond this high energy area, from 200 to 600 feet offshore of the west breakwater, the water depth ranges from 4 to 12 feet, and the bottom consists of a limestone reef with scattered patches of mixed sand and rubble. The bottom relief is relatively flat, with occasional depressions, overhangs, and ledges.

The harbor entrance channel is 10 to 15 feet deep and 150 to 200 feet wide and extends approximately 500 feet south of the breakwater. The channel bottom is relatively flat, with no abrupt slopes marking the sides. The bottom typically consists of a thin covering of calcareous sand and some rubble overlying hard limestone reef materials (AECOS 2005). Adjacent and parallel to the east breakwater is a scoured zone approximately 100 feet wide and 3 feet deep. The bottom is flat and composed of burrowed honeycombed limestone (AECOS 2005).

Outside of the harbor the highest coral cover occurs on either side of the channel entrance and extends eastward along a zone from 3 feet to 20 feet deep (Jokiel and Brown 1998). The area with the highest coral cover on the western side of the channel occurs as a narrow band along a north-south axis and gradually dissipates with increasing depth to 23 feet. On the eastern side of the channel, coral coverage was even higher and formed a rather extensive community over the reef flat. Here the coral is richest within the area surveyed. Dominant species included *Montipora verrucosa, M. patula, M. flabellata, Pocillopora meandrina,* and *Porites lobata.* The dominant coral species on the reef flat immediately adjacent to the east mole is *M. flabellate* (Jokiel and Brown 1998).

Outside the harbor the highest densities of fish have been documented around the entrance or along the sand channel (Jokiel and Brown 1998). Fish populations are dominated by parrotfish, tobies, sturgeonfish, wrasses, and damselfish. Several species of sea urchin (Class *Echinoidea*) occur both in the harbor and outside the breakwater. These include the long-spined urchin *(Diadema paucispinum),* banded urchin *(Echinothrix calamaris),* blue-black urchin *(Echinothrix diadema),* rock-boring urchin *(Echinometra mathaei),* oblong urchin *(Echinometra oblonga),* slate-pencil urchin *(Heterocentrotus mammillatus),* and the collector urchin *(Tripneustes gratilla).*

<u>Ma`alaea Bay</u>. The Ma`alaea Bay area is used extensively for recreation. A long, continuous sand beach immediately east from Kanaio allows snorkelers and swimmers easy access along its entire length. The ocean is relatively calm here and the currents are relatively weak, allowing safe swimming. The shallow waters, less than 30 feet deep, between Palalau and Kanaio, are considered best for snorkeling and diving because of the highly diverse flora and fauna and seasonally clear waters (Clark 1980). The water off Kapoli Park (west of the harbor) is also popular with snorkelers.

The shallow water fauna of western Ma`alaea Bay is unusual in several respects. A large number of species uncommon elsewhere are relatively common in Ma`alaea Bay. The wide variety of sponges and bryozoans and the highly diverse assemblage of gastropod mollusks once made Ma`alaea Bay an area of special interest for nature study, photography, and scientific research (Maciolek 1971). However, much of the once rich and varied shell life found on the sand bottom occupying the outer bay has declined in recent decades (AECOS 2005).

Edible seaweeds known as limu (a red algae) are harvested by local people in the area at and outside of Ma`alaea Harbor. A small amount of limu occurs in the harbor, but most of it occurs outside the breakwater. Two main reef areas near the harbor but outside of the ROI are popular with limu gatherers: the shallows off and south of Kapoli Park and the reef flat off Ma`alaea Beach Park where both limu manauea *(Gracilaria coronopifolia)* and limu huluhuluwaena *(Grateloupia filicina)* are sought (AECOS 2005).

The proposed project would take place in waters protected by the National Marine Sanctuary program. Ma`alaea Bay is within the boundaries of the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS). The sanctuary was established in 1992 to protect endangered humpback whales and their habitat (HIHWNMS 2005) and is discussed further below.

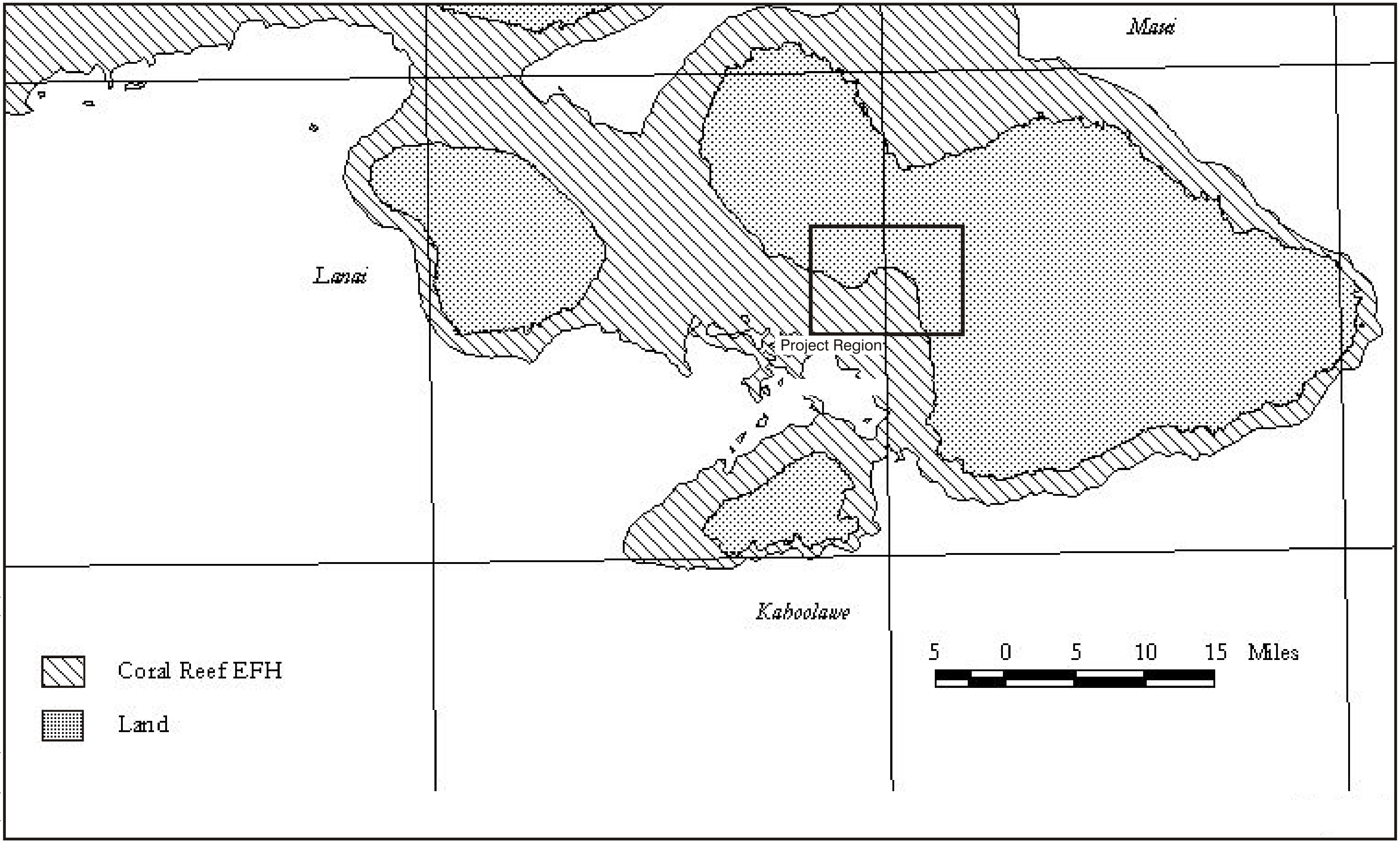
Sensitive Habitats

No locally designated natural communities, agricultural lands, or wetlands occur in the project ROI.

Essential fish habitat (EFH) does occur in the project ROI. EFH is defined by the MSA (Public Law [PL] 94-265, as amended by the Sustainable Fisheries Act of 1996, PL 104-267, codified in 16 USC, Section 1801 et seq.). EFH refers to those waters and substrate necessary to fish for spawning, breeding, feeding, or maturing. EFH also includes coral habitat. Certain corals and sponges have been determined to be EFH or habitat areas of particular concern (HAPC, a subset of EFH). Appendix F contains the Western Pacific Essential Fish Habitat and Habitats of Particular Concern Summary, which lists the EFH- and HAPC-specific designations for all fishery management units (including for precious corals and coral reef ecosystem) under relevant ecosystem management plans. EFH exists in MSBH for multiple fishery management plans (management plans for species assemblages). In addition, there are HAPCs in MSBH (in Hawai`i, any coral from 3 to 328 feet deep is considered an HAPC.) Figures 3-6 and 3-7 illustrate coral reef EFH and HAPC, respectively, in the ROI and project region.

The coral species inside MSBH are largely invasive or not listed (AECOS 2005). The reef seaward of MSBH is more developed, with a diverse community of corals and reef organisms. In addition, the reef east of the east harbor breakwater is well developed with large coral heads and an abundance of diverse reef organisms and other biological resources (USACE 1998).

The proposed project would take place in waters protected by the National Marine Sanctuary program, which consists of 14 marine protected areas that encompass more than 150,000 square miles. Sanctuaries are established to protect areas that have unique or significant natural or cultural features. Specifically, the project ROI falls within the HIHWNMS (Figure 3-8), which is composed of five separate areas abutting six of the major islands. The MSBH area and the area outside the harbor fall into designated sanctuary waters. The HIHWNMS has been designated to protect humpback whales and their habitat. Hawai`i is the only area in the United States where humpback whales mate, calve, and nurse their young. Scientists estimate that the pre-whaling population



R:\new\16862\Coral ReefEFH.cdr - 12/05/05 - YE

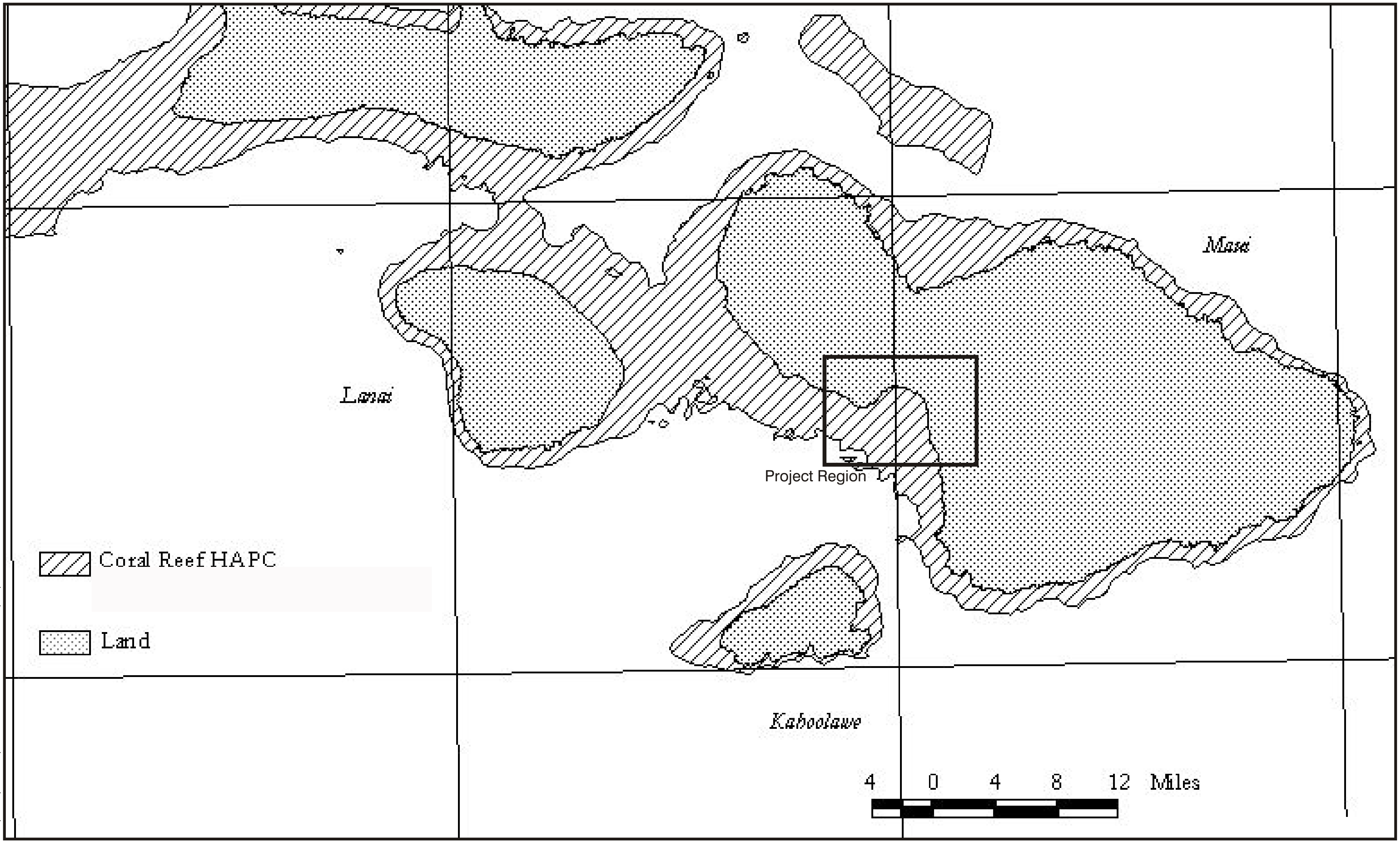
Shoreline to extent of Exclusive Economic Zone and from Sea Surface to 200 meter depth.

Coral Reef Essential Fish Habitat (EFH)

Ma'alaea Harbor, Hawai'i

Tetra Tech, Inc.

Figure 3-6



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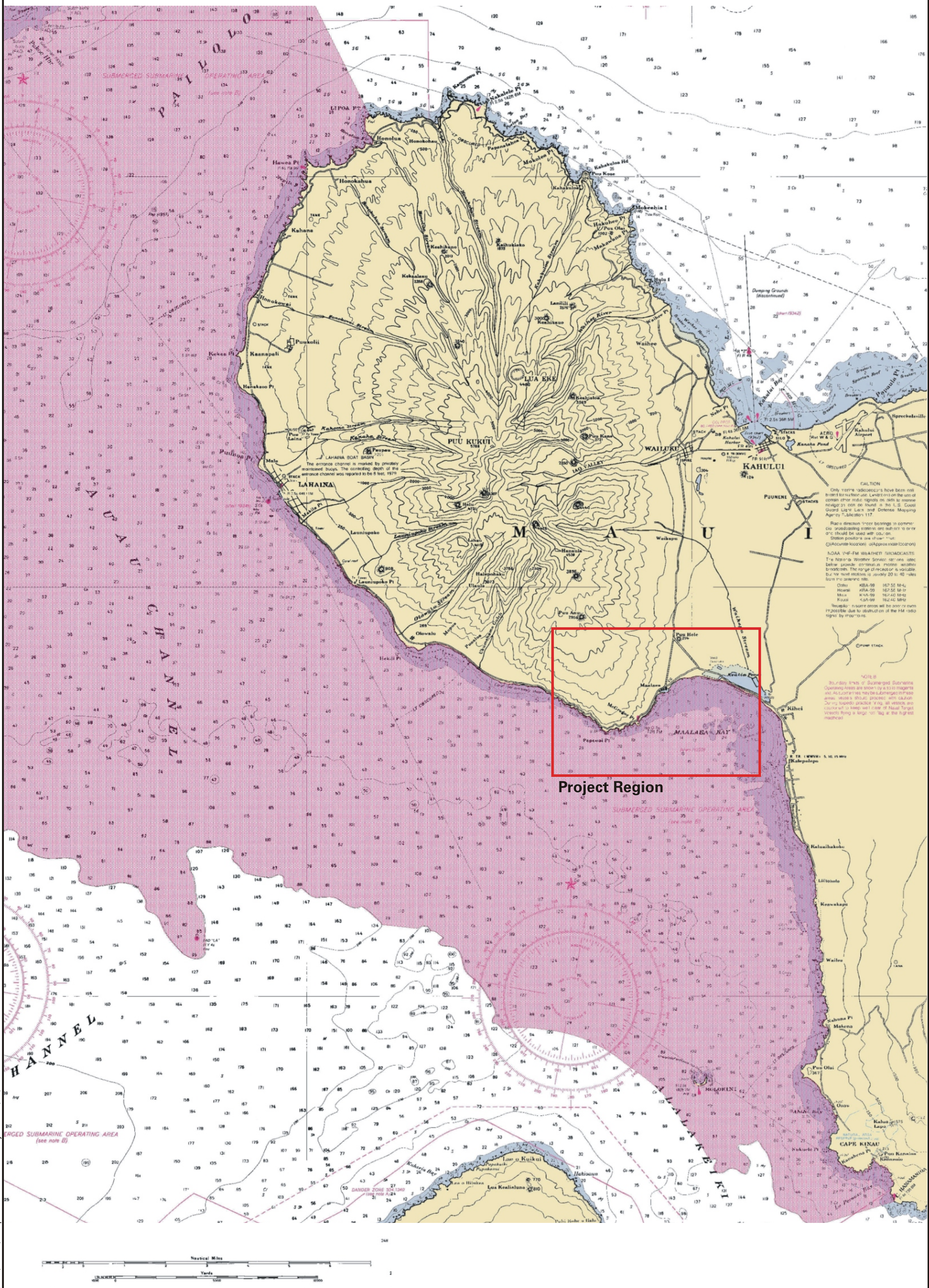
All hard bottom from 0 to 100 meter depth.

Coral Reef Habitat Areas of Particular Concern (HAPC)

Ma'alaea Harbor, Hawai'i

Tetra Tech, Inc.

Figure 3-7



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Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS)Waters

Legend

HIHWNMS Waters

Ma'alaea Harbor, Hawai'i

Tetra Tech, Inc.

Figure 3-8

of the North Pacific stock of humpback whales numbered approximately 15,000 to 20,000 (HIHWNMS 2005). Of the approximately 7,000 humpback whales currently in the North Pacific, about 5,000 migrate to Hawai`i each year. Humpback whales are protected under the ESA and are listed as endangered species.

Coral and coral reefs have numerous protections and designations as protected habitat. The USFWS identifies coral reefs as Category 2 habitats, those that are of high value for certain species and that are relatively scarce. Coral reefs are additionally protected by the EPA as “special aquatic sites” (40 CFR 230). Also, the Hawai`i CZM Program includes coral and coral reefs as part of the “valuable coastal ecosystem” and, as such, is protected under the CZM authority. EO 13089 directs federal agencies “to preserve and protect the biodiversity, health, heritage, and social and economic value of US coral reef ecosystems and the marine environment.” Any action undertaken by a federal agency that may affect a coral reef ecosystem must be carried out in a manner that such action protects and enhances and does not degrade the coral reef environment. The US Coral Reef Task Force was established to guide federal agencies and the public to fulfill the goals of EO 13089. In addition, EO 13158 (MPAs and the Northwest Hawaiian Islands [NWHI Sanctuary]) directs federal agencies whose purview includes the designation of MPAs to expand and strengthen existing areas or to establish new areas, as appropriate. The EO further directs that the efforts to protect important ocean resources will provide for a scientifically based comprehensive system that includes a diverse range of marine ecosystems. As with EO 13089, federal agencies must avoid harming MPAs.

Critical Habitat

No federally designated or proposed critical habitats fall within or in the immediate proximity of the Proposed Action area (USFWS 2005).

Special Status Species

Federally threatened, endangered, proposed threatened or proposed endangered species, and species protected under the MMPA are considered special status species. Special status species lists were generated based on consultations or from species identified by government agencies, including the DLNR, the USFWS (including data compiled by the Hawai`i Natural Heritage Program), and NOAA Fisheries (see letters, Appendix B). No candidate species or state species of concern were found to occur in the project area. Input from the DLNR and USFWS indicate no federally listed or proposed threatened or endangered species occur on the project site. NOAA Fisheries listed several special status species with potential to occur in the project area (NOAA Fisheries 2005a). However, most of these species, with the exception of those discussed below, are considered extremely unlikely to occur in the immediate project footprint because the harbor is heavily trafficked, the level of human disturbance is high, and the habitat overall is not high quality for marine wildlife. There is an increased chance for wildlife to occur outside the harbor in the ROI, but this is still not high quality habitat for marine mammals (though humpback whales do occur here).

Federally listed or protected species that occur or that could occur within the project area or the ROI are listed in Appendix G, along with their likelihood of occurrence in the Proposed Action area. The likelihood of occurrence is determined based on the presence of suitable habitat in the area, along with recorded occurrences, as identified by the USFWS and NOAA Fisheries or from observations made during site surveys or other studies. Federally listed threatened and endangered species with potential habitat in or that are known to occur in the project area are described in further detail below. None of the corals documented in the ROI have federal or state status.

Marine Mammals and Sea Turtles

The Hawaiian Islands are the most remote group of islands in the world. Numerous marine mammal species, including endangered whales and the endangered Hawaiian monk seal, inhabit these waters (NOAA Fisheries 2004a; ONR 2000). Five species of sea turtles inhabit waters of the Hawaiian Islands: green, loggerhead, leatherback, hawksbill, and olive ridley (NOAA Fisheries 2005b, 2005d, 2005e; ONR 2000). The ROI waters provide habitat for threatened and endangered species, including the federally listed endangered humpback whale and Hawaiian monk seal and the federally listed threatened green sea turtle. Less common, but potentially occurring, is the hawksbill turtle. All marine mammals are protected under the MMPA, whether or not they are listed under the ESA.

Humpback Whales

Humpback whales are abundant in coastal waters off the main Hawaiian Islands from November through April and number approximately 6,000 in the North Pacific (Calambokidis et al. 1997). They are one of the most abundant marine mammals in Hawaiian waters, and the Hawaiian Islands are an important breeding ground. Approximately two-thirds of the entire North Pacific humpback whale population migrate to Hawaiian waters to breed, calve, and nurse (NOAA Fisheries 2003a). Areas of highest concentration in the Hawaiian Islands are Penguin Bank and the four-island area between Moloka`i, Maui, Kaho`olawe, and Lana`i (HIHWNMS 2000). Humpback whales are found throughout the island chain and are most abundant in coastal waters of the main Hawaiian Islands, including Maui, from November through April, with peak abundance occurring from late February through mid-March (Baker and Herman 1981).

Humpback whales seem to prefer shallow waters, usually less than 100 fathoms (shoreward of the 600-foot depth) during the breeding season (Baker and Herman 1981; Mobley et al. 1999, 2001; Mobley 2005) Cow/calf pairs appear to prefer very shallow water less than 60 feet deep (ONR 2000; Smultea 1992 and 1994). Humpback whales of varying pod sizes and types, including mother and calf pods, are commonly sighted off the coasts of the main Hawaiian Islands and may be expected in project area waters from December through early April (Clark and Tyack 1998). Humpback whale mothers and calves prefer the calmer shallower waters often found on the leeward sides of the islands (Smultea 1992, 1994). Some results suggest that habitat use patterns of females and calves in nearshore Maui waters might have decreased, perhaps due to increasing vessel and human activities (ONR 2000). However, there is also some conflicting evidence that humpback whales are becoming more habituated to humans, especially off Maui (TenBruggencate 2004). As humpback whales are quite vulnerable to disturbance and possibly to boat strikes, regulations in Hawai`i prohibit boats from approaching within 100 yards of adult whales and within 300 yards of mother/calf pairs (NOAA Fisheries 2005c). The humpback whale recovery plan was completed in 1991 and includes a comprehensive research and management plan for the recovery of this species.

Ma`alaea Bay, just outside the harbor and part of the ROI, is an important calving, breeding, and nursing area for this species (Forestell and Brown 1991) . Ma`alaea Bay is also part of the HIHWNMS. Humpback whales have been observed near the harbor entrance, though they have not been sighted in water shallower than 20 feet (Jokiel and Brown 1998). From December through April, when humpback whales are in Hawaiian waters, they are often sighted close to shore, particularly mothers and calves. Mothers and calf pods frequent Ma`alaea Bay and do occur in the waters outside the breakwater and in the entrance to the harbor (Forestell and Brown 1991; Zoidis 2005).

There are no direct data on hearing sensitivity for humpback whales, but studies show they most likely have excellent low frequency hearing (US Navy 2001). Humpback whales are reported to produce frequencies between 25 hertz (Hz) and 10 kilohertz (kHz) (Au et al. 2000; US Navy 2001) and may have sensitivity to frequencies between 40 Hz and 16 kHz (US Navy 2001). It is often assumed that mammals can hear in the ranges of sounds they produce.

Monk Seal

The monk seal is the only pinniped (seal) species known to occur in the Hawaiian archipelago. The Hawaiian monk seal is listed as critically endangered under the ESA and depleted under the MMPA. It is the most endangered pinniped in US waters, and the second most endangered marine mammal. This species occurs only in the Hawaiian Islands, where its greatest distribution and abundance occurs in the small, mostly uninhabited, NWHI chain.

The species is managed as one stock, though each island may in fact have its own subpopulations (NOAA Fisheries 2004a). This species breeds in Hawaiian waters, mainly in the NWHI chain. Current estimates indicate that the monk seal population is declining and is believed to include fewer than 1,400 individuals remaining in Hawai`i (NOAA Fisheries 2004a). Most are found in the remote outlying areas of the outer archipelago islands. The monk seal recovery plan was completed in 1983 and includes a comprehensive research and management plan.

Monk seals are much more common in the NWHI but occur as incidental transients on every island, including Maui. They prefer sandy beaches for haul-out areas. Recent years show an increase in both the numbers of adult seals sighted in the main Hawaiian islands and an increase in pups born there (HWF 2005). A monk seal was observed in February 1993 on a beach at Ma`alaea Bay, east of the harbor (USACE 1998). However, the habitat in the project area is of very low value for this species due to the high level of human disturbance, lack of sandy beach area, and large amount of vessel traffic, so sightings are considered to be uncommon.

Audiograms of a monk seal are available (Thomas et al. 1990) and show this species has a somewhat narrower hearing range than other seals. A captive monk seal was found to have a narrower range of high sensitivity than other seals, with a rapid decrease in sensitivity above 28 kHz and below about 10 kHz. This animal's hearing curve had some characteristics that suggest its responses may have been affected by disease or age (Thomas et al. 1990).

Coastal Dolphin Species

Spinner dolphins occur throughout the Hawaiian Island chain in well-documented, highly localized, and, in some cases, seasonal patterns. Various authors have suggested that their distribution is related to factors such as prey availability, sea state, water depth, and clarity. The Hawaiian Islands group of spinner dolphins is a distinct stock, with an overall population estimate of approximately 4,000 animals (Lammers et al. 2000; Mobley et al. 2001). Spinner dolphins are very common and abundant, and they occur year-round in Hawaiian waters (NOAA Fisheries 2004b). They are often seen in large groups of over 400 (Dollar 1999), although there may be seasonal changes in abundance. The group's movement pattern around the islands has been well documented and is considered predictable and cyclical (Lammers et al. 2000; Lammers 2003). Spinner dolphins typically come into shallow nearshore waters during early morning and late afternoon periods to rest and socialize and to avoid predation by pelagic sharks, then move farther offshore in the late afternoon or early evening to forage in deeper waters. They tend to rest on the leeward sides of the islands, especially in nearshore or offshore areas with sandy bottoms. This period of rest is considered very important for tissue regeneration and overall health and also appears to be important in establishing or reaffirming social relationships (Lammers 2003). Spinner dolphins in general show a strong preference for waters both inside or near the 10-fathom (60-foot) isobath between the early morning and late afternoon periods (Dollar 1999; Lammers 2003). The islands of Lana`i, Maui, Kaho`olawe, and Moloka`i are connected by a relatively shallow bank less than 90 meters deep (300 feet). It is thought that are at least three large groups of spinners (50 to 100) in this region, frequently referred to as the Four Island Area. One group is found on the north shore of Moloka`i, a second along the south shore of Moloka`i, and the third is regularly observed along the southeastern shore of Lana`i, near Manele Bay (PWF 2006). Smaller groups of spinners are sporadically observed along the south coast of Kaho`olawe, and along both the northern and southern coasts of Maui (e.g., Honolua Bay and La Perouse Bay). Their hearing range is in the higher frequencies (Lammers et al. 2003) and has been reported to be from 1 kHz to 65 kHz (Howarth 2003).

Bottlenose Dolphins are ubiquitous around Hawaii and may represent an isolated small population (Baird et al. 2001). Studies have shown bottlenose dolphins around Hawaii appear to be composed of what is known as the offshore form of *Tursiops truncatus.* Bottlenose dolphins around the coastal Hawaiian Islands are usually found in small groups, ranging from lone individuals, to commonly two to three individuals together, and up to 12 or more animals. Their hearing range goes down to lower frequencies than the spinner and has been reported to be from 40 Hz to 150 kHz (Howarth 2003).

Spotted dolphins (or pantropical spotted dolphins as they are sometimes called) when they occur coastally in Hawai`i tend to occur within groups of spinner dolphins. They are similar to spinner dolphins but can be distinguished by their dorsal fin shape, beak length, and color pattern. School sizes of spotted dolphins in coastal Hawaiian waters range from 20 to 100 animals, though commonly they do not occur alone, but rather intermingle with spinner dolphin groups and in those groups, there are typically few numbers of individuals; offshore groupings are said to number in the thousands. Spotted dolphins are thought to feed both during the day and at night, upon epipelagic (the part of the oceanic zone into which enough light penetrates for photosynthesis) fish and squid (PWF 2006). Their hearing range is in the higher frequencies and has been reported to be from roughly 3 kHz to 21 kHz (Howarth 2003).

These three coastal dolphin species, all protected under the MMPA, are most common in nearshore waters of the Hawaiian islands (Baird et al. 2001), and all three are known to occur in Ma`alaea Bay. Individuals are not expected to occur inside in the harbor in the immediate action area but could occur outside the harbor in Ma`alaea Bay in the waters outside the breakwater.

Sea Turtles

There are five listed sea turtles that could occur in the Pacific tropical waters of Hawai`i. Of these, two occur or may occur in the project area. The green sea turtle, a federally listed threatened species, is the most common and is expected to occur. The other species, the hawksbill sea turtle (federally listed endangered) occurs near the ROI, though less commonly, and is not expected in the ROI. Sea turtles are protected under the ESA and by the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES).

Threatened Green Sea Turtle

The green sea turtle is considered the most abundant sea turtle in Hawaiian waters, with approximately 1,400 adult females (NOAA Fisheries 2005d). The NWHI is the primary nesting grounds for the Hawaiian green turtle, while the main Hawaiian Islands are the primary foraging grounds. Although scattered low-level nesting occurs throughout the Hawaiian archipelago, over 90 percent of the nesting is at a few sandy islets within French Frigate Shoals (Balazs 1994).

The green sea turtle occupies open beaches and open sea and feeds and sleeps in shallow protected waters. Juveniles and subadult green turtles are abundant in the nearshore areas off the main islands, including Maui.

The Hawaiian stock of green sea turtles was considered seriously depleted when studies began in the early 1970s. Since protection by state law in 1974 and by the ESA in 1978, the nesting population of the Hawaiian green sea turtle has increased dramatically. An estimated 450 to 475 green turtles nest annually in Hawai`i, though no nesting has been documented in the project ROI (NOAA Fisheries 2005d). The green sea turtle is expected to be the most common in the project ROI and near the coastlines, and it has been sighted in the harbor often (AECOS 2005; Jokiel and Brown 1998; USFWS 1994).

Endangered Hawksbill Sea Turtle

Hawksbills are considered uncommon in Hawaiian waters, though they have been sighted in waters near the project area and the ROI. A small number nest on Hawai`i and Moloka`i each year (NOAA Fisheries 2005e). Hawksbills are also found around rocky outcrops and high energy shoals, which are also optimum sites for sponges, a preferred food. Hawksbill turtles nest on the beach fronting Keālia Pond National Wildlife Refuge, approximately 0.8 mile east of Ma`alaea Harbor and have been studied along the Keālia shoreline from 1989 to 2005 (Hau 2006). Nests were verified in July 1991 and August 1993 (USACE 1998).

The hawksbill sea turtle has been seen in the Ma`alaea Bay (AECOS 2005) but with much less frequency. This species feeds on a variety of sponges and small marine animals that are known to inhabit the Ma`alaea reef (USFWS 1994), so it has potential habitat in the project ROI. The coral reef fronting the harbor provides habitat for the green sea turtle and possibly the hawksbill. Approximately half a mile from the harbor entrance is a patch reef known as "Turtle Town" by some boaters. Jokiel and Brown (1998) noted as many as 30 to 50 turtles (species not identified) on this small reef, which is at a depth of about 45 feet.

Turtle hearing capabilities: Data on sea turtle hearing are sparse. A study done by Ridgeway et al. (1969) on green sea turtles showed that they hear best at low frequencies. Several studies have documented that sea turtles perceive low-frequency sounds (Ridgway et al. 1969; Lenhardt 2002; Samuel et al. 2005). Their hearing range coincides with the predominant frequencies of anthropogenic (man-made) noise, increasing the likelihood that sea turtles could experience negative effects from noise exposure. Little is known about the current extent of noise exposure from anthropogenic sources in turtles' natural habitats or the potential impacts of increased anthropogenic noise (Samuel et al. 2005). Preliminary data from a study done on a captive green sea turtle indicates that it could hear tones ranging from 100 Hz to 500 Hz. At 200 Hz, this animal's hearing threshold was between 107 decibels (dB) re 1 μPa and 119 dB re 1 μPa, and at 400 Hz the threshold was between 121 dB re 1 μPa and 131 dB re 1 μPa (ONR 2006). These results are very important in that they represent the first data available on the range of sea turtle hearing capabilities. However, as it was a study done on one animal that was of an advanced age, the data should be interpreted cautiously. It is reasonable to predict that younger turtles probably have a slightly wider bandwidth and are able to hear lower intensity sounds than reported for the focal animal studied (ONR 2006). In sum, these studies demonstrate that sea turtles are able to detect and respond to sounds and that their hearing is limited to low frequencies, with the range of highest sensitivity between 200 and 700 Hz, and with a peak near 400 Hz. Other captive studies show that at higher frequencies or louder decibels, animals can respond with abrupt body movements, blinking, head retraction, and flipper movement, all of which are interpreted as startle responses (Samuel et al. 2005). Changes in swimming patterns and orientation were noted when sea turtles were exposed to high-pressure air gun pulses (Samuel et al. 2005). To date, there have been no noise thresholds set for behavioral impacts on sea turtles.

Summary of Marine Mammal Occurrence in Project Area Waters

Numerous marine mammal and sea turtle species inhabit the waters around the Hawaiian Islands. The ROI waters provide habitat for protected and ESA-listed threatened and endangered species. Only a very small number of the multitude of species found in the Pacific waters around the islands are considered to have the potential to occur in the immediate project area, with a few others potentially occurring in the waters outside the breakwater (in the ROI). Marine wildlife by its very nature is composed of mobile animals; individuals of a species can show up anywhere, including in unlikely areas, on rare occasion. It is thus difficult to say definitively that a species would not occur in an area, but one can address probabilities. From surveys done off Maui and in the surrounding waters and from several research papers published for species in this area, as well as from interviews with people who have observed them, the conclusion is that the species with the highest probabilities of occurrence are the humpback whale, Hawaiian monk seal, various dolphin species, including bottlenose dolphins, spinner dolphins, or spotted dolphins, and both the green sea turtle and the hawksbill sea turtle. Of these, for the reasons discussed above in the paragraphs detailing the natural histories of these species, with the exception of the rare "incidental transient," it is unlikely that any marine wildlife would be collocated with project actions, except possibly for dolphin species only outside the breakwater and green turtles inside the harbor. Green sea turtles do occur in the harbor, and dolphins are known throughout the southwest coastal areas of Maui.

There is a low likelihood that a monk seal would occur as there are roughly only 1,400 left in the Hawaiian Islands, and the busy harbor area is not their preferred habitat. Dolphins would most likely only come inside the harbor itself if they were sick, or, if an incidental socialized animal wanted human contact. Currently, there are none of these habituated dolphins in the waters around Maui. There are no whales in the harbor, and this project occurs outside of the seasonal window for humpback whales. The roughly 20 or more other species that occur throughout Hawai`i would be rare and unlikely inside the harbor.

Initial Studies to Supplement Environmental Evaluation

Soil borings were not part of the Proposed Action but did occur as an initial study to support the evaluation. Soil borings occurred in February 2006 (drilling took place over two days on February 16 and 17). This time frame was during the humpback whale season in Hawai`i, and whales, including mother-calf pairs, are known to occur in the ROI at this time, specifically, in Ma`alaea Bay. Since there could have been short-term impacts on marine wildlife, including on whales, as a result of soil borings, which produce noise, the USCG consulted with NOAA beforehand.

The contractor reported noise from the drill rig to be approximately 60 dB at 50 feet in the air (PGE 2005). Since this value is reported in dB and is stated as an in-air measurement, the assumption is that it is dB re 20 microPascals or µPa (the standard in air reference when dBs are reported as the measurement for noise). Conversion values can be applied to dB sound levels taken in air to allow for a comparison to db levels in water. To convert from in air to in water, 26 dB is added (Richardson et al. 1995; Underwater Acoustics 1998), meaning that in-water noise levels in this case are expected to be roughly 86 db re 1 µPa (the reference unit used for in-water levels. Richardson et al. 1995; Underwater Acoustics 1998). This noise level (60 dB re 20 µPa in air or 86 dB re 1 µPa in water) is below the threshold considered as the criteria for impacts on marine mammals. Behavioral impacts are expected on marine mammals when the underwater sound pressure level for single or pulsed sounds (which is the case here) equals or exceeds 160 dB re 1 µPa (NOAA Fisheries 2006b). For continuous sound, the threshold is 120 dB re 1 µPa. There have been no noise thresholds set for behavioral impacts on sea turtles, but they were not considered likely to be affected and in addition, specific BMPs were in place to halt work until they were out of range.

Specific BMPs for marine wildlife from use of hammers in drill rigs were recommended for the three-day period of soil borings. BMPs included having observers who are on the construction crew monitor the project area before drilling began to ensure it was clear of marine mammals and also turtles. BMPs also included ceasing any drilling or hammering if sea turtles or monk seals were sighted in the immediate project area, until they are out of the vicinity, or if whales were in the ROI. Contractor field personnel observed the immediate area for seals, whales, and turtles prior to the start of drilling of each over water boring. There were no obvious signs of these marine species observed during the observation checks.

Since reported noise levels were below those cited as causing behavioral impacts or disturbing marine mammals, avoidance reactions from marine wildlife were not expected. With the implemented BMPs and the short-term nature of the boring, impacts were considered not likely to adversely affect marine wildlife. Initial assessments indicated that while there may be an effect from the soil borings on marine wildlife, it was considered to be unlikely to have an adverse effect. As part of the informal consultation process, NOAA provided the USCG with a letter of concurrence to this effect, which was received on January 25, 2006 (see Appendix B). In its letter NOAA addressed only the soil boring initial phase study for this USCG pier project. Based on the letter received in January 2006 before the boring event, NMFS concurred with the assessment that soil borings may effect but are not considered likely to adversely affect marine wildlife (NOAA Fisheries 2006a).

3.2.7.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

For this analysis, an action would have an adverse impact on biological resources if its implementation would harm endangered, threatened, or rare species or their habitats or breeding areas, wetland habitat, or wildlife migration corridors. Loss of a substantial number of any biological resource that could affect abundance or diversity of that species beyond normal variability is considered a significant adverse impact.

In order to be consistent with ongoing NOAA consultation efforts, the Biological and Coastal Resources Environmental Consequences section below was organized for readability based on early responses received from NOAA Fisheries, which addressed prior stages of the Proposed Action. Consultation with NOAA Fisheries is ongoing and a biological assessment addressing this project and its expected impacts has been submitted to NOAA. There would be no construction until NOAA provides concurrence that the Proposed Action would not likely adversely affect biological resources.

Furthermore, as discussed in Section 3.1.2, while NEPA uses certain terminology to measure the significance level of a projected impact, this section also uses language typical for biological assessments that considers impacts in terms of the adversity of the effect on specific resources. This language is useful in ESA Section 7 consultation proceedings. As such, in this environmental consequences section, it is noteworthy that, while many impacts were considered to affect biological resources, they would not likely adversely affect them; this level of impact is similar to that of less than significant under NEPA.

3.2.7.2.1 Proposed Action

Impacts from the four design alternatives are similar and are therefore discussed only once. The actions required to construct a single-fixed concrete pier, two fixed concrete piers, a single floating pier, or two floating piers are only negligibly different. Though direct impacts when occurring would increase in intensity from the single pier to the two pier designs, they would not increase in terms of level of significance. Impacts would remain unlikely to adversely affect biological resources, so less than significant impacts are expected from the project actions. Analyses for these assessments are based on construction occurring as currently scheduled (fall 2006), outside of the biological window for humpback whale presence in Hawai`i.

Design Alternatives

Less than Significant Impacts

The proposed improvements to the USCG Station Maui at MSBH include dredging, installing piles, and constructing piers (building one of the four reasonable design alternatives).

Impacts during the construction phase include those from an increase in sedimentation, resulting in a decrease in water quality and habitat value and an increase in noise generated during construction. Noise would increase from dredging the harbor floor, drilling underwater holes for anchoring the piers, drilling holes for the anchors using a drill rig, and driving the piles used for the piers. Pier construction would be largely a terrestrial action and would not introduce noise into the marine environment. However, possible biological impacts associated with construction include bleaching corals as a result of decreased sunlight due to the new piers.

Dredging

Description of Activities. Dredging would occur over one week in August for eight hours during the day. Clamshell dredges would be used. In order to facilitate the required nine-foot depth below MLLW and the berthing area, the estimated dredge material quantity would be 60 cubic yards. Because of the limited amount of material to be removed, land-based or, more likely, barge-based equipment would be used so as to reduce costs and minimize impacts on the subsurface environment. The material would be placed in a watertight containment area onshore, adjacent to the project site, for drying before being trucked to an approved land disposal site. An area about 50 feet square and two feet high would accommodate the material for drying. Environmental controls would include turbidity barriers (silt curtains) surrounding the dredge area to prevent silt migration and to reduce water quality impacts.

Impacts from Dredging on Invertebrates, Coral, and Fish. As cited in NOAA's July 2004 report on Non-Fishing Impacts [on] Essential Fish Habitat and Recommended Conservation Measures (NOAA Fisheries 2004c), the environmental effects of dredging can include the following:

- Direct removal or burial of organisms;

- Turbidity or siltation effects, including light attenuation from turbidity;
- Contaminant release and uptake, including nutrients, metals, and organics;
- Release of oxygen-consuming substances;
- Entrainment;
- Noise disturbances; and
- Hydrodynamic regimes and physical habitat alteration.

Dredging may adversely affect species at the site by directly removing or burying immobile invertebrates, such as polychaete worms, crustaceans, and other organisms that are prey for fish (NOAA Fisheries 2004c). Similarly, the dredging activity may force mobile animals, such as fish, to migrate out of the project area. Other possible biological impacts associated with dredging include indirect impacts from siltation stress on benthic invertebrates, corals, and fish and direct destruction of corals and reef habitat.

Mitigations for Impacts on Invertebrates, Coral, and Fish from Dredging.

Efforts would be taken to reduce sediment loads when dredging or filling portions of the harbor. The USCG would implement all the required regulatory compliance to minimize the impacts caused by dredging. In addition, BMPs would be used to minimize impacts. These include the following BMPs recommended by NOAA Fisheries (NOAA Fisheries 2006c):

- Turbidity and siltation from project-related work should be minimized and contained to within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions;
- Any construction-related debris that may pose an entanglement hazard to marine protected species must be removed from the project site if it is not being used or at the conclusion of construction work;
- All project-related materials and equipment placed in the water should be free of pollutants;
- No project-related materials, such as fill, revetment rock, and pipe, should be stockpiled in the water, such as intertidal zones, reef flats, and stream channels;
- No contamination, such as trash or debris disposal and alien species introductions, of marine environments, such as reef flats, lagoons, and open ocean, adjacent to the project site should result from project-related activities;
- Project-related vehicles and equipment should be fueled away from the water. A contingency plan to control the accidental spills of petroleum

products at the construction site should be developed. Absorbent pads, containment booms and skimmers should be stored on-site to facilitate the cleanup of petroleum spills;

- Attempts must be made to prevent dredged material from being discharged into the marine environment when dredge material is being transported and off-loaded; and
- Return flow of or runoff from dredged material stored at inland dewatering or storage sites must be prevented.

Use of these BMPs would ensure that dredging sediments would be contained. Silt curtains or other measures would limit turbidity effects. Use of these BMPs would ensure that dredging sediments would be contained. Silt curtains or other measures would limit turbidity effects, which would in turn minimize any movement of sediment. Urchin populations and limu are not expected to be affected due to the temporary and short-term nature of the dredging and the use of BMPs. The growth forms (plate-like or foliaceous) of the extensive *Montipora capitata* coral community of the vertical surface adjacent to Station Maui should be capable of withstanding or recovering from siltation impacts of dredging. Resuspension of sediments is not expected to damage adjacent reefs if BMPs are employed. The plate-like growth forms enable the colonies to slough off settled sediments. The coral communities at the MLB site and the reef remnant are more susceptible to impacts from dredging because the colonies tend to be more encrusting and mound-like, are living on horizontal surfaces, and are less able to slough off settled sediments. However, the coral community at the MLB site and reef remnant consists of species that are common throughout Hawai`i, which tend to be fast growing and are therefore likely to rapidly recolonize the site.

Resuspended sediments are not expected to damage adjacent reefs if BMPs are employed. Additionally, new vertical surfaces may create suitable habitat for corals and other macroinvertebrates, which is a beneficial impact. Any habitat loss would be partially offset by new vertical surfaces that would be suitable for coral settlement. Should the invasive snowflake coral be encountered, extreme care should be taken to minimize its dispersal. Transplanting corals to new locations is not an option due to lack of suitable colony sizes, growth forms, and transplant sites along the coast (Jokiel and Brown 1998).

There are no listed invertebrates, corals, or fish that would be affected by the proposed design alternatives. The use of clamshell dredges minimizes the effect of increased turbidity and helps to contain contaminated materials, as would incorporation of the aforementioned BMPs. The most productive areas of coral in the region occur outside the area to be drilled, and there are no listed species in the ROI. Impacts from dredging on invertebrates, corals, and fish would be less than significant and would not be likely to adversely affect these species.

Impacts of Noise on Marine Wildlife from Dredging. Noise would be generated during construction, which includes dredging the harbor floor. Noise effects from dredging are temporary and mainly localized, but because they are often continuous sounds, they can affect marine life. Sounds from clamshell dredges tend to be quite variable (Richardson et al. 1995), though they are strongest at lowest frequencies and decrease with increasing distance from the source. For this project, five distinct events have been broken down as noise sources, all of which compose a single cycle of bucket deployment and retrieval during dredging (US Army 2001). These are identified as follows:

- Winch noise from the dredge derrick and bucket swinging outward and when the bucket is lowered. A splash as the bucket hits the water surface could be detected at relatively short distances from the source. This sound was variable, depending on the speed and angle of the bucket as it entered the water;
- A sudden and often very intense sound is produced as the bucket makes contact with the bottom;
- A grinding sound is produced as the bucket is closed and the dredged material is removed;
- A snap or clank is often audible as the jaws of the bucket close against each other; and
- More winch noise similar to the initial winch noise is audible as the bucket is raised to the surface and the derrick swings over the barge.

Note, sound pressure is measured in μPa, a unit of pressure. These measurements are usually presented as a ratio of pressures and therefore a standard reference is adopted as the denominator. This reference pressures used are 1 μPa for in water levels and 20 μPa for in air levels. Acoustic intensity is defined as the power per unit area in the direction of sound propagation and is often expressed in dB, denoting a logarithmic scale.

By one analysis, noise source levels tend to be in the range of roughly 150 to 162 dB re 1 μPa (Richardson et al. 1995). Another report gives other measurements of noise. The bucket striking the channel bottom has been recorded with peak sound pressure level (SPL) of 124 dB re 1 μPa at 150 meters. This produces the most intense sounds of all events in the dredging cycle. Bucket digging also produces loud sounds, though they are lower (113 dB re 1 μPa at 150 m) than from the bucket hitting bottom (US Army 2001). Strong sounds typically result from the winch motor (117 dB re 1 μPa at 150 m). Overall, the least intense sounds came from the sound associated with the closing of the clamshell, which contains little acoustic energy (Richardson et al. 1995). At 150 meters, the SPL of this event was measured at 99 dB re 1 μPa.

Dredge sounds have been found to be audible at distances of 5,500 meters (US Army 2001), especially noise of the bucket striking the bottom. Much greater detection distances for dredge noise above ambient levels have been reported (Richardson et al. 1995). Waters with high prevailing suspended sediment concentrations may have sound-scattering effects, thereby reducing sound detection distances. It is important to note dredging in coarse sediments produces the most intense sounds, whereas bottom contact in unconsolidated mud emits considerably less intense sound, and for this project, mud would be the primary substance dredged.

Mitigations for Noise Impacts on Marine Wildlife from Dredging. Noise from dredging may affect, but is not likely to adversely affect, marine wildlife. The proposed design alternatives of the harbor are not expected to affect humpback whales, monk seals, or either the green sea turtle or hawksbill sea turtle populations. This is partially based on efforts that should be taken to reduce impacts from noise. These efforts include incorporating BMPs that would minimize impacts. The mitigation measures below are for protected resources and incorporate recommendations from NOAA Fisheries (NOAA Fisheries 2006d).

- A survey of the project area must be performed just before construction activity begins or resumes to ensure that no protected species are in the project area. If protected species are detected, construction activities must be postponed until the animals voluntarily leave the area.
- It should be arranged in advance of construction or any project actions that local marine wildlife experts would be contacted and informed of the impending work. Local monk seal and marine wildlife experts can inform the USCG of recent marine mammal sightings, and also be on call to address any marine wildlife concerns that may occur during the project. The following individuals will be contacted prior to construction or prior to resuming construction after a break, to confirm that no monk seals have recently been sighted in the project vicinity and to be sure they agree to be on call during the construction event:
    - Ms. Hannah Bernard, (808) 280-8124, or wild@aloha.net,
    - Skippy Hau, State Division of Aquatic Resources Biologist, Skippy.Hau@hawaii.gov, (808) 243-5834,
    - Jason Baker, Pacific Islands Fisheries Science Center, Jason.Baker@noaa.gov, (808) 983-5711;
- If any ESA or MMPA listed species are observed in the area (a "safety zone area"; for more on this, see discussion under pile driving) during construction, all activities must cease until the animal voluntarily departs. Observers who are on the construction crew should be monitoring during construction to confirm presence of any sensitive marine wildlife in the ROI, especially green sea turtles, which are the

most likely wildlife species to occur in the vicinity of the project (though monk seals also are possible).

- All on-site project personnel must be apprised of the status of any listed species that could be in the project area and the protections afforded to that species under federal laws. A brochure explaining the laws and guidelines for listed species in Hawai`i may be downloaded from http://www.nmfs.noaa.gov/prot_res/MMWatch/hawaii.htm.

Summary

Dredging is scheduled for one week in August 2006 and, as currently scheduled, would be done outside of the sensitive biological window for humpback whales, so they would not be affected by the project actions if they occur in this timeframe.

Impacts expected from noise or other direct and indirect impacts from dredging may affect, but are not likely to adversely affect, listed species and are considered less than significant. This is due to the following:

- Short duration of dredging;
- Absence of high value habitat in the immediate project footprint for marine wildlife;
- Low likelihood of monk seals occurring in the ROI;
- Aforementioned BMPs that would take place; and
- The work window occurs outside of humpback whale season.

Drilling/Pile Driving Impacts

Description of Activities and Equipment. Pile driving would occur over two weeks in September, during daytime, and for eight hours a day. Based on the efficiency and success of the soil borings, pilings would likely be inserted using a two-phase technique. First a drill rig with a 24-inch auger would be advanced to approximately 40 feet. Noise levels from the drill rig are not expected to exceed the 160 dB re 1 μPa level set by NOAA Fisheries, as discussed under soil borings. Impacts from the auger changing from the four-inch bit used for the soil borings, to the 24–inch bit to be used for the piling, is considered negligible. The manufacturer of the augers (Foremost Mobile) was contacted and their engineers felt there would be no difference in SPL levels with reference to changes in auger size.

Once the auger is removed, precast concrete pilings would be inserted into the open holes using a pile driver to push past any soils that may have fallen into the hole. Vibratory equipment would not be used for this phase due to the potential for vibration-induced settlement and movements during predrilling and pile driving. Pile driving vibrations at other pier and wharf sites on O`ahu have resulted in many incidents of ground movement and distress. Because of the presence of soft and loose deposits and ungrouted rock revetments at the project site, there is the a potential for vibration-related movements and settlements. To reduce the number of potential vibration-related movements, vibratory hammers and vibratory equipment should not be used for predrilling and pile driving; instead, impact hammer pile driving equipment would be used. Pile driving or impact piling is performed using hammers that drive the pile by first inducing downward velocity in a metal ram. Upon impact with the pile accessory, the ram creates a force far larger than its weight, which moves the pile an increment into the ground. Most impact hammers have some kind of cushion under the end of the ram which receives the striking energy of the hammer. The degree of impacts from noise produced by pile driving varies by species.

The project geotechnical consultant has stated that between 26,000 and 40,000 foot-pounds of energy per blow would be needed for the pile driving. His recommendation was to use an apparatus known as the DELMAG D 22-23. This piece of equipment is no longer being manufactured, so the USCG would most likely use the DELMAG D19-32 or something similar. This apparatus provides energy levels in the range recommended (Hammer and Steel 2006).

The USCG project is designed around predrilling for the piles, which is required by the plans and specifications for the piers. The plan proposed includes installing a temporary casing at each pile location. The casing would be installed through the upper sediments to the basalt rock layer. The casing would be cleaned out and then a 24-inch-diameter socket would be drilled five feet into the basalt layer. After the predrilled hole is completed, the casing would be inserted without any further drilling (in other words, the piles are not being driven below the predrilled hole). Piles would run to the bottom of the predrilled hole, that is, all the way to its final tip elevation, the elevation of the bottom (tip) of the pile. The final tip elevation would be approximately -35 feet. The only purpose of the hammering at this point is to push through sediment that may have come into the hole. The hammer would be placed on the pile, which would be driven with just enough blows to prove its capacity. It is important to note that the actual hammering time is expected to be no more than five to ten minutes per pile. Since there are a total of nine piles, the total hammering time is thus collectively only 45 to 90 minutes during the entire two-week timeframe. After this stage, the void surrounding the pile would be filled with grout, and the temporary casing would be extracted.

In summary, most of the pile installation for this project involves predrilling. There would be some pile driving, but it would be extremely minimal and very short in duration, as the pile locations would be predrilled to tip. The pile driving would take place within the temporary casing.

Impacts on Invertebrates, Coral, and Fish from Drilling/Pile Driving. The direct impacts of drilling and pile driving could affect corals or fish in the project footprint, but impacts are not expected to be adverse and are considered to be less than significant. This is because the most productive areas of coral in the region occur outside the area to be drilled, because the work is short term (approximately two weeks) and because there are no listed coral or fish species present. Sedentary macroinvertebrates might be crushed by the direct action of the piles being driven into the substrate. This impact would affect these communities probably not adversely because they are not listed and the impact area is relatively small. In addition, the new piers would provide a beneficial impact by providing additional edge habitat, which could increase habitat diversity within the project vicinity by providing new habitat for algae, benthic invertebrates, and reef fishes. In addition, piles would be driven when the current is reduced, to minimize the number of fish exposed to adverse levels of underwater sound. (NOAA Fisheries has set the SPL level for injury to fish at 190 dB re 1 μPa [NOAA Fisheries 2006b].)

Due to the short duration of drilling/pile driving, the absence of listed species (no rare or endangered species are present, thus none would be lost in this already disturbed environment), and lack of high value habitat in the immediate project footprint, direct impacts from this action are expected to be less than significant on invertebrates, corals, and fish. Impacts may affect, but are not likely to adversely affect, biological resources or the overall habitat.

Impacts of Noise on Marine Wildlife from Drilling/Pile Driving. Noise would be generated during this phase of construction from drilling underwater holes for anchoring the piers, from drilling holes for the anchors using a drill rig, and from driving piles used for the piers. Noise produced from both drilling and pile driving and has been documented to have impacts on marine wildlife. For all cetaceans, sound is an important mechanism for their survival. It provides information about their environment, it is used for communication in a variety of contexts, including foraging, reproduction, and mating, and for some species it enables the remote detection of prey. Behavioral impacts are expected on marine mammals from impulsive sounds (sound produced by pile driving) when SPLs equal or exceed 160 dB re 1 μPa (NOAA Fisheries 2006b).

Noise from drilling or pile driving may affect but is not likely to adversely affect marine wildlife in the ROI. Impacts are expected to be less than significant on humpback whales, monk seals, coastal dolphin species, and either the green sea turtle or hawksbill sea turtle populations. As previously discussed, drilling noise was shown to be lower than the 160 dB threshold for behavioral impacts on marine wildlife, so the rest of this discussion focuses on pile driving.

Pile Driving Noise Studies. There is little available literature about underwater SPLs generated by pile driving, though literature on pile driving and its impacts on marine mammals is growing. Most underwater sound measurements and consequent impacts on marine mammals have been recorded during activities involving underwater explosives or sonar. Also, propagation of noise underwater is difficult to model as it is affected by numerous environmental conditions and as such, information from one area on one type of project is not always able to be extrapolated to other areas. Factors affecting sound transmission include ambient noise, bathymetry, sea state, currents, temperature, presence of fish schools and phytoplankton blooms/algae, local geology, and other physical or biological factors.

Sample SPL levels reported from another project, where pile driving occurred during installation of a new floating dock at the US Coast Guard Pier in Monterey, California (NOAA Fisheries 2003b), were between 90 and 100 dB re 20 μPa at the source (which would be between roughly 152 and 162 dB re 1 μPa in water). Equipment used on this project was the DELMAG D19-32 pile hammer. As previously noted, the USCG would be using either the same model or one with the same energy levels.

These values were reported by the manufacturer of the pile hammer and represented maximum in-air noise levels under what was labeled as extreme driving conditions and at maximum refusal (when firm material is reached). NOAA Fisheries concurred with the mitigations and monitoring done during this previous 2003 project in Monterey (NOAA Fisheries 2003c). Similar mitigations and monitoring would occur during this USCG project for pier construction on Maui such as working during daylight hours only, and monitoring for marine mammals prior to and during construction.

Documentation provided in support of the Monterey USCG project from 2003 also lists sound levels from another project where acoustic monitoring of pile driving operations was done on the Noyo River in Fort Bragg, California, using a similar size hammer under some of the same conditions (6.6 feet water, mud bottom, and a 12-inch I-beam pile. Here they measured noise levels of 169 dB re 1 μPa) at 328 feet (NOAA Fisheries 2003b). The breakwater in Maui is roughly 500 feet from the construction site. This is meaningful in that, it is farther than the distance reported above and also because most of any marine mammal species that may be collocated with actions for this project are likely to occur outside the breakwater of Ma`alaea Harbor (including any coastal dolphin species). Thus, using the above project as a guide, levels at roughly an additional 162 feet farther than what was measured in the Monterey USCG project are expected in this case to have attenuated so that they are lower than what is reported above, i.e., lower than the 160 dB re 1 μPa threshold.

A recent study on pile driver-generated noise did show that it has the potential to affect dolphin populations adversely, as noise produced by pile driving was shown to be detectable up to 25 miles from the source (David 2006). At 9 kHz, they frequency bottlenose dolphins use for whistle communication, pile driving noise is capable of masking strong vocalizations within 6 to 9 miles and weak vocalizations up to approximately 25 miles. The masking radius was observed to reduce as the frequency increased; that is, it was almost 4 miles at 50 kHz and 0.75 mile at 115 kHz.

Other studies cited in David (2006) measured sounds generated by impact driving conductor and insulator pipes for oil and gas wells and found that individual pile driving pulses generated a mean underwater broadband level of 151 dB re 1 μPa. David also reports SPLs from four projects in which drop hammers were used to drive either steel or wood piles into underwater substrates consisting of mud, clay, gravel or a combination of these; SPLs, after adjustment for spreading loss, ranged from 100 to 130 dB re 1 μPa2/Hz. Sound levels measured in one-octave bands (representing the sum of the sound pressures within each band), of pulses generated by a pile driver located between 270 and 1,100 yards from the receiver, converted to spectral density levels and adjusting for loss over distance, show levels at 3 feet of 165 dB re 1 mPa2/Hz at 200 to 800 Hz falling to approximately 130 dB re 1 mPa2/Hz at 12.8 to 25.6 kHz (David 2006). Impulsive hammering was reported to be between 131 and 135 dB re 1 μPa at 0.6 mile from a hammer used for pipe installation (Richardson et al. 1995).

In a study completed at Moss Landing, California (NOAA Fisheries 2005f), pile driving levels at a distance of 50 feet from the specific activity, airborne noise levels from the pile driver, and other construction equipment were not expected to exceed 100 dBA (and most sounds at that distance would be 90 dBA or lower [NOAA Fisheries 2005f]). This is meaningful in that, these levels are similar to what the USCG would be generating on this project, and, as noted previously, most of the pile driving work on this project involves predrilling. That is, actual underwater pile driving would be minimal, as the pile locations would be predrilled to the tip and the pile driving would take place within the temporary casing. The pile drivers used by the USCG on this project are going to be similar and would produce a similar lower energy level as the ones used on the Moss Landing project. During the Moss Landing project, they proceeded such that until underwater sound measurements were done for the pile driving equipment and until the distances at which underwater sound levels equal 160 db and 190 dB re 1 μPa rms could be determined, a preliminary in-water marine mammal impact zone (or safety zone) was delineated by a 500-foot radius from the in-water construction activity. Once specific SPLs from the pile driving were recorded, to determine the distance to the 160- and 190-dB re 1 μPa rms isopleths, the 500-foot safety zone would be replaced by the known radii for 160 dB and 190 dB safety zones. Observers surveyed the safety zones before pile driving began, but no bubble curtains were required for this project (NOAA Fisheries 2005f).

Finally, a letter received from a potential contractor for this project contained information obtained from a recent study for pile driving done on Maui by the HIHWNMS. HIHWNMS monitored and reported acoustic levels in an effort to evaluate the potential acoustic impacts on humpback whales of pile driving operations associated with construction of the HIHWNMS's new office building in Kihei, Maui. Those conducting the study documented that each hammer strike produced a pulse lasting about 140 milliseconds, with energy centered at approximately 125 Hz. The number of pulses produced per pile varied between about 40 and 60 and were typically spaced about two seconds apart, with intermittent periods of silence of up to two minutes. The SPLs of each pulse were measured and reported to vary between 114 and 116 dB re 1 μPa, well below the 160 dB threshold set by NOAA Fisheries (Lammers 2006). It was concluded that, based on the signals recorded, any whales in the area (within a .6- to 1.2-mile radius) "probably heard the pile driving activities," but it was also stated that the monitors did "not believe that any whales were adversely impacted by the sounds" (Lammers 2006). This was based on several factors. First, the received SPLs of pile driving activities were approximately only 3 to 4 dB higher than what is typically produced by chorusing sounds of humpback whales, and the levels recorded were likely the maximum that an individual whale could have been exposed to. It is more likely that any whales in the area would not have occurred in the shallow depths where the pile driving and monitoring occurred but rather one or more kilometers further offshore, resulting in considerably lower exposure levels. Since humpback whale chorusing levels can reach as high as 120 dB re 1 μPa (Au et al. 2000), it is likely that received levels were probably even below the threshold of humpback hearing, and humpback whales were not considered to have been negatively affected.

Impacts of Noise on Marine Wildlife from Pile Driving. The effects of elevated SPLs on marine wildlife can be short term or long term. Some of the short-term impacts may include behavioral changes, changes in respiration rates, avoidance of an area, disruption of signaling, including use of echolocation, masking of signal transmission, and temporary annoyance or harassment. Long-term impacts include tissue rupturing, hearing loss, habitat abandonment, aggression, pup/calf abandonment, and annoyance (harassment). The pile driving for this USCG Maui project has the potential to harass marine wildlife that may be swimming, foraging, or resting in the project vicinity.

Noise from pile driving may affect but is not likely to adversely affect marine wildlife in the ROI. Impacts are expected to be less than significant on humpback whales, monk seals, coastal dolphins, the green sea turtle, and the hawksbill sea turtle populations. This determination is based on the use of mitigations described below.

Mitigations for Noise Impacts on Marine Wildlife from Pile Driving

Humpback whales

Work windows. Drilling and pile driving work is scheduled for two weeks in September 2006 and, as currently scheduled, would be done outside of the sensitive biological window for humpback whales. As this species would not be present, humpback whales would not be affected by the project actions as long as drilling and pile driving remain scheduled for this timeframe.

Other marine wildlife species

Mitigations to reduce the impacts of pile driving actions for other marine wildlife species, such as monk seals, dolphins, and sea turtles, include numerous BMPs as listed below:

1. Five previous BMPs. The five BMPs stated here refer to five BMPs listed above in the section on Mitigations for Noise Impacts on Marine Wildlife from Dredging. In addition to using these suggestions from the Honolulu NOAA Fisheries office (NOAA Fisheries 2006d) for dredging actions, they would also be used during pile driving. In particular, BMP #3 would be enhanced to incorporate the use of a "safety zone" for marine mammals during pile driving (both above water and underwater).

2. Safety Zone. As part of this BMP and before any open water permanent piles are driven, a preliminary safety zone for marine wildlife would be established around the pile driving site. The safety zone would include all areas where the underwater SPLs are anticipated to equal or exceed 160 dB re 1µPa. As with the aforementioned Moss Landing project, a preliminary radius of 500 feet would be used for a safety zone until the distances at which underwater sound levels equal 160 db and 180 (for pinnipeds) dB re 1 µPa rms can be exactly determined. The establishment of this zone is based on the documentation found in the Federal Register notice cited in this document as NOAA Fisheries 2005f.

Observers who are on the construction crew would survey the safety zone to ensure that no marine wildlife is seen within the zone before pile driving begins. If marine mammals are found within the safety zone, pile driving would be delayed until the marine mammals have moved beyond the zone, and this would be verified either by an observer or by waiting until enough time has elapsed without a sighting (say, 15 minutes) to assume that the animal has moved beyond the zone.

A minimum of two observers who are on the construction crew would monitor safety zones during driving of all open water permanent piles. These observers would begin monitoring at least 30 minutes pile driving begins and would monitor from locations that allow a view of the harbor, the breakwater, and the area beyond the breakwater. As discussed previously, pile driving would be delayed if any marine mammals are observed in the safety zone before pile driving begins. If any marine wildlife is in the project area, pile driving would be stopped until the animals depart. Observers would use binoculars during daylight, and no work would occur after daylight. Members of the monitoring team would have a marine radio for contact with other observers and work crews. Data on all observations would be recorded and would include such items as species, numbers, behavior, time of observation, location, time that the pile driving begins and ends, and, where possible, sex or age class of the animals observed. Any other acoustic or visual disturbances occurring at the same time would be noted. In addition, reactions of marine wildlife spotted would be recorded as follows: 1) no response 2) alert (looks towards the source of disturbance) 3) departs. The number of marine mammals under each disturbance reaction also would be recorded.

Finally, as with the previously mentioned and approved Moss Landing pile driving project, the USCG would do the acoustic monitoring to determine the 160 and 180 dB re 1 µPa rms isopleths and would adjust the safety zones accordingly.

3. <u>Having the pile inside the casing/minimal driving.</u> The plan proposed includes installing a temporary casing at each pile location. A 30-inch pipe would be used to prevent the hole from being filled during the drilling and pile driving. The pipe casing would extend above the mudline. As previously noted, this USCG harbor project is designed around predrilling for the piles. The USCG contractor has stated that driving would be minimal and the piles would be drilled, socketed, and grouted. The pile driving itself is extremely minimal, as the pile locations would be predrilled to tip and the hammering ultimately would be necessary only to push through sediments that may have fallen into the drilled hole when the auger is removed. Thus, hammering would last an estimated five to ten minutes per hole, a collective total of 90 minutes over the two-week drilling/pile driving phase of this project. Any pile driving would take place within the temporary casing. The combination of short duration of hammering and use of casings would limit any transmission of sound into the marine environment.

4. <u>Ramp-Up</u>. An additional mitigation for pile driving that may be used is adjusting how the hammer is activated from the outset. Initial hammering can either begin with just "taps" of the hammer at less than full capacity. This provides a "ramp-up" period and has been used in previous projects, as it may serve to alert marine wildlife to leave the area. Either this methodology, or a "dry firing'' of the hammer prior to operating at full capacity would be used (NOAA Fisheries 2003b). A "dry fire" occurs when the hammer is raised and dropped with no compression of the pistons, which produces approximately 50 percent of the maximum in-air noise level, or 45 to 55 dB (dB re 20 microPascal-meter). One of these two methods, based on what the contractor determines is best employed, would be incorporated, both providing the same outcome of a ramp-up period.

Free-swimming marine wildlife are expected to leave or avoid the area once production of sound has begun. If marine mammals enter the safety zone after pile driving has begun, hammering would either continue unabated or would cease if operations allow. Marine wildlife observers who are on the construction crew would monitor and record numbers and behavior of any marine wildlife in the safety zone. NOAA Fisheries PIRO would also be notified immediately in the event this occurs, in order to document/research any potential effects on the marine wildlife. Once pile driving begins, it may not be able to be stopped until the segment being driven has reached its predetermined depth, depending on the nature of the sediments underlying that area. If hammering stops and then resumes, it would potentially have to occur for a longer time and at increased energy levels, which is likely to amplify impacts on marine wildlife, as they would endure potentially higher SPLs for longer periods.

Once driving a pile segment begins, most often operations would continue uninterrupted until the segment reaches its predetermined depth. Monitoring would continue through the pile driving period and would end approximately 30 minutes after pile driving has been completed.

5. Sound Monitoring. SPLs would be recorded to determine the distance to the 160- and 180 dB re 1 μPa rms isopleths. It is expected that SPL levels would be monitored during the first day of pile driving. Direct measurement of sounds (noise) produced by equipment used during pile driving would be assessed. Monitoring peak SPLs during pile driving could be done to ensure that they do not exceed the 160 dB re 1 μPa for behavioral impacts on marine mammals. Once this was undertaken, received levels at the 500-foot safety zone contours would be noted. The safety zone radius for marine wildlife would then be enlarged or reduced, depending on the actual recorded SPLs. It is important to note that analysis of sound recorded and documentation of SPLs would take at least 24 to 48 hours after pile driving begins.

6. Reduction of SPLs and Bubble Curtains. There are various methods to reduce SPLs. One of these is surrounding or encasing piles with an air bubble curtain system or air-filled coffer dam. An air barrier between the pile and the surrounding water effectively disrupts the sound pressure as it travels from water to air then back to water. One way to do this is to encase new piles within a slightly larger hollow pile and pump air into the gap (EIP Associates 2006). This is essentially what is being provided in this USCG project. The plan proposed includes installing a temporary 30-inch-diameter casing at each pile location. The pile would be inserted inside the casing, and the casing would extend above the water line; the noise generated would largely be captured inside the casing and would be discharged above the water. Temporary casings would be installed at each pile location. Thus, pile driving is quite limited, as the pile locations would be predrilled to tip, and pile driving would take place within the temporary casing.

Based on the plans and procedures for this project, since the piles would be inside a casing, most likely a bubble curtain would not add any benefit and would not be necessary as a mitigation (note that bubble curtains are expensive). For this project and in this case, a bubble curtain would be redundant since the USCG is planning on using the temporary casings.

Summary

Impacts from underwater sound remain largely uninvestigated or controversial. However, it is clear that marine wildlife do react to man-made industrial noise. A range of mitigation measures is proposed and these measures are aimed at reducing the impact of pile driver noise on marine wildlife species and individual animals. These measures, including using numerous BMPs, incorporating a safety zone, placing piles inside the casing, keeping the duration of actual hammering short, and ramping up procedures, in conjunction with using acoustic monitoring, is expected to reduce or eliminate impacts so that marine wildlife would not be adversely affected by pile driving. The use of monitoring for sound levels to determine the safety zone for marine wildlife mirrors techniques used and approved previously on other NOAA Fisheries reviewed projects (i.e., NOAA Fisheries 2003b, 2005f; Lammers 2006). There is a low likelihood of marine wildlife being collocated with the two-week project work window in the immediate ROI or within the safety zone and an even lower likelihood of animals being present during the 45- to 90-minute hammering period.

Impacts on monk seals are not expected to be adverse as any monk seal in the ROI would be noted, and project actions would cease until the seal was out of the safety zone. The same is true for sea turtle species. There is a caveat that if the animals show up during a pile driving segment, that segment may need to be completed before actions cease. However, this short-term exposure (between 45 and 90 minutes) is not expected to be significant due to the short duration and since, if the animal were disturbed, it could move away from the area. The impacts of masking on coastal dolphin species are not expected to be adverse due to the intermittent nature of pile driver noise, the dolphins' directional hearing, their ability to adjust the amplitude and frequency or their vocalizations, the structured content of their signals (David 2006), and the fact that no coastal dolphins are expected to occur inside the harbor. Impacts on foraging are not expected to be adverse as the project ROI is not a high value habitat for prey. If the project continues into December, it would require additional mitigations to be used for humpback whales.

In sum, impacts on marine wildlife are not expected to be adverse for the following reasons:

- The work window occurs outside of humpback whale season;
- There is no high value habitat in the immediate project footprint for marine wildlife;
- There is low likelihood of monk seals occurring in the ROI;

- The aforementioned BMPs would be implemented, including cessation of all activities if marine mammals or sea turtles are sighted;
- The approaches to be used for pile driving work (including aforementioned installation procedures, predrilling work for pile driving, short hammer timing, use of hollow casings to muffle sound and contain impacts, and use of a thinner pile design than ones used in previously cited NOAA projects where not likely to adversely affect concurrence was given (NOAA Fisheries 2003b; 2003c).

The casings would provide an air gap which would, in and of itself, provide a level of noise mitigation. Impacts expected from noise or other direct and indirect impacts from drilling and pile driving may affect, but are not likely to adversely affect, listed species and are considered to be less than significant for this project.

***Pier Construction*.** Impacts from construction could affect water quality in MSBH, which in turn would reduce habitat value for biological resources there. Impacts from pier construction may affect but are not likely to adversely affect biological resources.

Description of Activities. Pier construction should last approximately eight weeks, thus its effects would be short term.

Impacts on Invertebrates, Coral, and Fish from Pier Construction. Temporary increases in suspended sediments in the water column as a result of construction would cease at project's end. BMPs for handling toxic materials would be used to ensure that there is no deposit of any construction materials and related liquids, such as paints, solvents, and other noxious chemicals, into the marine environment. The USCG would implement all the required regulatory compliance to minimize the impacts caused by the construction of the design alternatives. Fishes and benthic invertebrate infauna would return after construction is complete, and organisms would readily recolonize the newly exposed hard surfaces. There are no listed corals in the project area, and overall impacts from pier construction are not expected to be adverse.

Impacts of Noise on Marine Wildlife from Pier Construction. There are no noise impacts expected from pier construction, which would occur above the water. Noise does not transmit well from in air to in water, and any noise transmission would be at levels too low to reach the threshold for behavioral impacts, so impacts from pier construction itself are not expected to adversely affect marine wildlife. The one exception is if a monk seal were in the immediate location. However, if a monk seal occurs and is collocated with construction, mitigations are in place to address this (see below). Sound traveling from a source in air through the water propagates in various ways, depending on local conditions, the depth of the receiver (the animal in the water in this case), and bottom depth and topography (Richardson et al. 1995).

Currently construction is scheduled for two months, beginning in September 2006, and being completed by the end of October 2006. As long as construction is completed before mid-December 2006, before the arrival of humpback whales, impacts on marine wildlife are expected to be less than significant. Noise from construction is not expected to have significant impacts on marine wildlife.

Mitigations for Noise Impacts on Marine Wildlife from Pier Construction. BMPs would be employed as discussed above in the sections on dredging and drilling/pile driving operations. These include using observers to confirm presence of any sensitive marine wildlife in the ROI, especially green sea turtles, which are the most likely wildlife to occur in the vicinity of the construction phase of the project, and monk seals, which would also be monitored for in the immediate harbor area. According to the current schedule, construction would occur outside the sensitive biological window for humpback whales, so they would not be affected by the project actions if they arrive in the area at this time.

Impacts from noise or other direct and indirect impacts from construction may affect, but are not likely to adversely affect, listed species, and anyway are considered less than significant. This is due to the following, combined with mitigations listed above, which would already be in place:

- The absence of high value habitat in the immediate project footprint for marine wildlife;
- The low likelihood of monk seals occurring in the ROI;
- The aforementioned BMPs that would take place, including SPL sound level monitoring; and
- The work window occurring outside of humpback whale season.

Summary

The USCG must maintain a tight construction schedule with oversight of the previous project phases (dredging and drilling/pile driving) to be sure they are completed on time and on schedule and to allow pier construction to begin on time so that it is completed before humpback whales arrive. Consultation with NOAA would be based on this schedule. Any schedule slip would result in additional consultation. If, on additional consultation, NOAA does not concur that the project “may affect but is not likely to adversely affect” marine mammals for construction during whale season, then the USCG would be required to enter into formal consultation with NOAA under the ESA.

In summary, impacts on biological resources from the construction of either the single or two fixed or floating concrete pier design alternatives, as currently scheduled, may affect but are not likely to adversely affect marine wildlife resources. Impacts are expected to be less than significant. Impacts from the two various designs alternatives are similar to each other. Additional NOAA consultation for the project is ongoing.

3.2.7.2.2 No Action Alternative

No Impacts

Under the No Action Alternative, no construction or dredging would take place, so there would be no impacts on biological resources.

3.2.7.3 Cumulative Effects Analysis

Only two cumulative projects, as discussed in Section 3.1.3, take place over water and could affect the marine environment that this evaluation covers. First, the Maui Ocean Center effluent has been ongoing. This impact on the marine environment, while it may have been considered significant in the past, is not now considered significant, as monitoring is showing an improving trend.

Second, and more importantly, the USACE's plans to improve navigational infrastructure and to modify the entrance channel may have significant impacts, but by implementing certain mitigations, such as silt curtains, and modifying the design, the USACE could minimize adverse effects on coral populations, filter feeders, and algae. Furthermore, these actions could provide additional edge habitat and create habitat diversity.

Additional dredging activities and construction would lower water quality through siltation and contamination if there is a confluence of projects in the same area or in a short time frame. Projects involving dredging activities would also alter habitat by converting and degrading the benthic environment and by affecting light regimes, which would in turn negatively affect coral. Use of standard BMPs would reduce impacts and is expected to mitigate cumulative impacts to a less than significant level.

Since humpback whales are both ESA and MMPA protected, a take (disrupting of behavior or injury) of even one individual whale is considered harassment and thus would be a significant impact. Some example of mitigations to reduce harassment potential include those cited in NOAA Fisheries 2004c, as well as the following: use of low-wake vessel technology, design of appropriate routes, and use of BMPs for wave attenuation structures as part of the design and permit process for the new vessel. Vessels should be operated at sufficiently low speeds to reduce wake energy, and no-wake zones should be designated near sensitive habitats, which in this case would be the bay outside the harbor, during humpback whale season. Any night travel would have to be at slower than normal speeds outside the harbor, to minimize potential of ship strikes with whales. Day travel would require use of spotters or observers while traveling in and out of the harbor. Existing USCG guidance includes many of these mitigations, which in turn reduce the likelihood of whale collisions. Continued use of these BMPs would reduce impacts and is expected to mitigate cumulative impacts to a less than significant level.

The impacts resulting from the new and larger vessels occurring in the project area would have to be considered under separate action. Use and the movement of the MLB itself into and out of the harbor may result in some impacts on marine wildlife and would be considered separately. Recommendations for best practices guidelines for the MLB have been received from the local group Pacific Wildlife Foundation (PWF). These best practices were originally drafted based on input that the Fourteenth Coast Guard District provided to PWF in the development of their best practices guidelines. The Fourteenth Coast Guard District has also issued its own guidance to all of their units on operations around whales, guidance considered to be more stringent than PWF's. Thus, PWF's best practices suggestions have already been incorporated. Vessel actions on marine wildlife would for the most part remain less than significant.

In addition to the USCG's guiding its own conduct, its law enforcement duties include patrolling whale sanctuaries to deter violations of the MMPA and ESA and educating mariners to prevent violations of the acts by both private and commercial vessel operators. The 47-foot MLB coming to Station Maui is replacing a boat that is able to operate at speeds faster than the MLB. The MLB provides a more robust platform for operation in the sea conditions around Maui.

The MLB's operational capabilities would improve the station's ability to respond to mariners in distress and to patrol and enforce regulations within the Hawaiian Islands Humpback Whale National Marine Sanctuary, providing an overall beneficial impact.

3.2.8 Historic and Cultural Resources

3.2.8.1 Affected Environment/Region of Influence

The following section addresses the potential increased risk to cultural and historic resources within the ROI, which includes the area that could be directly affected by the Proposed Action. Namely, the ROI is the parcel of berthing area that the USCG would lease from the DLNR, as well as the larger *Waikapū ahupua`a* in which the project is located. However, impact analysis focuses primarily on the project area.

In the event previously unknown archaeological resources are discovered during the project, the USCG would comply with the federal laws and regulations governing cultural resources, including the Archaeological Resources Protection Act, Native American Graves Protection and Repatriation Act, and the National Historic Preservation Act (NHPA).

Resource Overview

The land surrounding the project area appears to be more archaeologically sensitive than the proposed project area itself. In 2005, Pacific Legacy, Inc., conducted an archaeological survey of MSBH, documenting the cultural resources on the land in the Proposed Action location and the surrounding area (Pacific Legacy 2005). That report is the primary source used for the historical and cultural information presented below. An underwater marine and water survey was conducted in October 2005 in conjunction with this EA (AECOS 2005). That report is relied on for information pertaining to submerged cultural resources in the project area.

Furthermore, the USCG is consulting with OHA and SHPO (further discussed in Section 1.6.2) to solicit opinions of the project and any relevant knowledge of cultural resources that could be affected by the Proposed Action. Consultation letters were sent in early January 2006. No response was received from SHPO; consultation is considered complete. Any future contact made by SHPO will be considered. Mr. Clyde Nāmu`o of OHA requested that Ms. Thelma Shimaoka of OHA-Maui be contacted to solicit names of local Native Hawaiians to contact regarding the presence of traditional cultural resources that could be affected by the project.

Traditional Cultural Resources. Ms. Thelma Shimaoka was contacted by phone in February 2006 as an initial effort to ascertain the presence or absence of traditional cultural resources that could be affected by the project. She provided the names and phone numbers of five local Native Hawaiian individuals to contact (see Appendix B).

The USCG contractor, Tetra Tech, Inc., attempted to contact these representatives by phone several times in March 2006. Two of five—Lui Hookoana and Mr. Charles Maxwell, Sr.—were reached and provided comments or information on traditional cultural resources within or near Ma`alaea Harbor. Messages were left with the other representatives, but they have not responded, and consultation with these representatives is considered complete. (Details on this and the contact reports are included Appendix B.)

Mr. Lui Hookoana voiced concerns regarding the renowned surf break outside the harbor, sea urchin and *limu* populations that he and other Native Hawaiians collect from just outside the harbor, and the possibility that impaired water quality could affect the sea urchin and *limu* populations, especially if construction was conducted during the winter when there are large swells and more turbidity in the water.

After reviewing the draft EA, Mr. Charles Maxwell, Sr., saw no conflicts with traditional cultural resources that could result from the project.

Terrestrial Archaeological Resources. Ma`alaea Bay has been an important place in Hawaiian history, primarily functioning as a stopover or transit place for travelers (Hawai`i Marine Research 1979). However, it also supported a number of traditional fishing settlements and individual fishermen (Pacific Legacy 2005). Kapoli Spring at the western end of MSBH runs to the shore of Ma`alaea. The spring is traditionally said to be the site where the high chiefs landed by canoe in 1736 to take the remains of Kekaulike, the ruling chief of Maui, by land to Wailuku in the `Īao Valley (Hawai`i Marine Research 1979; Pacific Legacy 2005). It is also documented as the location where Chief Kiha-a-Pi`ilani landed to escape the wrath of his brother Lono-a-Pi`ilani (Pacific Legacy 2005).

According to Pacific Legacy (2005) there were several previously recorded sites in the vicinity of the harbor. Site 50-50-09-1440 consists of two large boulders and is known as Pōhaku O Ma`alaea, situated along Kapoli Spring. One stone is recorded as a *pōhaku piko,* while the other stone, known as the "Kings Table," was used for either food preparation or adze grinding. Both stones have been moved from their original locations.

Sites 50-50-09-1604, -3553, and -3554 are adjacent to the MSBH (Pacific Legacy 2005). Ma`alaea Ebisu Jinja, Site 1604, is a historic Japanese shrine most likely built in the first half of the twentieth century, possibly as early as 1916. The other two sites, 3553 and 3554, were recorded after Site 1604 as burials.

Based on Pacific Legacy (2005) other traditional and archaeological sites are within the region but well outside the harbor boundaries. The Lahaina Pali Trail is also within the region, but it runs along the lower southern slopes of Western Maui and appears to end *mauka* (inland), of MSBH. A *ko`a*, habitation sites, a *heiau* (an ancient temple), and petroglyphs (rock carvings) have also been recorded in the area. None are directly within the harbor but are instead either *mauka* from the harbor or elsewhere along the shoreline.

Hawai`i Marine Research (1979) deemed as culturally important the surfing area in front of the jetty and the reef on the Kīhei side of the harbor. However, it appears that the surfing site is a modern one and is possibly attributable to the construction of the breakwaters at Ma`alaea.

Pacific Legacy (2005) investigated three areas within the terrestrial areas of MSBH. Area 1 is adjacent to the southern intersection of Honapi`ilani Highway and Ma`alaea Road, in the southwest corner of the harbor area. A newly recorded Site 50-50-09-5645, consisting of three separate features, as well as modern debris, was observed in this area. The features of Site 5645 include a bridge across a dry gully, an alignment of cemented basalt boulder (possibly the curbing of a historic roadway), and a concrete pad with basalt boulders. Site 5645 was determined to be significant under Criteria A and D of the National Register of Historic Places (NRHP) significance criteria. However, Pacific Legacy (2005) also determined that the information potential of the site had been exhausted by their efforts, and the site was therefore ineligible for NRHP listing. Additionally, there is a modern bronze memorial plaque cemented into a boulder in this area. Several shovel test probes were conducted in Area 1, but no buried cultural deposits were encountered. Area 2, north of and adjacent to Area 1, encompasses the planned location for drying dredged materials for the Proposed Action. The Pacific Legacy survey crew observed no surface archaeological resources. They placed two test trenches in the northwest corner of Area 2 to test for subsurface cultural deposits. The only deposit of note was a rounded basalt pebble and calcium carbonate deposit, probably a result of natural mass-wasting during a flood. Four test trenches were dug in Area 3, which is near the northeast side of MSBH. The only cultural deposits found in this area were modern trash deposits. Pacific Legacy (2005) noted that, according to the backhoe operator for the trenching, the area had been used as a dumping ground before it was cleared and filled.

Historic Resources. Ma`alaea Bay continued its traditional role as a landing and transportation stop after contact with the West. Kapoli Spring at the southwest end of the harbor also continued to be a major canoe landing site and supported a well-developed maritime settlement on a single pier wharf and a hotel. The most notable activity at the site during this time is a historical account of lumber being transported to Ma`alaea Bay from East Maui and then transported to Lahaina via canoe for reconstructing Lahainaluna School (established 1831) (Pacific Legacy 2005). During the California Gold Rush, between 1848 and 1850, Ma`alaea Bay functioned as a major port for transporting Hawaiian-grown goods, such as Irish potatoes, sweet potatoes, onions, pumpkins, oranges, coffee, and molasses. Such goods were then shipped to San Francisco and elsewhere along the west coast of the mainland (Pacific Legacy 2005).

Two Land Commission Awards (LCA) were granted within and near the project area during the Great Māhele of 1848 (Pacific Legacy 2005). One, LCA 1156, consisted of a house lot surrounded by government land. It was awarded to a person named Kaili, who had lived at that location since 1829. The other, LCA 2959, consisted of a house lot at Ma`alaea, which was awarded to a person named Hika.

Much of the region of Waikapū was converted for agriculture during the mid-1800s, with sugar cane as the primary crop. Eventually the entire *ahupua`a* was sold to Henry Cornwell in 1885. Cornwell, along with his brother-in-law James Louzada, of Waimea, Hawai`i, began the Waikapū Plantation (Pacific Legacy 2005). The plantation fell under the control of the Wailuku Sugar Company in 1894.

During World War II, the US Marines used Ma`alaea Bay (Hawai`i Marine Research 1979), who, prior to the battle of Iwo Jima, rehearsed ship-to-ship maneuvers. Amphibious land practices were also held in the bay.

Construction of the MSBH began in 1952 to replace a small wharf and pier that had once existed in the bay. The original breakwater was constructed in 1953, and the harbor was dredged at the same time. Pacific Legacy's 2005 oral interviews indicated that some of the riprap/boulders used for the construction were actually *pōhaku* and other stones taken from the *heiau* upslope from the harbor. Subsequent breakwaters were constructed in 1958 and the 1960s after safety concerns were voiced.

Underwater Cultural Resources. Although no marine archaeological survey was conducted as part of this EA, AECOS (2005) conducted an underwater marine and water quality survey within the submerged area to be directly affected by the proposed project and alternatives. AECOS personnel used snorkeling equipment to survey the area around Station Maui. They observed that the underwater project area is composed of a mud bottom basin with a small area of boulders and undredged reef in the northern corner. The survey crew specifically looked for rocks with unusual shapes or laid out in a pattern that could have been human-made. No such materials were observed.

3.2.8.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

According to 36 CFR 800, the implementing regulations for NHPA, an adverse effect on cultural resources is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for inclusion on the NRHP in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects may be those that are reasonably foreseeable and caused by an undertaking that occurred later or farther removed or by one that is cumulative.

For the purposes of NEPA, impacts on cultural resources are considered significant under the following scenarios:

- The action involves an irrevocable commitment or loss or destruction of any cultural resource;
- Prehistoric or historic resources that are potentially eligible for listing or that are formally listed on the NRHP are disturbed or destroyed;
- Native American resources are desecrated or destroyed;
- Intrusions occur to aural or visual settings; or
- Access to traditional areas is affected.

3.2.8.2.1 Proposed Action

The environmental consequences related to cultural and historic resources are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

No Impacts

Based on the observations of the underwater marine and water survey (AECOS 2005), as well as on the extensive disturbance of the harbor floor due to dredging, it is highly unlikely that any intact submerged cultural deposits exist within the harbor. The terrestrial work area would not affect any NRHP-eligible sites since the historic site in Area 1 of the Pacific Legacy 2005 survey and assessment were determined ineligible and all other recorded sites are outside of the proposed project area.

Mr. Hookoana's concerns, outlined above, have been addressed in other sections of this EA. It was determined in Section 3.2.7 that neither the sea urchin nor the *limu* populations would be affected by the project. Since a silt curtain and other BMPs will be used during construction, which would not occur during winter due to humpback whale issues cited in Section 3.2.7, water quality affecting the *limu* and sea urchin populations would not be a concern. The project would not affect the surf break outside the harbor since the project location is well within the breakwater and no structures would extend into the pathway of the swell.

Based on the above and lack of objection by Mr. Maxwell, Sr., the proposed project is not expected to result in impacts on traditional resources. No impacts on offshore or terrestrial cultural resources are expected to occur as a result of the Proposed Action.

3.2.8.2.2 No Action Alternative

Under the No Action Alternative, no construction would occur, so there would be no impacts on cultural or historic resources from the No Action Alternative.

3.2.8.3 Cumulative Impacts

Since no impacts on cultural resources are anticipated under the Proposed Action, no cumulative impacts would occur.

3.2.9 Socioeconomics and Environmental Justice

3.2.9.1 Affected Environment/Region of Influence

This section is a description of the contribution of the USCG's Proposed Action in MSBH to the economy and the sociological environment of the ROI, as well as any effects on minority or low-income communities or the health and safety of children within this region. The Proposed Action would be on Maui, the largest of the three islands that make up Maui County. The socioeconomic indicators used for this study include the following:

- Population and housing;
- Employment, economy, and income; and
- Education.

Additionally, a discussion of environmental justice issues is presented, in accordance with Executive Order 12898, and a discussion relating to the protection of children from environmental health risks is presented, in accordance with Executive Order 13045.

3.2.9.1.1 Socioeconomics

The baseline year for socioeconomic data is 2000, the most recent year for which data for most of the socioeconomic indicators are available. When available, more recent data are used to best characterize the current conditions of the socioeconomic ROI.

Population and Housing. The resident population of Maui County almost doubled between 1980 (70,991) and 2000 (128,241) (Maui County Office of Economic Development 2002). While the increase in population in the state of Hawai`i was approximately 25.6 percent between 1980 and 2000, the population increase in Maui County was approximately 80.6 percent (an increase of 57,250). Table 3-7 provides a comparison of population trends over Maui County and state of Hawai`i.

Table 3-7
County of Maui and Hawai`i State Population

	1980	2000	% Change 1980-2000
State of Hawai`i	964,691	1,211,537	25.6
County of Maui	70,991	128,241	80.6

Sources: Maui County Office of Economic Development 2002.

Housing values on the island of Maui increased dramatically over the past few years. As of August 2005, the median single-family home price was $693,000 and the median condominium price was $365,000 (Honolulu Advertiser 2005).

Table 3-8 shows housing occupancy type and vacancy for Maui County and the state of Hawai`i. The vacancy rate in Maui County is 22 percent and the rate of owner-occupied units in Maui County is 44 percent. The state of Hawai`i has a vacancy rate of 12 percent and a rate of owner-occupied units of 49 percent (Maui County Office of Economic Development 2002).

Table 3-8
Housing in 2000

	Maui County	**State of Hawai`i**
Total housing units	56,377	460,542
Occupied	43,507	403,240
Vacant	12,870	57,302
Owner-Occupied	25,039	227,888
Rented	18,468	175,352

Sources: Maui County Office of Economic Development 2002; US Census 2000c

Employment, Economy, and Income. Although many emerging industries, such as technology, film, health and wellness, professional services, and specialty products, show great promise, the tourism industry is the most important source of economic activity in the county (Maui County Office of Economic Development 2005). Based on the 2005 third quarter report of the Department of Business, Economic Development, and Tourism, Maui County had an overall gain of 1,450 jobs, or a 2.2 percent increase. Construction led the other sectors in job gains for the quarter, with an increase of 550 jobs. Professional and business services contributed 300 jobs, and health care and social assistance added 200 jobs (DBEDT 2005).

Table 3-9 presents the distribution of employment among the various industry sectors and the changes experienced in these sectors between 1990 and 2000 for Maui County and the state of Hawai`i. For 2001 and 2003, the construction, accommodation and food service, and government sectors were the major source of employment and personal income in both the state and county. The major increase in personal income in Maui County between 2001 and 2003 came from the finance and insurance, government and government enterprise, real estate and rental and leasing sectors (42.5, 26.1, and 21.9 percent, respectively). In the state of Hawai`i, the major increase in personal income came from the construction sector (21.4 percent), followed by the government and government enterprise and finance and insurance sectors, with an increase of 18.3 and 14.2, respectively. However, the arts entertainment and recreation sector experienced a decline of 14.6 percent in Maui County, while it increased by 13.4 percent in the state of Hawai`i. On the contrary, for the farming and information sectors, personal income increased, between 2001 and 2003, in Maui County (2.4 and 8.5 percent), while it decreased in the state of Hawai`i (-1.6 and -3.5 percent).

Table 3-9
Personal Income by Major Source and Earnings by Industry
(in thousands of dollars)

	Maui County			State of Hawai`i		
	2001	**2003**	**Percent Change**	**2001**	**2003**	**Percent Change**
Farm	62,168	63,657	2.4	199,619	196,331	-1.6
Construction	167,015	171,261	2.5	1,456,055	1,767,778	21.4
Manufacturing	65,162	67,261	3.2	616,242	635,501	5.8
Wholesale trade	46,556	53,306	14.5	746,326	828,511	11
Information	48,309	52,435	8.5	614,794	592,968	-3.5
Finance and insurance	35,449	50,512	42.5	908,238	1,037,302	14.2
Real estate and rental and leasing	42,077	51,289	21.9	460,130	521,807	13.4
Arts entertainment and recreation	65,204	64,252	-14.6	279,608	305,548	9.3
Accommodation and food service	551,405	629,474	14.1	2,208,655	2,452,892	11
Government and government enterprise	370,448	467,213	26.1	8,086,480	9,568,929	18.3

Source: BEA 2005c, 2005d

As shown on Figure 3-9, the state of Hawai`i had an overall higher per capita personal income than did Maui County for both 2001 and 2003. For 2003, the per capita personal income of the state ($30,531) exceeded that of Maui County ($27,310) by $3,221 (BEA 2005a, 2005b). For 2001, the per capita personal income for the state ($28,745) exceeded that of Maui County ($25,390) by $3,355. Maui County experienced a higher growth in per capita personal income between 2001 and 2003, with a 7.5 percent increase, compared to 6.2 percent increase for the state.

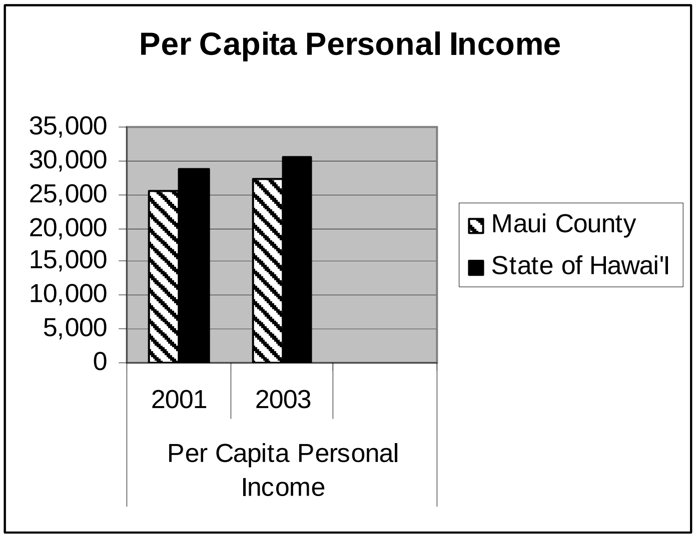
Table 3-10 illustrates the rates of employment from 1996 to 2000. The rate of unemployment consistently decreased between 1996 and 2000, with an increased labor force in Maui County.

Table 3-10
Rate of Employment in Maui County

	Labor Force	Unemployed	Percent Unemployed
1996	68,050	4,950	7.3
1999	71,400	4,050	5.7
2000	72,350	3,050	4.2

Sources: Maui County Office of Economic Development 2002

Figure 3-9 Per Capita Personal Income



Source: BEA 2005a, 2005b

Education. Maui County has 49 schools, 30 public and 19 private. The number of teachers in public school for 2001 was 1,351, for an enrollment of 21,660 students. The number of high school graduates, from public schools for 2001-2002 was 1,475. Of the 19 private schools in Maui County, 18 are on the island of Maui. The total enrollment for the 18 private schools on Maui was 2,772 for 2001.[1] The total number of degrees earned from the Maui Community College in 2001 was 235, including 152 associate degrees and 83 certificate or achievement degrees. For fall 2001, there were 982 full-time students and 1,717 part-time students. The University of Hawai`i had a total of 1,062 registrations from Maui County, 914 of which came from the island of Maui (Maui County Office of Economic Development 2002).

3.2.9.1.2 Environmental Justice and Protection of Children

A discussion of environmental justice issues is presented in accordance with EO 12898, and a discussion relating to the protection of children from environmental health risks is presented in accordance with EO 13045.

On February 11, 1994, President Clinton issued EO 12898, entitled Federal Actions to Address Environmental Justice in Minority and Low-Income Populations. This order requires that "each federal agency make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities, on minority populations and low-income populations" (EO 12898, 59 FR 7629 [Section 1-101]).

[1] Data unavailable for the one private school (not located on the island of Maui)

Racial and ethnic data for Maui County and the State of Hawai`i for 2000 are illustrated in Table 3-11. The dominant ethnic group in 2000 in Maui County was Caucasian, at 33.9 percent of the total population. The second and third groups are the Asian and the Native Hawaiian and Other Pacific Islander, at 31 and 10.7 percent. The dominant ethnic group for the state of Hawai`i is the Asian group, with 41.6 percent of the total population. The Native Hawaiian and Other Pacific Islander group makes up 9.4 percent of the total state population.

Table 3-11
Population Percentage by Race/Ethnicity

	Maui County	State of Hawai`i
Total	128,094	1,211,537
Caucasian	43,421	294,102
Black or African American	509	22,003
American Indian and Alaska Native	479	3,535
Asian	39,738	503,868
Native Hawaiian and Other Pacific Islander	13,730	113,539

Sources: US Census 2000a, 2000b

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks, April 1997, seeks to protect children from disproportionately incurring environmental health risks or safety risks that might arise from federal policies, programs, activities, and standards. Environmental health risks and safety risks to children are those that are attributable to substances that a child is likely to come into contact with or to ingest.

The USCG site is in a public harbor and there are presently no fences or other isolating devices to exclude persons from the area. However, the USCG is erecting security fencing and lighting to surround portions of Station Maui to prohibit unauthorized entry. Fencing will be kept locked, and signs will be clearly displayed. Only authorized personnel from the USCG will be able to access Station Maui and any future berthing and wharf area. This is under a separate USCG action. Multifamily residential areas are along the shoreline area of Ma`alaea Bay, adjacent to MSBH.

3.2.9.2 Environmental Consequences

Impact Methodology and Considerations for Impact Analysis

The Proposed Action design alternatives and No Action Alternative were reviewed and evaluated to identify beneficial or adverse impacts on conditions within the ROI. For example, a project alternative may result in changes to the population, employment, and income. These impacts may result in direct or indirect effects beyond the immediate project vicinity through housing for the facility personnel and their dependents or schooling for facility families, or the impacts may have beneficial effect by employing local residents on the island or in the state.

For this evaluation, the ROI is the geographic area against which social, economic, and environmental justice impacts of project alternatives are analyzed. Based on these criteria, the ROI for this evaluation is defined as the island of Maui.

Maui makes up 90 percent of Maui County, which encompasses three inhabited islands, Maui, Lāna`i, and Moloka`i. Therefore, most economic activities can be tracked at the county level because of the way data are collected and compiled. Similarly, environmental justice issues identify low-income or minority communities at a county level for demographic tracking. Where possible, this section describes the socioeconomic characteristics and environmental justice issues at the island level to more accurately depict the most affected areas adjacent to USCG facilities in MSBH. Economic and demographic data of the state of Hawai`i was used for comparison.

In order to determine the level of effect that may result on any resource as a result of the Proposed Action or subsequent design alternative, the effect is compared against specific significance criteria identified at the onset of the evaluation. For the evaluation of socioeconomic conditions, significance is determined if the action would result in any of the following:

- Conflict with the state's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;
- Substantial effects on the economic or social welfare of the community or state;
- Substantial secondary changes, such as population changes or effect on public facilities (for example, schools or housing);
- Displacement of a substantial proportion of residents in a community;
- A demand for additional housing that could not be sustained within the project area;
- Substantially adversely affect expenditures or income associated with the planned project within the study area;
- Cause a substantial decrease in local or area employment;
- Displace or substantially disrupt businesses;
- Change any social, economic, physical, environmental, or health conditions so as to disproportionately affect any particular low-income or minority group; or
- Disproportionately endanger children in areas on or near the installations.

As discussed in Chapter 1, this EA follows both federal and state environmental review protocol. Public review periods were provided at the onset of the environmental evaluation process for scoping, as well as following the completion of the draft EA, both provided through the Office of Environmental Quality Control (OEQC). No specific comments emphasizing socioeconomic and environmental justice issues were received during these review periods.

3.2.9.2.1 Proposed Action

The environmental consequences related to socioeconomic conditions are common to all design alternatives and therefore are discussed only once below.

Design Alternatives

Socioeconomics

Less than Significant Impacts

Population and Housing. No adverse impacts on population and housing are anticipated. Although it may be possible that some of the construction workers may be from off-island or another county, but this is not expected at this time. There is not an anticipated increase in personnel as part of the Proposed Action, and any additional personnel brought to Station Maui beyond the parameters of the Proposed Action would simply be redistributed from within the USCG District; thus no one would be hired on Maui or brought in from off-island, and the demand for housing would not increase. If in the event that one or more of the construction workers were from off-island, the impact would be negligible. The annual increase in residents to Maui, which has averaged approximately 1,000 per year since 1990, has been consistent and is expected to continue (Maui County Office of Economic Development 2002). Thus, any possible negligible effect on population and housing as a result of the Proposed Action would be short term.

No Impacts

Employment, Economics, and Income. The Proposed Action under each design alternative would have beneficial short-term impacts on the local economy and employment because it would temporarily increase employment and associated regional spending during the construction phase. The Proposed Action would have no anticipated long-term effect on employment.

The project is proposed to be developed over approximately four to five months, with a preliminary construction cost estimate in the range of $500,000 to $1,000,000 (in the 2005 dollar value).

Education. The Proposed Action would not result in adverse impacts on the schools within the ROI. There is no increase in the number of permanent personnel and dependents, and thus no relocation is expected.

Environmental Justice and Protection of Children

No Impacts

Environmental Justice. The Proposed Action would have no adverse environmental justice impacts. The proposed site is classified as urban and is zoned Business and Light Industrial (see Section 3.2 for land use). There are condominiums adjacent to MSBH. The potentially affected area is not a predominantly minority or low-income community, so none of the effects of construction and operation of the proposed project would disproportionately affect minority or low-income groups.

Protection of Children. The Proposed Action would not have disproportionate health and safety effects on children. The project site is within the MSBH, which is managed and operated by the state, therefore children may be present at times. However, fencing and other safely precautions would prevent children from gaining access to the project site during construction.

3.2.9.2.2 No Action Alternative

Socioeconomics

No Impacts

Population and Housing. Under the No Action Alternative no new personnel would be relocated to Maui. There would be no new demand on the housing market and no increase in population beyond the natural annual influx. No adverse impacts on the local population and housing would occur under the No Action Alternative because existing conditions and operations would not change.

Employment, Economics, and Income. No adverse impacts on the local economy and employment would occur under the No Action Alternative because existing conditions and operations would not change. Similarly, none of the beneficial short-term or long-term beneficial effects identified under each of the other project alternatives would be realized under the No Action Alternative.

Education. The No Action Alternative would have no adverse impact on the schools and community within the ROI because the existing conditions at the proposed site would remain unchanged.

Environmental Justice and Protection of Children

No Impacts

Environmental Justice. The No Action Alternative would have no adverse impact on low-income or minority communities in the vicinity of the ROI because the existing conditions at the proposed site would remain unchanged.

Protection of Children. There would be no change in precautionary protocol around MSBH under the No Action Alternative that may endanger the health or safety of children. No adverse impacts would occur.

3.2.9.3 Cumulative Effects Analysis

The cumulative projects identified within the ROI (discussed in Section 3.1.3) would increase economic activity and demand for services on the island. These projects would temporarily increase regional employment and spending during their construction phases. Additionally, new projects within the ROI may create new long-term employment opportunities for current residents and could also likely draw new residents from outside the region. This may increase the demand on residential housing and regional service providers, including schools. The developers of two of the cumulative projects identified within the ROI, the Ma`alaea Village Project District and the Ma`alaea Village Project District, are considering developing additional residential housing in the vicinity of MSBH. Although the other cumulative projects are not anticipated to create such a demand to require two full complexes in themselves, urban planning for Maui has identified a possible need for more housing in the future and is looking at these locations to develop. No significant cumulative impact is determined to result from these projects, and the contribution by the Proposed Action would be negligible.

CHAPTER 4
FINDINGS AND CONCLUSIONS

4.1 SUMMARY OF IMPACTS

4.1.1 Summary of Proposed Action Impacts

Due to severe weather conditions common in the Pacific Region, the USCG has identified limitations to their current Station Maui assets of two RB-S patrol boats. As a result, the USCG has replaced one of the existing RB-S boats with a 47-foot MLB, which is designed to withstand the elevated seas, storm surges, and wind funneling and can travel to farther distances within the Maui jurisdiction. This larger boat, however, is not trailerable and would remain in the water at MSBH.

The Proposed Action includes an extension of the USCG's lease with DLNR at MSBH in Ma`alaea on the island of Maui. Because the USCG does not currently retain any slip space at the harbor, this extension would consist of slips 108 and 109 located immediately adjacent to their Station Maui facility. In order to secure and protect the new patrol boat against storm surges that have been known to cause damage to vessels in MSBH, the USCG proposes to improve this berthing area with one of four identified reasonable mooring configurations: one floating pier, one or two fixed concrete piers, or one of each. This EA has evaluated the potential impacts resulting from implementation of the Proposed Action.

No significant impacts were identified as a result of the Proposed Action and no significant but mitigable to less than significant impacts were determined. Less than significant impacts were identified for most resource areas and impacts among design alternatives were similar, if not identical. The only increased impacts among the four design alternatives was found to be from the two pier alternatives (Design Alternatives 2 and 4) in which a slightly lengthened construction time when noise would be generated and additional deliveries of concrete for pier development would be required. These differences are not substantial.

Most impacts would be experienced only during the construction phase of the Proposed Action. During this period, access within the harbor at the northeast extent of the central breakwater would be reduced and traffic on land would be increased due to equipment and construction crews. All activities would be coordinated with DBOR and MSBH leaseholders. Furthermore, a staging area would be developed to keep equipment, materials, and crew vehicles so as not to compromise traffic flow or parking areas.

Several heavy pieces of equipment, including dump trucks, a crane, and concrete trucks, would be onsite during this period. Each of these machines creates noise levels above the permissible daytime noise levels in accordance with HAR 11-46 requiring a noise permit from HDOH prior to commencement of any of these activities. Furthermore, dredging and construction activities at the deck may result in resuspension of existing sediments and increased turbidity levels. Mitigations such as the use of silt curtains would be employed to reduce sediments loads. Furthermore, certain noise control mitigations have been identified including restricting all noise-emitting activities to daytime hours, maintaining all equipment for proper operation, shutting down equipment between operations.

Because Station Maui and USCG contractors would be required to comply with the protocols of MSBH and prepare a health and safety plan in accordance with OSHA regulations, there would be no anticipated adverse impacts resulting to public health and safety. Materials used would be properly disposed at an approved landfill, including dredge material that would first be dried. To reduce staging time, sediment was tested for toxicity during the planning phase. This analysis confirmed that dredge sediment would not have to be handled or disposed of as contaminated material following the dredging phase of construction. Only minor hazardous materials, primarily petroleum-based, are used at Station Maui, both during construction for the equipment and in operation for maintenance.

Possible biological impacts associated with construction include siltation stress in corals from dredging, physical destruction of corals and reef habitat, and bleaching from decreased sunlight from the new piers. Although there are listed corals that have been identified within MSBH, there are none that would be impacted by the proposed design alternatives of the harbor. Furthermore, the new piers would provide additional edge habitat and potentially increase habitat diversity within the project vicinity, by providing new habitat for algae, benthic invertebrates, and reef fishes. No rare or endangered species would be lost in this already disturbed environment. Fishes and benthic invertebrate infauna will return after construction is complete and organisms will readily re-colonize the newly exposed hard surfaces. Underwater noise effects from dredging, piling, and pier construction would generate excess sound pressure levels. These activities would be temporary and short term and would not occur during the humpback whale migratory period. As such these effects were not determined to be significant. Mitigations and BMPs have been identified to minimize these effects.

Likewise, there are no listed or proposed cultural or archaeological sites within the project area and no impacts on offshore or terrestrial cultural resources are expected to occur as a result of the Proposed Action. There would be no change in personnel at Station Maui as a result of the Proposed Action and no heightened demand on housing or schools. There would be no impacts to environmental justice or the protection of children from environmental health and safety risks.

During the operational phase of the Proposed Action, no adverse impacts were identified for any of the resource categories. A beneficial impact was identified on public health and safety. By implementing the Proposed Action, the new MLB would be supported against damage caused at the harbor during storm surges. Because the patrol boat would be better maintained, the public would greatly benefit from improved SAR response capabilities by the USCG.

4.1.2 Findings and Reasons of Determination

As discussed in Section 3.1.2, determination of impact significance took into considered both context and intensity of potential impacts (40 CFR 1508.27; HRS 343§11-200-9, 12). To foster this evaluation and to help the reader understand the approach that was taken, specific criteria were outlined at the beginning of each resource evaluation. These criteria were developed based on criteria listed in HAR 11-200-12 and resource-specific determinant factors. As such, impacts were evaluated collectively (the sum of their effects on the environment), cumulatively, and incrementally, including each phase of the Proposed Action.

No impacts were identified to be significant or significant but mitigable to less than significant. No impacts were determined to involve irrevocable commitment or loss or destruction of any natural or cultural resources. No action is anticipated to curtail beneficial uses of the environment or harbor (such as recreational access or nearby beach use). There would be no conflicts with Hawai`i laws, regulations, executive orders, or long-term land uses. The Proposed Action would not adversely affect economic or social welfare, nor would it result in substantial changes to the social or economic setting. There would be no negative impacts on public health or safety. Finally, there would be no detrimental effects on listed species, critical habitats, or air or water quality. Each of these conditions is discussed further in this document, with the key issues and effects summarized in Section 4.1.1. Based on these findings and reasons, the USCG concludes with a FONSI determination, which is attached to this EA.

4.1.3 Summary of No Action Alternative Impacts

Under the No Action Alternative, no construction would take place. The MLB would be brought to Station Maui, however the USCG would not extend their lease and no designated berthing space would be available. The new MLB would be tied to the existing wharf along the northern side of MSBH and Station Maui. The public would still benefit from the improved SAR capabilities of the USCG assets. No adverse impacts were identified for most resources, however the wharf experiences heavy swells and surges as it is directly across from the harbor entrance channel. As a result, if the patrol boat were simply moored to this wharf, in periods of severe weather it would be rubbed and knocked against the wharf likely causing severe damage to the MLB and possibly to surrounding infrastructure and vessels. This could compromise the integrity of the patrol boat to reliably respond to SAR calls. As a result, under the No Action Alternative the USCG would likely bring the MLB offshore during periods of heavy surge to ride out the high waves that cause the most damage. This would result in crew fatigue but would prevent expensive maintenance and reduced integrity to the patrol boat.

4.1.4 Summary of Cumulative Effects

A primary cumulative ROI was shared by most resource areas and was designated to be MSBH and the surrounding area. Several cumulative projects were identified in this area, as discussed in Section 3.1.3. Similar to the Proposed Action, the primary impacts were recognized to result from the construction phases of these projects. Although no significant impacts were identified, one significant but mitigable impact was determined to affect biological resources. The USACE plans to modify and improve navigational features of MSBH would compromise some of the coral communities in the region. They have studied the areas of corals in the harbor as well as other communities and by implementing certain mitigations, such as silt curtains, impacts would be contained and minimized. The Proposed Action would have no contribution to this effect.

Other less than significant impacts were found to be largely similar to the construction phase of the Proposed Action. For instance, noise created from equipment above 60 dB would require a permit from HDOH. Traffic would be temporarily congested during these periods and coordination among activities would lessen the impact. Workers would be required to comply with MSBH protocol and OSHA regulations, and projects should confirm capacity with appropriate landfills prior to waste generation. No long term effects were anticipated with the exception of residential development would presumably increase population and traffic in the area. Most of these activities would occur independent of the Proposed Action and there would be few if any concurrent construction phases.

4.2 Determination of the Preferred Design Alternative

As discussed in Section 2.2.2, Design Alternative 2, Two Fixed Concrete Piers, was chosen as the preferred design alternative to supplement the Proposed Action for the following reasons:

- Fixed piers require less maintenance;

- Although a single pier would cost less to construct than two piers, the difference in cost is less consequential when compared to the flexibility in mooring arrangements of having twin piers; and
- Station Maui personnel logistically prefer the alternative of having two fixed piers so, in times of high wind and waves, the MLB could be tied between the two piers and would not rub against the pier.

Based on the evaluation of this EA, although this design alternative would produce elevated noise and traffic impacts during the construction phase, this elevation would be slight and short-term. There would be no long-term adverse impacts resulting from the preferred alternative, while the long-term benefit of this alternative would be substantial, as supported above. For these reasons, Design Alternative 2 remains as the preferred mooring configuration to supplement the Proposed Action for the USCG Patrol Boat Support Facilities EA evaluation.

4.3 Other Required Analyses

Significant Unavoidable Adverse Impacts

There would be no significant unavoidable adverse impacts as a result of the USCG's proposed lease modification or mooring infrastructure construction.

Relationship Between Local Short-Term Uses of the Environment and Long-Term Productivity

Short-term damage to the environment relating to the Proposed Action would be limited, as described above. No significant impacts were identified.

The Proposed Action would provide safe and adequate mooring for the new MLB coming to USCG Station Maui. As such, the long-term productivity would ensure longevity and success the USCG's SAR mission to "aid to distressed persons, boats, and aircraft on and under the high seas and on and under the waters over which [Station Maui] has jurisdiction" (USCG 2003). Any measurement of long-term productivity in this context must recognize the importance of public safety on the waters and the effects of severe weather conditions, both in causing these effects and in intensifying the mission of life saving. The USCG will take whatever actions are reasonable and practicable to preserve and protect the resources under its stewardship.

Irreversible and Irretrievable Commitments of Resources

Implementing the proposed action would require committing both renewable and nonrenewable energy and material resources for construction, such as the fuel used by machinery.

CHAPTER 5
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CHAPTER 6
LIST OF PREPARERS

Name	Role	Degree/School	Years of Experience
Tetra Tech **820 Mililani Street, Suite 700** **Honolulu, Hawai`i 96813** **(808) 533-3366**			
Tetra Tech **180 Howard Street, Suite 250** **San Francisco, California 94105** **(415) 974-1221**			
Leslie Garlinghouse	Project Manager	BS, Environmental Science & Policy, University of South Florida	8
George Redpath	NEPA Specialist	MS, Ecology, University of California, Davis BS, Fish and Wildlife Biology, UC Davis	32
Ann Zoidis	Biological and Coastal Resources NOAA Consultation	MS, Physiology and Behavioral Biology, San Francisco State University BS, Geology, Smith College	16
Andrew Gentile	Noise Solid Waste and Hazardous Materials	MS, Environmental Management, University of San Francisco BS, Biochemistry, University of Waterloo, Ontario, Canada	5
Dawn Lleces	Public Uses Public Health and Safety Hawaiian Language	BA, Environmental Sciences, University of Hawai`i	3

Name	Role	Degree/School	Years of Experience
Erin King	Historic and Cultural Resources SHPO/OHA Consultation	MA, Cultural Anthropology, California State University, Northridge BA, Cultural Anthropology, University of California, Santa Barbara	5
Holly Prohaska	References and Administrative Record	MS, Environmental Management, University of San Francisco BA, Marine Science, University of San Diego	8
Landin Johnson	Traffic and Roadways Socioeconomics and Environmental Justice	BA, Political Science & Economics, University of Hawai`i at Manoa	1
Rima Ghannam	Water Resources Administrative Record	MS, Environmental Management, Swiss Federal Institute of Technology BS, Agriculture, American University of Beirut	10
Susan Carstenn, PhD	Biological Resources	PhD, Systems Ecology, Department of Environmental Engineering Sciences, University of Florida M.Ed, Science Education, University of Florida BS, Education, University of Florida	7
Randolph Varney	Technical Editor	MFA in Writing, University of San Francisco BA, Technical and Professional Writing, San Francisco State University	16
Cindy Schad	Word Processor	BFA, Creative Writing, Emerson College, Boston, Massachusetts	15
Justin Colgan	GIS/AutoCADD/ Graphics	BA, Geography, CSU, Chico	4
Yashekia Evans	GIS/Graphics	GIS Technician	5

AECOS, Inc.
45-939 Kamehameha Highway, 104
Kaneohe, HI 96744

Susan Burr	Marine Biologist	MS, Marine Resources Management, Oregon State University BA, Biology, Pomona College	12
Eric Guinther	Marine Biologist	BA, Biology, University of the Pacific	41
Katie Laing	Marine Biologist	MS, Marine Biology University of North Carolina, Wilmington BS, Biology, Minor in Chemistry University of North Carolina, Wilmington	3

Name	Role	Degree/School	Years of Experience
Allen Cattell, PhD	Water Quality Specialist	PhD, Oceanography, University of British Columbia MA, Marine Science, University of the Pacific BA, Biology, University of the Pacific	34

CHAPTER 7
DISTRIBUTION LIST

The USCG compiled a list of elected officials, individuals, agencies, and organizations that may have an interest in the proposed activities at Ma`alaea Small Boat Harbor. There were 98 listings on the database, including six local libraries. This allowed individuals that may not have been on the distribution list to have access to the information. Each of these individual listings was mailed the scoping informational packet. The list has been distilled based on active participation during the scoping period or in consultation efforts to include organizations and individuals who have requested or are required to receive the draft EA, as well as the six local public libraries. These recipients received a copy of the draft EA. Those on the original list received a letter identifying contact information if they would like to request a copy of the draft EA and the list of local libraries where they may access the document. Based on the response during the scoping period, draft review period, and during consultations, this list was further distilled to the one below. These recipients will receive a copy of the final EA and FONSI.

Organizations Mail Out

Title	FirstName	LastName	Position	No. Copies of DEA	Company	Address	City	St	Zip Code
Mr.	Richard	Rice		1	Dept. of Land and Natural Resources Division of Boating and Ocean Recreation	333 Queen Street, Room 300	Honululu	HI	96813
				2	Office of Environmental Quality Control	235 S. Beretania Street, Suite 702	Honululu	HI	96813
				1	State of Hawaii Department of Business, Economic Development and Tourism, Office of Planning	PO Box 2359	Honululu	HI	96804
Mr.	Clyde	Namu`o	Administrator	1	Office of Hawaiian Affairs	711 Kapiolani Boulevard, Suite 500	Honolulu	HI	96813
Ms.	Thelma	Shimaoka	Community Resource Coo	1	Office of Hawaiian Affairs	140 Hoohana Street, Suite 206	Kahului	HI	96732
Ms.	Heidi	Guth		1	Office of Hawaiian Affairs	711 Kapiolani Boulevard, Suite 500	Honolulu	HI	96813
	Charlie	Maxwell, Sr.		1		157 Alea Place	Pukalani	HI	96768
Mr.	Lui	Hookoana		1	Maui College	310 W. Kaahumanu Avenue	Kahului	HI	96732-1617
Mr.	Peter	Young	Director	1	Dept. of Land and Natural Resources	601 Kamokila Boulevard, Suite 555	Kapolei	HI	96707
	Glenn	Correa	Director	1	County of Maui Dept. of Parks and Recreation	700 Hali`a Nakoa Street	Wailuku	HI	96793
Mr.	Gilbert	Coloma-Agara	Director	1	County of Maui Department of Public Works and Environmental Management	250 South High Street	Wailuku	HI	96793
Ms.	Alison	Cohan		1	Pacific Whale Foundation	300 Maalaea Road, Suite 211	Wailuku	HI	96793
				1	Surfrider Foundation	P.O. Box 790549	Paia	HI	96779
Mr.	John	Naughton		1	National Marine Fisheries Service	1601 Kapiolani Blvd, 1110	Honolulu	HI	96814
Mr.	Chris	Yates	Assistant Regional Adm	1	National Marine Fisheries Service	1601 Kapiolani Blvd, 1110	Honolulu	HI	96814
Mr.	Jeffrey	Walters		1	NOAA-State Sanctuary Co-manager	726 South Kihei Road	Kihei	HI	96753
Ms.	Jayne	LeFors		1	National Marine Fisheries Service Pacific Islands Regional Office	1601 Kapiolani Blvd, 1110	Honolulu	HI	96814
BMC	Rob	Bushey		1	U.S. Coast Guard Station Maui	Maalaea Harbor, 233 Maalaea Road	Wailuku	HI	96793
Ms.	Rodney	Haraga	Director	1	State of Hawaii Department of Transportation	Aliiaimoku Hale, 69 Punchbowl Street	Honolulu	HI	96813
Mr.	Tom	Phillips	Chief	1	County of Maui Police Department	55 Mahalani Street	Wailuku	HI	96793

Mr.	Herbert	Matsubayashi	District Environmental He	1	State of Hawaii Dept of Health	54 High Street	Wailuku	HI	96793
Mr.	George	Young, P.E.	Chief, Regulatory Branch	1	US Dept of the Army US Army Corps of Engineers, Honolulu District	Attn: CEPOH-EC-R Bldg 230, Room 201	Fort Shafter	HI	96858
Mr.	Farley K.	Watanabe	Archaeologist	1	US Dept of the Army US Army Corps of Engineers, Honolulu District	Attn: CEPOH-EC-R Bldg 230, Room 201	Fort Shafter	HI	96858
Mr.	Wayne	Smith	Harbor Agent	1	Maalaea Small Boat Harbor	101 Maalaea Boat Harbor Road	Waikulu	HI	96793
Mr.	Nicolas	Giaconi	Harbor Agent	1	Maalaea Small Boat Harbor	RR 1, Box 371	Waikulu	HI	96793
Mayor	Alan	Arakawa		1	County of Maui	200 S. High Street	Waikulu	HI	96793
				1	Maalaea Community Association	50 Hauoli Street	Maalaea	HI	96793
Mr.	Michael	Foley	Planning Director	1	County of Maui Department of Planning	250 South High Street	Wailuku	HI	96793
Mr.	Skippy	Hau	Aquatic Biologist	1	Division of Aquatic Resources - Maui Department of Land and Natural Resources	130 Mahalani Street	Wailuku	HI	96793
	Ranae	Ganske-Cerizo	District Conservationist	1	USDA, Natural Resources Conservation Service (NRCS)	210 Imi Kala Street, Suite 209	Wailuku	HI	96793
Senator	Rosalyn	Baker		1	Hawai`i State Capitol - State Senate	415 South Beretania Street, Room 220	Honolulu	HI	96813

Libraries

Title	FirstName	LastName	Position	No. Copies of DEA	Company	Address	City	St	Zip Code
				1	Wailuku Public Library	251 High St.	Wailuku	HI	96793
				1	Hawaii State Library	Hawaii Documents Center 478 South King St.	Honolulu	HI	96813
				1	Kahului Public Library	90 School St.	Kahului	HI	96732
				1	Kihei Public Library	35 Waimahaihai St.	Kihei	HI	96753
				1	Lahaina Public Library	680 Wharf St.	Lahaina	HI	96761
				1	Maui Community College Library	310 Kaahumanu Avenue	Kahului	HI	96732

APPENDIX A. PUBLIC REVIEW COMMENTS

A-1: Scoping Comments (10 submissions)

A-2: Draft EA Review Comments (13 submissions)

APPENDIX A-1. SCOPING COMMENTS

Leslie Garlinghouse

From: Silberman, Jay [Jay.S.Silberman@uscg.mil]
Sent: Thursday, December 08, 2005 11:30 PM
To: alison@pacificwhale.org
Cc: Havlik, Beverly CDR; Kirkpatrick, David LCDR
Subject: RE: Comments on proposed patrol boat operations, Maalaea, Maui

Dear Ms. Cohan:

Thanks for the input and advice in your December 5th letter. We appreciate and share your concern for the humpback whales and other marine life in this area. As you may know, the Fourteenth Coast Guard District provided input to the Pacific Whale Foundation (PWF) in the development of your Best Practices Guidelines. The Fourteenth Coast Guard District has also issued its own guidance to all of our units, and we consider the guidance to be more stringent than PWF's.

In addition to guiding our own conduct, our law enforcement duties include patrolling whale sanctuaries to: 1) deter violations of the Marine Mammal Protection Act and the Endangered Species Act, and 2) educate mariners to prevent violations of the Acts by both private and commercial vessel operators.

The 47' Motor Life Boat (MLB) coming to Station Maui is replacing a boat that is able to operate at speeds faster than the MLB. However, the MLB is a more robust platform for operation in the sea conditions around Maui. The MLB's operational capabilities will improve the Station's ablity to respond to mariners in distress, and to patrol and enforce regulations within the Hawaiian Islands Humpback Whale National Marine Sanctuary.

Please let me know if you have any other questions or concerns. Thanks.

Jay

From: alison@pacificwhale.org [mailto:alison@pacificwhale.org]
Sent: Tuesday, December 06, 2005 12:44 PM
To: JSilberman@D14.uscg.mil
Cc: Lukas D. Sheild; Greg kaufman
Subject: Comments on proposed patrol boat operations, Maalaea, Maui

December 5, 2005

Mr. Jay Silberman
United States Coast Guard
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

SUBJECT: Comments on Proposed U.S. Coast Guard Patrol Boat Operation, Ma'alaea Harbor, Maui, Hawaii

Dear Mr. Silberman:

This letter is regarding the 47-Foot motor lifeboat (MLB), which has been proposed for use in Ma'alaea Harbor. We at the Pacific Whale Foundation are concerned about the increased risk of collision with humpback whales or other marine life associated with high speed vessels in this area.

Humpback whales utilize Ma'alaea Bay to raise their calves in the winter months (Forestell and Brown 1991). Studies have shown that calves comprise a larger proportion of the population in Maui County waters than others areas in Hawaii (Craig and Herman 2000). Over the last 10 years the population of wintering humpbacks has increased, particularly the number of calves (Mobley et al. 1999). Mother-calf pairs spend more time near the surface due to the higher respiration rate of calves than adults. Newborn calves surface every three to four minutes, often unexpectedly; they are also naïve to the threat that oncoming vessels pose. Therefore these whales stand a higher chance of coming into close contact with high-speed vessels.

Our concern results from evidence that vessels traveling over 14 knots (~16 mph) are most likely to kill or injure whales (Jenson and Silber 2003; Laist et al. 2001). This results from the inability to spot or maneuver the vessel to avoid striking the animal. It has also been found that regardless of vessel size, if the speed of the vessel exceeds 16 knots a drastic increase in severe injury and fatality is observed. Also, if vessel speed is greater than 22 knots almost all collisions result in death (Laist et al. 2001). Although we appreciate your efforts to perform an Environmental Assessment for the construction phase of this project, we are concerned about the impacts that may occur during vessel operation.

We therefore implore you to implement our Best Practices Guidelines
for Vessel Operations Around Whales (see enclosure):

* From December 1 to May 15 all vessels should reduce their speed to 20 knots or less regardless of whether a sighting has occurred.

* While traveling at speeds greater than 15 knots an observer should be posted to assist the captain in looking for whales.

* Vessels should further reduce their speed to 15 knots or less within a half-mile of a pod of whales.
* If a vessel must approach within a quarter-mile of a pod of whales reduce speed to 6 knots or less.

We hope that you will agree with our position and take the proper precautions to ensure that our beautiful and irreplaceable marine life here in Hawaii is protected. Thank you for taking the time to read this letter and in advance for addressing the concerns that we pose. We look forward to your response detailing how you plan to address these concerns.

Sincerely,

Alison Cohan, Member
Conservation Committee
Pacific Whale Foundation

Attachment

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DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

November 18, 2005

Regulatory Branch

File No. POH-2005-609

Mr. Jay Silberman
U.S. Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd, Room 8-134
Honolulu, HI 96850-4952

Subject: Request for pre-assessment comments for preparation of draft Environmental Assessment (dEA) for Patrol Boat Facilities, U.S. Coast Guard Station Maui, Maʻalaea Harbor, Maui, Hawaii

Dear Mr. Silberman:

This responds to your request (letter dated November 10, 2005) for pre-assessment comments for the above-referenced project. We have reviewed the information you provided under the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403) and Section 404 of the Clean Water Act (CWA) (33 USC 1344).

Based on the preliminary information provided, it appears the proposed undertaking would involve activities in navigable waters of the U.S.; therefore authorization under Section 10 will be required. Furthermore, we are unable to determine from the limited details in the fact sheet whether an authorization under Section 404 may be required for the proposed dredging. A copy of the dEA should be submitted for our review and further determination.

If you have questions or need additional information, you may contact Ms. Joy Anamizu at (808) 438-2137 or Ms. Lolly Silva at (808) 438-7023 and reference the file number above regarding this project.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.1979

December 9, 2005

Mr. Jay Silberman
Project Manager
U.S. Department of Homeland Security
United States Coast Guard
300 Ala Moana Boulevard, Room 8-134
Honolulu, Hawaii 96850-4982

Dear Mr. Silberman:

Subject: Rescue Boat Replacement, Maalaea Harbor, Maui
United States Coast Guard
30-Day Scoping Comments

Thank you for the notification on the subject boat replacement project.

It is our understanding that there will be no major increase in Coast Guard personnel stationed at the harbor. Therefore, the subject boat replacement project will not have an impact on our State highway facilities.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

Leslie Garlinghouse

From: JSilberman@D14.uscg.mil on behalf of Silberman, Jay [JSilberman@D14.uscg.mil]

Sent: Monday, November 21, 2005 2:51 PM

To: Leslie Garlinghouse

Subject: FW: Pre-consultaion for USCG Maui Staion Ma'alaea Harbor MLB Project

fyi

From: JLiu@eha.health.state.hi.us [mailto:JLiu@eha.health.state.hi.us]
Sent: Monday, November 21, 2005 11:14 AM
To: JSilberman@D14.uscg.mil
Subject: Pre-consultaion for USCG Maui Staion Ma'alaea Harbor MLB Project

Dear Mr. Silberman:

Thank you for allowing us to review the subject project. We offer Standard Comments at:http://www.state.hi.us/health/environmental/env- planning/landuse/landuse.html or clicking (Standard Comments) for pre-assessment consultation. We are looking forward to seeing the DEA and please send the document to our office at:

Environmental Planning Office
919 Ala Moana Blvd., Room 312
Honolulu, Hawaii 96814

Thank you.

Jiacai Liu
Land Use Review Coordinator
Environmental Planning Office /DOH
(808) 586-4346

Leslie Garlinghouse

From: JSilberman@D14.uscg.mil on behalf of Silberman, Jay [JSilberman@D14.uscg.mil]

Sent: Tuesday, November 15, 2005 12:06 PM

To: 'Jeffrey.S.Walters@hawaii.gov'

Cc: naomi.mcintosh@noaa.gov; Richard.K.Rice@hawaii.gov; patty.miller@noaa.gov; Kirkpatrick, David LCDR

Subject: RE: USCG Station Maui - Maalaea Infratrsucture Improvements

Dear Jeff,

Thanks very much for your support - much appreciated. Please feel free to contact us at any time about the project should concerns arise, or if you have some good info you'd like to bring to our attention.

Jay

From: Jeffrey.S.Walters@hawaii.gov [mailto:Jeffrey.S.Walters@hawaii.gov]
Sent: Monday, November 14, 2005 3:01 PM
To: JSilberman@D14.uscg.mil
Cc: naomi.mcintosh@noaa.gov; Richard.K.Rice@hawaii.gov; patty.miller@noaa.gov
Subject: USCG Station Maui - Maalaea Infratrsucture Improvements

Dear Mr. Silberman:

I have received your letter and enclosed materials re the proposed infratructure improvements to your facility at Maalaea Harbor, Maui.

As far as the DLNR / state office of the Hawaiian Islands Humpback Whale National Marine Sanctuary is concerned, we fully support the proposed activity.

We appreciate the fact that you are proposing to do the construction outside of humpback whale season.

The USCG has been a great partner over the years providing assets in responding to entangled whales and other on the water issues in the sanctuary.

We wish you the all the best in your current and future endeavors.

Aloha,

Jeff

~~~~~~

Jeffrey S. Walters, Ph.D.
Co-Manager
Hawaiian Islands Humpback Whale National Marine Sanctuary
Department of Land and Natural Resources
1151 Punchbowl St., Rm 330
Honolulu, HI 96813
(808) 587-0106
~~~~~~

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

November 30, 2005

Mr. Jay Silberman
USCG Project Manager
US Coast Guard, Civil Engineering Unit
300 Ala Moana Boulevard, Room 8-134
Honolulu, Hawai`i 96850

Attention: Ma`alaea Harbor EA

Dear Mr. Silberman:

Subject: **Ma`alaea Harbor Infrastructure Design Alternatives**

Thank you for the opportunity to comment on the proposed infrastructure improvements at Ma`alaea Harbor. The following comments are offered:

1. The noise created during the construction phase of the project may exceed the maximum allowable levels as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control". A noise permit may be required and should be obtained before the commencement of work.

2. Where and how will the dredged benthic soil be disposed of?

Should you have any questions, please call me at 808 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

December 21, 2005

Mr. Jay Silberman, USCG Project Manager
US Coast Guard, Civil Engineering Unit
Attention: Ma'alaea Harbor EA
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Dear Mr. Silberman:

RE: Pre-consultation Comments for Proposed Slip Improvements in Support of the Replacement of One (1) Existing Rescue Boat at the United States Coast Guard (USCG) Station Maui, located in Maalaea Harbor, Island of Maui, Hawaii (LTR 2005/2997)

The Maui Planning Department (Department) is in receipt of your request for pre-consultation comments regarding the proposed replacement of an existing rescue boat at USCG Station Maui in Maalaea Harbor with a 47-foot motor life boat. Docking the new 47-foot motor life boat will require retaining slip space from Department of Land and Natural Resources (DLNR) and conducting slip improvements. Based on the foregoing, the Department provides the following comments:

1. Because this project will be funded and built by the Federal Government, the project will be exempt from County permitting requirements. Please fill out and submit a Federal Consistency Form to the State of Hawaii Office of Planning.

2. The Department recommends including the Maalaea Community Association on the distribution list for the Draft Environmental Assessment (EA).

3. Describe the current use of the proposed slip improvements.

4. Provide an analysis of the each alternative site evaluated for viability for this project.

5. Provide a detailed analysis of each proposed designed alternative for

the slip design, including the advantages as well as potential impacts of each design. Impacts to be discussed include harbor access for other boats using the harbor as well as environmental impacts, both during and after construction.

6. Discuss the potential noise impacts associated with the dredging and related construction activities for the proposed slip improvements, and what mitigative measures will be taken to reduce such impacts.

7. Discuss what mitigative measures that will be taken to reduce potential impacts to underwater sea life due to disturbance of sea floor sedimentation during dredging activities.

8. Describe the terms of the lease being sought with the Department of Land and Natural Resources (DLNR) for the required slip space.

Thank you for the opportunity to comment. Please include the Department on the distribution list for the Draft EA. Should you require further clarification, please contact Mr. Dan Shupack, Staff Planner, of this office at 270-7735.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:DBS:lar
c: Wayne Boteilho, Deputy Planning Director
Clayton Yoshida, Planning Program Administrator
Kivette Caigoy, Environmental Planner
Thorne Abbott, Staff Planner
Dan Shupack, Staff Planner
DLNR, OCCL
General File
K:\WP_DOCS\PLANNING\EA\PreConComments\2005\2997_USCGMaalaeaBoatReplacement.wpd

ALAN M. ARAKAWA
Mayor

GEORGE Y. TENGAN
Director

ERIC H. YAMASHIGE, P.E., L.S.
Deputy Director

DEPARTMENT OF WATER SUPPLY
COUNTY OF MAUI

200 SOUTH HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2155
www.mauiwater.org

November 21, 2005

Mr. R. N. Wykle, Commanding Officer
U.S. Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd. Room 8-134
Honolulu, Hawaii 96850-4982

Re: Replacement of Rescue Boat at USCG Station, Ma'alaea Harbor, Maui

Dear Mr. Wykle:

Thank you for the opportunity to comment on this application.

Source Availability and Consumption
The subject area is served by the Central Maui system. The Department will not issue temporary construction meters for Central Maui projects. Reclaimed water is available from the Department of Public Works and Environmental Management. The U.S. Coast Guard station is serviced by a 5/8-inch water meter. Domestic and irrigation calculations will be required in the building permit process for the proposed pier construction.

System Infrastructure
The subject property is serviced by a 8-inch waterline and a fire hydrant. Fire flow calculations will be required in the building permit process.

Conservation
We recommend that the following conservation measures be incorporated in project design and implemented:
Utilize Low-Flow Fixtures and Devices: Maui County Code Subsection 16.20A.680 requires the use of low-flow water fixtures and devices in faucets, showerheads, urinals, water closets and hose bibs. Water conserving washing machines, ice-makers and other units are also available.
Maintain Fixtures to Prevent Leaks: A simple, regular program of repair and maintenance can prevent the loss of hundreds or even thousands of gallons a day. The applicant should establish a regular maintenance program.

Pollution Prevention
The Department encourages protection of all water resources, including nearshore marine waters. Please find attached sample BMPs designed to minimize runoff from construction for your reference in addition to required BMPs.

Should you have any questions, please contact our Water Resources and Planning Division at 244-8550.

Sincerely,

George Y. Tengan, Director
emb

c: Engineering Division

Attachments:

Ordinance No. 2108 - A Bill for an Ordinance Amending Chapter 16.20 of the Maui County Code, Pertaining to the Plumbing Code
Selected BMP's from "Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters"-EPA

C:\WPdocs\EA EIS SLUD\USCG rescue boat replace pre EA.wpd

ALAN M. ARAKAWA
MAYOR

OUR REFERENCE
tj
YOUR REFERENCE

POLICE DEPARTMENT
COUNTY OF MAUI

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

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

December 9, 2005

Mr. Jay Silberman
USCG Project Manager
U.S. Department of Homeland Security
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Dear Mr. Silberman:

SUBJECT: USCG Proposal to Replace One Existing Rescue Boat

This is in response to your letter dated November 7, 2005, requesting comments on the above subject.

We have reviewed the application for this project. Please refer to a copy of the to/from submitted by Officer Brad Hickle of our Kihei Patrol District.

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

Sincerely,

Assistant Chief Sydney Kikuchi
for: Thomas M. Phillips
Chief of Police

c: Mr. Michael Foley, Planning Dept.

Enclosure

Concur with comments & recommendations forward to USCG
[illegible] 11/30/05

TO : THOMAS PHILLIPS, CHIEF OF POLICE, COUNTY OF MAUI

VIA : CHANNELS [illegible] — 11/22/05

FROM : BRAD HICKLE, POLICE OFFICER III, DISTRICT VI KIHEI

SUBJECT : US COAST GUARD (USCG) PROPOSAL TO REPLACE AN EXISTING RESCUE BOAT AND PROPOSED PIER INFRASTRUTURE CHANGES AT MA'ALAEA HARBOR

Sirs, on 11/10/05 I received a copy of the proposal submitted by the US Coast Guard whom are requesting comments relating to the replacement of one of it's three existing rescue boats.

The proposed replacement vessel will be a 47-foot motor life boat (MLB). It is my understanding that the current wharf provides inadequate protection for vessels due to strong southerly summer swells. Changes in pier infrastructure are also proposed to provide a safe homeport slip to protect and support a new 47-foot MLB.

Other harbors have also been evaluated for viability as an alternative site for the new boat, however it appears as though Ma'alaea Harbor may be the most suitable as the current conditions will require the least changes to infrastructure and will undoubtedly have the least impact on the existing environment.

The Coast Guard currently does not retain a slip space at Ma'alaea Harbor, however they are working with the Department of Land and Natural Resources to lease a space for necessary pier development. They are preparing an environmental assessment (EA) to evaluate any potential environmental and socioeconomic impacts that may result from the proposed upgrades to infrastructure at the USCG Station at the Maui Maalaea Harbor.

IMPACT ON POLICE:

We do not anticipate the proposed changes of ocean vessels or pier design will impact Police services in the Maa'laea area.

As indicated by our Chief's comments on the cover page, we do support the proposed changes. I am certain the changes will benefit our community, endangered marine life and of course the US Coast Guard currently stationed at Ma'alaea Harbor.

IMPACT ON TRAFFIC:

If approved, the dredging of the berthing area may create potentially hazardous conditions for motorist at the harbor.

- tour operations
- tour customers (independent motorists)

concern re: traffic flow

IMPACT ON TRAFFIC:

Large trucks making deliveries and trucks hauling boat trainers may have difficulty maneuvering in the harbor area near the dredging without the assistance of trained traffic control personnel to assist them.

RECOMMENDATIONS:

Trained traffic control personnel may be needed during the dredging and construction phase's to control egress/ingress of the trucks hauling debris from the harbor area. We do not anticipate traffic control problems after the dredging/construction phase of this project is completed.

IMPACTS ON PUBLIC SAFETY SERVICES:

We do not anticipate the proposed replacement of your MLB will have an impact on Police services to the harbor area or will have an impact on our caseload to the Maalaea area.

FINAL RECOMMENDATIONS:

We hope the US Coast Guard will chose the Maalaea Harbor area for the berthing of their proposed new rescue boat. We appreciate the US Coast Guard Station at Maalaea as they have been very supportive of the Police in the past.

We further recommend this information be returned to Mr. R.N. WYKLE and Mr. Jay SILBERMAN, USCG Project Manager for final review and disposition.

Respectfully Submitted,

Officer Brad Hickle, Kihei Community Police Officer
11/25/05

Note: I concur with Ofc. Hickle's recommendations. Only problem foreseen is the large vehicles that would be utilized during the construction phase, however this can be remedied through trained traffic personnel. Police service in the area should not be affected.

9943
11/29/05 @ 0155 hrs.

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD05/2122

December 6, 2005

R.N. Wykle
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Attn: Jay Silberman
USCG Project Manager

RE: Request for early consultation on proposed Patrol Boat Support Facilities, U.S. Coast Guard (USCG) Station Maui, Ma'alaea Harbor, Maui

Dear R. N. Wykle,

The Office of Hawaiian Affairs (OHA) is in receipt of your November 7, 2005, request for comments on the above project, which would include replacing one of the existing rescue boats at USCG Station Maui with a 47-foot motor life boat (MLB), and leasing space for pier development at Ma'alaea Harbor from the State Department of Land and Natural Resources. OHA looks forward to the opportunity to review the forthcoming Draft Environmental Assessment in detail, and currently offers the following general concerns.

We appreciate Maui's need for the improved life-saving capabilities of the new patrol boat, and the Coast Guard's subsequent need for improvements in Ma'alaea Harbor, but we note potential conflicts with other users of the harbor. Outrigger canoe paddling, surfing, fishing and other Native Hawaiian traditional and customary gathering, access and use rights should not be restricted – even during the construction process – except as necessary to ensure safety. If such safety-related restrictions are put in place, alternate access routes must be provided.

OHA further requests that the Coast Guard consult with the Hawaiian community about any such potential impacts and user conflicts. Please contact Thelma Shimaoka, OHA's Community

Resource Coordinator on Maui (address below), because she can better direct you to people and organizations with whom the Coast Guard should consult for the required Cultural Assessment under Hawai'i Revised Statutes, Chapter 343.

Thank you for the opportunity to comment. If you have any further questions or concerns please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

CC: Thelma Shimaoka
Community Resources Coordinator
OHA – Maui Office
140 Hoohana St., Suite 206
Kahului, HI 96732

APPENDIX A-2. DRAFT EA REVIEW COMMENTS

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
LAURA H. THIELEN
DIRECTOR
OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-11271

February 27, 2006

R. N. Wykle
Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Boulevard, Room 8-134
Honolulu, Hawaii 96850-4982

Attention: Mr. Jay Silberman

Dear Commanding Officer Wykle:

Subject: Hawaii Coastal Zone Management (CZM) Program Federal Consistency Review Required for the Lease Extension and Constructing Patrol Boat Support Facilities at the U.S. Coast Guard (USCG) Station Maui, at Maalaea Small Boat Harbor, Maui

We have reviewed the *Draft Environmental Assessment for Patrol Boat Support Facilities, USCG Station Maui*. This is to confirm that a CZM federal consistency review is required, as indicated in the draft environmental assessment, for the proposed State lease extension, new pier construction, and dredging. We note that Appendix D contains an unsigned and undated version of the Coast Guard's coastal consistency determination. A signed and dated determination letter is required and has not been received by our Office. The CZM Assessment Form, which is also in Appendix D, is complete and adequate.

After receiving the CZM federal consistency determination, we will publish a public notice of the CZM review as required by Federal regulations (15 CFR 930). The public notice will be published in the Office of Environmental Quality Control publication, *The Environmental Notice*, and a two-week public review period will be provided. The public notice of the CZM review is required in addition to the public notice for the draft environmental assessment. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

Laura H. Thielen
Director

U.S. Department of
Homeland Security

United States
Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
May 31, 2006

Laura H. Thielen
Department of Business, Economic Development & Tourism
Office of Planning
P.O. Box 2359
Honolulu, HI 96804

Dear Ms. Thielen:

Thank you for your letter dated 27 Feb 2006. In accordance with your direction, the USCG has completed its coastal consistency determination. The completed package and cover letter were provided to your office on 24 May 06. We very much appreciate the assistance your staff has provided in review of the package and publication in the upcoming OEQC Environmental Notice.

The Coast Guard will be publishing the final Environmental Assessment in the near future, and we thank you for the information and support your office has provided. If you have any further questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. Wykle

R. N. WYKLE

Enclosure: (1) Your letter dated 27 Feb 2006

ALAN M. ARAKAWA
Mayor

GLENN T. CORREA
Director

JOHN L. BUCK III
Deputy Director

(808) 270-7230
Fax (808) 270-7934

DEPARTMENT OF PARKS & RECREATION

700 Hali'a Nakoa Street, Unit 2, Wailuku, Hawaii 96793

March 6, 2006

Jay Silberman, Environmental Protection Specialist
United States Coast Guard
300 Ala Moana Boulevard Rm. 8-134
Honolulu, Hawaii 96850-4982

**RE: United States Coast Guard Station Maui
Draft Environmental Assessment
For Patrol Boat Support Facilities**

Dear Mr. Silberman:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Patrol Boat Support Facilities at the United States Coast Guard Station Maui.

Upon review of the submitted assessment packet, concerning an extension of the USCG's current lease and improvements to the harbor at Ma'alaea to accommodate a new 47-foot motorized lifeboat, we have no comment to offer at this time.

Should you have any questions or other concerns, please contact me or Patrick Matsui, Chief of Parks Planning & Development at 808-270-7387.

Sincerely,

Glenn Correa
Director

c: Patrick Matsui, Chief of Parks Planning & Development

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Glenn Correa
Department of Parks & Recreation
700 Hali'a Nakoa Street, Unit 2
Wailuku, Hawaii 96793

Dear Mr. Correa:

Thank you for your letter dated 06 Mar 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We appreciate the time you took to review and respond to the document.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

DIVISION OF AQUATIC RESOURCES – MAUI
DEPARTMENT OF LAND & NATURAL RESOURCES
130 MAHALANI STREET
Wailuku, Hawaii 96793
Phone# (808) 243-5834
March 22, 2006

To: Jay S. Silberman, USCG Environmental Protection Specialist

From: Skippy Hau, Aquatic Biologist

Subject: Draft Environmental Assessment for Patrol Boat Support Facilities at USCG Station Maui, Ma'alaea Harbor

I reviewed the information packet and the draft Environmental Assessment at the Kahului Library for aquatic resources concerns. I agree that there may be occasional honu or green turtles (*Chelonia mydas*) which have been observed near the channel and outside of the Harbor.

We have been involved with hawksbill turtle (*Eretmochelys imbricata*) nesting along the Kealia shoreline from 1989 to 2005. They have not been observed near Ma'alaea Harbor. It appears the proposed construction area next to the Coast Guard Station will have minimal impact on turtles.

The presence of *Montipora*, *Porites*, and *Pocillopora* are restricted to hard substrate and influenced by sediment and turbidity from the various drainage outlets. The Harbor technically acts as a sedimentation basin which protects the outer coral reefs from heavy sedimentation and drainage runoff. The flushing action of incoming swells, trade winds, and cleaner water near the entrance has resulted in higher coral cover inside of the South breakwater. I expect Montipora will be one of the first corals to be re-established on the hard substrate after construction.

Please call if you have any questions.

c: DAR - Oahu

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
May 31, 2006

Skippy Hau
Division of Aquatic Resources - Maui
Department of Land and Natural Resources
130 Mahalani Street
Wailuku, Hawaii 96793

Dear Dr. Hau:

Thank you for your letter dated 22 Mar 2006. Your information regarding the honu and hawksbill turtles helps us to confirm our findings in the biological assessment conducted in support of the proposed construction at Maalaea Harbor. Additionally, we appreciate the discussion about the various coral species found within the inner harbor. This input will be reflected in the Biological Assessment and final EA.

The Coast Guard will be publishing the final Environmental Assessment in the near future, and we appreciate the information and support your office has provided. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. Wykle

R. N. WYKLE

Enclosure: (1) Your letter dated 22 Mar 2006

ALAN M. ARAKAWA
Mayor

MICHAEL W. FOLEY
Director

WAYNE A. BOTEILHO
Deputy Director

COUNTY OF MAUI
DEPARTMENT OF PLANNING

March 21, 2006

Mr. Jay Silberman, USCG Project Manager
US Coast Guard, Civil Engineering Unit
Attention: Ma`alaea Harbor EA
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

Dear Mr. Silberman:

RE: Comments Regarding the Draft Environmental Assessment for Patrol Boat Support Facilities at the USCG Station Located on Tax Lot 3-6-001:041 in Ma`alaea Harbor, Maui, Hawai`i (EAC 2006/0007)

The Maui Planning Department (Department) has reviewed the Draft Environmental Assessment (EA) regarding the construction of a new boat slip and associated improvements including dredging at the above referenced site. The Department provides the following comments:

1. The Draft EA refers to starting the "... dredging, piling and construction activities as soon as possible following the summer swell season (as early as July 2006)." However, the summer swell season that affects Ma`alea Harbor usually extends well past summer, and oftentimes swells can still be present in the month of October. The discussion of the construction schedule in the Final EA should note this and should be modified to start later in the year if the desire is to avoid the summer swell season. Additionally, the discussion in the Final EA regarding the construction schedule should address impacts during the peak summer tourist season. The Planning Department suggests the construction occur in Autumn after the summer swell and summer tourist seasons, and before the humpback whale season.

2. The Final EA should elaborate on the dust control mitigation for the drying of the dredge materials, fully addressing the strong winds that are common to the area, especially in regard to the adjacent State highway.

Thank you for the opportunity to comment. Please include the Department on the distribution list for the Draft EA. Should you require further clarification, please contact Mr. Jeff Hunt, AICP, Staff Planner, of this office at 270-6271.

Sincerely,

MICHAEL W. FOLEY
Planning Director

MWF:JH:sec
c: Clayton Yoshida, Planning Program Administrator
Kivette Caigoy, Environmental Planner
OCCL
General File
K:\WP_DOCS\PLANNING\EA\2006\0007_USCG_Maalea _Harbor\DEA_Comments.wpd

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Michael W. Foley
County of Maui
Department of Planning
250 South High Street
Wailuku, HI 96793

Dear Mr. Foley:

Thank you for your letter dated 21 March 2006. We are in the process of finalizing the construction schedule with our contractor and would like to address your concerns.

The construction window is planned for late summer and early fall, likely starting sometime in August. We realize the summer swells will still be a factor during this timeframe, however, we hope to start as early as possible to ensure that the work does not intrude into whale breeding season. The USCG will ensure that the contractor takes proper safety precautions as south swells arrive. Our hope is that by starting work at the latter part of the summer we are helping to reduce the impact to the tourist season, address the CG operational needs in a timely manner, and prevent potential impacts to marine mammals by avoiding the whale breeding season.

The issue of dust control will be addressed as part of the contractor's best management practices for the dredging. This will be noted in the final EA as well.

The Coast Guard will be publishing the final Environmental Assessment in the near future, and we thank you for the information and support your office has provided. If you have any further questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

Enclosure: (1) Your letter dated 21 Mar 2006

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M. D.
DIRECTOR OF HEALTH

LORRIN W. PANG, M. D., M. P. H.
DISTRICT HEALTH OFFICER

STATE OF HAWAII
DEPARTMENT OF HEALTH
MAUI DISTRICT HEALTH OFFICE
54 HIGH STREET
WAILUKU, MAUI, HAWAII 96793-2102

March 21, 2006

Mr. Jay Silberman
USCG Project Manager
US Coast Guard, Civil Engineering Unit
300 Ala Moana Boulevard, Room 8-134
Honolulu, Hawai`i 96850

Dear Mr. Silberman:

Subject: **Draft Environmental Assessment for Patrol Boat Support Facilities USCG Station Maui**
TMK: (2) 3-6-01:041

Thank you for the opportunity to comment on the Draft Environmental Assessment. The following comments are offered:

1. A noise permit as set forth in Hawaii Administrative Rules (HAR), Chapter 11-46, "Community Noise Control" will be required and should be obtained before the commencement of work.

2. WQC and NPDES coverage may be required. The Clean Water Branch should be contacted at 808 586-4309.

Should you have any questions, please call me at 808 984-8230.

Sincerely,

Herbert S. Matsubayashi
District Environmental Health Program Chief

c: EPO

U.S. Department of
Homeland Security

United States
Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd, Rm 8-134
Honolulu, HI 96850
Staff Symbol:
Phone: (808) 541-2129
Fax: (808) 541-2203
Email:

16475

JUN 12 2006

Mr. Herbert Matsubayashi
District Environmental Health Program Chief
State of Hawaii
Department of Health
Maui District Health Office
54 High Street
Wailuku, HI 96793-2102

Dear Mr. Matsubayashi:

Thank you for your letter dated 21 March 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. Please be advised that we will be applying for a noise permit before starting any construction at the project site. The Coast Guard will also be working with the Department of Health, Clean Water Branch to address WQC and NPDES issues.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. WYKLE

ALAN M. ARAKAWA
MAYOR

OUR REFERENCE

YOUR REFERENCE

POLICE DEPARTMENT

COUNTY OF MAUI

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

THOMAS M. PHILLIPS
CHIEF OF POLICE

KEKUHAUPIO R. AKANA
DEPUTY CHIEF OF POLICE

February 23, 2006

R. N. Wykle
Commanding Officer
United States Coast Guard
Civil Engineering Unit
300 Ala Moana Boulevard, Room 8-134
Honolulu, HI 96850-4982

Dear Commanding Officer Wykle:

This is just a short note to let you know we have received a copy of the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor and that it is being forwarded to Assistant Chief Sydney Kikuchi of our Uniformed Services Bureau and Acting Captain Victor Ramos of the Kihei Patrol Division for their review and comments.

We also wanted you to be advised that the Maui Police Department is in total support of the U.S. Coast Guard, which provides vital services to our County of Maui and the State of Hawaii, and any improvements which the U.S. Coast Guard deem necessary.

Very truly yours,

THOMAS M. PHILLIPS
Chief of Police

cc: Assistant Chief Sydney Kikuchi
Acting Captain Victor Ramos

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Thomas M. Phillips
Chief of Police
Police Department, County of Maui
55 Mahalani Street
Wailuku, Hawaii 96793

Dear Chief Phillips:

Thank you for your letter dated 23 Feb 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We greatly appreciate your support on this project.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. Wykle

R. N. WYKLE

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 973-2937 • Fax: (808) 973-2941

MAR 2 1 2006

Mr. Jay Silberman
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Dear Mr. Silberman:

This letter responds to your request for comments on the Draft Environmental Assessment (DEA) for Patrol Boat Support Facilities U.S. Coast Guard Station Maui. The Protected Resources Division, NOAA Fisheries Service Pacific Islands Regional Office (NMFS), provides the following comments regarding this proposed project.

The DEA lacks an analysis of the effects of noise generated by construction activities on marine species listed as threatened or endangered under the Endangered Species Act (ESA), 16 U.S.C. §1536, including Hawaiian monk seals, green sea turtles, and hawksbill sea turtles. While the effects of the soil borings were described on pages 3-62 and 3-63, an analysis of the noise generated by dredging, pile driving, and other construction activities should be completed to provide an accurate assessment of sound levels that could be generated in the marine environment and their effects on these species.

We would also like to point out that the DEA incorrectly states that the noise threshold for effects to humpback whales is 190 dB re: 1 microPascal (page 3-63, lines 5-7). While there is some debate over the applicability of certain scientific research on the effects of noise on marine mammals, NMFS currently uses the threshold of 160 dB for behavioral effects that constitute Level B harassment under the Marine Mammal Protection Act.

In addition, the DEA references the January 25, 2006 Letter of Concurrence (LOC) issued by our office for the initial soil boring activities (page 3-63, lines 23-25), and implies that this LOC also applied to the construction activities. We would like to make it clear that the LOC only covered the soil boring surveys and did not provide ESA coverage for the construction phase of this project. As stated in the LOC, we will need the complete Biological Assessment in order to fully assess the effects of the project on ESA-listed species under NMFS jurisdiction.

Thank you for the opportunity to comment on the DEA, and for working with NMFS to protect our nation's living marine resources. Should you have further questions regarding these comments, please contact Jayne LeFors on my staff at (808) 944-2277, or at the e-mail address jayne.lefors@noaa.gov.

Sincerely,

Chris E. Yates
Assistant Regional Administrator
For Protected Resources

U.S. Department of Transportation

United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd Rm 8-134
Honolulu, HI 96850-4982
Staff Symbol:
Phone: (808) 541-2077
Fax: (808) 541-2203
Email:

16475
JUN 21 2006

MEMORANDUM

From: R.N. Wykle
CG CEU Honolulu

Reply to Attn of: J. Silberman
(808) 541-2077

To: Chris E. Yates
Assistant Regional Administrator
For Protected Resources
Pacific Islands Regional Office
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1601 Kapiolani Blvd, Suite 1110
Honolulu, HI 96814-4700

Subj: PROPOSED PATROL BOAT SUPPORT FACILITIES, U. S. COAST GUARD STATION MAUI SURVEY ACTIVITIES, MAALAEA HARBOR, MAUI

1. This memo responds to your letters of 25 January 2006 and 21 March 2006 regarding the U.S. Coast Guard (USCG) plans for the subject project and its potential biological effects.

2. The enclosed Biological Assessment (BA) was prepared to determine the extent to which the proposed project may affect the threatened and endangered species that may be found in the action area. The focus of the BA was on the dredging, drilling, pile driving and pier construction aspects of the project. The BA has been revised to reflect the information and comments provided by you and your staff in our 23 May and 14 June 2006 conference calls.

3. Among the more significant noise mitigations proposed in the BA are (a) performing sound monitoring; (2) adjusting the size of the safety zone for marine wildlife based on the actual recorded sound pressure levels; (3) driving each pile inside a slightly larger casing, so that the noise generated will largely be captured inside the casing and discharged above the water; and (4) "ramping-up" or "dry firing" the hammer prior to operating at full capacity, to alert marine wildlife to leave the area. It should also be noted that the pile locations will be pre-drilled all the way to their final tip elevation, and therefore the actual hammering time is expected to be no more that five to ten minutes for each of the nine proposed piles.

4. We have determined based on the findings of the BA that this work is not likely to adversely impact marine wildlife, including humpback whales, monk seals, coastal

dolphin species, green sea turtle or hawksbill sea turtle populations. This determination has been made contingent on the use of the mitigation measures described in the BA, and is being made under the "informal consultation" process of the Endangered Species Act regulations [50 CFR 402.13].

5. As noted in the BA, our project is scheduled to begin in early August 2006, and be completed by the end of October. We would like to keep to this schedule to prevent construction from extending into humpback whale season. We therefore ask that you provide your review and concurrence at your earliest possible convenience.

6. Should you have any further questions or concerns, feel free to contact Mr. Jay Silberman at 541-2077.

#

Enclosure: Biological Assessment

Copy: D14 (dpl)

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

Our People...Our Islands...In Harmony

210 Imi Kala Street, Suite #209, Wailuku, HI 96793-2100

March 1, 2006

Mr. Jay Siberman, USCG Environmental Protection Specialist
U.S. Department of Homeland Security
United State Coast Guard
300 Ala Moana Blvd, Room 8-134
Honolulu, HI 96850-4982

Subject: Notification of the Availability of the Draft EA for Patrol Boat Support Facilities at USCG Station Maui, Ma'alaea Harbor

Dear Mr. Siberman:

We have no comment concerning this project.

Thank you for the opportunity to comment.

Sincerely,

Ranae Ganske Cerizo

Ranae Ganske-Cerizo
District Conservationist

U.S. Department of
Homeland Security

United States
Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
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Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Ranae Ganske-Cerizo
U.S. Department of Agriculture
210 Imi Kala Street, Suite #209
Wailuku, Hawaii 96793-2100

Dear Ms. Ganske-Cerizo:

Thank you for your letter dated 01 Mar 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We appreciate the time you took to review and respond to the document.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

LINDA LINGLE
GOVERNOR OF HAWAII

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us

February 22, 2006

Richard Rice
DLNR, Division of Boating & Ocean Recreation
333 Queen Street, # 300
Honolulu, Hawaii 96813

Dear Mr. Rice:

Subject: Draft Environmental Assessment (EA)
USCG Station, Maalaea Small Boat Harbor

We have the following comments to offer:

EA distribution: Send a copy of the draft EA to the Maui Planning Department, which requested a copy in its December 21st, 2005 letter. It is not included on your draft EA distribution chart.

Paving: Hawaii Revised Statutes 103D-407 requires the use of recycled glass in paving materials whenever possible. In the final EA indicate if you will follow this requirement.

Terminology: Note that the term *negative declaration* has been replaced by the term *Finding of No Significant Impact (FONSI)* as of 1997. Please correct this in the final EA.

Significance criteria: In the final EA include a discussion of findings and reasons, according to the 13 significance criteria listed in HAR 11-200-12, that supports your forthcoming determination, either Finding of No Significant Impact (FONSI) or EIS preparation notice. You may access the criteria from http://www.state.hi.us/health/about/rules/11-200.html#sec_12 or you may contact our office for a paper copy.

Correspondence: In the final EA enclose copies of any response letters to pre-consultation correspondence received.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director

c: Tetra Tech

U.S. Department of
Homeland Security

United States
Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
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Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 7, 2006

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson:

This is in response to your letter dated 22 February 2006 sent to the Hawai`i Department of Land and Natural Resources concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at Maalaea Small Boat Harbor. The Coast Guard is the Applicant for this project.

We have reviewed and addressed your comments in the final Environmental Assessment, which we will be publishing in the near future. Please be advised that your comment on paving was not discussed, since there is no paving involved with this project.

If you have any further questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

Enclosure: (1) Your letter dated 22 February 2006

The Senate
The Twenty-Third Legislature
of the
State of Hawaii

STATE CAPITOL
HONOLULU, HAWAII 96813

March 3, 2006

Mr. Jay Silberman, USCG Environmental Protection Specialist
United States Coast Guard
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-2200

Dear Mr. Silberman:

I am writing in support of the draft environmental assessment for patrol boat support facilities. This facility is located in my district and is an asset for all of Maui County.

The U.S. Coast Guard's presence in Maui is critical to continued protection of Maui's most basic needs: our safety and security, safeguarding our marine environment, and assisting our economy. This presence is especially important since Maui has the largest number of swimmable beaches in Hawaii.

The U.S. Coast has been a welcome and vital member of our community for many years. I am very pleased with the services that the U.S. Coast Guard has provided to Maui's residents and visitors alike. Therefore, I fully support the proposed action including the necessary pier improvements.

Best regards,

Rosalyn H Baker

Rosalyn H. Baker
SENATOR
District 5 – South and West Maui

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Senator Rosalyn H. Baker
The Senate
The Twenty-Third Legislature of the State of Hawaii
District 5 – South and West Maui
State Capitol
Honolulu, Hawaii 96813

Dear Senator Baker:

Thank you for your letter dated 03 Mar 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We greatly appreciate your support for this project and sincerely thank you for your kind words regarding our service. This project will provide necessary infrastructure upgrades to support the Coast Guard's increased response capabilities attributed to the new 47' vessel in Maui.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

DANIEL K. AKAKA
HAWAII

WASHINGTON OFFICE:
141 HART SENATE OFFICE BUILDING
WASHINGTON, DC 20510
TELEPHONE: (202) 224-6361

HONOLULU OFFICE:
3106 PRINCE JONAH KUHIO
KALANIANAOLE FEDERAL BUILDING
P.O. BOX 50144
HONOLULU, HI 96850
TELEPHONE: (808) 522-8970

United States Senate

WASHINGTON, DC 20510-1103

COMMITTEES:
ARMED SERVICES
ENERGY AND NATURAL RESOURCES
HOMELAND SECURITY AND GOVERNMENTAL AFFAIRS
INDIAN AFFAIRS
VETERANS' AFFAIRS

April 7, 2006

CDR R.N. Wykle
Commanding Officer
Civil Engineering Unit Honolulu
United States Coast Guard
300 Ala Moana Boulevard, #8-134
Honolulu, HI 96850-4982

Dear Commander Wykle:

Thank you for contacting me regarding a draft environmental assessment (EA) for Patrol Boat Support Facilities at U.S. Coast Guard (USCG) Station Maui, Maalaea Harbor.

I appreciate your apprising me of the release of the EA examining the proposed USCG dredging, drilling, and pier improvements for a new 47-foot motorized life boat at Station Maui. Once again, mahalo for contacting me.

Aloha pumehana,

Daniel K. Akaka

DANIEL K. AKAKA
U.S. Senator

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Senator Daniel K. Akaka
United States Senate
3106 PJKK Federal Building
P.O. Box 50144
Honolulu, HI 96850

Dear Senator Akaka:

Thank you for your letter dated 07 April 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We appreciate the time you took to review and respond to the document.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD06/2122B

March 30, 2006

R.N. Wykle
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Attn: Jay Silberman
USCG Project Manager

RE: Request for comments on the Draft Environmental Assessment for Patrol Boat Support Facilities, U.S. Coast Guard (USCG) Station Maui, Ma'alaea Harbor, Maui

Dear R. N. Wykle,

The Office of Hawaiian Affairs (OHA) is in receipt of your February 17, 2006, request for comments on the above project, which would include replacing one of the existing rescue boats at USCG Station Maui with a 47-foot motor life boat (MLB), leasing space for pier development at Ma'alaea Harbor from the State Department of Land and Natural Resources, and pier improvements within the berthing space to accommodate the new, 47-foot life boat – including dredging 140 cubic yards of benthic soil, driving concrete pilings 40 feet deep, and constructing one or two piers. OHA offers the following comments.

OHA appreciates that the Coast Guard, upon our request, consulted with our Maui Community Resources Coordinator. We further appreciate the Coast Guard's explanations of its proposed alternatives and the reasons for its choice of the preferred alternatives. Each alternative is a legitimate one, and the reasoning behind the choice of two, fixed concrete piers seems sound. Even so, some concerns remain.

While Maui's need for the improved life-saving capabilities of the new patrol boat, and the Coast Guard's subsequent need for improvements in Ma'alaea Harbor, are understandable, we note some potential conflicts with other users of the harbor. Outrigger canoe paddling, surfing, fishing, limu gathering and other Native Hawaiian traditional and customary gathering, access and use rights should not be restricted – even during the construction process – except as necessary to ensure safety. We remind the Coast Guard that if such safety-related restrictions are put in place, alternate access routes must be provided.

We will further rely on your assurances that the Class A waters of Ma'alaea Small Boat Harbor will be managed to assure the protection and propagation of endemic and native sealife, that there will be no discharge of dredged or fill material into the harbor, and that appropriate measures will be taken to prevent runoff of fuel, oil and cement products from non-permeable surfaces near the harbor, such that no discharge or leaching into the ocean will occur.

Thank you for the opportunity to comment. If you have any further questions or concerns please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

CC: Thelma Shimaoka
Community Resources Coordinator
OHA – Maui Office
140 Hoohana St., Suite 206
Kahului, HI 96732

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
USCG Civil Engineering Unit Honolulu

Prince Kalanianaole Fed. Bldg.
300 Ala Moana Blvd. Rm. 8-134
Honolulu, HI 96850-4982
Phone: (808)541-2077
FAX: (808)541-2203

5758

JUN 14 2006

Mr. Clyde Namu`o, Administrator
Office of Hawaiian Affairs
711 Kapi`olani Blvd., Suite 500
Honolulu, HI 96813

Dear Mr. Namu`o:

Thank you for your letter dated 30 March 2006 regarding our proposed Patrol Boat Support Facilities in Ma`alaea Small Boat Harbor. I am writing to assure you that outrigger canoe paddling, surfing, fishing, limu and other Native Hawaiian gathering practices would not be restricted by our project, even during the construction process, and that the harbor's Class A waters would be protected.

These issues have all been addressed in the Final Environmental Assessment (EA) for the project, which we will send you when it is published later this month. It was determined in Section 3.2.7 ("Biological and Coastal Resources") of the Final EA that neither the sea urchin nor the limu populations in the area would be affected by the project. Since a silt curtain and other best management practices would be used during construction, which would not occur during winter due to humpback whale issues cited in Section 3.2.7, water quality affecting the limu and sea urchin populations is not expected to be a concern. The project would not affect the surf break outside the harbor either, since the project location is well within the breakwater and no structures would extend into the pathway of the swell.

The USCG would implement all the required regulatory procedures to minimize the impacts caused by dredging and the construction of the concrete piles and piers. A spill prevention, control and countermeasures (SPCC) plan would reduce the potential for contaminants to migrate into harbor waters, and is being prepared ahead of this project. No changes or construction activities are anticipated for the wharf, sheet pile wall and revetment, and the proposed project would not increase impervious surfaces at the site.

If you have any questions or would like additional information, please contact Mr. Jay Silberman at (808) 541-2077 or via e-mail at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle

R. N. WYKLE

LINDA LINGLE
GOVERNOR

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

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2072

March 6, 2006

Mr. Jay Silberman
Project Manager
U.S. Department of Homeland Security
United States Coast Guard
300 Ala Moana Boulevard, Room 8-134
Honolulu, Hawaii 96850-4982

Dear Mr. Silberman:

Subject: Draft Environmental Assessment (DEA)
U.S. Coast Guard Rescue Boat
Maalaea Small Boat Harbor, Maui, Hawaii
TMK: (2) 3-6-001: 041

In response to the Coast Guard's request for our review of the subject draft environmental assessment, this is to advise you that our prior comments of no significant impact in letter STP 8.1979 (copy attached) are still valid and applicable to the draft assessment.

We appreciate the opportunity to provide our comments.

Very truly yours,

RODNEY K. HARAGA
Director of Transportation

Attach.

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Roger.N.Wykle@uscg.mil

16475
June 1, 2006

Rodney K. Haraga
State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Haraga:

Thank you for your letter dated 06 Mar 2006 concerning the Draft Environmental Assessment for Patrol Boat Support Facilities at the Maalaea Small Boat Harbor. We appreciate the time you took to review and respond to the document.

The Coast Guard will be publishing the final Environmental Assessment in the near future and will provide your office with a copy. If you have any questions, please contact the USCG Project Manager, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. Wykle

R. N. WYKLE

APPENDIX B. AGENCY CONSULTATIONS

B-1: Hawai‘i Department of Land and Natural Resources
B-2: National Oceanic and Atmospheric Administration Fisheries
B-3: US Fish and Wildlife Service
B-4: US Army Corps of Engineers
B-5: Office of Hawaiian Affairs

From: Nelson.L.Ayers@hawaii.gov
Sent: Tuesday, November 29, 2005 11:25 AM
To: Ann Zoidis
Cc: Paul.J.Conry@hawaii.gov; Vickie.L.Caraway@hawaii.gov; John.S.Cumming@hawaii.gov
Subject: Fw: Species List Request for USCG project on Maui.

Per Your Request of Subject Project, here is DLNR, Division of Forestry and Wildlife comments below. DOFAW's comments include terrestrial endangered species, only.

****

Nelson L. Ayers, Staff Forester
State of Hawaii, Dept. Land/Natural Resources
Division of Forestry and Wildlife
1151 Punchbowl St. Rm. 325
Honolulu, Hawaii 96813
Nelson's Direct Line: (808) 587-4175
Business Line: (808) 587-0166
Fax: (808) 587-0160
E-Mail: Nelson.L.Ayers@hawaii.gov
Web Page: www.state.hi.us/dlnr/dofaw
****

----- Forwarded by Nelson L Ayers/DLNR/StateHiUS on 11/29/2005 09:10 AM -----

Vickie L Caraway/DLNR/StateHiUS	To	Paul J Conry/DLNR/StateHiUS@StateHiUS
	cc	john.s.cumming@hawaii.gov, Nelson L Ayers/DLNR/StateHiUS@StateHiUS
11/29/2005 08:57 AM	Subject	Re: Fw: Species List Request for USCG project on Maui.Link

From the information provided, it seems the construction is confined to the actual pier area and will not affect any DOFAW lands.
Vickie Caraway
Botanist
Hawaii Division of Forestry and Wildlife
Department of Land and Natural Resources

----- Forwarded by Peter T Young/DLNR/StateHiUS on 11/28/2005 03:05 PM -----

"Ann Zoidis" <ann.zoidis@tetratech.com>	To	<Peteryoung@hawaii.gov>
	cc	
11/28/2005 02:58 PM	Subject	FW: Species List Request for USCG project on Maui.

Dear Mr. Young,

Hello, I am writing to you with a formal request as part of an upcoming BA and EA for the USCG in Maui. The project involves some pier construction at Malalaea Harbor, Maui. I work for Tetra Tech, a consulting company and we have been brought in to assist the USCG with their consultation and environmental documentation. The attached letter explains the project and some information regarding the actions involved. I am writing you with a request for a species list for the project area of Malalaea Harbor, Maui. The attached graphic illustrates one of the options discussed in the letter re: the four potential options for pier construction. The options cover essentially the same footprint but vary as to if they have one or two piers built.

Please see the attached letter (I have sent this out as a hard copy to you as well). I thought that if possible, you might be able to initiate our request with this electronic version of the species formal request letter attached to this email. This would assist us, as the timeline for the project is very tight. Both the BA and EA we are doing will serve to address potential impacts from the project.

Thank you for your assistance.

Sincerely,

Ann Zoidis

Ann Zoidis
Senior Biologist; Marine Mammal Scientist
Tetra Tech, Inc.
180 Howard Street, Suite 250
San Francisco, CA 94105
415-974-1221 (phone)
415-974-5914 (fax)

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 973-2937 • Fax: (808) 973-2941

December 2, 2005

Ann Zoidis
Senior Biologist
Tetra Tech, Inc.
180 Howard St., Suite 250
San Francisco, CA 94105

RE: USCG Harbor Project in maalaea Harbor, Maui.
Please refer to Consultation No.: I-PI-05-469-CY

Dear Ms. Zoidis:

This letter responds to your letter received November 28, 2005, regarding the U.S. Coast Guard (USCG) proposal to build one or two piers for a new 47 foot motor life boat that is being assigned to the USCG Station Maui. You requested information on the species under our jurisdiction that may be affected by the project. We provide the following comments and information under our statutory authorities under the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. §1531 *et seq.*), and the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. 1361 *et seq.*).

ESA-listed species under our jurisdiction that may be present in the proposed project area include the threatened green sea turtle (*Chelonia mydas*), and the endangered hawksbill sea turtle (*Eretmochelys imbricata*), humpback whale (*Megaptera novaengliae*), and Hawaiian monk seal (*Monachus schauinslandi*). A complete list of Hawaii's marine protected species is also enclosed for your review.

If you have further questions please contact Jayne LeFors on my staff at 808-944-2277. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,

Chris E. Yates

Chris Yates
Acting Assistant Regional Administrator
for Protected Resources

HAWAII MARINE PROTECTED SPECIES

National Marine Fisheries Service, Pacific Islands Regional Office

MARINE MAMMALS

All marine mammals are protected under the Marine Mammal Protection Act. Those in *ITALICIZED CAPITALS* are also listed as endangered under the Endangered Species Act.

Common Name	Scientific Name
HAWAIIAN MONK SEAL	*Monachus schauinslandi*
HUMPBACK WHALE	*Megaptera novaeangliae*
SPERM WHALE	*Physeter macrocephalus*
BLUE WHALE	*Balaenoptera musculus*
FIN WHALE	*Balaenoptera physalus*
Common Dolphin	*Delphinus delphis*
Northern Elephant Seal	*Mirounga angustirostris*
Rough-Toothed Dolphin	*Steno bredanensis*
Risso's Dolphin	*Grampus griseus*
Bottlenose Dolphin	*Tursiops truncatus*
Pantropical Spotted Dolphin	*Stenella attenuata*
Spinner Dolphin	*Stenella longirostris*
Striped Dolphin	*Stenella coeruleoalba*
Melon-Headed Whale	*Peponocephala electra*
Pygmy Killer Whale	*Feresa attenuata*
False Killer Whale	*Pseudorca crassidens*
Killer Whale	*Orcinus orca*
Short-Finned Pilot Whale	*Globicephala macrorhynchus*
Blainville's Beaked Whale	*Mesoplodon densirostris*
Cuvier's Beaked Whale	*Ziphius cavirostris*
Pygmy Sperm Whale	*Kogia breviceps*
Dwarf Sperm Whale	*Kogia sima*
Bryde's Whale	*Balaenoptera edeni*
Fraser's Dolphin	*Lagenodelphis hosei*

SEA TURTLES

All sea turtles are protected under the Endangered Species Act. Those in *italics* are listed as endangered, while those in normal lettering are listed as threatened.

Common Name	Scientific Name
LEATHERBACK TURTLE	*Dermochelys coriacea*
HAWKSBILL TURTLE	*Eretmochelys imbricata*
GREEN TURTLE	*Chelonia mydas*
OLIVE RIDLEY TURTLE	*Lepidochelys olivacea*
LOGGERHEAD TURTLE	*Caretta caretta*

Last updated July 2004

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 973-2937 • Fax: (808) 973-2941

JAN 25 2006

Mr. Jay Silberman
U.S. Dept. of Transportation
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd. Rm. 8-134
Honolulu, HI 96850-4982

Subject: Endangered Species Act Section 7 consultation regarding construction of patrol boat support facilities at U.S. Coast Guard Station Maui in Ma'alaea Harbor, Hawaii
Please refer to consultation #: I-PI-05-469-CY

Dear Mr. Silberman:

This letter responds to your January 3, 2006 letter regarding the proposed survey activities, dredging, and construction of patrol boat support facilities at U.S. Coast Guard (USCG) Station Maui in Ma'alaea Harbor, Hawaii. Your letter requests NMFS Pacific Islands Regional Office (NMFS) concurrence under Section 7 of the Endangered Species Act (ESA), 16 U.S.C. § 1536, with your determination that the proposed action is not likely to adversely affect threatened or endangered species under NMFS jurisdiction.

Consultation History
An e-mail to NMFS on November 16, 2005 from Ann Zoidis of Tetra Tech, Inc. requested review of the proposal to construct the piers and the pre-construction survey borings. In the e-mail she indicated that the surveys had previously been proposed for May 2005 but were now being rescheduled to January 2006. On November 21, 2005 we responded to Ms. Zoidis by e-mail that, based upon the possibility of adverse effects to humpback whales during the winter migration season, NMFS recommended that a Biological Assessment be prepared to initiate consultation under the ESA. We then received a letter from Ms. Zoidis on November 28, 2005 formally requesting a species list, to which we replied on December 2, 2005. A Summary of Biological Resource Impacts and the letter requesting concurrence was received from your office on January 5, 2006.

Proposed Action and Action Area
The USCG proposes to dredge approximately 140 cubic yards of material and construct 2 piers, to accommodate a 47-foot motor lifeboat being relocated to their facilities at Ma'alaea Harbor, Maui. Construction of the piers is scheduled for summer 2006. Prior to construction, borings will be done to determine how deep into bedrock the pier's concrete piles will need to

be driven. The borings are estimated to last for a total of three, 10-hour days occurring in January 2006.

Best Management Practices (BMPs) to be used during the soil survey boring, dredging, and construction include use of silt curtains and curtailing construction during adverse sea conditions, to minimize increases in turbidity and limit off-site movement of suspended sediments. BMPs to be used during the soil boring and pile driving include ceasing drilling or hammering if sea turtles or marine mammals are sighted in the project area, until they are out of the vicinity. Prior to beginning work, observers would ensure the area is clear of marine mammals and turtles.

The footprint of the proposed project area is approximately 60 feet by 120 feet, and is located adjacent to the USCG Station Maui, Ma'alaea Harbor, Hawaii, on land owned by the State of Hawaii Department of Land and Natural Resources (DLNR). The USCG is currently working with the DLNR to lease this space for the pier development.

The proposed project is located in waters protected by the Hawaiian Islands Humpback Whale National Marine Sanctuary. There are no known sea turtle or Hawaiian monk seal haul-out or turtle nesting areas in the vicinity of the proposed project. There are no listed corals within the project area.

Species That May Be Affected

Threatened green sea turtles (*Chelonia mydas*) are known to occur in the vicinity of the proposed location of the support facilities and may be affected by this project. Endangered Hawaiian monk seals (*Monachus schauinslandi*) and endangered hawksbill turtles (*Eretmochelys imbricata*) may also be present, but do not commonly occur in the vicinity. Endangered humpback whales (*Megaptera novaeangliae*) are known to be in the project area vicinity during their annual winter migration which occurs between December and April.

There is no critical habitat designated for any listed marine species within the waters surrounding the island of Maui. Therefore, it is determined that this project will have no effect on designated critical habitat.

Analysis of Effects

Because the pier construction and dredging will not occur during humpback whale migration season, the only project component that may affect humpback whales is the soil boring surveys that will be conducted in January, when whales are known to be in the area of Ma'alaea Harbor. In-water sound pressure levels from the drill rig are expected to be roughly between 80 and 90 decibels (dB) re: 1 microPascal. Behavioral responses in marine mammals are expected when sound pressure levels exceed 160 dB re: 1 microPascal. Because the sound pressure level of the drill rig is far below the threshold that would cause disturbance, avoidance reaction by humpback whales or Hawaiian monk seals to the noise produced by the boring surveys is not anticipated.

The construction of the two piers requires the driving of piles into the bottom of the harbor. The noise created by the pile driving may be heard by animals in the vicinity; however, the use of observers and BMP requirements that drilling and hammering to be stopped if sea turtles or marine mammals are observed will minimize any disturbance and should not result in adverse behavioral effects. In addition, it is unlikely that either Hawaiian monk seals or hawksbill turtles would be in the vicinity of the project during construction as these species are not common in the area.

With the listed BMPs employed and strictly adhered to, there should be minimal impacts to coral reef and other habitat within the surrounding area.

Based upon the insignificant effects of the soil boring survey noise, the use of silt curtains to limit turbidity and off-site movement of suspended sediment, and the discountable probability that Hawaiian monk seals or hawksbill turtles would be present in the project area during the soil boring surveys, NMFS concurs with the determination that this phase of the project is Not Likely to Adversely Affect ESA-listed Hawaiian monk seals, humpback whales, green sea turtles, or hawksbill turtles in the vicinity of the project area.

Conclusion of Consultation

For the purposes of conducting the soil boring surveys, this concludes your consultation responsibilities under the ESA for species under NMFS' jurisdiction. Consultation must be reinitiated if a take occurs or new information reveals effects of the action not previously considered, or the identified action is subsequently modified in a manner that causes an effect to the listed species or critical habitat in a manner or to an extent not previously considered, or if a new species is listed or critical habitat designated that may be affected by the identified action. We look forward to receiving the full Biological Assessment prior to the construction phase of the project, at which time we will be able to fully assess the impacts.

If you have further questions please contact Jayne LeFors on my staff at (808) 944-2277. Thank you for working with NMFS to protect our nation's living marine resources.

Sincerely,

for

William L. Robinson
Regional Administrator

cc: Ann Zoidis, Senior Biologist, Tetra Tech, Inc.
Jeffrey Walters, State of Hawaii Department of Land and Natural Resources

U.S. DEPARTMENT OF COMMERCE
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MAR 2 1 2006

Mr. Jay Silberman
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Dear Mr. Silberman:

This letter responds to your request for comments on the Draft Environmental Assessment (DEA) for Patrol Boat Support Facilities U.S. Coast Guard Station Maui. The Protected Resources Division, NOAA Fisheries Service Pacific Islands Regional Office (NMFS), provides the following comments regarding this proposed project.

The DEA lacks an analysis of the effects of noise generated by construction activities on marine species listed as threatened or endangered under the Endangered Species Act (ESA), 16 U.S.C. §1536, including Hawaiian monk seals, green sea turtles, and hawksbill sea turtles. While the effects of the soil borings were described on pages 3-62 and 3-63, an analysis of the noise generated by dredging, pile driving, and other construction activities should be completed to provide an accurate assessment of sound levels that could be generated in the marine environment and their effects on these species.

We would also like to point out that the DEA incorrectly states that the noise threshold for effects to humpback whales is 190 dB re: 1 microPascal (page 3-63, lines 5-7). While there is some debate over the applicability of certain scientific research on the effects of noise on marine mammals, NMFS currently uses the threshold of 160 dB for behavioral effects that constitute Level B harassment under the Marine Mammal Protection Act.

In addition, the DEA references the January 25, 2006 Letter of Concurrence (LOC) issued by our office for the initial soil boring activities (page 3-63, lines 23-25), and implies that this LOC also applied to the construction activities. We would like to make it clear that the LOC only covered the soil boring surveys and did not provide ESA coverage for the construction phase of this project. As stated in the LOC, we will need the complete Biological Assessment in order to fully assess the effects of the project on ESA-listed species under NMFS jurisdiction.

Thank you for the opportunity to comment on the DEA, and for working with NMFS to protect our nation's living marine resources. Should you have further questions regarding these comments, please contact Jayne LeFors on my staff at (808) 944-2277, or at the e-mail address jayne.lefors@noaa.gov.

Sincerely,

Chris E. Yates

Chris E. Yates
Assistant Regional Administrator
For Protected Resources

Best Management Practices
National Oceanic and Atmospheric Administration, National Marine Fisheries Service
Pacific Islands Regional Office, Protected Resources Division

---

The National Marine Fisheries Service, Pacific Islands Regional Office recommends that the following measures, as appropriate and germane to specific projects, be incorporated into projects to minimize impacts on protected resources:

a. Turbidity and siltation from project-related work should be minimized and contained to within the vicinity of the site through the appropriate use of effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

b. Any construction-related debris that may pose an entanglement hazard to marine protected species must be removed from the project site if not actively being used and/or at the conclusion of the construction work.

c. All project-related materials and equipment placed in the water should be free of pollutants.

d. No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, etc.)

e. No contamination (trash or debris disposal, alien species introductions etc.) of marine (reef flats, lagoons, open ocean, etc.) environments adjacent to the project site should result from project-related activities.

f. Fueling of project-related vehicles and equipment should take place away from the water. A contingency plan to control the accidental spills of petroleum products at the construction site should be developed. Absorbent pads, containment booms and skimmers will be stored on-site to facilitate the cleanup of petroleum spills.

g. Underlayer fills will be protected from erosion with core-loc units (or stones) as soon after placement as practicable.

h. Attempts must be made to prevent discharge of dredged material into the marine environment during the transporting and off-loading of dredged material.

i. Return flow of or run-off from dredged material stored at inland dewatering or storage sites must be prevented.

Last updated April 14, 2004

NOAA Fisheries' Recommended Mitigating Measures to Reduce Impacts to Protected Species

1. A survey of the project area must be performed just prior to commencement or resumption of construction activity to ensure that no protected spec(ies) are in the project area. If protected spec(ies) are detected, construction activities must be postponed until the animal(s) voluntarily leave the area.

2. If any listed spec(ies) enters the area during the conduct of construction activities, all activities must cease until the animal(s) voluntarily depart the area.

3. All on-site project personnel must be apprised of the status of any listed spec(ies) potentially present in the project area and the protections afforded to those species under Federal laws. A brochure explaining the laws and guidelines for listed species in Hawaii, American Samoa, and Guam may be downloaded from http://www.nmfs.noaa.gov/prot_res/MMWatch/hawaii.htm.

4. Any incidental take of marine mammals must be reported immediately to NOAA Fisheries' 24-hour hotline at 1-888-256-9840. Hawaii only: Any injuries to sea turtles must be reported immediately to NOAA Fisheries at 1-808-983-5730. Information reported must include the name and phone number of a point of contact, location of the incident, and nature of the take and/or injury.

U.S. Department of Transportation

United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd Rm 8-134
Honolulu, HI 96850-4982
Staff Symbol:
Phone: (808) 541-2077
Fax: (808) 541-2203
Email:

16475
JUN 21 2006

MEMORANDUM

From: R.N. Wykle
CG CEU Honolulu

Reply to Attn of: J. Silberman
(808) 541-2077

To: Chris E. Yates
Assistant Regional Administrator
For Protected Resources
Pacific Islands Regional Office
National Marine Fisheries Service
National Oceanic and Atmospheric Administration
1601 Kapiolani Blvd, Suite 1110
Honolulu, HI 96814-4700

Subj: PROPOSED PATROL BOAT SUPPORT FACILITIES, U. S. COAST GUARD STATION MAUI SURVEY ACTIVITIES, MAALAEA HARBOR, MAUI

1. This memo responds to your letters of 25 January 2006 and 21 March 2006 regarding the U.S. Coast Guard (USCG) plans for the subject project and its potential biological effects.

2. The enclosed Biological Assessment (BA) was prepared to determine the extent to which the proposed project may affect the threatened and endangered species that may be found in the action area. The focus of the BA was on the dredging, drilling, pile driving and pier construction aspects of the project. The BA has been revised to reflect the information and comments provided by you and your staff in our 23 May and 14 June 2006 conference calls.

3. Among the more significant noise mitigations proposed in the BA are (a) performing sound monitoring; (2) adjusting the size of the safety zone for marine wildlife based on the actual recorded sound pressure levels; (3) driving each pile inside a slightly larger casing, so that the noise generated will largely be captured inside the casing and discharged above the water; and (4) "ramping-up" or "dry firing" the hammer prior to operating at full capacity, to alert marine wildlife to leave the area. It should also be noted that the pile locations will be pre-drilled all the way to their final tip elevation, and therefore the actual hammering time is expected to be no more that five to ten minutes for each of the nine proposed piles.

4. We have determined based on the findings of the BA that this work is not likely to adversely impact marine wildlife, including humpback whales, monk seals, coastal

dolphin species, green sea turtle or hawksbill sea turtle populations. This determination has been made contingent on the use of the mitigation measures described in the BA, and is being made under the "informal consultation" process of the Endangered Species Act regulations [50 CFR 402.13].

5. As noted in the BA, our project is scheduled to begin in early August 2006, and be completed by the end of October. We would like to keep to this schedule to prevent construction from extending into humpback whale season. We therefore ask that you provide your review and concurrence at your earliest possible convenience.

6. Should you have any further questions or concerns, feel free to contact Mr. Jay Silberman at 541-2077.

#

Enclosure: Biological Assessment

Copy: D14 (dpl)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122, Box 50088
Honolulu, Hawai‘i 96850

In Reply Refer To:
1-2-2006-SP-060

DEC 5 2005

Ms. Ann Zoidis
Senior Biologist; Marine Mammal Scientist
Tetra Tech, Inc.
180 Howard Street, Suite 250
San Francisco, CA 94105

Dear Ms. Zoidis:

Thank you for your letter dated December 1, 2005, requesting a list of threatened and endangered species that may occur in the vicinity of the Ma‘alaea Harbor on the island of Maui. Your letter was received on December 1, 2005. The proposed project is for infrastructure improvements to support U.S. Coast Guard vessels at Ma‘alaea Harbor. You state in your letter that the specific work and structure will be described in a Biological Assessment and an Environmental Assessment that are being prepared of this project. Your letter also states that any mitigation measures suggested by NOAA Fisheries, the U.S. Fish and Wildlife Service, the U.S. Coast Guard, or the State Department of Land and Natural Resources will become part of the proposed action.

We reviewed the information you provided and pertinent information in our files, including data compiled by the Hawai‘i Natural Heritage Program. To the best of our knowledge, no federally listed or proposed threatened or endangered species, or designated or proposed critical habitats occur on the project site.

We appreciate your efforts to conserve endangered species. If you have questions, please contact Assistant Field Supervisor Gina Shultz (phone: 808/792-9400; fax: 808/792-9581).

Sincerely,

Gina M Shultz

for Patrick Leonard
Field Supervisor

DEPARTMENT OF THE ARMY
U. S. ARMY ENGINEER DISTRICT, HONOLULU
FT. SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF

March 14, 2006

Regulatory Branch

File No. POH-2005-609

Mr. Jay Silberman
U.S. Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd, Room 8-134
Honolulu, HI 96850-4952

Subject: Request for comments on the draft Environmental Assessment (dEA) for Patrol Boat Facilities, U.S. Coast Guard Station Maui, Ma'alaea Harbor, Maui, Hawaii

Dear Mr. Silberman:

This responds to your request dated February 17, 2006 for comments on the above-referenced project. We have reviewed the information you provided under the Corps' authority to issue Department of the Army (DA) permits pursuant to Section 10 of the Rivers and Harbors Act (RHA) of 1899 (33 USC 403) and Section 404 of the Clean Water Act (CWA) (33 USC 1344).

The proposed activities to dredge approximately 140 cubic yards of benthic soil, with disposal to an upland site; and pile driving for the new pier will not involve any discharges of dredged or fill material. Therefore authorization only under Section 10 of the Rivers and Harbors Act will be required. Please submit DA application (ENG Form 4345) for the proposed work. The application can be found on the Corps website at the following website: http://www.usace.army.mil/inet/functions/cw/cecwo/reg/

If you have questions or need additional information, you may contact Ms. Lolly Silva at (808) 438-7023 and reference the file number above regarding this project.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

Office of Hawaiian Affairs (Maui Office)
140 Hoohana Street, Suite 206
Kahului, HI 96732

February 14, 2006 HRDO5/2155

Ms. Erin King:

RE: Early Consultation on Proposed Patrol Boat Support Facilities
U. S. Coast Guard (USCG) Station Maui, Ma`alaea Harbor, Maui

The Maui Office of Hawaiian Affairs is in receipt of your January 5, 2006, request for local Native Hawaiians and/or organizations with whom you should be able to consult regarding the proposed undertaking.

You have also requested that these names or/and organizations be in a written form, which is enclosed. I have also added an extra name for you to consult aside from the original names submitted to you earlier. This will be sent to your email address: erin.king@tetratect.com

If you have any questions or would like additional information, please contact me at 808-243-5219 or e-mail thelmas@oha.org..

G. Lehua Clubb	808-879-3888
Lui Hookoana	808-984-3553
Boogie Luuwai	808-244-1438
Charles Maxwell	Please check the phone directory
Kimokea Bully Kaupulelehua	808-276-7219

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 15, 2006	**Time:**	1:30pm PST
Contact:	Lui Hookoana	**Phone #:**	(808) 984-3553
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

I described the proposed project and location to Mr. Hookoana and told him I was attempting to determine the presence or absence of traditional resources or uses that could be affected.

Mr. Hookoana voiced concern regarding the surf break outside the harbor, water quality, and two traditional gathering resources, sea urchin and limu. He was concerned that construction at the harbor would affect the surf break, one of the largest waves in the world. Surfing is a traditional Hawaiian activity that persists into today. I informed Mr. Hookoana that the project was well within the breakwater of the harbor and would not affect the break.

Mr. Hookoana's other concerns regarding resources that are traditionally gathered by Native Hawaiians and water quality are tied together. He informed me there is a healthy population of limu just outside the harbor breakwater that he and other Native Hawaiians collect from, as well as sea urchin. Mr. Hookoana was also concerned that construction of the pier would disturb harbor-bottom sediment and impact the water column. The sediment could then travel outside the breakwater and impact the limu and sea urchin populations, especially if construction was conducted during the winter when there are large swells and increased turbidity in the water.

I informed Mr. Hookoana that I did not know if the limu and sea urchin populations were addressed in the Draft EA, but would ask the project biologist (Ann Zoidis) and project manager (Leslie Garlinghouse) to address them in the final EA. I was unsure if construction was proposed during the winter or if a silt curtain would be utilized.

Follow Up:

- Ask Ann and Leslie about limu and sea urchin issues in Draft EA. (Ann says the sea urchin was addressed and determined to be a non-issue. She was unaware of the limu population.)
- Ask Leslie about construction schedule and methods. (In an email dated 3/15/06, Leslie stated that a silt curtain would be used during construction, which would not be conducted during the winter because of humbpacks.)

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 22, 2006	**Time:**	2:15pm PST
Contact:	Charles Maxwell, Sr.	**Phone #:**	(808) 572-8038
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

First attempt at contact. No attempt made on 3/15/06 with other phone calls, because I needed to confirm with Thelma Shimaoka which Charles Maxwell in the Yellow Pages to contact.

I described the proposed project and location to Mr. Hookoana and told him I was attempting to determine the presence or absence of traditional resources or uses that could be affected.

He requested a copy of the Draft EA on CD before he would comment on the project.

Follow Up:

- Send CD of Draft EA to Mr. Maxwell at 157 Alea Place, Pukalani, Maui, HI 96768. (CD mailed 3/22/06)
- Await response from Mr. Maxwell.

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	April 26, 2006	**Time:**	3:35pm PST
Contact:	Charles Maxwell, Sr.	**Phone #:**	(808) 572-8038
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

I contacted Mr. Maxwell on March 22, 2006, per OHA's direction, regarding the Ma'alaea Small Boat Harbor EA and to inquire as to any concerns he may have about the project. At that time, Mr. Maxwell requested that I send him a CD of the Draft EA so that he could be better informed about the project before making any comment.

This phone call was to follow-up on that initial phone call and ask Mr. Maxwell if he had any concerns for traditional Hawaiian values, activities, or sites after reading the Draft EA. He said that he saw no problem with going ahead with the proposed project and had no further questions.

Follow Up:

- Consultation with Mr. Maxwell is complete.

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 15, 2006	**Time:**	1:30pm PST
Contact:	Boogie Luuwai	**Phone #:**	(808) 244-1438
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

No answer after 4 attempts at dialing and receiving an Operator message, "Call cannot be completed as dialed."

Follow Up:

- Ask Thelma Shimaoka at OHA, Maui to confirm phone number. (Sent email to Thelma on 3/15/06. Thelma responded on 3/15/06 in an email, stating, "As for Luuwai, he is a hard one to contact, but that's the last number I received." End attempts for consultation.)

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 15, 2006	**Time:**	1:30pm PST
Contact:	Lehua Clubb	**Phone #:**	(808) 879-3888
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

No answer. Left message describing the project and its location. Attempting to identify any traditional resources in the area. Left phone number to return call.

Follow Up:

- Re-try phone number in one week.

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 22, 2006	**Time:**	2:15pm PST
Contact:	Lehua Clubb	**Phone #:**	(808) 879-3888
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

Second attempt at contact.

No answer. Left message describing the project and its location. Attempting to identify any traditional resources in the area. Left phone number to return call.

Follow Up:

- End consultation if no response received by Final EA publication.

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 15, 2006	**Time:**	1:30pm PST
Contact:	Kimokea Bully Kaupulelehua	**Phone #:**	(808) 276-7219
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		
Notes:			
No answer. Left message describing the project and its location. Attempting to identify any traditional resources in the area. Left phone number to return call.			
Follow Up:			
• Re-try phone number in one week.			

TETRA TECH CONTACT REPORT

Project:	Ma'alaea Small Boat Harbor EA	**TC #:**	16862
Date:	March 22, 2006	**Time:**	2:15pm PST
Contact:	Kimokea Bully Kaupulelehua	**Phone #:**	(808) 276-7219
Author:	Erin King, RPA		
Subject:	Native Hawaiian Consultations		

Notes:

Second attempt at contact.

No answer. Left message describing the project and its location. Attempting to identify any traditional resources in the area. Left phone number to return call.

Follow Up:

- End consultation if no response received by Final EA publication.

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
USCG Civil Engineering Unit Honolulu

Prince Kalanianaole Fed. Bldg.
300 Ala Moana Blvd. Rm. 8-134
Honolulu, HI 96850-4982
Phone: (808) 541-2077
FAX: (808) 541-2203
Email: Jay.S.Silberman@uscg.mil

5758

MAY 2 5 2006

Ms. Heidi Guth
Office of Hawaiian Affairs
711 Kapi`olani Blvd., Suite 500
Honolulu, HI 96813

Dear Ms. Guth:

In accordance with 36 CFR Part 800, Section 106 of the National Historic Preservation Act, the US Coast Guard (USCG) consulted with you in February 2006 regarding USCG Station Maui, Ma'alaea Harbor project (OHA Reference Number HRD05/2122). At that time, we were nearing completion of our Native Hawaiian consultation process. We are pleased to inform you that this process was completed on April 26, 2006.

Per the request of Ms. Thelma Shimaoka of OHA – Maui Office, an archaeologist from our contractor, Tetra Tech, consulted with five Native Hawaiians with ties to the project area (Enclosure (1)). Initial phone calls were made on March 15, 2006, with follow-up phone calls made on March 22, 2006 to those who were not reached during the first attempt (Enclosure (2)).

Despite several attempts, Tetra Tech was unable to reach Lehua Clubb and Kimokea Bully Kaupulelehua, but messages were left describing the project, location, and the purpose of the phone call (i.e., to identify traditional cultural properties or resources that could be affected by the proposed project). A contact phone number was also left for them to return the phone call. Contact with Boogie Luuwai also failed due to an invalid phone number. Tetra Tech contacted Thelma Shimaoka to confirm the number.

Lui Hookoana was contacted on March 15, 2006. His main concerns were regarding the renowned surf break outside the harbor, sea urchin and *limu* populations that he and other Native Hawaiians collect from just outside the harbor, and the possibility that impacted water quality could affect the sea urchin and *limu* populations (especially if construction was conducted during the winter when there are large swells and more turbidity in the water). Tetra Tech informed Mr. Hookoana that the project would not affect the surf break since the proposed project is well within the breakwater. Since a silt curtain will be used during construction, which would not occur during winter due to humpback whale issues, water quality would not be a concern. Tetra Tech had addressed the sea urchin population in the Draft EA as a non-issue; however, Tetra Tech was unaware of the *limu* population Mr. Hookoana referred to. This issue was addressed in the Final EA, in both the biological and cultural resources sections.

Mr. Charles Maxwell, Sr., was contacted on March 22, 2006. He asked that a Draft EA be sent to him before he would comment on the project. A CD of the draft was mailed to him the same day. A follow-up consultation phone call was placed by Tetra Tech on April 26, 2006. At that time, Mr. Maxwell commented that he saw no problems with the proposed project moving forward.

Based on the above and the lack of Native Hawaiian objection to the proposed Ma'alaea Harbor project, the USCG considers the Native Hawaiian consultation process for the project to be complete.

If you have any questions or would like additional information, please contact Mr. Jay Silberman at (808) 541-2077 or via e-mail at JSilberman@D14.uscg.mil.

Sincerely,

R. N. Wykle

R. N. WYKLE

Enclosures: (1) Letter from Thelma Shimaoka, OHA – Maui Office
(2) Tetra Tech Native Hawaiian Consultation Contact Reports

U.S. Department of Homeland Security
United States Coast Guard

Commanding Officer
USCG Civil Engineering Unit Honolulu

Prince Kalanianaole Fed. Bldg.
300 Ala Moana Blvd. Rm. 8-134
Honolulu, HI 96850-4982
Phone: (808) 541-2077
FAX: (808) 541-2203

5758
June 14, 2006

Mr. Lui Hookoana
Maui College
310 W. Kaahumanu Avenue
Kahului, HI 96732-1617

Dear Mr. Hookoana:

The US Coast Guard (USCG) would like to thank you for your recent participation in the Ma'alaea Harbor project. Your knowledge of the local Native Hawaiian resources was invaluable to our understanding of the project's possible effects.

You had voiced concerns regarding the surf break outside the harbor, water quality, and two traditional gathering resources, sea urchin and *limu*. These issues have all been addressed in the Final EA. It was determined in Section 3.2.7 ("Biological and Coastal Resources") of the Final EA that neither the sea urchin nor the *limu* populations would be affected by the project. Since a silt curtain and other Best Management Practices will be used during construction, which would not occur during winter due to humpback whale issues cited in Section 3.2.7, water quality affecting the *limu* and sea urchin populations would not be a concern. The project would not affect the surf break outside the harbor either since the project location is well within the breakwater and no structures would extend into the pathway of the swell. We will be sending you a copy of the Final Environmental Assessment (EA) for the project.

If you have any questions or would like additional information, please contact Mr. Jay Silberman at (808) 541-2077 or via e-mail at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. WYKLE

U.S. Department of
Homeland Security

United States
Coast Guard

Commanding Officer
USCG Civil Engineering Unit Honolulu

Prince Kalanianaole Fed. Bldg.
300 Ala Moana Blvd. Rm. 8-134
Honolulu, HI 96850-4982
Phone: (808) 541-2077
FAX: (808) 541-2203

5758
June 14, 2006

Mr. Charles Maxwell, Sr.
157 Alea Place
Pukalani, Maui, HI 96768

Dear Mr. Maxwell:

The US Coast Guard (USCG) would like to thank you for your recent participation in the Ma'alaea Harbor project. Your knowledge of the local Native Hawaiian resources was invaluable to our understanding of the project's possible effects. We will be sending you a copy of the Final Environmental Assessment for the project.

If you have any questions or would like additional information, please contact Mr. Jay Silberman at (808) 541-2077 or via e-mail at Jay.S.Silberman@uscg.mil.

Sincerely,

R.N. Wykle
R. N. WYKLE

PHONE (808) 594-1888

FAX (808) 594-1865

STATE OF HAWAI'I
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAI'I 96813

HRD06/2122C

June 6, 2006

R.N. Wykle
United States Coast Guard
Civil Engineering Unit Honolulu
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982

Attn: Jay Silberman
USCG Project Manager

RE: Section 106 Consultation on Patrol Boat Support Facilities, U.S. Coast Guard (USCG) Station Maui, Ma'alaea Harbor, Maui

Dear R. N. Wykle,

The Office of Hawaiian Affairs (OHA) is in receipt of your May 25, 2006, describing the Coast Guard's efforts at consultation with Native Hawaiians about the above-referenced project.

Thank you for meeting our requests and for attempting to contact everyone with ties to the project area that Thelma Shimaoka, OHA's Maui Community Resources Coordinator, suggested you contact. Thank you also for your documentation and description of those consultations. OHA appreciates the level of detail put into this project and all of the levels of opportunity for community comment. We also appreciate that your contractor, Tetra Tech, used the information from the referenced Native Hawaiian comments in the project's Final Environmental Assessment, and that the information was incorporated in both the biological and cultural resources sections of that document.

If you have any further questions or concerns about this proposed project, please contact Heidi Guth at (808) 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

CC: Thelma Shimaoka
Community Resources Coordinator
OHA – Maui Office
140 Hoohana St., Suite 206
Kahului, HI 96732

APPENDIX C. REGULATIONS, LAWS, AND EXECUTIVE ORDERS

Appendix C
Table C-1. Applicable Executive Orders, Regulations, and Laws

Title, Citation	Summary
Executive Orders	
Executive Order (EO) 11593, Protection and Enhancement of the Cultural Environment	All Federal agencies are required to locate, identify, and record all cultural resources. Cultural resources include sites of archaeological, historical, or architectural significance.
EO 11990, Protection of Wetlands	Requires Federal agencies to avoid undertaking or providing assistance for new construction located in wetlands unless there is no practicable alternative, and all practicable measures to minimize harm to wetlands has been implemented.
EO 11988, Floodplain Management	If a Federal agency proposes to, conduct, support, or allow an action to be located in a 100-year floodplain, the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains. If the agency finds that the only practicable alternative requires siting in a floodplain, the agency must, prior to taking action, (i) design or modify its action in order to minimize potential harm to or within the floodplain, and (ii) prepare and circulate a notice containing an explanation of why the action is proposed to be located in the floodplain.
EO 12114, Environmental Effects Abroad of Major Federal Actions	Enables officials of Federal agencies to be informed of pertinent environmental considerations and to take such considerations into account before taking major Federal actions that could have significant impacts on the environment outside the geographical borders of the U.S. and its territories.
EO 12372, Intergovernmental Review of Federal Programs (as amended by EO 12416)	Requires Federal agencies to consult with state and local governments when proposed Federal financial assistance or direct Federal development has an impact on interstate metropolitan urban centers or other interstate areas.
EO 12856, Federal Compliance with Right-to-Know Laws and Pollution Prevention Requirements	Requires Federal agencies to plan for chemical emergencies. Facilities that store, use, or release certain chemicals are subject to various reporting requirements. Reported information is made available to the public.
EO 12898, Environmental Justice	Requires certain Federal agencies, including the Department of Defense (DoD), to the greatest extent practicable permitted by law, to make environmental justice part of their missions by identifying and addressing disproportionately high and adverse health or environmental effects on minority and low-income populations.
EO 13007, Indian Sacred Sites	Requires Federal agencies to accommodate access to, and ceremonial use of, sacred sites by practitioners and avoid adversely affecting the physical integrity of such sites.

Title, Citation	Summary
EO 13045, Protection of Children from Environmental Health and Safety Risks	Makes it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children. It also directs agencies to ensure that policies, programs, activities, and standards address such risks if identified.
EO 13175, Consultation and Coordination with Indian Tribal Governments	Requires Federal agencies to have an accountable process to ensure meaningful and timely input by tribal officials in the development of policies that have tribal implications.
EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	Each agency shall "ensure that environmental analyses of Federal actions required by the NEPX or other established environmental review processes evaluate the effects of actions and agency plans on migratory birds, with emphasis on species of concern; and support the conservation intent of the migratory bird conventions by integrating bird conservation principles, measures, and practices into agency activities and by avoiding or minimizing, to the extent practicable, adverse impacts on migratory bird resources when conducting agency actions."
American Indian Religious Freedom Act, 42 United States Code (U.S.C.) 1996, Public Law (P.L.) 95-341	Protects and preserves the rights of American Indians, Eskimos, Aleuts, and Native Hawaiians to exercise the traditional religions. These rights include, but are not limited to, access to sites, use and possession of sacred objects, and the freedom to worship through ceremony and tradition rites.
Archaeological and Historical Preservation Act, 16 U.S.C. 469	Protects and preserves historical and archaeological data. Requires Federal agencies to identify and recover data from archaeological sites threatened by their actions.
Archaeological Resources Protection Act of 1979, 16 U.S.C. 470 et seq., P.L. 96-95	Enacted to preserve and protect resources and sites on Federal and Indian lands. Fosters cooperation between governmental authorities, professionals, and the public. Prohibits the removal, sale, receipt, and interstate transportation of archaeological resources obtained illegally from public or Indian lands.
Clean Air Act, 42 U.S.C. 7401-7671q, July 14, 1955, as amended	This Act, as amended, is known as the Clean Air Act (CAA) of 1970. The amendments made in 1970 established the core of the clean air program. The primary objective is to establish Federal standards for air pollutants. It is designed to improve air quality in areas of the country, which do not meet Federal standards and to prevent significant deterioration in areas where air quality exceeds those standards.
Coastal Zone Management Act of 1972, 16 U.S.C. 1451-1464, P.L. 92-583	Establishes a policy to preserve, protect, develop, and, where possible, restore and enhance the resources of the Nation's coastal zone. Encourages and assists states through the development and implementation of coastal zone management programs.

Title, Citation	Summary
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), 42 U.S.C. 9601-9675, P.L. 96-510, amended by Superfund Amendments and Reauthorization Act of 1986 (SARA), P.L. 99-499	Also known as "Superfund," provides for liability, compensation, cleanup, and emergency response for hazardous substances released into the environment and cleanup of inactive hazardous substances disposal sites. Also established a fund financed by hazardous waste generators to support cleanup and response actions.
Department of Transportation Act, Section 4(f)	Requires the Department of Transportation (DOT) to avoid or mitigate impacts to public parks and wildlife areas when approving transportation programs or projects.
Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 et seq., P.L. 93-205	Protects threatened, endangered, and candidate species of fish, wildlife, and plants and their designated critical habitats. Under this law, no Federal action is allowed to jeopardize the continued existence of an endangered or threatened species. The Endangered Species Act also requires consultation with USFWS and the National Marine Fisheries Service (NMFS) and the preparation of a biological assessment when such species are present in an area that is affected by government activities.
Federal Property and Administrative Services Act of 1949	Guides the process for transferring government property.
Federal Records Act	Requires Federal agencies to preserve Federal records of potential historic value.
Federal Water Pollution Control Act (Clean Water Act), 33 U.S.C. 1251-1387	The Clean Water Act is a comprehensive statute aimed at restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Primary authority for the implementation and enforcement rests with the U.S. Environmental Protection Agency (EPA).
Fish and Wildlife Coordination Act, 16 U.S.C. 661 et seq., P.L. Chapter 55	The purpose of this Act is to ensure that wildlife conservation receives equal consideration and be coordinated with other features of water-resources development programs.
Historic Sites Act of 1935, 16 U.S.C. 461-467, P.L. Chapter 593	Establishes a national policy to preserve for public use, historic sites, buildings, and objects of national significance.
Historical and Archaeological Data-Preservation, 16 U.S.C. 469 et seq., P.L. 93-291	Protects and preserves historical and archaeological data caused as a result of Federal construction projects. Directs Federal agencies to notify the Secretary of the Interior when the construction project may cause irreparable loss or destruction of significant resources or data. Provides a mechanism through which resources can be salvaged from a construction site.
Lacy Act of 1900, 16 U.S.C. 701, 702; 31 Stat. 187, 32 Stat. 285	Under this law, it is unlawful to import, export, sell, acquire, or purchase fish, wildlife, or plants taken, possessed, transported, or sold: 1) in violation of U.S. or Indian law, or 2) in interstate or foreign commerce involving any fish, wildlife, or plants taken, possessed, or sold in violation of state or foreign law.

Title, Citation	Summary
Magnuson-Stevens Fishery Conservation and Management Act, as amended through October 11, 1996, 16 U.S.C. 1801 et seq., P.L. 94-265	Establishes regional fisheries councils that set fishing quotas and restrictions in U.S. waters. Federal agencies must consult with NMFS on all actions, authorized, funded, or undertaken by the agency that may adversely affect essential fish habitat (EFH).
Marine Mammal Protection Act of 1972, 16 U.S.C. 1361 et seq., 1401-1407, 1538, 4107	Establishes a moratorium on the taking and importation of marine mammals including harassment, hunting, capturing, collecting, or lulling or attempting the above actions. Requires permits for taking marine mammals. Requires consultations with USFTVS and NMFS if impacts to marine mammals are possible.
Marine Protection, Research, and Sanctuaries Act of 1972, 33 U.S.C. 1401-1445, P.L. 92-532	Regulates the dumping of materials into ocean waters. Provides for a permitting process to control the ocean dumping of dredged materials. Establishes the marine sanctuaries program.
Migratory Bird Treaty Act 16 U.S.C. 703-712	The Migratory Bird Treaty Act implements various treaties and is for the protection of migratory birds. Under the Act, taking, killing, or possessing migratory birds is unlawful.
National Environmental Policy Act of 1969 (NEPA), as amended; P.L. 91-190, 42 U.S.C. 4321 et seq.	Requires Federal agencies to utilize a systematic approach when assessing environmental impacts of government activities. NEPA proposes an interdisciplinary approach in a decision-making process designed to identify unacceptable or unnecessary impacts to the environment.
National Historic Preservation Act, 16 U.S.C. 470 et seq.	Requires Federal agencies to take account of the effect of any federally assisted undertaking or licensing on any district, site, building, structure, or object eligible or listed for inclusion in the NRHP. Provides for the nomination, identification (through listing on the National Register), and protection of historical and cultural properties of significance.
National Invasive Species Act of 1996, 16 U.S.C. 4701 et seq., P.L. 104-332	Reauthorizes and amends the Nonindigenous Aquatic Nuisance Prevention Control Act of 1330. Establishes ballast water information and requires guidelines to be issued for the Great Lakes.
Noise Control Act of 1972, 42 U.S.C. 4901-1918, P.L. 92-574	Establishes a national policy to promote an environment free from noise that jeopardizes health and welfare. Authorizes the establishment of Federal noise emissions standards and provides information to the public.
Occupational Safety and Health Act	Establishes standards to protect workers, including standards on industrial safety, noise, and health standards.
Port and Waterways Safety Act	Sets boat operating and towing safety requirements and sets out enforcement provisions.
Resource Conservation and Recovery Act, 42 U.S.C. 6901, P.L. 94-580	Establishes requirements for safely managing and disposing of solid and hazardous waste and underground storage tanks. Federal agencies must comply with waste management requirements.

Source: USCG 2003

Note: This table only reflects those laws, regulations and Executive Orders and resource areas that may reasonably be expected to apply to the proposed action and alternatives at a programmatic level.

APPENDIX D. COASTAL ZONE MANAGEMENT CONSISTENCY CHECKLIST

U.S. Department of Homeland Security

United States Coast Guard

Commanding Officer
United States Coast Guard
Civil Engineering Unit Honolulu

300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
Staff Symbol: CEU Honolulu
Phone: (808) 541-2200
Fax: (808) 541-2203
Email: Jay.S.Silberman@uscg.mil

16475

Mr. David W. Blane, Director
Office of Planning
Department of Business, Economic Development and Tourism
P.O. Box 2359
Honolulu, Hawai'i 96804

Attention: Hawai'i Coastal Zone Management Program

Dear Mr. Blane:

Pursuant to Section 307 of the Coastal Zone Management Act of 1972 (16 USC § 1456), the US Coast Guard (USCG) has determined that extending their lease at Ma'alaea Small Boat Harbor (MSBH) in the State of Hawai'i and constructing patrol boat support facilities is consistent with the Hawai'i Coastal Zone Management Program (CMP). This letter, the attached Federal Consistency Assessment Form, and the USCG's Preliminary Final Environmental Assessment (PFEA) for Station Maui Patrol Boat Support Facilities serve as a Coastal Consistency Determination, as required by the National Oceanic and Atmospheric Administration regulations for federal consistency with approved coastal management programs (15 CFR 930).

Background

The attached EA has been prepared in accordance with the National Environmental Policy Act of 1969 (NEPA), USCG Commandant Instruction M16475.1D (42 USC 4321-4370f), and HRS, Title 11, Chapter 200, Section 10 of the Hawai`i Administrative Rules (HAR) and addresses in detail the specific impacts to resources, including consistency of the Proposed Action with the CMP. The USCG is the lead agency on this proposed project, which would occur on submerged lands to be leased from the State of Hawai`i Department of Land and Natural Resources (DLNR). The project would modify USCG's existing lease to accommodate a new 47-foot motorized lifeboat (MLB), and to dredge and construct two finger piers and associated infrastructural improvements. The USCG published a notice on February 23, 2006 in the Hawai'i Office of Environmental Quality Control (OEQC) *The Environmental Notice* bulletin requesting public comment on the Draft EA, and will again publish a notice for the Final EA.

Project Description

USCG Station Maui is located within MSBH, on the south side of the island of Maui. From Station Maui, the USCG operates a station headquarters office, storage facilities, and two 25-foot small response boats (RB-S). In an effort to address ongoing capability constraints of this fleet, the USCG is replacing one of the response boats with a 47-foot MLB. In order for Station Maui to safely and securely accommodate the new MLB, the USCG requires adequate slip space within the harbor and infrastructural improvements and associated dredging within the berthing area. Details can be found in the attached PFEA.

Conclusion

The USCG has determined that the proposed MSBH upgrades would be consistent to the maximum extent practicable with the State of Hawai`i's coastal zone management program. We request your written concurrence, and in accordance with 15 CFR 930.36(b), we are also requesting that the notification schedule end on the date of your office's decision. Your response should be sent to:

Jay Silberman
300 Ala Moana Blvd., Room 8-134
Honolulu, HI 96850-4982
CEU Honolulu
Phone: (808) 541-2077
Fax: (808) 541-2203

If additional information is required, please contact the USCG Environmental Specialist, Mr. Jay Silberman, at (808) 541-2077 or at Jay.S.Silberman@uscg.mil.

Sincerely,

R. N. Wykle
R. N. WYKLE

Enclosure: (1) Federal Consistency Assessment Form
(2) Preliminary Final Environmental Assessment

FEDERAL CONSISTENCY ASSESSMENT FORM

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

1) Improve coordination and funding of coastal recreation planning and management.

2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

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

   b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy 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;

   c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

   d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

   e) Encouraging expanded public recreational use of county, state, and federally owned or controlled shoreline lands and waters having recreational value;

   f) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;

   g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and

   h) 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, County planning commissions; and crediting such dedication against the requirements of section 46-6.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Will the proposed action involve or be near a dedicated public right-of-way?	X	___
2.	Does the project site abut the shoreline?	X	___
3.	Is the project site near a State or County park?	___	X
4.	Is the project site near a perennial stream?	___	X
5.	Will the proposed action occur in or affect a surf site?	___	X
6.	Will the proposed action occur in or affect a popular fishing area?	___	X
7.	Will the proposed action occur in or affect a recreational or boating area?	X	___
8.	Is the project site near a sandy beach?	X	___
9.	Are there swimming or other recreational uses in the area?	X	___

Discussion:

1. The proposed project site is currently in a controlled area of the harbor and no public access is allowed. To further secure the USCG facility, fencing is currently being erected to assure no unauthorized access. There is access to a beach next to the east breakwater and access to the breakwater for fishing. There is also public access though the rest of the Harbor for boating. The proposed project will not affect any existing public access and is not in the immediate area of fishing or surfing.

2. The project is on the shoreline at the MSBH. There is an existing wharf used for mooring and boat storage along the shoreline in the proposed project area. The proposed pier, which would extend out from the existing wharf, will not change the use of the area and would have little effect on the shoreline.

5. There are three surf sites near the proposed project, Ma`alaea Pipeline, Off-the-Wall, and Buzz's, all outside the breakwater. The proposed project is not in the immediate vicinity of these sites and would not affect these surfing sites or access to them.

6. Fishing takes place from the existing breakwaters and spear fishing is practiced on the reef fronting the harbor. The proposed project is not in the immediate vicinity of these sites and would not affect fishing activities or access to these fishing locations.

7. MSBH is used by recreation boaters. There is a launch ramp within the harbor as well as mooring for recreation boats. There could be a short term, two to three weeks, and disruption to access to two neighboring slips during construction and would be a minor inconvenience to slip owners. Construction may also temporarily reduce the size of the turning basin between the proposed project and the breakwater. There would be no long-term impacts as this project is located in an area already used by the US Coast Guard and other harbor users for boat mooring and storage and will have little effect on recreation boating.

8. There is a small sandy beach next to the east breakwater and a sandbar off the end of the breakwater. These areas are lightly used. The proposed project is not in the immediate vicinity of these sites and will not affect the beaches or beach access.

9. Sport fishermen fish from the breakwater in the harbor and access it from the area near the small beach. Swimming, while possible, is not likely within the harbor area. Some swimming may take place from the small beach next to the east breakwater. Surfing is discussed in item 5 above. The proposed project is in an area already disturbed and used by the US Coast Guard boats so will have little effect on recreation use of the area.

HISTORIC RESOURCES

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

Policies:

1) Identify and analyze significant archaeological resources;

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

3) Support State goals for protection, restoration, interpretation, and display of historic resources.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Is the project site within a historic/cultural district?	___	X
2.	Is the project site listed on or nominated to the Hawaii or National register of historic places?	___	X
3.	Does the project site include undeveloped land which has not been surveyed by an archaeologist?	___	X
4.	Has a site survey revealed any information on historic or archaeological resources?	X	___
5.	Is the project site within or near a Hawaiian fishpond or historic settlement area?	X	___

Discussion:

4. Pacific Legacy investigated three areas within the terrestrial areas of MSBH. Area 1 is located adjacent to the southern intersection of Honapi`ilani Highway and Ma`alaea Road, in the southwest corner of the harbor area. A newly recorded historic site 50-50-09-5645, consisting of three separate features, as well as modern debris, was observed in this area. The features of Site 5645 include a bridge across a dry gully, an alignment of cemented basalt boulder (possibly the curbing of an historic roadway), and a concrete pad with basalt boulders. Pacific Legacy determined that the information potential of the site had been exhausted by their efforts and the site was ineligible for NRHP listing. Additionally, a modern bronze memorial plaque cemented into a boulder was observed in this area. Several shovel test probes (STPs) were conducted in Area 1 and no buried cultural deposits were encountered. Area 2 is located north of and adjacent to Area 1. This encompasses the planned location for drying dredged materials for the current proposed project. No surface archaeological resources were observed. Two test trenches were placed in the northwest corner of Area 2 to test for subsurface cultural deposits. The only deposit of note was a caliched and rounded basalt pebble deposit, probably a result of natural mass-wasting during a flood. Area 3 is near the northeast side of MSBH. Four test trenches were dug in this area. The only cultural deposits in this area consisted of modern trash deposits were encountered. Pacific Legacy noted that according to the backhoe operator for the trenching the area had been used as a dumping ground before it was cleared and filled. There were no marine archeological artifacts observed in the project area

during an underwater marine and water quality study. The project is not expected to have any impact on any significant archeological or historic feature or site.

5. *Traditional and Terrestrial Archaeological Resources.* Ma`alaea Bay has been an important place in Hawaiian history, primarily functioning as a stopover or transit place for travelers. However, it also supported a number of traditional fishing settlements and individual fishermen. Kapoli Spring, located at the western end of MSBH, runs to the shore of Ma`alaea. The spring is traditionally said to be the site where the high chiefs landed by canoe in 1736 to take the remains of Kekaulike, the ruling chief of Maui, by land to Wailuku in the `Īao Valley. It is also documented as the location where Chief Kiha-a-Pi`ilani landed to escape the wrath of his brother Lono-a-Pi`ilani.

According to Pacific Legacy there were several previously recorded sites in the vicinity of the harbor. Site 50-50-09-1440 consists of two large boulders and is known as Pōhaku O Ma`alaea, situated along Kapoli Spring. One stone is recorded as a *pōhaku piko* while the other stone, known as the "Kings Table," was used for either food preparation or adze grinding. Both stones have been moved from their original location.

Sites 50-50-09-1604, -3553, and -3554 are situated adjacent to the MSBH. Ma`alaea Ebisu Jinja, Site 1604, is a historic Japanese Shrine most likely built in the first half of the 20th century, possibly as early as 1916. The other two sites, 3553 and 3554, were recorded after Site 1604 as burials. Based on Pacific Legacy other traditional and archaeological sites are located within the region, but well outside the harbor boundaries. The Lahaina Pali Trail is also located within the region. However, the trail, running along the lower southern slopes of Western Maui, appears to end *mauka* of MSBH. A *ko`a*, habitation sites, a *heiau*, and petroglyphs have also been recorded in the area. None are located directly within the harbor, but are instead located either *mauka* from the harbor or elsewhere along the shoreline.

Hawai`i Marine Research also noted a cultural importance placed on the surfing area in front of the jetty and at the reef on the *Kīhei* side of the harbor. However, it appears that the surfing site is a modern one and is possibly attributable to the construction of the breakwaters at Ma`alaea. Pacific Legacy investigated three areas within the terrestrial areas of MSBH. Area 1 is located adjacent to the southern intersection of Honapi`ilani Highway and Ma`alaea Road, in the southwest corner of the harbor area. A newly recorded historic site 50-50-09-5645, consisting of three separate features, as well as modern debris, was observed in this area. The features of Site 5645 include a bridge across a dry gully, an alignment of cemented basalt boulder (possibly the curbing of an historic roadway), and a concrete pat with basalt boulders. Site 5645 was determined to be significant under Criterion A and D of the National Register of Historic Places (NRHP) Significance Criteria. However, Pacific Legacy also determined that the information potential of the site had been exhausted by their efforts and the site was therefore ineligible for NRHP listing. Additionally, a modern bronze memorial plaque cemented into a boulder was observed in this area. Several shovel test probes (STPs) were conducted in Area 1 and no buried cultural deposits were encountered. Area 2 is located north of and adjacent to Area 1. This encompasses the planned location for drying dredged materials for the current proposed project. No surface archaeological resources were observed by Pacific Legacy survey crew. Two test trenches were placed in the northwest corner of Area 2 to test for subsurface cultural deposits. The only deposit of note was a caliched and rounded basalt pebble deposit, probably a result of natural mass-wasting during a flood. Area 3 is near the northeast side of MSBH. Four test trenches were dug in this area. The only cultural deposits in this area consisted of modern trash deposits were encountered. Pacific Legacy noted that according to the backhoe operator for the trenching the area had been used as a dumping ground before it was cleared and filled.

Historic Resources. Ma`alaea Bay continued its traditional role as a landing and transportation stop after western contact. Kapoli Spring at the southwest end of the harbor also continued to be a major canoe landing site and supported a well-developed maritime settlement centered upon a single pier wharf and hotel. The most notable activity at the site during this time is a historical account of lumber for the reconstruction of Lahainaluna School (est. 1831) being transported to Ma`alaea Bay from East Maui and then transported to Lahaina via canoe. During the California Gold Rush between 1848 and 1850, Ma`alaea Bay functioned as a major port for transportation of Hawaiian-grown goods, such as Irish potatoes, sweet potatoes, onions, pumpkins, oranges, coffee, and molasses. Such goods were then shipped to San Francisco and elsewhere along the West Coast of the mainland.

Two Land Commission Awards (LCA) were granted within and near the project area during the Great Māhele of 1848. One, LCA1156, consisted of a house lot surrounded by government land. It was awarded to Kaili who had lived at that location since 1829. The other, LCA 2959, consisted of a house lot at Ma`alaea and was awarded to Hika. Much of the region of Waikapū was converted for agriculture during the mid-1800s, with sugar cane as the primary crop. Eventually the entire *ahupua`a* was sold to Henry Cornwell in 1885. Cornwell, along with his brother-in-law James Louzada of Waimea, Hawai`i, began the Waikapū Plantation. The plantation fell under the control of the Wailuku Sugar Company in 1894. During World War II, Ma`alaea Bay was used by the US Marines. Prior to the battle of Iwo Jima ship-to-ship maneuver rehearsals were conducted. Amphibious land practices were also held in the bay.

The proposed project is not expected to impact any of the archeological or historical sites adjacent on within the project area.

SCENIC AND OPEN SPACE RESOURCES

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

Policies:

1) Identify valued scenic resources in the coastal zone management area;

2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;

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

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

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Does the project site abut a scenic landmark?	___	X
2.	Does the proposed action involve the construction of a multi-story structure or structures?	___	X
3.	Is the project site adjacent to undeveloped parcels?	___	X
4.	Does the proposed action involve the construction of structures visible between the nearest coastal roadway and the shoreline?	X	___
5.	Will the proposed action involve construction in or on waters seaward of the shoreline? On or near a beach?	X	___

Discussion:

4. The proposed project would be visible from Honoapi`ilani Highway (State Route 30) and Old Wailuku Lahaina Road. However, the project will be built in an area that is already developed. The proposed project will not change the visual character of the area nor block views of the harbor.

5. The proposed project involved the construction of a pier running perpendicular to the existing wharf area. The proposed pier will not change the use of the area as the wharf is currently used for mooring and boat storage. The new pier will provide protection of a US Coast Guard rescue vessel from the effect of severe weather.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

1) Improve the technical basis for natural resources management;

2) Preserve valuable coastal ecosystems of significant biological or economic importance;

3) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs; and

4) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate State, water quality standards.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Does the proposed action involve dredge or fill activities?	X	___
2.	Is the project site within the Shoreline Setback Area (20 to 40 feet inland of the shoreline)?	X	___
3.	Will the proposed action require some form of effluent discharge into a body of water?	___	X
4.	Will the proposed action require earthwork beyond clearing and grubbing?	___	X
5.	Will the proposed action include the construction of special waste treatment facilities, such as injection wells, discharge pipes, or cesspools?	___	X
6.	Is an intermittent or perennial stream located on or near the project site?	___	X
7.	Does the project site provide habitat for endangered species of plants, birds, or mammals?	___	X
8.	Is any such habitat located nearby?	X	___
9.	Is there a wetland on the project site?	___	X
10.	Is the project site situated in or abutting a Natural Area Reserve?	___	X
11.	Is the project site situated in or abutting a Marine Life Conservation District?	___	X
12.	Is the project site situated in or abutting an estuary?	___	X

Discussion:

1. The construction will require minor dredging in the mooring area (estimated 60 cubic yards). Approximately 60 cubic yards of sediment from the mudline would be collected, dried on site, and disposed of at an approved disposal area. Samples collected during the February 2006 boring event were analyzed for total petroleum hydrocarbons, polychlorinated biphenyls, metals, volatile organic compounds, semivolatile organic compounds, pH, and ignitibility. Samples were analyzed for total metals,

as opposed to just TCLP metals, which is the isolated constituent of interest in profiling soils for landfill disposal. However, Section 1.2 of the TCLP test method (EPA Method 1311) allows for a total constituent analysis in lieu of the TCLP extraction (http://www.epa.gov/sw-846/faqs_tclp.htm). The results of the total constituent analysis may be divided by twenty to convert the total results into the maximum leachable concentration. Barium, chromium, and lead were detected in these samples, but when divided by 20, they are well below their allowable TCLP concentrations. All other analytes whose disposal is regulated by EPA were not detected. A Corps of Engineers permit will be obtained prior to dredging. Fill can also be used in the construction of pier infrastructure within the proposed berthing area. This activity will also be covered under a Corps of Engineers nationwide permit prior to commencement.

2. The proposed project is within the Shoreline Setback Area. However, because the project is being funded and implemented by a federal agency (the US Coast Guard) the Proposed Action is exempt from county permitting requirements, as directed by the Maui Department of Planning. The project area currently is a disturbed area within an existing and actively used harbor. The proposed project includes the construction of pier infrastructure within the proposed berthing area in order to safely and securely moor a new patrol boat. This is an ongoing use of the harbor area and no new use would be introduced. No construction would take place on land.

8. There are no listed corals in the harbor that would be affected by the proposed design alternatives. The direct impacts of drilling and dredging could affect corals in the project footprint, but this is not considered to be a significant impact as the most productive areas of coral in the region occur outside the area to be drilled and because there are no listed coral species.

Due to the short duration of construction and the absence of listed species and high value habitat in the immediate project footprint, impacts are not considered significant. Dredge and fill activities would increase turbidity during construction, but construction effects could be mitigated by using silt curtains and curtailing construction during adverse sea conditions. Silt containment measures would be used during construction to restrict any effects to the smallest area possible.

Implementation of the proposed design alternatives of the harbor are not expected to affect marine mammals including humpback whales, monk seals, dolphins, nor sea turtles such as the green sea turtle or hawksbill sea turtle populations.

Humpback whales: Project actions are currently scheduled to occur outside of the biological window for humpback whale presence in Hawai`i (late summer/fall 2006), therefore, humpback whales will not be affected by the project dredging, drilling or construction. Dredging, drilling and construction will take place from August through October, and as such, humpback whales will not be in the area during this time. Soil borings, part of an initial study related to this project, occurred in February 2006 (drilling took place over 2 days on February 16 and 17), which was during the migration season of humpbacks. As there was the potential for mother-calf pairs to be in Ma`alaea Bay at this time, specific Best Management Practices (BMPs) were in place during boring, which included observing for humpbacks, and also included requirements that work would halt until any individuals sighted were out of range. Additional BMPS were in place to ensure impacts would be less than adverse during this boring process. Also, noise from the drill rig was not at the level that is known to cause impacts. Drill rig noise was reported to be roughly 60 dB re 20 microPascals at 50 feet from the drill rig, above water (i.e. in air). Conversion values are such that a pressure comparison between air and water differs by 62 dB, so this means that the in-water noise levels were expected to be roughly 122 dB re 1 microPascal. This is below the threshold known to affect humpback whales. Impacts are expected to marine mammals when the underwater sound pressure level from the pile driving work equals or exceeds 160 dB re 1 microPascal. NOAA Fisheries was consulted on soil borings as part of the informal consultation process, and NOAA provided a Letter of Concurrence (LOC) concurring with the determination of may effect, but not likely to adversely effect humpback whales.

Monk seals, dolphins, and sea turtles. Noise from dredging, drilling, or construction may effect, but is not likely to adversely affect marine wildlife. The marine wildlife that may occur or is most likely to occur in the project area including monk seals, coastal dolphin species such as bottlenose dolphin, spinner or spotted dolphin, and the green or hawksbill sea turtles. The proposed design alternatives of the harbor are not expected to affect these populations. This is based on the fact that the project area and immediate vicinity provide low value habitat for these species as well as the efforts incorporated in the BMPs to reduce impacts from noise or other project related actions. These efforts include incorporating numerous steps that would minimize impacts to marine wildlife. An LOC was received from NOAA Fisheries on January 25, 2006 which only addressed the soil boring initial phase study for this USCG pier project. NOAA Fisheries (NMFS) concurred with the assessment that soil borings may effect but are not considered likely to adversely affect marine wildlife or ESA-listed species in the vicinity of the project area. Consultation with NOAA Fisheries is ongoing for project-related pile driving activities, including discussions on potential mitigations for noise reduction and noise monitoring.

Specific BMPs for marine wildlife from use of hammers in drill rigs include ceasing any drilling or hammering if sea turtles, dolphins, or monk seals are sighted in the project area, until they are out of the vicinity. Before drilling begins, observers should monitor the project area to ensure it is clear of marine mammals and turtles. Since the borings would be very short term, and because no whales would be present during construction, no significant impacts are expected on marine wildlife from building the piers. The proposed construction in the harbor would not affect green sea turtles, hawksbill turtles, dolphin species, or Hawaiian monk seals. Any project actions taken would adhere to the approach restrictions and regulations for the HIHWNMS Sanctuary. The Proposed Action would not occur until after issuance of any required permits and authorizations and as such would comply with sanctuary regulations.

Consultation with NOAA Fisheries is ongoing and a biological assessment addressing this project and its expected impacts will be submitted to NOAA. There would be no construction until NOAA concurs that there would be no likely adverse affect.

ECONOMIC USES

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

Policies:

1) Concentrate in appropriate areas the location of coastal dependent development necessary to the state's economy;

2) Insure that coastal dependent development such as harbors and ports, 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

3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
   a) Utilization of presently designated locations is not feasible;
   b) Adverse environmental effects are minimized; and
   c) Important to the state's economy.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Does the project involve a harbor or port?	X	___
2.	Is the project site within a designated tourist destination area?	___	X
3.	Does the project site include agricultural lands or lands designated for such use?	___	X
4.	Does the proposed activity relate to commercial fishing or seafood production?	X	___
5.	Does the proposed activity related to energy production?	___	X
6.	Does the proposed activity relate to seabed mining?	___	X

Discussion:

1. The proposed project is in MSBH. The project area is already developed and has an existing wharf used for boat mooring, boat storage, and a parking lot. The proposed lease extension and pier construction all fit within the planned uses of the harbor.

4. Thirteen vessels are moored in MSBH that are used for commercial fishing and 27 are for charter fishing. The proposed project will not change the operation of the harbor nor negatively impact any commercial fishing. However, the presence of the new, larger, rescue boat, means that the USCG will be able to respond to many emergencies during severe weather. The larger boat can also tow larger vessels which may be disabled back to port perhaps preventing them from sinking reducing potential downtime of commercial fishermen.

COASTAL HAZARDS

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

Policies:

1) Develop and communicate adequate information on storm wave, tsunami, flood erosion, and subsidence hazard;

2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;

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

4) Prevent coastal flooding from inland projects.

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Is the project site on or abutting a sandy beach?	X	___
2.	Is the project site within a potential tsunami inundation area as depicted on the National Flood Insurance Program flood hazard map?	X	___
3.	Is the project site within a potential flood inundation area according to a flood hazard map?	X	___
4.	Is the project site within a potential subsidence hazard areas according to a subsidence hazard map?	___	X
5.	Has the project site or nearby shoreline areas experienced shoreline erosion?	___	X

Discussion:

1. There is a small sandy beach next to the east breakwater and a sandbar off the end of the breakwater. These areas are lightly used. The proposed project will not change sand transport by ocean currents and therefore will not affect the beaches or beach access.

2. The proposed project would be within the tsunami inundation area. The new piers would protect the US Coast Guards new MLB rescue boat from small tsunami generated waves and could provide valuable rescue operations in the event of a tsunami.

3. The project is within zone V18, areas of 100-year flooding zone with wave action, and Zone C, areas of minimal flooding. Zone V18 encompasses the entire harbor while Zone C surrounds the harbor area. The proposed project will not increase the flooding potential of the area.

MANAGING DEVELOPMENT

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

Policies:

1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;

2) Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and

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

Check either "Yes" or "No" for each of the following questions:

		Yes	No
1.	Will the proposed activity require more than two (2) permits or approval? (Provide the status of each.)	X	___
2.	Does the proposed activity conform with the State and County land use designations for the site?	X	___
3.	Has or will the public be notified of the proposed activity?	X	___
4.	Has a draft or final environmental impact statement or an environmental assessment been prepared?	X	___

Discussion:

1. The proposed action requires consultation with the SHPO, NOAA, and USFWS in accordance with Section 106 of the National Historic Preservation Act and Section 7 of the Endangered Species Act. The Section 106 and Section 7 consultations are ongoing concurrently with the NEPA process.

   The USCG is requesting a Letter of Permission from the Corps of Engineers to cover dredging activities. This consultation is ongoing and all appropriate permits will be obtained prior to construction.

   Finally, noise levels during the construction phase may exceed permissible daytime noise levels stipulated under Hawai`i Administrative Rules (HAR) Chapter 11-46. The USCG will attain a noise permit from the Hawai`i Department of Health prior to construction work.

   Because the project is being funded and implemented by a federal entity, the USCG, the project is exempt from County of Maui permitting, specifically Special Use Management and Shoreline Setback Variance permits.

2. The proposed project would include two existing slips (108 and 109). There would be no change in existing land or harbor use; therefore, there would be no changes to existing state and county land use designations.

3. During the planning process the public has been notified of the proposed action during scoping and upon publication of the draft EA. The USCG published a notice in the OEQC *The Environmental Notice* bulletin at both events and distributed scoping materials and the draft EA, respectively. The USCG will publish a final notice in the OEQC bulletin upon completion of the Final EA.

4. A Draft EA has been prepared and distributed for public comment and the Final EA will be circulated for legal challenge upon completion.

PUBLIC PARTICIPATION

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

Policies:

1) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;

2) 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-related issues, developments, and government activities; and

3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion: Public participation will follow Policy No. 3, Council on Environmental Quality regulations for Implementing NEPA, USCG Commandant Instruction M16475.1D, which guides the USCG in complying with NEPA (42 USC 4321-4370f) and in accordance with HRS, Title 11, Chapter 200, Section 10 of the Hawai`i Administrative Rules (HAR).

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

1) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;

2) 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

3) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion: The proposed action does not include any project measure that would change the existing shoreline character, include any erosion-protection structures, nor interfere with existing recreation or waterline activities.

MARINE RESOURCES

Objective: Implement the state's ocean resources management plan.

Policies:

1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

2) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

3) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;

4) 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;

5) 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

6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion: In order to fully evaluate potential impacts to marine species, habitats, or conditions, the USCG completed an underwater marine survey during the planning phase of the EA. The purpose of the survey was to characterize the various marine organisms that comprise the substrate habitat in the project area, list all the species observed in the survey area (including those that might be expected to use or pass through the habitat at other times of the year), compare present findings to data found in other marine surveys, and summarize trends in habitat growth. This study found no listed corals within the harbor that would be affected by the Proposed Action, and there would be no expected effect to humpback whales, monk seals, or either the green sea turtle or hawksbill sea turtle populations.

Construction activities would take place from August through October 2006 when humpback whales would not be in the area and would not be affected. As an initial study, in February 2006 the USCG conducted three days of soil borings in order to characterize the subsurface features and collect sediment samples. Because the equipment being used had the potential to cause slight vibrations and elevated underwater noise levels, the USCG informally consulted with NOAA to receive concurrence that there would be no significant adverse affect to humpback mothers and their calves. Although noise levels were not expected to reach significant levels (160 dB re 1microPascal), specific best management practices were identified for use including the use of equipment that may generate less noise or vibrations and monitoring of the project area to ensure clearance of marine mammals and turtles.

APPENDIX E. UNDERWATER MARINE SURVEY REPORT, AECOS INC.

(AECOS 2005)

US Coast Guard Improvements at Ma`alaea Small Boat Harbor, Maui, Hawai`i: Marine and water quality survey of potential impact areas[1]

December 30, 2005 *Revised* *AECOS* No. 1108

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Introduction

A new 47-foot motor lifeboat (MLB) will be assigned to the U.S. Coast Guard (USCG) Station Maui in Ma`alaea Small Boat Harbor. The MLB will probably be homeported at the station itself; however the current wharf provides inadequate protection for vessels due to strong southerly swells prevalent in the summer months. Design alternatives are therefore being studied to determine an optimal mooring configuration and include dredging and construction of one of the following: a single fixed concrete pier, two fixed concrete piers, a single floating pier, or two floating piers.

The site of the USCG mooring is owned by the State of Hawaii and leased with permission from the Department of Land and Natural Resources (DLNR). DLNR requires the USCG to prepare an environmental assessment (EA) of the proposed action in accordance with state laws and regulations. The main environmental issues involve marine water quality and marine ecology and are expected to arise from dredging and pile driving during construction.

Ma`alaea Small Boat Harbor is located at Ma`alaea on the southern shore of the Maui isthmus in the northwestern corner of Ma`alaea Bay (Figure 1). Original construction of the harbor occurred in phases throughout the 1950s. The 11.9 hectare (29.5 acre) harbor was constructed on a narrow fringing reef flat at the western end of Ma`alaea Bay. The harbor serves as the only public access point along the western side of

[1] This document has been prepared for Tetra Tech for inclusion in an Environmental Assessment (EA) entitled *Patrol Boat Support Facilities, USCG Station Maui, Ma`alaea Harbor, Maui* and is therefore part of the public record.

Ma`alaea Bay and consists of two breakwaters: the West Breakwater (South Mole) extending east from the west shoreline; and the East Breakwater extending south from the north shoreline (Figure 2). The harbor accommodates approximately 93 berths and moorings (USFWS, 1993).

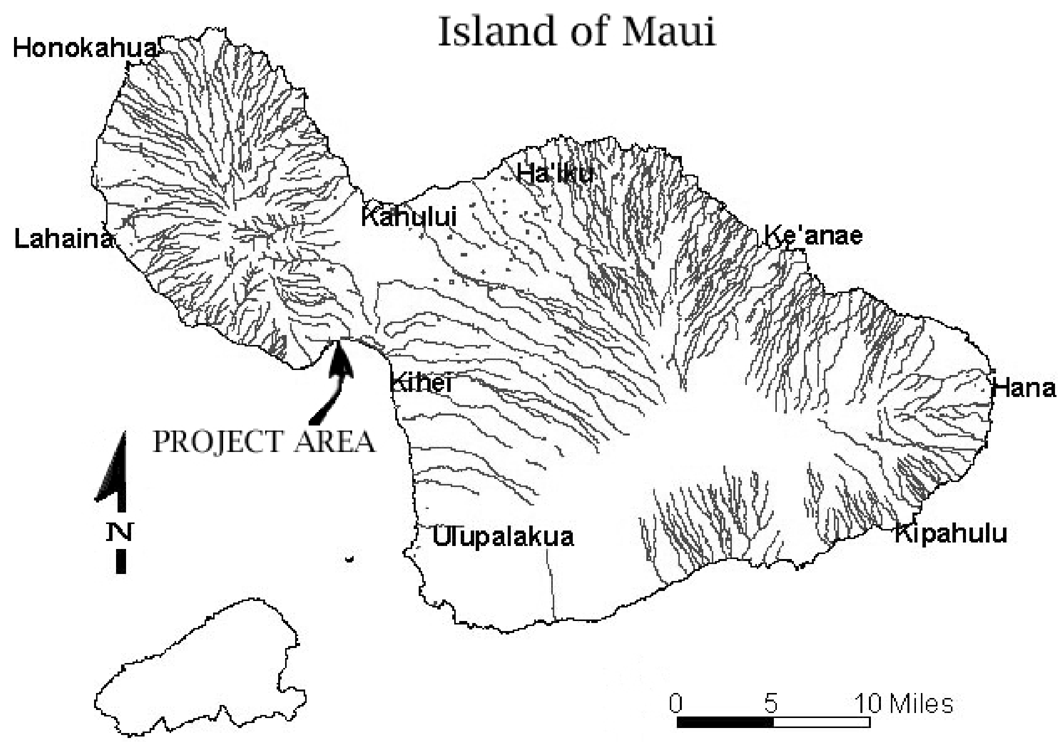

Figure 1. Project location at Ma`alaea on the Island of Maui.

AECOS, Inc. conducted an underwater survey and collected water samples to support the preparation of the EA. The purpose of the survey was to characterize the various marine organisms that comprise the substrate habitat in the project area, list all the species observed in the survey area (including those that were not seen but might be expected to use or pass through the habitat at other times of the year), compare present findings to data found in other marine surveys, and summarize trends in habitat growth.

The underwater survey was conducted on October 25, 2005 by two *AECOS* biologists: Susan Burr and Katie Laing in accordance with the Sampling Plan (*AECOS*, 2005a). For safety reasons, a third biologist, Chad Linebaugh, remained on the surface for the duration of the survey event. The biologists collected water samples along the shoreline to measure chemical and physical properties and snorkeled the area around the project site to identify marine flora and fauna. The location of the biological survey area and three water quality sampling stations are shown in Figure 3.

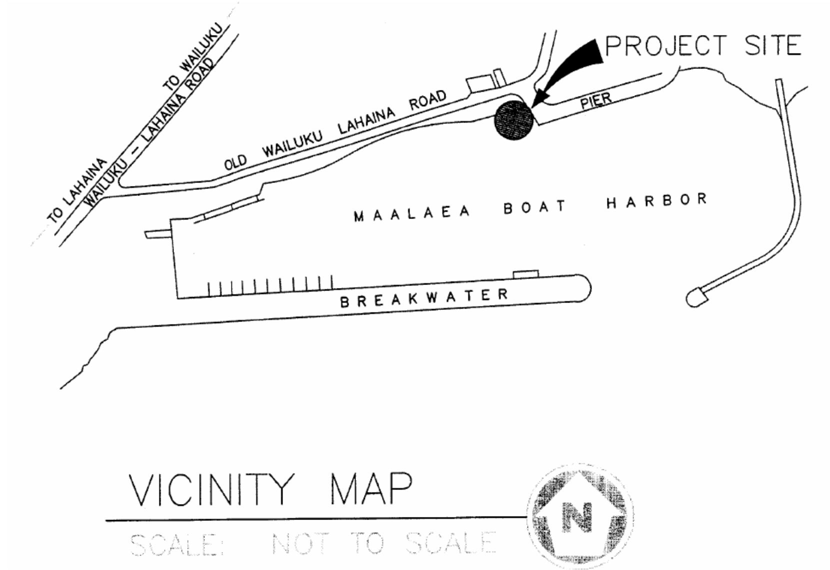

Figure 2. Project site in Ma`alaea Small Boat Harbor, Ma`alaea, Maui.

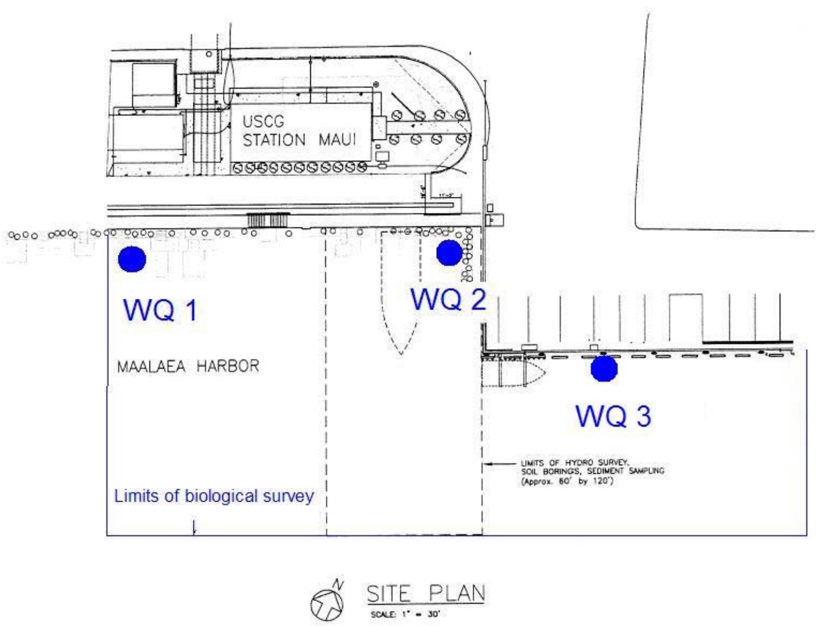

Figure 3. October 25, 2005 marine biological survey limits and water quality sampling stations.

Environment Description

<u>Ma`alaea Bay</u> — The Ma`alaea Bay area is used extensively for recreation. A long, continuous sand beach immediately east of Kanaio (east of the harbor) allows snorkelers and swimmers easy access along its entire length. The ocean is relatively calm here and the currents relatively weak, allowing for safe swimming and diving. The shallow waters, less than 10 m (30 feet) deep, between Kanaio and Palalau are considered best for snorkeling and diving because of the highly diverse flora and fauna and seasonally clear waters (Clark, 1980). The nearshore waters off Kapoli Park (west of the harbor) are also popular with snorkelers.

The shallow water fauna of western Ma`alaea Bay is unusual in several respects. A large number of species uncommon elsewhere are relatively common in Ma`alaea Bay. The wide variety of sponges and bryozoans, and the highly diverse assemblage of gastropod mollusks once made Ma`alaea Bay an area of special interest for nature study, photography, and scientific research (Maciolek, 1971). However, much of the once rich and varied shell life found on the sand bottom occupying the outer bay (Butler, 1975) has declined or disappeared.

At least two reef areas near the harbor are popular with *limu* (edible seaweed) gatherers: the shallows off and south of Kapoli Park and the reef flat off Ma`alaea Beach Park. The popular seaweeds, *limu manauea* (*Gracilaria coronopifolia*) and *limu huluhuluwaena* (*Grateloupia filicina*), are sought in these areas (McDermid, 1990).

Ma`alaea Bay is within the boundaries of the Hawaiian Islands Humpback Whale National Marine Sanctuary. The sanctuary was established in 1992 to protect endangered humpback whales (*Megaptera novaengliae*) and their habitat (HIHWNMSA, 2005).

<u>Outside Harbor Breakwaters</u> — The marine bottom offshore of the harbor generally consists of a limestone reef eroded with small channels and harboring scattered live coral heads. Directly offshore of the West Breakwater, the bottom grades from smooth rounded rocks and cobbles at and near the shore to a flat limestone suerface with scattered patches of coral rubble extending out some 60 m (200 ft) from shore. Water depths are about 2 m (6 ft) in this area, and wave energy is moderately high. Beyond this high energy area, from 60 to 180 m (200 to 600 ft) offshore of the West Breakwater, the water depth ranges from 1 to 4 m (4 to 12 ft), and the bottom consists of a limestone reef with scattered patches of mixed sand and rubble. The bottom relief is relatively flat, with occasional depressions, overhangs, and ledges.

The harbor entrance channel is 3 to 5 m (10 to 15 ft) deep, 45 to 60 m (150 to 200 ft) wide, and extends approximately 150 m (500 ft) south of the breakwater. The channel bottom is relatively flat, with no abrupt side slopes. The bottom typically consists of a thin covering of calcareous sand and some rubble overlying hard limestone reef materials (AECOS, 1980; 1994). Adjacent to and paralleling the East Breakwater is a scoured zone approximately 30 m (100 ft) wide and 1 m (3 ft) deep. The bottom is flat and composed of furrowed, honeycombed limestone (*AECOS*, 1994).

<u>Harbor Environment</u> — Ma'alaea Small Boat Harbor is one of only two berthing areas for small watercraft on Maui. The harbor is the home port for a charter fishing fleet, a small commercial fishing fleet, as well as Maui headquarters for the USCG. The harbor also has a small boat launch ramp that is heavily used by Maui's trailerboat fishermen (*AECOS*, 1980).

Northeast Tradewinds blow fairly consistently across Ma`alaea Bay except between October and April when “Kona storms” may shift the Tradewinds and bring more frequent rainstorms. The predominant ocean current flow near Ma`alaea Harbor is a Tradewind-generated surface movement of less than 1 kt (1.2 mph) towards the southwest (USFWS, 1993). Tidal fluctuations in concert with prevailing currents continuously flush the harbor of suspended fine sediments that are introduced to the harbor from storm water runoff from upland sources (USFWS, 1993). A drainage channel discharges storm water runoff and marine water from the Maui Ocean Center seawater system into Ma`alaea Harbor at the USCG station (*AECOS*, 1994). Water visibility in the harbor is typically poor and salinity is often lower than 35 ppt (USFWS, 1993). Average salinity in Ma`alaea Harbor was 32.7 ppt, based on the average salinity from samples collected from 1973 to 2005 by the Hawaii Department of Health (USEPA, 2005) and *AECOS* (AECOS, 1994 and *AECOS*, 2005).

Prior to construction of Ma`alaea Small Boat Harbor, the nearshore area was a reef flat divided by a shallow channel into shore (Jokiel and Brown, 1989). The entrance to Ma`alaea Harbor opens to the south and the harbor is subjected to occasional strong southerly swells. Much of Ma'alaea Harbor has a sediment bottom and supports a variety of borrowing animals. Boulder revetments and sea walls line the margin and provide substrata for intertidal and subtidal plants and animals. Live coral bottom has developed along the east and west slopes of the dredged channel and turning basin (Jokiel and Brown, 1989) and the greatest concentration of coral occurs along the channel entrance near the southern tip of the East Breakwater. Coral colonies exist on vertical surfaces throughout the harbor and remnants of the former reef flat remain in areas of the harbor that have not been dredged. There is a dark sand beach located in the northeast corner of the harbor.

The intertidal habitat within the harbor is predominantly basalt revetment stones and concrete surfaces that host a wide variety of intertidal flora and fauna. Brewer (1987) lists thin-shelled rock crab or *'a'ama* crab (*Grapsus tenuicrustatus*) and common supratidal snails (*Nerita picea*, *Littorina pintado* and *L. scabra*) as conspicuous inhabitants near the USCG station. Near the low tide line the fleshy green algae, *Ulva fasciata* and *U. reticulata*, are occasionally found along with filamentous blue-green algae. The coralline red algae, *Porolithon onkoides*, can be found as an encrusting layer on boulders. Surveys in May and April 1994 found essentially the same species as found in 1987 with some additional species seen further inside the harbor (AECOS, 1994). A small oyster (*Ostrea* sp.) is common near the shore west from the USCG station, while in the vicinity of the boat ramp, clusters of mussels (*Brachidontes crebristriatus*) are present near the water line. The *'alamihi* crab (*Metopograpsus thukuhar*) is conspicuous everywhere on rocks just above and below the water line, replacing the *'a'ama* crab which is present, but only common in the eastern part of the harbor and on the outside face of the breakwater. The description in USFWS reports (1980, 1993) of *opihi* (*Cellana exarata*) being abundant in the harbor undoubtedly refers to the false limpet (*Siphonaria normalis*), which attains considerable size in this area.

The 1980 USFWS survey, although possibly impaired by low visibility (reported at 1 m or 3 ft), reported no corals and no macroalgae anywhere along the northern side of the harbor between the boat ramp and the East Breakwater. Brewer (1987) noted lace coral (*Pocillopora damicornis*) (reported as *Pocillopora cespitosa*) as the "…only significant (and somewhat surprising) benthic organism observed in the harbor …attached to the concrete sea wall…west of the Coast Guard station." *AECOS* (1994) noted that coral cover declines further into the harbor, with only small, scattered heads of lace coral present west of the USCG station. Jokiel and Brown (1989) estimate the highest coral coverage inside the harbor at 50.9% near the entrance of the harbor with *Montipora capitata* (reported as *Montipora verrucosa*) being the dominant species. Other corals reported from within the harbor include the previously mentioned *Pocillopora damicornis*, foliaceous *Montipora capitata*, and branched *Porites compressa* (Jokiel and Brown, 1989).

A trapezoidal shaped reef remnant in the middle of the harbor near the USCG station was visited by USFWS biologists in 1993 (USFWS, 1993). The shoal was covered by sand and silt and the introduced red alga known as “hookweed” (*Hypnea musciformis*), covered much of the shallow bottom. A few small coral colonies of *Porites rus* and *Pocillopora damicornis*, and two species of sea urchins, *Diadema paucispinum* and *Echinometra mathaei*, were observed in this area. A list of eleven species of fishes reported from this reef (most seen around loose boulders of a breakwater set on the reef) by USFWS added only the wrasse, *Thalassoma duperreyi*, to the fishes described below from the vicinity of the USCG Station. *AECOS* (1994) noted the growth of at least two coral species on this reef remnant: rice coral (*M. capitata*) and lace coral (*P. damicornis*) at perhaps ten percent cover with some rice coral colonies measured at over 25 cm (10 in) across. Other benthic invertebrates observed were a hydroid (?*Halocordyle disticha*), burrowing urchin (*Echinometra mathaei*), and spaghetti worm (*Loimia medusa*). Algal growth was limited to sparse turf with silt and scattered large fronds of *Ulva* *reticulata*). Jokiel and Brown (1989) reported the coral coverage of this reef reaching 39.8 percent and *M. capitata* being the dominant species.

A shallow reef flat occurs inside the harbor along the East Breakwater. This flat, about 0.8 hectare (2 ac) in extent, was surveyed by Brewer (1987) and USFWS (1993). The biota in 1987 was dominated by "dense, tangled stands of…*Ulva fasciata*, *Ulva reticulata*, *Hypnea chordacea*, *Amansia glomerata*, *Gracilaria* cf. *bursapastoris*, and *Grateloupia filicina*, with 100 percent algal cover in some patches. In 1993, USFWS found the reef flat to be heavily infested by the red alga, *Hypnea musciformis* (hookweed), but *Bryopsis pinnata*, *Codium reediae*, *Codium reticulata*, *U. fasciata*, and *Sargassum echinocarpum* occurred here as well. Large amounts of hookweed washed up on the small beach inside the harbor, indicating that this species remained abundant on the reef flat. Between 1999 and 2000, Smith (2000) found an abundance of hookweed with 80 percent cover in northwest Ma`alaea Bay. No live coral was seen on the reef flat, an area that was particularly silted over close to the harbor channel, in contrast to the section of the same reef flat that lies outside of the harbor (i.e., east of the breakwater) *AECOS*, 1994). Two species of fishes, *manini* (*Acanthurus triostegus*) and *aholehole* (*Kuhlia sandvicensis*), were numerically dominant, while numerous juvenile wrasses and a moray eel were noted by Brewer (1987).

USFWS (1980) listed convict tang or *manini* (*Acanthuruss triostegus*) and anchovy or *nehu* (*Stolephorus purpureus*) as abundant within the harbor, and Hawaiian flagtail or *aholehol*e (*Kuhlia sandvicensis*) and barracuda as found in "occasional numbers." The report further mentions that Ma'alaea Harbor supports a "short, but intense seasonal, recreational fishery of bigeye scad or *hahalalu* (*Selar crumenophthalmus*)." Brewer (1987) listed only the anchovy or *nehu* as present in the harbor, but the paucity of fishes recorded may be attributed to the poor underwater visibility. *AECOS* (1994) listed the following species near the sampan wharf (roughly in order of abundance observed): *aholehole*, *manini*, Hawaiian sergeant or *mamo* (*Abudefduf abdominalis*), moorish idol (*Zanclus cornutus*), box fish (*Ostracion meleagris*), belted wrasse (*Stethojulis balteata*), pearl wrasse or *'opule* (*Anampses cuvier*), Hawaiian white-spotted toby (*Canthigaster jactator*), Hawaiian dascyllus or *alo'ilo'i* (*Dascyllus albisella*), raccoon butterflyfish or *lau hau* (*Chaetodon lunula*), lizardfish (*Synodus* cf. *variegatus*), blacktail snapper or *to`au* (*Lutjanus fulvus*), *pualu* (*Acanthurus* cf. x*anthopterus*), yellowfin goatfish or *weke* (*Mulloidichthyes vanicolensis*), juvenile sidespot goatfish or *malu* (*Parupeneus pleurostigma*), Jenkin's damsel (*Stegastes fasciolatus*), parrotfish (*Scarus* sp.), and cornetfish (*Fistularia commersoni*). Barracuda (*Sphyraena barracuda*), *aholehole*, and schools of mullet (*Mugil cephalus*) and small silverside (?*Spratelloides delicatulus*) occured throughout the inner harbor. In 1989, Jokiel and Brown reported the dominant fish species to be yellowfin goatfish (*Mulloides vanicolensis*) and *aholehole*. Many juvenile species of wrasses, (*Stethojulis balteata* and *Thalassoma duperrey*), surgeonfish (*Acanthurus triostegus* and *Acanthurus blochii*), parrotfish (*Scarus psittacus*), and butterflyfish, (*Chaetodon* spp.) were present in the harbor.

Jokiel and Brown (1989) observed one green sea turtle (*Chelonia mydas*) (highly diseased with fibropapilloma) inside the harbor along the eastern side. However, outside of the harbor, they observed a large group (30 - 50) of green sea turtles in the shallow waters to the east of the harbor and adjacent to the south mole where the reef provides important resting habitat for turtles. They also observed humpback whales in close proximity (~100m or 330 ft) to their transect areas but never in water depths less than 6 m (18 ft).

A more complete qualitative description of the overall marine environment inside and outside of the harbor is given in the USFWS report (1993), the EIS for the Maui Ocean Center (AECOS, 1994), and the report by William A. Brewer and Associates (1987).

Marine Survey

The October 2005 marine survey was accomplished by snorkeling the area around the USCG station, including the nearby remnant reef, and recording the flora and fauna encountered. Observations were made in three areas (Figure 4) and estimates of relative abundance of fish, coral, algae, and other invertebrates noted (Table 1). Digital photographs were taken to aid with further species identification and habitat descriptions.

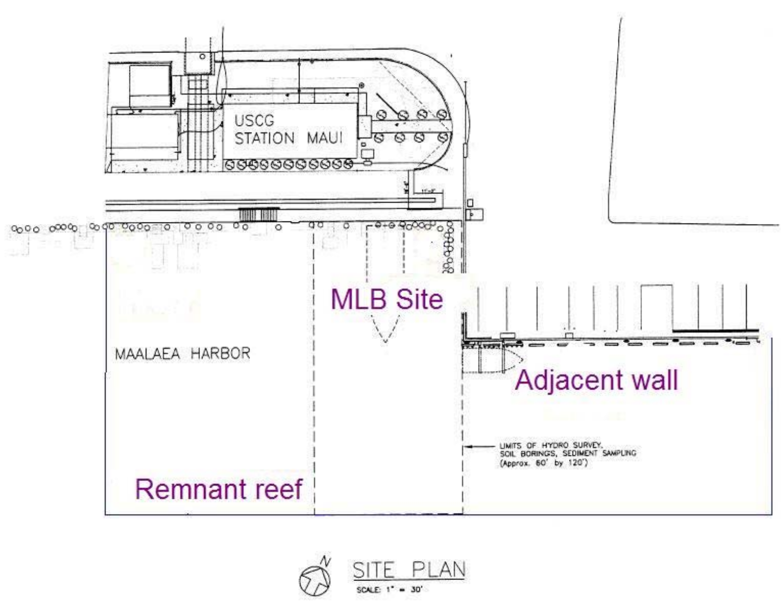

Figure 4. Location of October 25, 2005 marine biological survey sites.

Coral species were identified using Reef and Shore Fauna of Hawai`i, Section 1: Protozoa Through Ctenophora by Maragos (1977). Fish species were identified using the Guide to Hawaiian Reef Fishes by Randall (1985) and Shore Fishes of Hawai`i by Randall (1996).

Table 1. Checklist of aquatic biota observed in Ma`alaea Small Boat Harbor in October 2005 and previously in 2004 (*AECOS*, 2005b).

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	**Common name**	**Harbor (2004)**	**Survey Area** MLB site	Adjacent wall	Remnant reef
		ALGAE			
CHLOROPHYTA	GREEN ALGAE				
Cladophora sp.		P			
Halimeda opuntia		P			
Ulva fasciata/lactuca	sea lettuce	P	O		
Ulva reticulata		P	O	R	
Valonia aegagrophila				R	U
PHAEOPHYTA	BROWN ALGAE				
Ralfsia pangoensis		P			
RHODOPHYTA	RED ALGAE				
Acanthophora spicifera	spiny seaweed	P			
Grateloupia hawaiiana	*limu huluhuluwaena*		R		
Hypnea musciformis	hookweed	P			
Peysonella rubra			C		
Porolithion onkodes			C	C	C
HETEROKONTOPHYTA, BACILLIARIOPHYCEAE					
Indet.	pseudofilamentous diatom	P			
		INVERTEBRATES			
CNIDARIA, HYDROZOA					
HYDROIDA					
Pennaria cf. *disticha*	Christmas tree hydroid	P	O	U	
CNIDARIA, ANTHOZOA					
OCTOCORALLIA					
Carijoa riisei	snowflake coral	P			
CUBOZOA					
Carybdea sp.	box jellyfish		R		
ZOANTHINARIA, ZOANTHIDAE					
SCLERACTINIA,					
Palythoa caesia	blue-gray zoanthid	P			
ACROPORIDAE					
Montipora capitata	rice coral	P	13%	60%	20%
Montipora patula	spreading coral	P	2%	2%	2%

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name	Survey Area Harbor (2004)	MLB site	Adjacent wall	Remnant reef
Montipora flabellata	blue rice coral	P			
FAVIIDAE					
Cyphastrea ocellina		P	<1%	<1%	
POCILLOPORIDAE					
Pocillopora damicornis	lace coral	P	3%	2%	6%
Pocillopora meandrina	cauliflower coral	P			
PORITIDAE					
Porites lobata	lobe coral	P	2%	3%	2%
Porites compressa	Finger coral	P		3%	
ANELLIDA, POLYCHAETA, ACICULATA	SEGMENTED WORMS				
AMPHINOMIDAE					
Pherecardia striata	lined fireworm		R		
ANELLIDA, POLYCHAETA, CANALIPALPATA					
SABELLIDAE					
indet.	tube worm		U		
SERPULIDAE					
Sabellastarte sanctijosephi	feather duster worm	P	R	U	R
Spirobranchus giganteus	Christmas-tree worm	P			
TEREBELLIDAE					
Loimia medusa	medusa spaghetti worm	P	O		C
indet.	unknown pink spaghetti worm		U	U	U
MOLLUSCA, GASTROPODA	MOLLUSKS				
PATELLIDAE					
Cellana sandwicensis	yellow-foot `opihi		C		O
Siphonaria normalis	false `opihi	P	C		
indet.	unknown limpet		C		
TROCHIDAE					
Trochus intexus	woven top		R		
NERITIDAE					
Nerita picea	black nerite	P			C
LITTORINIDAE					
Littoraria pintado	dotted periwinkle	P			C
VERMETIDAE					
Serpulorbis variabilis	variable worm snail	P	C	C	C
MOLLUSCA, BIVALVIA					
ARCIDAE					
Arca ventricosa	ventricose arc				R

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name	Survey Area Harbor (2004)	MLB site	Adjacent wall	Remnant reef
PTERIIDAE					
Pinctada margaritifera	black-lipped pearl oyster				R
OSTREIDAE					
Ostrea sandvicensis	Hawaiian oyster	P			C
ARTHOPODA, CRUSTACEA, DECAPODA					
ALPHEIDAE					
Alpheus deuteropus	snapping shrimp	P			
GRAPSIDAE					
Grapsus tenuicrustatus	thin-shelled rock crab	P	C		C
Percnon planissimum	flat rock crab		U		
OCYPODIDAE					
Macrophthalmus sp.	sentinel crab		A		
ECHINODERMATA, ECHINOIDAE	SEA URCHINS				
DIADEMATIDAE					
Diadema paucispinum	long-spined urchin	P		U	U
Echinothrix calamaris	banded urchin				R
Echinothrix diadema	blue-black urchin	P			
ECHINOMETRIDAE					
Echinometra mathaei	rock-boring urchin	P	R	R	U
Echinometra oblonga	oblong urchin				
Heterocentrotus mammillatus	slate-pencil urchin	P			O
TOXOPNEUSTIDAE					
Tripneustes gratilla	collector urchin	P			U
ECHINODERMATA, HOLOTHUROIDAE	SEA CUCUMBERS				
HOLOTHURIIDAE					
Actinopyga mauritiana	white-spotted sea cucumber	P			
Holothuria atra	black sea cucumber				U
	VERTEBRATES				
VERTEBRATA, CHONDRICHTHYES	SHARKS & RAYS				
MYLIOBATIDAE					
Aetobatis narinari	spotted eagle-ray	P			
VERTEBRATA, PICES	FISHES				
MURAENIDAE					
Echidna nebulosa	snowflake moray				R
ENGRAULIDAE					
Encrasicholina purpurea	Hawaiian anchovy		C		

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name	Survey Area Harbor (2004)	MLB site	Adjacent wall	Remnant reef
SYNODONTIDAE					
Saurida sp.	lizardfish	P	O		O
Synodus ulae	*`ulae*		O		O
HOLOCENTRIDAE					
Myripristis kuntee	pearly soldierfish				U
AULOSTOMIDAE					
Aulostomus chinensis	trumpetfish	P			R
FISTULARIIDAE					
Fistularia commersonii	coronetfish	P			R
KUHLIIDAE					
Kuhlia sandvicensis (E)	Hawaiian flagtail	P	A		C
CARANGIDAE					
Caranx melampygus	bluefin trevally	P			
LUTJANIDAE					
Lutjanus fulvus	blacktail snapper		C	U	C
MUGILIDAE					
Mugil cephalus	striped mullet or *`ama`ama*		U		
MULLIDAE					
Mulloidichthys flavolineatus	yellowstripe goatfish	P	O		A
M. vanicolensis	yellowfin goatfish	P	R		
Parupeneus cyclostomus	blue goatfish	P			
P. multifasciatus	manybar goatfish	P			
P. porphyreus (E)	whitesaddle goatfish	P			
Upeneus arge	bandtail goatfish		U		
KYPHOSIDAE					
Kyphosus bigibbus	brown chub	P			
CHAETODONTIDAE					
Chaetodon auriga	threadfin butterflyfish	P	O	R	R
C. lunula	raccoon butterflyfish	P	U	R	U
C. miliaris (E)	milletseed butterflyfish	P	O	O	O
POMOCENTRIDAE					
Abudefduf abdominalis (E)	Hawaiian sergeant	P	C	C	C
A. sordidus	blackspot sergeant		O	U	O
Dascyllus albisella (E)	Hawaiian dascyllus	P	U		U
Plectroglyphidodon imparipennis	brighteye damselfish				U
Stegastes fasciolatus	Pacific gregory	P	O		U
LABRIDAE					

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name	Survey Area Harbor (2004)	MLB site	Adjacent wall	Remnant reef
Cheilio inermis	cigar wrasse	P			
Coris gaimard	yellowtail wrasse	P			
Gomphosus varius	bird wrasse	P			
Labroides phthirophagus (E)	Hawaiian cleaner wrasse	P			
Stethojulis balteata (E)	belted wrasse	P	O	O	O
Thalassoma ballieui	old woman wrasse		R		
Thalassoma duperrey (E)	saddle wrasse	P	O	O	O
Thalassoma trilobatum	Christmas wrasse		R	R	R
SCARIDAE					
Scarus psittacus	pale nose parrotfish		R		
Scarus rubroviolaceus	red lip parrotfish				R
TRIPTERYGIIDAE					
Enneapterygius atriceps	Hawaiian tripplefin				R
BLENNIDAE					
Blenniella gibbifrons	bullethead rockskipper				R
GOBIIDAE					
Psilogobius mainlandi (E)	Hawaiian shrimp goby		C		
ZANCLIDAE					
Zanculus cornutus	Moorish idol	P	C	C	C
ACANTHURIDAE					
Acanthurus blochii	ring-tail surgeonfish	P	C	R	R
Acanthurus dussumieri	eye-stripe surgeonfish	P	R	R	R
Acanthurus guttaus	white spotted surgeonfish	P			R
Acanthurus leucopareius	white-bar surgeonfish	P			U
Acanthurus nigrofuscus	lavender tang	P	C		C
Acanthurus triostegus	*manini*	P	A	A	A
Acanthurus xanthopterus	yellowfin surgeon		R		R
Ctenochaetus hawaiiensis	chevron tang				U
Ctenochaetus strigosus	goldring surgeon	P			R
Naso lituratus	orangespine unicornfish				
Naso unicornis	unicornfish	P			
Zebrasoma flavescens	yellow tang	P		O	

PHYLUM, CLASS, ORDER, FAMILY *Genus species*	Common name	Survey Area Harbor (2004)	MLB site	Adjacent wall	Remnant reef
BALISTIDAE					
Rhinecanthus rectangulus	reef triggerfish	P			
MONOCANTHIDAE					U
Cantherhines dumerilii	barred filefish				
OSTRACIIDAE					
Ostracion meleagris	spotted boxfish	P	R	R	R
TETRAODONTIDAE					
Canthigaster amboinensis	Ambon toby		U	U	
Canthigaster jactator	HI whitespotted toby				U

KEY TO SYMBOLS USED IN TABLE 1:

Location:

Harbor 2004 - Inside harbor near old ferry, channel end of West Breakwater and sand channel, or East Breakwater (*AECOS*, 2005b)

MLB site – Proposed site for MLB, includes sand bottom and rock wall edges

Vertical wall – Vertical wall west of MLB site

Breakwater – Breakwater inside of harbor

Abundance categories:

R - Rare - Only one or two individuals observed in area.

U - Uncommon - Three to no more than a dozen individuals seen in area.

O- Occasional – Seen irregularly and always in small numbers; more than a dozen individuals in area.

C - Common – Seen regularly, although generally in small numbers.

A - Abundant - Found in large numbers and widely distributed.

P - Present - Abundance information lacking.

Other symbols and categories:

† - Shell, carapace, or test only (not seen alive).

E – Endemic – Found in Hawaii and nowhere else.

QC:

Animals were identified in the field on October 24, 2005 by S. Burr or K. Laing.

MLB site — The MLB site is a mud bottom basin with a small area (less than 10 m^2 or 33 ft^2) of boulders and undredged reef in the northern corner (Figure 5). Scattered corals cover up to 30 percent of the hard surfaces (Figure 6), which is higher than the 10 percent reported in by *AECOS* in 1994 for the same area (*AECOS*, 1994). *Montipora capitata* is the predominant species, but *Pocillopora damicornis*, *Porites lobata*, and *Montipora patula* colonies are also present. Some *M. capitata* colonies were over 25 cm (10 in) across, but most colonies were much smaller. Bleached *M. capitata* colonies were noted growing in the dark overhanging habitat created by the concrete wharf deck of the north wall. A school of Hawaiian flagtail (*Kuhlia sandvicensis*) hovered near the shore and under sheltered overhangs. Numerous invertebrates were observed in the intertidal zone. Dozens of an indeterminate limpet were seen (Figure 7) and the thin-shelled rock crab (*Grapsus tenuicrustatus*) and flat crab (*Percnon planissimum*) were observed on the rocks above the water line. Burrowing sentinel crabs (*Macrophthalmus* sp.) were abundant in the mud bottom basin of the MLB site (Figure 8). A small amount of *Grateloupia filicina* or *limu huluhuluwaena*, an edible red algae, was encountered at the MLB site.

<u>Vertical wall</u> — The vertical surface of the seawall adjacent to the USCG station is covered with an extensive community of the coral *Montipora capitata*. About 70 percent of the surface is covered with corals, but in some places the coverage exceeds 100 percent with colonies overlapping one another on the vertical surface. The Moorish idol (*Zanculus cornutus*), surgeonfishes (Acanthuridae), and other planktivorous fishes are common in this area.

<u>Reef remnant</u> — *Montipora capitata* is the predominant coral on the remnant reef southeast of the MLB site, and a fair number of small *Pocillopora damicornis* colonies are also present. Total coral coverage approaches 30 percent. A variety of urchins were observed on the reef and a large school of the yellow-stripe goatfifsh (*Mulloidichthys flavolineatus*) stayed near the eastern edge of the reef.

In summary, Ma`alaea Harbor contains common coral species found throughout Hawaiian waters and include *Montipora capitata*, *Pocillopora damicornis*, *Porites compressa*, and *P. lobata*. The growth forms of the corals inside the harbor are adapted to low water motion environments and as a consequence tend to be delicate and foliaceous. At shallow depths (<2m or 6 ft) within the harbor, corals thrive due to high light conditions, moderate water motion, steep slope, and a lack of destructive wavers. Coral cover diminishes with depth as a result of light attenuation associated with high turbidity conditions in the harbor. The highest coral coverage in the vicinity of the USCG station is the vertical wall adjacent to the station, which has up to 70 percent coral coverage of foliaceous *M. capitata* coral colonies. The area proposed for the MLB pier has about 20 percent coral coverage and the reef remnant southwest of the station has about 30 percent coral coverage.

In 2004, the introduced snowflake coral (*Carijoa riisei*) was observed near the ferry pier in Ma`alaea Harbor (*AECOS*, 2005b), but this invasive species was not observed near the USCG pier during this survey. The snowflake coral is a soft coral that was introduced into Pearl Harbor in the 1970s and grows in harbors and bays under low light conditions like those found beneath overhanging docks (Coles et al., 1999).

The harbor serves as nursery ground for juvenile fish such as mullet (*Mugil cephalus*), Hawaiian flagtail (*Kuhlia sandvicensis*), anchovy (*Encrasicholina purpurea*), butterflyfish (*Chaetodon* spp.), surgeonfish (*Acanthurus triostegus* and *A. blochii*), wrasses (*Stethojulis balteata* and *Thalassoma duperrey*), and parrotfish (*Scarus psittacus*). Planktivores are the most common fish inside the harbor. In harbors, juvenile fish are attracted to man-made structures and low visibility, which provides shelter from predation. Food resources, such as algae, plankton, and benthic invertebrates in the soft substrate, are also abundant within the harbor.

No sea turtles or other endangered or threatened species were observed in or near the harbor during our survey. However, three species, the humpback whale (*Megaptera novaeangliae*), the hawksbill sea turtle (*Eretmochelys imbricata*), and the green sea turtle (*Chelonia mydas*), protected under the Endangered Species Act of 1973 (Federal Register, 1999a, 1999b, and 2001) and Hawaii Administrative Rule (DLNR, 1998), occur in Ma`alaea Bay. Ma`alaea Bay is an important calving, breeding, and nursing area for the endangered humpback whale between December and May each year (Forestell and Brown, 1991). When not migrating, the humpback whales occur very close to shore and Maui offers great opportunities to view the whales from shore or by boat. The threatened green sea turtle (*Chelonia mydas*) and the endangered hawksbill sea turtle (*Eretmochelys imbricata*) are known to frequent Ma`alaea Bay (SRGII, 2004) and USFWS reported to have observed a large green sea turtle in the harbor in 1993 (USFWS, 1993).

Water Quality

Ma`alaea Small Boat Harbor is designated as a Class A Embayment (HDOH, 2004) with water quality criteria pertaining to wet and dry conditions (Table 2). A review of HDOH salinity data collected in Ma`alaea Harbor between 1973 – 1977 and 1990 - 1998 (USEPA, 2005) coupled with measurements taken in 1994 (*AECOS*, 1994), 2004 (*AECOS*, 2005b), and the present survey indicate that salinity values in the harbor represent “wet” conditions more than 90 percent of the time. Thus, the “wet” State criteria will be used exclusively in the following discussion of water quality in the harbor.

As stated in the water quality regulations, it is the objective of Class A waters that their use for recreation and aesthetic enjoyment be protected (HDOH, 2004). Ma`alaea Small Boat Harbor is also an artificial basin which is designated a Class II, shallow draft harbor under the marine bottom standards, with the following specific criterion pertaining: oxidation-reduction potential (EH) in the uppermost ten centimeters (four inches) of sediment shall not be less than -100 millivolts (HDOH, 2004; §11-54-07(d)(3)).

The October 24, 2005 water quality survey involved collection of surface water samples (grab samples) at each of three stations (see Figure 3). Samples were collected in appropriate sampling containers and placed on ice until they were transported to the laboratory for analyses (Laboratory Log No. 21080). The following parameters were measured with instruments in the field at the time of sample collection: temperature, dissolved oxygen, pH, and salinity. The remaining parameters were measured in the laboratory: turbidity, total suspended solids, ammonia, nitrate+nitrite, total nitrogen, total phosphorus, and chlorophyll α. All parameters were measured within appropriate hold times. Table 3 lists the instruments and analytical methods used for field and laboratory water analyses.

Table 2. State of Hawaii water quality criteria for Class A embayments (HAR §11-54-06(a)(3)).

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total nitrogen (µg/L)	200.00* 150.00**	350.00* 250.00**	500.00* 350.00**
Ammonia (µg/L)	6.00* 3.50**	13.00* 8.50**	20.00* 15.00**
Nitrate + nitrate (µg/L)	8.00* 5.00**	20.00* 14.00**	35.00* 25.00**
Total phosphorus (µg/L)	25.00* 20.00**	50.00* 40.00**	75.00* 60.00**
Chlorophyll α (µg/L)	1.50* 0.50**	4.50* 1.50**	8.50* 3.00**
Turbidity (ntu)	1.5* 0.40**	3.00* 1.00**	5.0* 1.50**

* Wet criteria apply when the open coastal waters receive more than three million gallons per day of fresh water discharge per shoreline mile.

** Dry criteria apply when the open coastal waters receive less than three million gallons per day of fresh water discharge per shoreline mile.

The following are applicable to embayments during both "Wet" and Dry" conditions:

- pH shall not deviate from 7.6 to 8.6.
- Dissolved oxygen shall not be less than 75% saturation.
- Temperature shall not vary more than 1 °C from ambient.
- Salinity shall not vary more than 10% from natural or seasonal changes.

The primary purpose of the October 24, 2005 water quality measurements was to characterize the existing marine environment, not to set baseline values or determine compliance with the water quality standards (HDOH, 2004). In fact, the State criteria for all nutrient measurements, chlorophyll α, and turbidity are based upon geometric mean values and a minimum of three separate samples per station is required to compute geometric means (HDOH, 2004). Later in this section, data from the Hawaii Department of Health (USEPA, 2005), data collected by *AECOS* in 1994 and 2004 (*AECOS*, 1994 and *AECOS*, 2005b), and the data collected for this project are evaluated as a set against the water quality standards for embayments. The multiple samplings encompass a range of conditions in Ma`alaea Small Boat Harbor such as high tide and low tide samples, wet and dry season, etc.

The October 24, 2005 water sampling event took place between 8:15 and 8:40 am. The morning low tide was predicted for 0.3 feet (higher low water, HLW) occurring at 7:15 am and the afternoon high tide was predicted at 2.3 feet (higher high water or HHW) occurring at 2:13 pm (NOAA/NOS, 2005). According to this tidal information these water samples were collected during a rising tide.

Table 3. Analytical methods and instruments used for USCG Ma`alaea Small Boat Harbor water samples.

Analysis	**Method**	**Reference**	**Instrument**
Ammonia	alkaline phenol	Karoleff in Grasshoff et al. (1986)	Technicon AutoAnalyzer II
Chlorophyll α	10200 H	Standard Methods, 18th Edition (1992)	Turner Model 112 fluorometer
Dissolved Oxygen	EPA 360.1	EPA (1979)	YSI Model 85 DO meter
Nitrate + Nitrite	EPA 353.2	EPA (1993)	Technicon AutoAnalyzer II
pH	EPA 150.1	EPA (1979)	Hannah Pocket pH Meter
Salinity	EPA 120.1	EPA (1979)	Handheld Refractometer
Temperature	thermister calibrated to NBS cert. Thermomet. (EPA 170.1)	EPA (1979)	YSI Model 85 DO meter
Total Nitrogen	persulfate digestion /EPA 353.2	D'Elia et al. (1977) / EPA (1993)	Technicon AutoAnalyzer II
Total Phosphorus	persulfate digestion /EPA 365.1	Koroleff in Grasshoff et al. (1986) / EPA (1993)	Technicon AutoAnalyzer II
Total Suspended Solids	Method 2540D (EPA 160.2)	Standard Methods 18th Edition (1992); EPA (1979)	Mettler H31 balance
Turbidity	Method 2130B (EPA 180.1)	Standard Methods 18th Edition (1992); EPA (1993)	Hach 2100P Turbidimeter

D'Elia, C.F., P.A. Stendler, & N. Corwin. 1977. *Limnol. Oceanogr.* 22(4): 760-764.
EPA. 1979. Methods for Chemical Analysis of Water and Wastes. U.S. Environmental Protection Agency, EPA 600/4-79-020.
EPA. 1993. Methods for the Determination of Inorganic Substances in Environmental Samples. EPA 600/R-93/100.
EPA. 1994. Methods for Determination of Metals in Environmental Samples, Supplement 1. EPA/600/R-94/111. May 1994.
Grasshoff, K., M. Ehrhardt, & K. Kremling (eds). 1986. Methods of Seawater Analysis (2nd ed). Verlag Chemie, GmbH, Weinheim.
Standard Methods. 1992. Standard Methods for the Examination of Water and Wastewater. 18th Edition. 1992. (Greenberg, Clesceri, and Eaton, eds.). APHA, AWWA, & WEF. 1100 p.

The results of this sampling event revealed similar water quality at the three stations (Table 4). Temperatures ranged from 25.8 to 26.4 ºC and are typical for morning measurements. Measured salinity (35 ppt) and pH (7.98 - 8.14) values are typical of seawater samples with minimal freshwater influence. The percent saturation of DO was high at each station (86 - 90%) and typical of coastal areas. Turbidity values (0.90 - 1.50 ntu) and TSS concentrations (5.4 - 7.2 mg/L) were low, as was chlorophyll α (0.30 - 0.53 µg/L). Ammonia nitrogen was not detected in any of the samples. The concentration of total nitrogen in the samples ranged from 218 to 332 µg/L and the concentration of total phosphorus ranged from 21 to 37 µg/L. The concentration of nitrate + nitrite nitrogen in the samples was fairly high (68 - 213 µg/L). Nitrates are usually high in groundwater in Hawai`i and these measurements indicate groundwater may influence the harbor water quality.

Station 2, located at the mouth of the stormwater discharge outlet, also contains discharge from the Maui Ocean Center aquarium. No stormwater discharge was noted at the time of sampling and the water quality at Station 2 is similar to that of Stations 1 and 3, although nutrient levels are higher.

Table 4. Water quality characteristics of Ma`alaea Small Boat Harbor from samples collected on October 24, 2005.

STATION	Time Sampled	Temp. (°C)	Dissolved Oxygen (mg/l)	Dissolved Oxygen (% sat.)	pH --	Salinity (ppt)	Turbidity (NTU)
Sta. 1	0815	25.8	5.75	86	7.98	35	1.00
Sta. 2	0830	26.1	5.99	90	8.06	35	0.90
Sta. 3	0840	26.4	5.77	88	8.14	35	1.50

STATION	TSS (mg/L)	Ammonia (µg N /L)	Nitrate + Nitrite (µg N/L)	Total N (µg N/L)	Total P (µg P/L)	Chl α (µg /L)
Sta. 1	5.4	<1	121	248	26	0.47
Sta. 2	7.2	<1	213	332	37	0.30
Sta. 3	7.2	<1	68	218	21	0.53

The Hawaii Department of Health collected water quality samples in Ma`alaea Small Boat Harbor from 1973 to 2005 and the data are available in the on-line database, Storet (USEPA, 2005). In 1994, AECOS established a water quality monitoring program to characterize existing water quality in Ma`alaea Harbor for a seawater system and drainage improvements project (AECOS, 1994). In 2004, AECOS collected two water quality samples in the harbor for a ferry improvement project (AECOS, 2005b). These three data sets, along with the data from this present study, are used provide the following baseline water quality analysis in Ma`alaea Small Boat Harbor.

A summary of available historical data for selected physical parameters in Ma`alaea Harbor is shown in Table 5. As noted above, salinity levels in the harbor are consistently within the "wet" category as described by the State of Hawaii water quality criteria for embayments. This indicates that there is a relatively constant input of freshwater to the harbor. A significant inverse relationship (r-squared = -0.65) between salinity and silicate data indicate that much of the freshwater entering the harbor is likely groundwater, rather than direct surface runoff, as groundwater typically contains significant amounts of dissolved silicate, whereas surface runoff does not.

Table 5. Summary of selected physical parameter data in Ma`alaea Harbor (after AECOS, 1994, 2005b, and present study; and DOH, 2005;)

	mean	**minimum**	**maximum**	**sample size (n)**
Salinity (‰)	32.7	11.9	35	*131*
Temperature (°C)	23.9	18.1	27.4	*86*
DO saturation (%)	96	36	142	*68*
pH	8.0	6.1	8.6	*76*

Dissolved oxygen (DO) saturation levels, with two exceptions, were above the State's minimum 75 percent saturation level requirement. Forty percent of the DO saturation levels were super saturated (greater than 100 percent), which may be related to low chlorophyll α levels. Since chlorophyll α concentrations, an indicator of photosynthetic biomass, were typically low, it is assumed that circulation and vertical mixing in the harbor must have been minimal during these periods to allow the development of these super saturated conditions. Levels of pH in the Harbor were consistently within the State's criteria limits.

All forms of nitrogen (ammonia, nitrate+nitrite, and total nitrogen) measured in Ma`alaea Harbor (Table 6) were in excess of State criteria. However, the level at which they exceed the criteria differs greatly and gives insight to the source of these nitrogen nutrients. Oxidized nitrogen as nitrate+nitrite (NO^3+NO^2) is an order of magnitude greater than State criteria, whereas nitrogen as ammonia (NH^3) is only two times greater, and the exceedence of organic nitrogen (total N-[nitrate+nitrite]) is lower still. These findings suggest that much of the source nitrogen (i.e., organic nitrogen and ammonia) has been oxidized to nitrate + nitrite. Thus, it is likely that the primary input source of nitrogen to the harbor is groundwater, as the residence time of groundwater is typically long, allowing for the nitrogen oxidation process to take place.

Total phosphorus levels are in compliance with the State geometric mean criterion and only slightly elevated for 10% and 2% not to exceed criteria (Table 6). In most aquatic environments the molar ratio of nitrogen to phosphorus (N:P) is between 8:1 and 16:1. The average N:P ratio in Ma`alaea Harbor is 22:1, indicating nitrogen-rich and phosphorus-poor conditions. The relatively low phosphorus concentrations in the harbor also suggest groundwater as the primary source of nutrient input to this system as phosphorus tends to absorb onto particulate matter, which is abundant in coastal alluvial aquifers.

Table 6. Summary of selected nutrient and particulate parameter data in Ma`alaea Harbor (after AECOS, 1994, 2004, present study; and DOH, 2005)

		Geomean	Not to exceed 10% of time	Not to exceed 2% of time	Sample size (n)
Ammonia (µg/l)	State criteria	6	13	20	
	measured	**8.9***	**24**	**34**	*52*
Nitrate + nitrite (µg/l)	State criteria	8	20	35	
	measured	**107**	**274**	**373**	*73*
Total Nitrogen (µg/l)	State criteria	200	350	500	
	measured	**258**	**509**	**569**	*36*
Total Phosphorus (µg/l)	State criteria	25	50	75	
	measured	25	**45**	**94**	*50*
Turbidity (ntu)	State criteria	1.5	3.0	5.0	
	measured	1.4	**5.2**	**19**	*62*
Chlorophyll (µg/l)	State criteria	1.5	4.5	8.5	
	measured	1.0	**7.4**	**19.3**	*56*

* bold numbers exceed State criteria

The long-term average for turbidity levels in the harbor meets the State's geometric mean criterion for embayments (Table 6). This is somewhat surprising since small enclosed harbors often have high turbidity levels due, not only to surface runoff, but also to the stirring of bottom sediments by boat traffic in and out of the harbor. The low turbidity levels in the harbor may reflect the fact that freshwater input to the harbor is mainly from groundwater sources, rather than surface water runoff. Surface water runoff does appear to become a significant source of turbidity during major storm events as shown by the elevated "not to exceed" turbidity levels.

Chlorophyll α concentrations, like turbidity, are well within the State's geometric mean criterion, even though nutrient (nitrogen and phosphorus) levels are sufficient to sustain much higher phytoplankton concentrations (as measured by chlorophyll α concentrations) in the harbor. The growth of phytoplankton is controlled not only by nutrient and light availability, but also by the flushing, or residence time, of water in the harbor. Phytoplankton can take from a few days to a week or so to reproduce even under ideal conditions. The flushing rate in Ma`alaea Harbor has been found to be about 2.6 days (Wang, et al., 1994) during typical tradewind conditions. Thus, it is likely that phytoplankton in the harbor are typically flushed out into the bay as fast, or faster than they can reproduce, resulting in the typically low concentrations of chlorophyll recorded within the harbor. However, chlorophyll levels do reach high concentrations on occasion. These high concentration levels are likely to be reached during extended "Kona" wind conditions when flushing rates are reduced, and determined only by tidal exchange with the adjacent bay waters.

The Maui Ocean Center discharges aquarium water into Ma`alaea Harbor adjacent to the USCG station. The source water for the aquarium is pumped from Ma`alaea Bay and the discharge water is of better quality (i.e., lower nutrient, turbidity, and chlorophyll levels) than the harbor receiving waters - thus slightly improving water quality in the harbor (AECOS, 1994). Furthermore, the water discharged from the aquarium slightly reduces the residence time of water in the harbor, which also has a beneficial effect on harbor water quality.

In summary, water quality in Ma`alaea Harbor is influenced primarily by two factors: (1) groundwater inputs to the harbor that elevate nutrient concentrations, especially nitrate + nitrite; and (2) the residence time of water in the harbor – the longer the residence time, the more degraded the water quality.

Assessment

The proposed improvements to the USCG Station at Ma`alaea Small Boat Harbor include dredging and construction of one of the following: a single fixed concrete pier, two fixed concrete piers, a single floating pier, or two floating piers. Construction of the piers constitutes a “fill” activity, which, along with dredging, is regulated under the federal Clean Water Act. Possible biological impacts associated with construction include siltation stress in corals from dredging, physical destruction of corals and reef habitat, and bleaching from decreased sunlight from the new piers. However, no rare or endangered species would be lost in this already disturbed environment. Fishes and benthic invertebrate infauna will return after construction is complete and organisms will readily re-colonize the newly exposed hard surfaces.

During construction, efforts should be taken to reduce sediment loads when dredging or filling portions of the harbor. Suspended sediments can be detrimental to coral recruitment and survival in low water motion environments with little vertical relief such as the MLB site. The growth forms (plate-like or foliaceous) of the extensive *Montipora capitata* coral community of the vertical surface adjacent to the USCG station should be capable of withstanding or recovering from siltation impacts from dredging. The plate-like growth forms enable the colonies to slough off settled sediments. The coral communities at the MLB site and the reef remnant are more susceptible to impacts from dredging because the colonies tend to be more encrusting and mound-like, are living on horizontal surfaces, and are less able to slough off settled sediments. However, the coral community at the MLB site and reef remnant consists of species that are common throughout Hawai`i, which tend to be fast-growing and are therefore likely to rapidly recolonize the site. Additionally, construction of new vertical surfaces may create suitable habitat for corals and other macroinvertebrates. However, should the invasive soft coral, snowflake coral, be encountered, care should be taken to minimize its dispersal.

Short term impacts from construction activities can be expected on the water quality of Ma`alaea Small Boat Harbor. Dredge and fill activities associated with the construction will increase turbidity during the construction period, but construction effects can be mitigated through the use of silt curtains and the curtailment of construction during adverse sea conditions. Temporary increases in suspended sediments in the water column as a result of construction activities will cease once the project is complete. Care must be taken to avoid depositing construction materials and related liquids (i.e., paints, solvents, and other noxious chemicals) into the marine environment.

The proposed construction in the harbor will not impact green sea turtle (*Chelonia mydas*) or humpback whale (*Megaptera novaeangliae*) populations so long as care is taken to minimize noise disturbance. Restrict blasting, if there will be any, to between the months of May and December to avoid affecting humpback whales.

Conclusions

The installation of the MLB site at the USCG Station in Ma`alaea Small Boat Harbor will permanently alter this environment, destroy some coral colonies, and eliminate habitat for coral reef species. However, the proposed activities should have minimal long-term adverse effects on the water quality and marine community of the harbor. Water quality impacts will be temporary and new habitat will be created by the piers, which should locally increase coral coverage and create additional habitat for macroinvertebrates and fishes.

Transplantation of corals to new locations is not an option at Ma`alaea due to lack of suitable colony sizes, growth forms, and transplant sites along the coast (Jokiel and Brown, 1989). Habitat loss will be partially offset by the construction of vertical surfaces that will be suitable for coral settlement.

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Figure 5 (top). Looking north towards USCG Station and proposed MLB site. Figure 6 (bottom). Typical growth form and percent cover of *Montipora capitata* on boulders and undredged reef in north corner of MLB site.

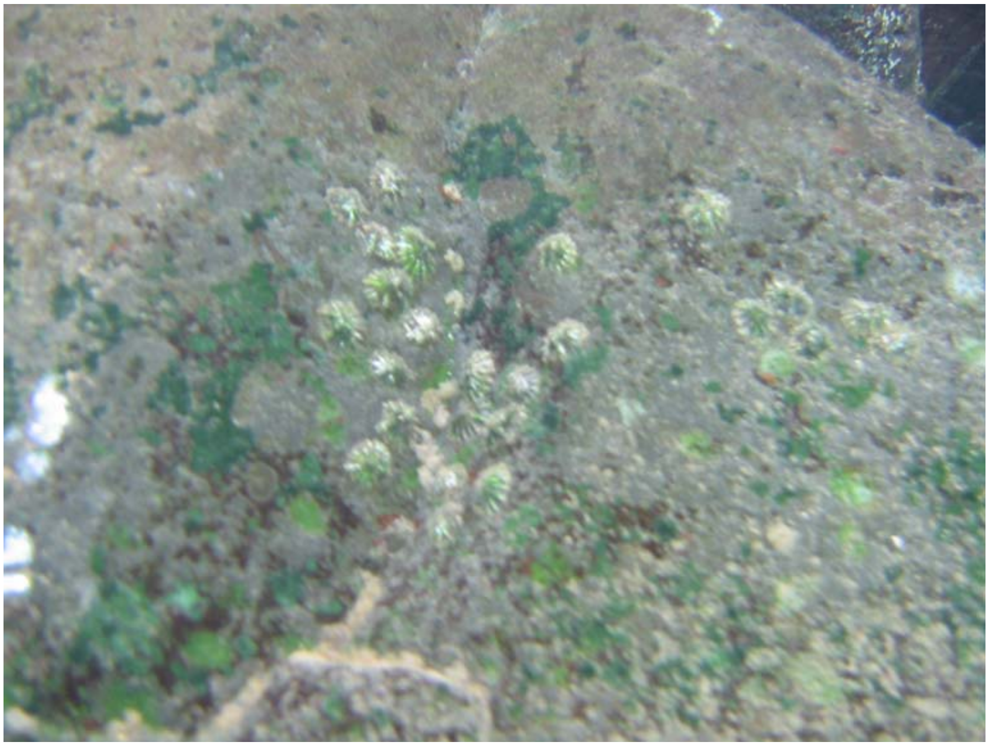

Figure 7 (top). Unidentified limpets found subtidally in north corner of MLB site.
Figure 8 (bottom). Sentinel crab and burrow in mud bottom basin of MLB site.

APPENDIX F. WESTERN PACIFIC ESSENTIAL FISH HABITAT AND HABITATS OF PARTICULAR CONCERN SUMMARY

WESTERN
PACIFIC
REGIONAL
FISHERY
MANAGEMENT
COUNCIL

EFH/HAPC Designations for Fishery Management Units Covered Under the Bottomfish, Crustacean, Pelagic, Precious Corals and Coral Reef Ecosystem Fishery Management Plans

Updated
April 9, 2004

Western Pacific Regional Fishery Management Council
1164 Bishop St., Suite1400
Honolulu, Hawaii 96813

Background

Essential Fish Habitat (EFH) is defined in the Magnuson Stevens Conservation and Management Act of 1976 (M-S Act) as "all waters and substrates necessary to fish for spawning, breeding, feeding or growth to maturity." Based on the guidelines established by the Secretary of Commerce under section 305(b)(1)(A) of the M-S Act, Regional Fishery Management Councils are directed to describe and identify EFH for each federally managed species, minimize to the extent practicable adverse effects on such habitat caused by fishing and non-fishing activities, and identify other actions to encourage the conservation and enhancement of such habitat The M-S Act also requires that the designation of EFH be based on the best available scientific information.

Introduction

The National Marine Fisheries Service (NMFS) guidelines intended to assist Councils in implementing the EFH provision of the Magnuson-Stevens Act set forth the following four broad tasks:

- Identify and describe EFH for all species managed under an FMP;
- Describe adverse impacts to EFH from fishing activities;
- Describe adverse impacts to EFH from non-fishing activities; and
- Recommend conservation and enhancement measures to minimize and mitigate the adverse impacts to EFH resulting from fishing and non-fishing related activities

The guidelines suggest that each Council prepare a preliminary inventory of available environmental and fisheries information on managed species. Such an inventory is useful in describing and identifying EFH, as it also helps to identify missing information about the habitat utilization patterns of particular species. The guidelines note that a wide range of basic information is needed to identify EFH. This includes data on current and historic stock size, the geographic range of the managed species, the habitat requirements by life history stage and the distribution and characteristics of those habitats. Since EFH has to be identified for each major life history stage, information about a species' distribution, density, growth, mortality and production within all the habitats it occupies, or formerly occupied, is also necessary.

The guidelines state that the quality of available data used to identify EFH should be rated using the following four-level system:

Level 1: All that is known is where a species occurs based on distribution data for all or part of the geographic range of the species.
Level 2: Data on habitat-related densities or relative abundance of the species are available.
Level 3: Data on growth, reproduction or survival rates within habitats are available.
Level 4: Production rates by habitat are available.

Sustainable Fisheries Act Amendment

For western Pacific fisheries, the EFH requirement was done through the omnibus Sustainable Fisheries Act (SFA) amendment which amended all four of the Council's active FMPs. The amendment also included provisions regarding bycatch, fishing sectors, fishing communities and overfishing. The amendment compiled the best available scientific information for each of these new provisions and incorporated the information directly or by reference into the Western Pacific Regional Fishery Management Council's (Council) FMPs as:

(1) Amendment 6 to the Bottomfish and Seamount Groundfish Fisheries Management Plan;
(2) Amendment 8 to the Pelagic Fisheries Management Plan;
(3) Amendment 10 to the Crustaceans Fisheries Management Plan and;
(4) Amendment 4 to the Precious Corals Fisheries Management Plan

In designating EFH for management unit species (MUS), the Council considered four alternatives which included (1) no action, (2) narrow designation of EFH (3) broad designation of EFH (4) Designate EFH based on observed habitat utilization patterns in localized areas *(preferred alternative).*

The Council used the best available scientific information to describe EFH that provide information on the biological requirements for each life stage (egg, larvae, juvenile, adult) of all MUS . Careful judgement was used in determining the extent of the essential fish habitat that should be designated to ensure that sufficient habitat in good condition is available to maintain a sustainable fishery and the managed species' contribution to a healthy ecosystem.

This information was obtained through an iterative process consisting of a series of public meetings of the Council, SSC, FMP teams and fishing industry advisory panels. In addition, the Council worked in close cooperation with scientists in the NMFS Southwest Fisheries Service Center, Honolulu Laboratory, PIAO and Southwest Regional Office.

In addition to EFH, the Council identified habitat areas of particular concern (HAPCs) within EFH for all FMPs. In determining whether a type or area of EFH should be designated as a HAPC, the area had to meet one or more of the following criteria: ecological function provided by the habitat is important; habitat is sensitive to human-induced environmental degradation; development activities are or will be stressing the habitat type; or habitat type is rare.

The Council's omnibus SFA amendment was published in the Federal Register on November 5, 1998 and was approved by the Secretary on February 3, 1999. Due to the are large gaps in scientific knowledge about the life histories and habitat requirements of many MUS in the western Pacific region, the Council designated EFH based on observed habitat utilization patterns in localized areas. The Council also identified EFH research needs for each fishery in order to gather the data necessary to refine these EFH designations. As higher quality data becomes available, the Council will be able to identify those habitats most highly valued by a species, thus allowing for a more precise designation of EFH.

The following table summarizes the approved EFH designations for each life stage of federally managed species.

Table 1. EFH and HAPC Designations for Western Pacific Fishery Management Units

FMP	EFH	HAPC	Species Complexes
Bottomfish	**Eggs and larvae:** the water column extending from the shoreline to the outer limit of the EEZ down to a depth of 400 m (200 fathoms). **Juvenile/adults:** the water column and all bottom habitat extending from the shoreline to a depth of 400 m (200 fathoms)	**All slopes and escarpments between 40-280 m (20 and 140 fathoms)**. **Three known areas of juvenile opakapaka habitat:** Two locations are off Oahu and one location is off Molokai in waters 40-73 m	**Bottomfish Complex** **Shallow water species (0-50 fm):** Uku (*Aprion virescens*), Thicklip trevally (*Pseudocaranx dentex*), Lunartail grouper (*Variola louti*), Blacktip grouper (*Epinephelus fasciatus*), Ambon emperor (*Lethrinus amboinensis*), Redgill emperor (*Lethrinus rubrioperculatus*), Giant trevally (*Caranx ignoblis*), Black trevally (*Caranx lugubris*), Amberjack (*Seriola dumerili*), Taape (*Lutjanus kasmira*) **Deep water species 50-200 fm):** Ehu (*Etelis carbunculus*), Onaga (*Etelis coruscans*), Opakapaka (*Pristipomoides filamentosus*), Yellowtail Kalekale (*P. auricilla*), Yelloweye opakapaka (*P. flavipinnis*), Kalekale (*P. sieboldii*), Gindai (*P. zonatus*), Hapupuu (*Epinephelus quernus*), Lehi (*Aphareus rutilans*)
Seamount Groundfish	**Eggs and larvae:** the (epipelagic zone) water column down to a depth of 200 m (100 fathoms) of all EEZ waters bounded by lattitude 29°-35° **Juvenile/adults:** all EEZ waters and bottom habitat bounded by latitude 29°-35° N and longitude 171° E-179° W between 200 and 600 m (100 and 300 fathoms		**Seamount Groundfish Complex** **Deep water species (50-200 fm):** Armorhead (*Pseudopentaceros richardsoni*), Ratfish/butterfish (*Hyperoglyphe japonica*), Alfonsin (*Beryx splendens*)

FMP	EFH	HAPC	Species Complexes
Pelagics	**Eggs and larvae:** the (epipelagic zone) water column down to a depth of 200 m (100 fathoms) from the shoreline to the outer limit of the EEZ. **Juvenile/adults:** the water column down to a depth of 1,000 m (500 fathoms) from the shoreline to the outer limit of the EEZ.	**The water column from the surface down to a depth of 1,000 m (500 fathoms) above all seamounts and banks with summits shallower than 2,000 m (1,000 fathoms) within the EEZ**.	**Temperate species** Striped Marlin (*Tetrapurus audax*); Bluefin Tuna (*Thunnus thynnus*); Swordfish (*Xiphias gladius*); Albacore (*Thunnus alalunga*); Mackeral (*Scomber* spp); Bigeye (*Thunnus obesus*); Pomfret (family Bramidae **Tropical species** Yellowfin (*Thunnus albacares*); Kawakawa (*Euthynnus affinis*); Skipjack (*Katsuwonus pelamis*); Frigate and bullet tunas (*Auxis thazard, A. rochei*); Blue marlin (*Makaira nigricans*); Slender tunas (*Allothunnus fallai*); Black marlin (*Makaira indica*); Dogtooth tuna (*Gymnosarda unicolor*); Spearfish (*Tetrapturus spp*); Sailfish (*Istiophorus platypterus*); Mahimahi (*Coryphaena hippurus, C. equiselas*); Ono (*Acanthocybium solandri*); Opah (*Lampris* sp) **Sharks** (non-coral reef associated sharks) Requiem sharks (family Carcharinidae); Thresher sharks (family Alopiidae); Mackeral sharks (family Lamnidae); Hammerheads sharks (family Sphyrnidae)

FMP	EFH	HAPC	Species Complexes
Crustaceans	**Eggs and larvae:** the water column from the shoreline to the outer limit of the EEZ down to a depth of 150 m (75 fathoms) **Juvenile/adults:** the all bottom habitat from the shoreline to a depth of 100 m (50 fathoms)	**All banks in the NWHI with summits less than or equal to 30 m (15 fathoms) from the surface.**	**Spiny and Slipper Lobster Complex** Hawaiian spiny lobster (*Panulirus marginatus*), Spiny lobster (*P. penicillatus*), Slipper lobster (family *Scyllaridae*) **Kona Crab** Kona crab (*Ranina ranina*)
Precious Corals	EFH for Precious Corals is confined to six known precious coral beds located off Keahole Point, Makapuu, Kaena Point, Wespac bed, Brooks Bank and 180 Fathom Bank. EFH has also been designated for three beds known for black corals in the Main Hawaiian Islands between Milolii and South Point on the Big Island, the Auau Channel and the southern border of Kauai	**Includes the Makapuu bed, Wespac bed, Brooks Banks bed.** **For Black Corals, the Auau Channel has been identified as a HAPC.**	**Deep-water Precious Corals (150-750 fm)** Pink coral (*Corallium secundum*), Red coral (*C. regale*), Pink coral (*C. laauense*), Midway deepsea coral (*C.* sp nov.), Gold coral (*Gerardia* sp), Gold coral (*Callogorgia gilberti*), Gold coral (*Narella* spp.), Gold coral (*Calyptrophora* spp.), Bamboo coral (*Lepidisis olapa*), Bamboo coral (*Acanella* spp.) **Shallow-water Precious Corals (10-50 fm)** Black coral (*Antipathes dichotoma*), Black coral (*Antipathis grandis*), Black coral (*Antipathes ulex*)
***Coral Reef Ecosystem**	EFH for the Coral Reef Ecosystem MUS includes the water column and all benthic substrate to a depth of 50 fathoms from the shoreline to the outer limit of the EEZ	**Includes all no-take MPAs identified in the CRE-FMP, all Pacific remote islands, as well as numerous existing MPAs, research sites and coral reef habitat throughout the western Pacific region.** *(See table below).*	*For a complete listing of all CRE-MUS and EFH/HAPC, see CRE FMP volume III: Description of Essential Fish Habitat for Coral Reef Ecosystem Management Unit Species* visit: www.wpcouncil.org/coralreef.htm

* Coral Reef Ecosystem FMP Management Unit Species (MUS) include virtually all of the organisms that inhabit the coral reef ecosystem including bony fishes, rays, invertebrates, corals, algae and other sessile benthos.

Coral Reef Ecosystem Habitat Areas of Particular Concern

	Rarity of Habitat	Ecological function	Susceptibility to Human Impact	Likelihood of Developmental Impacts	Existing Protective Status
NWHI					
All substrate 0-10 fm	x	x	x		x
Laysan*:* All substrate 0-50 fm	x	x			
Midway*:* All substrate 0-50 fm	x	x	x		x
FFS*:* All substrate 0-50 fm	x	x	x	x	
Main Hawaiian Islands					
Kaula Rock (entire bank)		x	x		x
Niihau (Lehua Island)	x	x	x		
Kauai (Kaliu Point)		x	x		
Oahu					
Pupukea (MLCD)		x	x	x	x
Shark's Cove (MLCD)			x	x	x
Waikiki (MLCD)			x	x	x
Makapuu Head/Tide Pool Reef Area		x	x	x	
Kaneohe Bay	x	x	x	x	
Kaena Point		x	x		
Kahe Reef		x	x		
Maui					
Molokini	x	x	x	x	x
Olowalo Reef Area		x	x	x	
Honolua-Mokuleia Bay (MLCD)		x	x		x
Ahihiki Kinau Natural Area Reserve	x	x	x		x
Molokai (south shore reefs)		x	x		

Coral Reef Ecosystem Habitat Areas of Particular Concern (cont.).

	Rarity of Habitat	Ecological function	Susceptibility to Human Impact	Likelihood of Developmental Impacts	Existing Protective Status
Main Hawaiian Is. (cont.)					
Lanai					
Halope Bay		x	x		
Manele Bay		x	x	x	
Five Needles		x	x		
Hawaii					
Lapakahi Bay State Park (MLCD)		x	x		x
Pauko Bay and Reef (MLCD)		x	x		x
Kealakekua		x	x		x
Waialea Bay (MLCD)	x	x	x		x
Kawaihae Harbor-Old Kona Airport (MLCD)		x	x		x
Additional Areas					
All long-term research sites		x	x		
All CRAMP sites		x	x		
American Samoa					
Fagatele Bay	x	x			x
Larsen Bay		x	x	x	
Steps Point		x	x		
Pago Pago (North Coast of Tutuila), National Park of American Samoa	x	x	x		x
Aunuu Island	x	x	x	x	
Rose Atoll	x	x			x
South coast Ofu (marine areas)	x	x	x	x	
Aua Transect- Pago Pago harbor, oldest coral reef transect	x	x	x	x	
Tau Island	x	x	x		

Coral Reef Ecosystem Habitat Areas of Particular Concern (cont.).

	Rarity of Habitat	Ecological function	Susceptibility to Human Impact	Likelihood of Developmental Impacts	Existing Protective Status
Guam					
Cocos Lagoon	x	x	x		
Orote Point Ecological Reserve Area	x	x	x	x	x
Haputo Point Ecological Reserve Area	x	x			x
Ritidian Point	x	x			x
Jade Shoals	x	x	x		
CMNI					
Saipan (Saipan Lagoon)	x	x	x	x	
US Pacific Remote Islands					
Wake Atoll	x	x			x
Johnston Atoll	x	x		x	x
Palmyra Atoll	x	x	x		x
Kingman Reef	x	x	x		x
Howland Island	x	x			x
Baker Island	x	x			x
Jarvis Island	x	x			x

APPENDIX G. TABLE: SENSITIVE MARINE WILDLIFE OCCURRING IN PROJECT ROI WATERS

Appendix G
Sensitive Marine Wildlife Occurring or Potentially Occurring in Project ROI Waters

Scientific Name	Common Name	[1]Federal Status	[2]State Status	Habitat	Likelihood of Occurrence	Notes
Cetaceans and Pinnipeds						
Balaenoptera acutorostrata	Minke whale	*	-	Rarely in nearshore water; prefers offshore waters	U	Most common northwest of the main seven-island chain or on leeward side of islands. Acoustic detections of this species show a greater presence than visual sightings.
B. Borealis	Sei Whale	E*	-	Most likely in deeper offshore waters	U	Rarely sighted in Hawaiian waters.
B. edeni	Bryde's whale	*	-	May occur in nearshore or offshore waters	U	Most common northwest of the main seven-island chain.
B. musculus	Blue whale	E*	-	Most likely in deeper offshore waters	U	Acoustically detected in Hawaiian waters.
B. physalus	Fin whale	E*	-	Most likely in deeper offshore waters	U	Heard but rarely sighted in Hawaiian waters.
Berardius bairdii	Baird's beaked whale	*	-	Most likely in deeper offshore waters	U	Common in offshore waters
Delphinus Delphis	Common dolphin	*	-	Most likely in deeper offshore waters	U	May be incidentally sighted but not likely this close to shore
Eubalaena glacialis	Pacific right whale	E*	-	Unknown if depth is a criteria	U	Stray individuals from more northern population have been rarely sighted in offshore waters.
Feresa attenuate	Pygmy killer whales	*	-	May occur in nearshore or offshore waters	P	Known in the channels between the main islands and in coastal areas of main islands. Known from standings off Maui.
Globicephala macrorhynchus	Short-finned pilot whale	*	-	May occur in nearshore or offshore waters	P	Known in the channels between the main islands. Common in nearshore or offshore areas in waters of the main Hawaiian islands. Known from strandings off Maui.
Grampus griseus	Risso's dolphin	*	-	Most likely in deeper offshore waters	P	Most commonly sighted in offshore waters, but possible nearshore. Known from strandings off Maui.
Kogia breviceps	Pygmy sperm whale	*	-	Most likely in deeper offshore waters	P	Prefers deeper waters but occasionally seen in the channels between the main islands. Known from standings off Maui.
K. simus	Dwarf sperm whale	*	-	Most likely in deeper offshore waters	P	Prefers deeper waters but occasionally seen in the channels between the main islands. Known from strandings off Lanai.
Monachus schauinslandi	Monk seal	E*, CH, D	-	More common in nearshore waters or hauled out on the coast.	C	Most common northwest of the main seven-island chain. Incidental individuals known to haul out along main seven island shorelines.
Megaptera novaeangliae	Humpback whale	E*	-	May occur in nearshore or offshore waters	C	Occurs throughout the main seven-island chain January through April. Occurs in all nearshore and offshore waters to the 100 fathom line.
Mesoplodon densirostris	Blainville's whale	*	-	Most likely in deeper offshore waters	P	Prefers deeper offshore waters. Has been sighted off coast of Maui. May be seen in offshore areas in waters adjacent to the main islands.

Appendix G
Sensitive Marine Wildlife Occurring or Potentially Occurring in Project ROI Waters *(continued)*

Scientific Name	Common Name	[1]Federal Status	[2]State Status	Habitat	Likelihood of Occurrence	Notes
Orcinus orca	Killer whale	*	-	May occur in nearshore or offshore waters	P	Occasionally seen, especially in the channels between the main islands and at the northwest island chain. May be incidentally sighted in nearshore or offshore waters adjacent to the main islands.
Peponocephala electra	Melon-headed whale	*	-	May occur in nearshore or offshore waters	P	Occurs especially in the channels between the main islands and at the northwest island chain. May also occur in nearshore or offshore areas adjacent main islands. Known from strandings off Maui.
Physeter macrocephalus	Sperm whale	E*	-	Most likely in deeper offshore waters	U	Most common off the north and eastern shores of the main seven islands.
Pseudorca crassidens	False killer whale	*	-	May occur in nearshore or offshore waters	P	Occasionally seen in the channels between the main islands. May be sighted in nearshore or offshore waters adjacent to the main islands.
Stennella attenuata	Spotted dolphin	*	-	Most likely in nearshore, leeward coastal waters	P	Common along the coastline, especially on the leeward sides of the island. Occurs in both nearshore or offshore areas in waters adjacent to the main islands.
S. coeruleoalba	Striped dolphin	*	-	May occur in nearshore or offshore waters	P	More strandings sighted than live individuals. May be sighted in nearshore or offshore waters adjacent to main islands.
S. longirostris	Spinner dolphin	*	-	Most likely in nearshore, leeward coastal waters	C	Common along the coastlines. Occurs in nearshore or offshore areas in waters adjacent to main Hawaiian islands.
Steno bredanensis	Rough toothed dolphin	*	-	Most likely in deeper offshore waters	P	Prefers deeper offshore waters but has been sighted off coast of main islands. Known from strandings off Maui.
Tursiops truncatus	Bottlenose dolphin	*	-	May occur in nearshore or offshore waters	C	Common along the coastlines. Occurs in nearshore or offshore areas in waters adjacent to main islands.
Ziphius cavirostris	Cuvier's beaked whale	*	-	Most likely in deeper offshore waters	P	Most common of the beaked whales in waters off main islands. Prefers deeper offshore waters but can be common in nearshore or offshore areas.
Lagenodelphis hosei	Fraser's Dolphin	*	-	Most likely in deeper offshore waters	U	Only sighted as recently as 2002 in the NW Hawaiian Island Chain. No stranding records.
Mirounga angustirostris	Northern elephant seal	*	-	Almost entirely aquatic, coming ashore primarily to breed. Its range is mostly in warm waters	U	Females occur in Hawaiian waters

Appendix G
Sensitive Marine Wildlife Occurring or Potentially Occurring in Project ROI Waters *(continued)*

Scientific Name	Common Name	[1]Federal Status	[2]State Status	Habitat	Likelihood of Occurrence	Notes
Sea Turtles						
Caretta caretta	Loggerhead turtle	T	-	Prefers nearshore waters of northwest island chain.	U	Considered uncommon off Maui.
Chelonia mydas	Green turtle	T	-	Prefers nearshore waters of main islands.	C	Nests annually on Hawaiian beaches; common in nearshore areas of any of the main seven islands. Most abundant sea turtle in Hawaiian waters. Common in harbors.
Dermochelvs coriacea	Leatherback turtle	E	-	Prefers offshore waters	U	Primarily occurs over deep oceanic waters; sighted equally as frequently off any of the main seven islands. Most common along the north shores and in offshore waters.
Eretmochelys imbricata	Hawksbill turtle	E	-	Prefers nearshore waters off Big Island	P	Considered uncommon; a small number nest on the Island of Hawaii
Lepidochelys olivacea	Olive ridley turtle	T	-	Prefers offshore waters	U	Infrequently seen in Hawaiian offshore waters

Sources: Maldini 2003. NOAA Fisheries 2005a and b; ONR 2000

Status:

[1]Federal:

E = Endangered

* = Protected under MMPA

D = Depleted under the MMPA

CH = Critical habitat designated or proposed for designation

[2]State

- = No Status

Likelihood of occurrence in the project site

C = Confirmed

P = Potentially may occur

U = Unlikely to occur